AMENDMENT 6 (LIMITED ENTRY)

TO THE FISHERY MANAGEMENT PLAN FOR

PACIFIC COAST GROUNDFISH

INCLUDING

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

AND REGULATORY IMPACT REVIEW

ADOPTED BY
THE PACIFIC FISHERY MANAGEMENT COUNCIL
SEPTEMBER 1991

Prepared by the Staff of the Pacific Fishery Management Council
and Limited Entry Advisory and Drafting Committees

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COVER SHEET

( ) Draft

(X) Final Supplemental
Environmental Impact Statement

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Proposed Action

Approval and implementation of Amendment 6 to the Pacific Coast Groundfish Plan (FMP).

Abstract

The proposed action is to implement an amendment to the fishery management plan which governs the groundfish fisheries off the coast of Washington, Oregon and California under the provisions of the Magnuson Fishery Conservation and Management Act of 1976 as amended. The amendment (Amendment 6) would implement a license limitation system, adding the limited entry program to the FMP as a fourteenth chapter. Owners of vessels using groundfish trawl, longline and fishpot gear to catch groundfish managed by the Pacific Fishery Management Council would be required to hold a federal limited entry permit registered for the vessel. Vessel owners using all other gears would continue to harvest under an open access system and an allocation would be made between open and closed access fisheries as necessary. The license limitation system would be based on transferable permits; however, the permits issued to some lower priority entrants would be nontransferable. A description of the affected marine, coastal and human environments is included along with the impacts of proposed and alternative actions on these environments. This supplement supports the conclusion in the Final Supplemental Environmental Impact Statement which accompanied the Pacific Coast Groundfish Plan when it was submitted in 1982: "The proposed action will help protect the long-term productivity of the groundfish resources and will involve no irreversible or irretrievable commitments of the groundfish resources."

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ADDENDUM

After review the National Marine Fisheries Service has revised the "classification" section on Amendment 6. The amendment is now considered to be a significant action under the Regulatory Flexibility Act (RFA). Therefore the title of the document has been revised to indicate that in addition to being a Supplemental Environmental Impact Statement and Regulatory Impact Review the analysis provided also serves as an Initial Regulatory Flexibility Analysis (IRFA). The new title is:

> Amendment 6 (Limited Entry) to the Fishery Management Plan for Pacific Coast Groundfish Including Supplemental Environmental Impact Statement, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis.

Because the document was initially prepared in anticipation of a possible finding that the program would be found to be significant under the RFA no additional revision is required to meet the requirements for an IRFA.

PFMC
8/7/92

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ACRONYMS

ABC	acceptable biological catch
Council	Pacific Fishery Management Council
CZMA	Coastal Zone Management Act
DAP	domestic annual processing
EIS	Environmental Impact Statement
EEZ	exclusive economic zone
ESA	Endangered Species Act
FMP	fishery management plan
GMT	Groundfish Management Team
GNP	gross national product
INPFC	International North Pacific Fisheries Commission
IPHC	International Pacific Halibut Commission
ITQ	individual transfer quota
JV	joint venture
JVP	joint venture processing
LE permit	limited entry permit
LEADOC	Limited Entry Amendment Drafting and Oversight Committee
LEC	Limited Entry Committee
MFCMA	Magnuson Fishery Conservation and Management Act
MLR	minimum landing requirements
MMPA	Marine Mammal Protection Act
MSY	maximum sustainable yield
mt	metric tons
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	optimum yield
PacFIN	Pacific Coast Fishery Information Network
RDB	research data base
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SSC	Scientific and Statistical Committee
TALFF	total allowable level of foreign fishing

1.0 HISTORY OF THE LIMITED ENTRY AMENDMENT

The domestic and foreign groundfish fisheries in the EEZ of the United States (3 to 200 miles offshore) in the Pacific Ocean off the coasts of California, Washington and Oregon are managed under the "Pacific Coast Groundfish Fishery Management Plan and Environmental Impact Statement for the California, Oregon, and Washington Groundfish Fishery". The FMP was developed by the Council under the MFCMA. It was approved by the Assistant Administrator for Fisheries, NOAA on January 4, 1982 and became effective on September 30, 1982. Implementing regulations were published in the Federal Register on October 5, 1982 (at 47 FR 43964) and appear at 50 CFR 663 and Part 620. Five amendments to the FMP have been implemented. This document describes the license limitation alternative which the Council has recommended for implementation under the sixth FMP amendment. The license limitation alternative would be incorporated as Chapter 14 in the groundfish FMP. Under a license limitation program, the Council would continue to use the management measures available under the current groundfish FMP.

The Council's decision to consider license limited entry was a response to requests by members of industry on the Council's Groundfish Advisory Subpanel who were concerned about the future of the West Coast groundfish fishery. In April 1987, the Council appointed the LEC (a group composed of individuals both for and against limited entry) to study the issue. At the July 1987 Council meeting, the LEC recommended, and the Council adopted, a limited entry cut-off date of July 11, 1987, after which individuals entering the fishery would be considered on notice that they were at risk of not receiving a permit. Over the next year, the LEC worked to develop specific proposals for a viable license limitation system. In July 1988, the LEC presented two proposals to the Council which were adopted for the purpose of obtaining public comment. At that time, because the previously adopted cut-off date had not been published in the Federal Register, the cut-off date was changed to August 1, 1988. In the same action, July 11, 1984 was established as the opening date for the qualifying window. After these actions, the Council appointed a workshop committee to develop a public information program. This committee recommended the Council sponsor a series of public information workshops and a scientific survey of various segments of industry. The workshops served as the scoping session for the issues and alternatives to be included in the supplemental EIS. Additionally, the proposals which had been developed by the LEC were presented and participants were asked to identify ways the proposals might be improved. The workshops were held in the winter of 1989 and the survey commenced shortly thereafter. The Survey Research Center at Oregon State University was contracted to conduct the survey. In November 1989, after considering survey results and hearing testimony from the public and Council advisory entities, the Council voted to proceed with the development of a limited entry amendment. Representatives from each state, the Council's enforcement advisors, industry, NMFS and NOAA General Counsel were appointed to a committee to oversee the drafting of the limited entry amendment package. During the drafting of the amendment, this committee considered all suggestions on improving the LEC's original proposals received during the workshops and through other public comment. The draft limited entry amendment was approved for public review at the November 1990 Council meeting, the draft supplemental EIS/RIR mailed out in January 1991, and hearings held the following month. In March 1991, after reviewing public comments and the draft supplemental EIS/RIR, the Council made several revisions to the license limitation alternative and gave its tentative approval of the revised alternative pending the outcome of further analysis and public comment. Subsequently, in response to advisory committee and public comments, additional options were developed within the license limitation alternative. Preferred options within the license limitation alternative were selected at the July Council meeting after which the revised alternative and additional analysis were distributed for public

review (over 45 days prior to the close of the public comment period). The public comment period was closed September 13 and reopened for testimony to the Council September 18 and 19. In its final vote September 19, 1991, the Council was unanimous in recommending the license limitation alternative for implementation by the Secretary of Commerce.

1.1 Purpose of the Document

This document analyzes the limited entry alternatives being considered by the Council as part of Amendment 6 to the groundfish FMP and provides the background and assessments necessary for the Secretary of Commerce to determine if the management measures are consistent with the MFCMA, other applicable law and the FMP. Specific statutory and administrative requirements fulfilled by this document include those of the NEPA, RFA, Executive Order 12291, CZMA, ESA and MMPA.

Specifically, this document is an FMP amendment including supplemental EIS and RIR.

1.1.1 Final Supplemental EIS

In order to analyze the potential impacts of the proposed action on the quality of the human environment, compliance with NEPA requires that an environmental assessment or impact statement be prepared. According to NOAA directive, an EIS must be prepared if the proposed action may reasonably be expected to:

1. jeopardize the productive capability of the target resource species or any related stocks that may be affected by the action,

2. allow substantial damage to the ocean or coastal habitats,

3. have substantial adverse impact on public health or safety,

4. affect adversely an endangered or threatened species or a marine mammal population, or

5. result in cumulative effects that could have a substantial adverse effect on the target resource species or any related stocks that may be affected by the action.

Additionally, controversy and socio-economic effects should also be considered in any determination of significance.

The decision to prepare a supplemental EIS was made because of the generally controversial nature of a limited entry system, and the effects of such a system on the future configuration of vessel sizes and gears and on the effectiveness of future conservation measures.

The determination requiring a supplemental EIS was not intended to prejudice any decision by the Council or Secretary of Commerce, but instead was designed to provide the best information on which to base any such decisions.

1.1.2 RIR and Regulatory Flexibility Act Determination

In compliance with Executive Order 12291 and the RFA, NMFS requires the preparation of an RIR and analysis of impacts under the Regulatory Flexibility Act for all regulatory actions or for significant policy changes that are of public interest. The RIR:

1. provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action,

2. provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternative that could be used to solve the problems, and

3. ensures that the regulatory agency or Council systematically and comprehensively considers all available alternatives so that public welfare can be enhanced in the most efficient and cost-effective way.

The RIR also serves as the basis for determining whether any proposed regulations are major under criteria provided in Executive Order 12291 and whether or not proposed regulations will have a significant economic impact on a substantial number of small entities, in compliance with the RFA (Public Law 96-354). The primary purpose of the RFA is to relieve small businesses, organizations and governmental jurisdictions (collectively, "small entities") of burdensome regulatory and record keeping requirements. The RFA requires that if regulatory and record keeping requirements are not burdensome, then the head of an agency must certify that the regulation, if promulgated, will not have a significant effect on a substantial number of small entities.

1.2 Purpose and Need for Action

Council consideration of limited entry is motivated by a number of problems which arise from a single underlying cause; overcapacity in the fishery (discussed in Section 1.2.1). How the identified problems impede achievement of goals and objectives established by the Council in the interest of the public is discussed in Section 1.2.2.

1.2.1 Statement of the Problem

The Council adopted the following problem statement in April 1990.

> Nearly all groundfish stocks are now fully harvested by domestic fishermen in the Pacific coast groundfish fishery. While fleet harvesting capacity has increased, harvests are declining as stocks are fished down to MSY levels. Further, there is a general level of excess harvest capacity existing in most West Coast and North Pacific fishing fleets (e.g., shrimp, crab, halibut, salmon, etc.). As these other fisheries grow increasingly overcrowded, relative to available harvest, it becomes more likely that capacity will be redirected to the West Coast groundfish fishery when downturns occur elsewhere. In addition, the implementation of more restrictive management regulations in other fisheries, including ITQ limited entry systems,

may result in increased effort during season openings in the West Coast groundfish fishery.

In the Pacific coast groundfish fishery, declining stocks and the presence of harvest capacity in excess of that necessary to catch the resource result in increasing number and complexity of regulations. Accordingly, the Council faces increased pressure to balance the conflicting need to adopt more restrictive regulations for protecting the resource with the need to provide sufficient allowable catch to sustain the fleet.

Increased number and complexity of regulations have many adverse impacts in such areas as fleet costs, resource utilization, safety, and enforcement costs and effectiveness. Additionally, there is a point beyond which added regulations that interfere with day to day vessel operations (e.g., trip limits or mesh size regulations) will not improve the Council's ability to accomplish its goals. Pressures on industry arise not only from management measures which restrict operations, but also the division of the allowable catch among larger numbers of vessels.

Two components comprise fleet harvest capacity: vessel fishing power and number of vessels. As harvesting capacity in the fisheries continues to increase, problems arising from the need for more restrictive management measures and resolution of allocation issues become more acute. It is apparent that no relief from these problems will occur if management actions continue to allow increased harvest capacity.

1.2.2 Related Groundfish FMP Goals and Objectives

The Council goals and objectives for the groundfish FMP are discussed in Section 2.1 of groundfish FMP Amendment 4. The following discussion covers the goals and objectives affected by this FMP amendment.

1.2.2.1 Related Groundfish Goals

Achievement of all three of the Council's goals is impeded by the problems discussed in Section 1.2.1. Exactly how achievement of these goals is impeded will be discussed in the following section under the related objectives.

Goal 1. Conservation – Prevent overfishing by managing for appropriate harvest levels, and prevent any net loss of the habitat of living marine resources.

Goal 2. Economic – Maximize the value of the groundfish resource as a whole.

Goal 3. Utilization – Achieve the maximum biological yield of the overall groundfish fishery, promote year–round availability of quality seafood to the consumer and promote recreational fishing opportunities.

1.2.2.2 Related Groundfish Objectives

Conservation.

Objective 2. Adopt harvest specifications and management measures consistent with resource stewardship responsibilities for each groundfish species or species group.

Increased fleet harvest rates are related to increasing amounts of active harvest capacity. As harvest rates increase, more restrictive management measures are required to avoid excessive mortality. Landing limits and closures are two of the primary management tools used by the Council. When limits become more restrictive or longer closures occur, there are increases in mortality due to discard of by–catch, highgrading to maximize the value of allowed catch and unreported landings. These unmeasured sources of mortality may drive biomass levels below optimum levels and decrease the accuracy of stock assessments. Additionally, there is a point beyond which a decrease in the trip limit only decreases landed catch, with no decrease in targeting and thus no decrease in actual fishing mortality. At the November 1990 Council meeting, the SSC commented to the Council:

> In discussing proposed 1991 management measures for the groundfish fisheries, several general observations became evident. The period of "fishing down" West Coast groundfish stocks is over. Most stocks are now reduced to the level that produces MSY and restraint is needed to maintain current population sizes. The harvest capacity of the fleet is many times greater than the combined ABCs. Management tools traditionally used by the Council (landing limits, trip frequency limits, ratios and quotas) have reached the limits of their usefulness in achieving the Council's conservation goals . . . .

Thus, new types of management measures are required. Each new tool considered will have different sets of social and economic consequences. Limited entry is one of the new tools being considered.

Economic.

Objective 4. Attempt to achieve the greatest possible net economic benefit to the nation from the managed fisheries.

As fleet capacity and harvest rates increase, more harvest, management and enforcement resources are used to harvest the same amount of fish. Additional use of regulations which interfere with the optimal day to day operations of a fishing enterprise, impose burdens on the enterprise, decrease efficiency and reduce profits for both the vessel and the fishery as a whole. NOAA guidelines state:

> In theory, an efficient fishery would harvest OY with the minimum use of economic inputs such as labor, capital, interest and fuel. Efficiency in terms of aggregate costs then becomes a conservation

> objective, where "conservation" constitutes wise use of all resources involved in the fishery, not just fish stocks. (50 CFR 602.15[b][2])

As the SSC statement cited above points out, the management tools traditionally used by the Council to achieve conservation goals have "reached the limits of their usefulness in achieving Council conservation goals." Limited entry, in combination with whatever other management measures are necessary, has been proposed as a tool which will result in greater net benefits than alternative measures applied in an open access fishery.

Objective 5. Identify those sectors of the groundfish fishery for which it is beneficial to promote year-round marketing opportunities and establish management policies that extend those sectors' fishing and marketing opportunities as long as practicable during the fishing year.

Trip limits have been the primary tool used in the Council's attempt to maintain a long season for purposes of market and community stability. As discussed, with reference to the conservation objective, trip limits or season closures (whether a single closure is used or a series of openings and closures are used to maintain a longer season) result in unreported mortality. Thus, as numbers of vessels and, hence, fleet harvest rates increase (requiring more restrictive trip limits), it becomes more difficult to achieve this objective while still meeting the conservation objective.

Utilization.

Objective 9. Strive to reduce the economic incentives and regulatory measures that lead to wastage of fish.

The discard of by-catch discussed with respect to conservation and economic objectives is in effect wastage of fish which might otherwise be landed and consumed by the public. A management system which reduces the future need for discard inducing management measures will likely increase fishery resource utilization.

Social Factors.

Objective 11. When conservation actions are necessary to protect a stock or stock assemblage, attempts are made to develop management measures that will affect users equitably.

Commenting to the Council on the 1991 management measures, the SSC stated:

> The SSC examined the range of alternatives for the various proposals and recognized that the most important differences among the alternatives were in their social implications. In these considerations, the Council will be asked to choose between big and small boats, directed and incidental fisheries [and] vessels delivering to onshore or offshore processors.

As conservation measures become more restrictive, equitable distribution of the conservation burden becomes more difficult and decisions become more allocative in nature. Every allocation and means of allocating (whether they be direct or indirect allocations resulting from efforts to control harvest rates) will have different social and economic consequences. Limited entry presents yet another

allocation alternative for consideration by the Council and public both in terms of the allocation of fishing rights and the allocation effects of the mix of management measures used in the future.

Objective 13. When considering alternative management measures to resolve an issue, choose the measure that best accomplishes the change with least disruption of current domestic fishing practices, marketing procedures and environment.

Current management measures conserve the resource, but as the measures become more restrictive disruption of domestic fishing practices and marketing increase. This FMP amendment analysis is part of the Council's attempt to determine whether other management measures (i.e., a limited entry program) might provide a more stable, less disrupted fishery over the longer term.

1.2.3 Goals and Objectives for Limited Entry

The following are the goals and objectives for limited entry adopted by the Council in April 1990. The primary objective addresses the overcapacity problem directly, and the secondary objectives address the ways in which the Council hopes limited entry will promote achievement of Council goals and objectives for the groundfish fishery.

Goals. The goals for the West Coast groundfish fishery limited entry program are to improve stability and economic viability of the industry while recognizing historic participation, meet groundfish management objectives and provide for enforceable laws.

Primary Objective. The primary objective of a limited entry program will be to limit **or** reduce harvest capacity in the West Coast groundfish fishery.

Secondary Objectives. In pursuit of the primary objective, the following secondary objectives will be addressed:

Economic

- Promote long-term economic stability
- Increase net returns from the fishery
- Allow flexibility for combination vessels

Management

- Stabilize management regimes by reducing need for frequent inseason changes
- Reduce the cost of management
- Reduce by-catch and waste
- Encourage effort in underutilized species fisheries

Enforcement

- Promote cost-effective enforcement by reducing need for frequent changes and tight trip limits
- Promote logistically viable enforcement by minimizing need to use regulations such as trip limits or subarea closures which are more difficult to enforce

Social

- Recognize and accommodate historical participation of those investing their life and resources in the fishery
- Maintain a mechanism for fishery entrance/exit and flexibility for change in the fleet
- Reduce conflicts between user groups by limiting or reducing effort competition for the same resource
- Provide stable supply of groundfish to the public at a reasonable price

2.0 THE ALTERNATIVES

At its March 1990 meeting, the Council announced four tentative alternatives which it would examine during consideration of Amendment 6 to the Pacific coast groundfish FMP: (1) status quo; (2) intensified management trends (gear restrictions, increasingly restrictive trip limits and seasons, multiple openings or quarterly/monthly quotas); (3) license limited entry; and (4) ITQs. Public comment on these alternatives was solicited. During discussions at the April 1990 meeting, it was decided that status quo and intensified management trends were the same. The final set of alternatives specified for the analysis were (1) status quo, (2) license limited entry, and (3) ITQs.

2.1 Description of the Alternatives

2.1.1 Status Quo

This description of status quo management includes a listing of the regulations allowable under the framework FMP (Amendment 4). On an annual basis, the Council determines allowable harvests, sets quotas and harvest guidelines, and establishes trip limits, seasons and other basic conservation measures which are expected to achieve the quotas and harvest guidelines. A description of past management actions taken under Amendments 3 and 4 of the current FMP is included in Chapter 5 and illustrates a trend toward increasingly restrictive regulations.

The Framework FMP. Routine Council management measures (Section 6.2.1 of the groundfish FMP) include:

- trip landings and frequency limits for specific commercial gears and species:
  - Widow Rockfish – All Gear
  - Sebastes Complex – All Gear
  - Boccacio – All Gear
  - Yellowtail Rockfish – All Gear
  - Deepwater Complex – All Gear
  - Thornyhead – All Gear
  - Dover Sole – All Gear
  - Sablefish (Including Size Limits) – Trawl Gear
  - Sablefish – Non-trawl Gear,
  - Pacific Ocean Perch – All Gear, and

- recreational bag and size limits for lingcod and rockfish.

Gear regulations, reporting requirements, season/time closures, harvest guidelines and quotas are also used on a regular basis. Changes to routine management measures may be made during one Council meeting. Additionally, under framework procedures[1/] established by Amendment 4, the Council may

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1/ The framework procedures section specifies a process that the Council must follow in making management decisions. These procedures involve the preparation of analytical documents, public notice of the Council's intent to address the issue and opportunity for public comment. Acting under the framework procedure of the FMP, the Council and Secretary of Commerce may only take actions which are within the scope of those specified in the FMP (listed in this paragraph). Other kinds of fishery management measures require amendment of the FMP.

recommend through a two meeting process that any of the following common fishery management measures be employed in manners in which they have not been routinely used in the West Coast groundfish fishery:

- gear limitations (mesh size limits, codend specifications, legal gear definitions, marking requirements and other gear specifications as necessary),
- trip landing limits (including by–catch limits) and trip frequency limit,
- size limits,
- harvest guidelines (target harvest levels) and quotas,
- season, time and area (or subarea) closures,
- cessation of directed fishing (foreign, domestic or both) on the identified species or species group with appropriate allowances for incidental harvest of that species or species group,
- observer coverage,
- reporting requirements,
- permits (other than limited entry permits), and
- other necessary measures.

The process for deciding to use a nonroutine management measure requires analyses specified in the framework procedures be developed and disseminated for public comment. In addition to the types of regulations described above, direct allocation to gear groups may also be accomplished through the framework procedures established under Amendment 4. Direct allocation actions require more detailed analyses than other management actions.

2.1.2 License Limited Entry

The following is a brief summary of the license limitation alternative which includes only the most basic characteristics of the program. A more detailed summary is included as part of the executive summary to the appendix to this document. There are a number of specific provisions in the license limitation alternative which are not included in this document that will be significant to individual circumstances. It is important to directly consult the license limitation program document in determining how the license limitation alternative might apply to individuals in specific situations. Chapter 3 of this document explains the rationale for specific provisions of the adopted program and covers alternative provisions which were considered and rejected.

The adopted license limitation program, when combined with the current management system, controls the capacity of the fishery segment covered by the program in four main ways: (1) number of vessels, (2) gear used by the vessels, (3) length of the vessel, and (4) trip size and frequency limits (primarily trawl).

The program is based on a federal permit. The fishery will be divided into limited and open access segments. Vessels using groundfish trawl, longline or fishpot gear may qualify for limited entry permits. These vessels land over 90 percent of the catch. Rather than issuing a separate permit for each gear that vessel qualifies for, a single permit would be issued and endorsed for each gear that meets the qualifying requirements (Figure 2-1). Vessels using all other gear (exempted gears) would not be required to have a permit to continue to fish for groundfish. Additionally, vessels making small landings with longline or fishpot gear would be allowed to fish in the open access segment. Other management measures, such as trip limits, would be used to control the open access segment of the fleet. The management goal for this segment of the fleet would be to provide year-round fishing opportunity.

There are a number of different kinds of endorsements that may be issued for each gear (Table 2-1). *"A" endorsements* are primarily intended for those vessels with a significant involvement in the fishery during the July 11, 1984 to August 1, 1988 window period (vessels which meet the MLRs). They are transferable with the permit and valid for all Council-managed groundfish fisheries. There is no specified time limit on the endorsements; i.e., they will remain valid until the groundfish FMP is amended to change the nature of the permit system. The Council sent two MLR options out with the draft supplemental EIS in January 1991. -After reviewing public comment, the Council drafted an intermediate option which was analyzed and distributed for public comment in July 1991. This intermediate MLR option was adopted when the license limitation alternative was adopted in September 1991.

The current owner of a vessel which met the MLRs between **July 11, 1984 and August 1, 1988 (the window)** may qualify for an "A" gear endorsement. The MLRs are as follows.

Adopted MLR:

Trawl — At least 9 days in which over 500 pounds of any groundfish species caught with groundfish trawl gear except Pacific whiting are landed or delivered, or 450 mt of landings or deliveries of any groundfish species caught with groundfish trawl gear except Pacific whiting, or 17 days in which over 500 pounds of Pacific whiting caught with groundfish trawl gear are landed or delivered, or 3,750 mt of landings or deliveries of Pacific whiting caught with groundfish trawl gear.

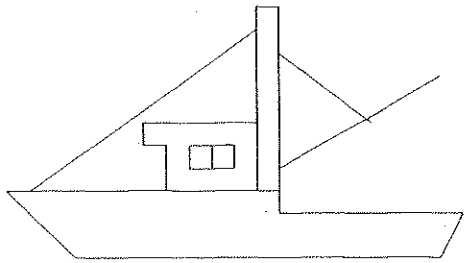
Longline — At least 6 days in which over 500 pounds of any groundfish species caught with longline gear are landed or delivered, or 37.5 mt of landings or deliveries of any groundfish species caught with longline gear.

Fishpot — At least 5 days in which over 500 pounds of any groundfish species caught with fishpot gear are landed or delivered, or 150 mt of landings or deliveries of any groundfish species caught with fishpot gear.

MLR options sent out for public review:

Vessel ID Number: 2999999

WEST COAST GROUNDFISH
LIMITED ENTRY PERMIT



Vessel Owner:	Clarence Jones
Vessel:	F/V Coastline
Size Endorsement:	45 Feet (Length Overall)
Gear Endorsement:	"A" - Trawl
	"B" - Pot - 2999999 - Expires January 1, 1997

Figure 2-1. Example LE permit.

Table 2-1. Summary of characteristics of the LE permit gear endorsements.[1/]

Type of Gear Endorsement[2/]	Endorsement Characteristics				
	Nature of Issuance Criteria	"Transferable"[3/]	Duration	Species	Upgradable
"A"	Vessel meets MLRs during the window period,[4/] upgrade from provisional "A" endorsement, or certified fleet.[5/]	Yes	No Specified Limit	All Species	No
Provisional "A"	Conversion/construction/purchase/replacement[6/]/ prohibited gear.	No	Three Year Maximum[7/]	All Species	Yes
"B"	Vessel does not meet MLRs but has 3 or more days of over 500 pound landings prior to August 1, 1988.	No	Expires December 31, 1996[8/]	All Species	No
Designated Species "B"	Seniority/first come/lottery (when harvesting capacity committed to domestic processors by vessels holding other types of endorsements is less than acceptable biological catch or an apportionment to total allowable level of foreign fishing would otherwise be required.)	No	One Year Maximum	Specified Species	No

1/ This table summarizes the characteristics of various kinds of gear endorsements. It should be used only as a guide to understanding the endorsements. There may be details important to individual circumstances which are not included in the summary table.

2/ All gear endorsements may be issued for groundfish trawl, longline or fishpot gear, depending on which gear is used to meet issuing criteria.

3/ Endorsements are not separable from the master permit. A "transferable" endorsement generally remains valid when the master permit is transferred. When a vessel is totally lost, transfer of endorsements which would not otherwise be transferable may be allowed.

4/ The qualifying **window** period is July 11, 1984 through August 1, 1988.

5/ Small fleets under local jurisdiction limited entry programs may be incorporated under this federal program if they meet certain criteria. Such local limited entry programs must be in existence as of July 11, 1991.

6/ As used here "replacement" references only the special circumstance where a qualifying vessel was replaced with a larger vessel and permit rights transferred prior to September 30, 1990.

7/ Expires in the first year in which the upgrade criteria are not met.

8/ Or on transfer of the vessel to a new owner.

Option 1 (Low MLR) The MLR for all limited entry gears is one pound or more (one landing or delivery) of groundfish.

Options 2 (High MLR)

Trawl — At least 18 days or 900 mt of landings or deliveries of any groundfish species except Pacific whiting, or 34 days or 7,500 mt of landings or deliveries of Pacific whiting.

Longline — At least 11 days or 75 mt of landings or deliveries of any groundfish species.

Fishpot — At least 10 days or 300 mt of landings or deliveries of any groundfish species.

Provisional "A" endorsements are primarily intended for those persons who are making large investments in order to enter the fishery at significant levels, but did not have full opportunity to meet the qualifying requirements established for the four-year window period. Through means of the provisional "A" endorsement, the Council requires that such vessels develop a history of landings in order to demonstrate intent to enter the fishery. Included among potential recipients are vessels that were under construction or conversion during some part of the window period. When the draft supplemental EIS was sent out in January 1991, the Council requested comment on the criteria which would be used to determine whether a vessel was under conversion. The Council requested public comment on the value it should use in determining whether a vessel owner had made sufficient financial investment in a conversion to warrant consideration as a vessel under conversion and indicated it was considering a range of $20,000 to $50,000. In response to public comment, $10,000 was set as the threshold amount for determining whether a vessel should qualify the owner for an endorsement. When construction or conversion of these vessels is completed, the owners will have three years in which they must fish at an annual rate that is approximately equal to the annual average required for vessels receiving full "A" endorsements (most vessels will have already had to meet this requirement by the time endorsements are issued). After completion of these three years of fishing, the provisional "A" endorsements may be upgraded to "A" endorsements. Provisional "A" endorsements are valid for all Council-managed groundfish fisheries, but are not transferable.

"B" endorsements are intended for vessels that had some low level of activity in the fishery but did not meet the landing requirements for vessels receiving "A" endorsements. These vessels had a very low level of dependence on the fishery. The "B" endorsements provide a three-year adjustment period during which time holders of the "B" endorsements may either make arrangements to stay in the fishery through the purchase of a permit with an "A" endorsement, or make other adjustments to the limited entry program. "B" endorsements are valid for all Council-managed groundfish fisheries, but are not transferable.

Designated species "B" endorsements are intended for vessels that want to harvest potentially underutilized species. These endorsements would only be issued when the commitments of "A", provisional "A" and "B" endorsement holders to harvest for domestic processors are not sufficient to take the entire allowable harvest. The endorsements issued would be valid for one year and only for delivery to domestic processors; however, if necessary to prevent an apportionment to TALFF, the

endorsements issued may be valid for delivery to foreign processors. Designated species "B" endorsements are valid only for the species they are issued for and are not transferable. For instances in which controversy arises over the issuance of endorsements, an appeals process is provided in which the Council may act as an advisory review board to NMFS.

In addition to gear endorsements, all permits will be endorsed for the length overall of the vessel for which the permit is originally issued. The length endorsement is not expected to place an immediate limit on increases of vessel harvest capacity, but will constrain growth in vessel harvest capacity and place an ultimate upper bounds on the amount of capacity which can be used with a particular vessel. Under a trip limit management regime, there will be little incentive to expand the trip capacity of the vessel (catch capacity for a given trip). Also, where trip limits for a species include a frequency limit, there is little incentive to expand capacity for harvesting the species in terms of the speed with which trips may be taken. There is an expectation that a future permit buy-back program or the development of individual quotas may further rationalize the fishery and reduce harvest capacity once the license limitation system is in place.

2.1.3 ITQs

The Council directed the committee overseeing the drafting of this amendment to develop some detail for an ITQ program to be considered as an alternative to the license limitation program. The committee developed some basic elements of a program but recommended that the specifics be considered only as an example. This section contains the rationale for the Council's decision not to expend resources in the full development of an ITQ alternative at this time and the example of a possible ITQ system developed by the Council's oversight committee.

2.1.3.1 Rationale for Not Fully Developing a Detailed Amendment Alternative on a Comprehensive ITQ System

The license limitation alternative of Amendment 6 is a step toward controlling the capacity of the most powerful gears in the fishery. The comparable ITQ alternative to this license limitation system would be an ITQ system covering all, or nearly all, of the species for which the Council has established measures to control the rate of harvest. A comprehensive system does not need to cover every species in the FMP. However, to establish an ITQ system for only a few species would leave effort in a substantial portion of the fishery uncontrolled. The Council has determined that the Pacific coast groundfish fishery is not suitable for **immediate** implementation of a comprehensive groundfish ITQ system. Rejection of a comprehensive ITQ system at this time does not imply rejection of an ITQ system for selected species, nor does it imply rejection of the idea that a comprehensive ITQ system may eventually be developed. The following is a discussion of the major reasons for rejecting ITQs as a viable alternative to the Amendment 6 license limitation plan at this time.

Enforcement and Monitoring. Enforcement is a critical consideration in the design of any ITQ program. Following the discussion of Muse and Schelle (1989), enforcement problems fall into two categories: (1) smuggling, underreporting and misreporting and (2) dumping and highgrading.

Smuggling, Underreporting and Misreporting. ITQ systems may be undermined if individuals are able to catch and sell fish through unreported black market channels without using ITQs. The geography of the fishery has an important role in determining the severity of these problems. When domestic markets are large relative to export markets, there is greater difficulty in detection of

cheating. Large numbers of buyers, markets close to the fishery, numerous locations to land product and the presence of major urban areas are all factors which contribute to evasion of an ITQ system. Muse and Schelle found successful programs despite the presence of many of these factors. All these factors are present in the West Coast fisheries. Additionally, dockside sales, unlicensed buyers and area specific quotas might further complicate the enforcement problems for the West Coast groundfish fishery. In successful programs, the methods of monitoring involve reports by buyers and sellers that can be linked to create a clear audit trail. These methods would be complex and costly to establish and conduct for the West Coast groundfish fishery. For example, in 1990, there were 3,500 licensed fish buyers on the West Coast (while a small proportion of these licensed buyers purchase groundfish from fishermen, this number indicates the number of individuals who may be operating in fish marketing channels that need to be monitored); the Council was able to identify 122 groundfish processors for its 1989 limited entry survey; in 1988, 2,656 vessels harvested groundfish; groundfish are currently landed in about 90 ports; over 500 separate port codes are listed in the PacFIN research database documentation indicating possible landing or fish transfer points identified by the state fisheries departments; and most of the coast is easily accessible from a highway system on which product can be trucked to any location in the U.S. State enforcement systems, in place to monitor payment of landing taxes, might be used to enforce an ITQ system. In Oregon, such a system is needed to monitor a $.001 per pound landing tax. With an ITQ system in place, the cheating incentive would be much greater as the amount to be gained would be the total per pound profit from the landing. Development and implementation of an adequate monitoring system may require significant, additional enforcement effort. In addition to problems of total cost and complexity, monitoring programs would rely on state resources which have been in critically short supply in recent years. Crises in the California budget have recently threatened its ability to process fish tickets. Monitoring procedures would have to be given consistent and high priority by the states in order to be effective. Maintenance of such a program may well mean reducing state enforcement in other areas. If one state were unable to maintain the necessary enforcement, the whole system could collapse. Inability to provide adequate enforcement has been cited as a reason for massive cheating and collapse in some ITQ programs.

Dumping of Overages and Highgrading. Fisherman may dump excess catch for which they have inadequate or no ITQs causing unreported discard mortality. Highgrading is another source of unreported discard mortality because ITQs do not create property rights for a particular fish, fishermen sort their catches discarding less valuable individual fish thereby increasing the price per pound received and amount of revenue generated for a given amount of ITQ. The multispecies nature of the West Coast groundfish fishery creates particular problems for the fishermen trying to determine the combination of ITQs necessary to cover their catch. Limited ability to properly predict species ratios will result in incentive to discard by-catch for which no ITQ is held. Incentives for discarding by-catch will increase toward the end of the season as the availability of ITQs for inseason transfers decreases. Muse and Schelle discuss the difficulty of obtaining information on illegal dumping and highgrading. This lack of information would also adversely affect stock assessments. Some programs have developed incentives to encourage fishermen to land overages. One solution suggested is an onboard observer program. Such a program is currently under consideration by the Council, however, a number of difficulties arise when scientific observers are asked to collect enforcement information. Additionally, for the multitude of small vessels in the groundfish fishery, this would be a difficult and expensive program to implement.

Conservation Concerns. Failure in enforcement and monitoring could potentially result in the failure of the Council to achieve its highest priority goal, conservation of the resource. Unreported catch

could result in exceeding ABCs and may adversely impact estimates of the ABC in succeeding years. The stakes in terms of potential lost production in the West Coast groundfish fishery are high. These stakes increase when the costs of developing a comprehensive ITQ program are considered.

Other Concerns. In addition to the enforcement and monitoring problems, the LEC had a number of other sociological concerns. From case studies examined, it appeared that an ITQ system would disrupt the traditional industry structure which promotes the sharing of resource benefits among a large number of people involved in small businesses and family owned operations. The likely result of ITQs appeared to be the accumulation of fishing rights in the hands of a few holders. Direct or indirect foreign ownership of ITQs was also of concern.

Summary. The design of an ITQ system which would result in smoothly functioning markets, generate minimum opportunity for cheating and incentive for discards, and address social concerns would take a great deal of careful planning. Incentives for cheating and the possibilities for inadvertent creation of incentive for significant discards (possibly equal to or greater than that which occurs under restrictive trip limits) creates a high probability for regulatory failure. Monitoring programs to cover the entire West Coast would be costly, and stable and adequate funding from the states is uncertain. Numerous approaches have been suggested to reduce the incentives for discards, however, given the lack of experience with an ITQ system, there is a significant amount of uncertainty about the degree of discards which could result from such a program. Considering the potential problems which may be encountered in a comprehensive ITQ system, and the Council's lack of experience with ITQs, it seems that immediately jumping into the development of a complex ITQ system covering the entire fishery would be time and resource consuming, have a low probability of success, and likely have higher than necessary costs. Experience with ITQ systems for one or two species would greatly aid the development of an effective multispecies system.

Implementation of an ITQ or license limitation system are not mutually exclusive alternatives. While immediate and comprehensive implementation may be inadvisable, the committee responsible for developing the draft amendment has recommended that the Council not be biased against consideration of gradual implementation of ITQs. ITQ systems might be developed for one or two species, adding more species as experience is gained with by-catch, discard and enforcement problems. Over time, a comprehensive ITQ system might be developed.

2.1.3.2 Outline of an ITQ Alternative

The following example of some of the key elements in an ITQ system is framed as an alternative to license limited entry for the entire groundfish fishery. Notes are made (*in italicized text*) on how some of the elements might be specified differently for a system based on only a few species. The example should not bias the reviewers toward or away from an ITQ system designed to cover only a few of the groundfish species or a comprehensive program which may be phased in over a period of time.

Scope of the Fishing Activity to be Restricted.

Types of Fishing.

- Non-Indian, commercial only.

Geographic Extent.

- All Pacific coast shoreside and at-sea landings of the covered species would be included under the ITQ system.

- Some ITQs may be restricted to certain INPFC harvest areas (wherever there are currently differences in trip limits or separate ABCs or OYs).

- Owners of ITQs would be put on notice that use of any ITQ may be restricted to certain INPFC areas if the Council decides it is necessary.

Fishing Gear Types.

- ITQs would be required for catch of groundfish with any legal groundfish gear.

- ITQs would not be specific to a particular legal groundfish gear. (This would allow the market place to resolve intergear allocation problems.)

(When applied to a single species, ITQs may or may not be specific to a type of legal groundfish gear.)

Species.

- Included species:

  - Pacific whiting, lingcod, sablefish
  - widow rockfish, yellowtail rockfish, sebastes (boccaccio, canary, chilipepper, and all other rockfish except widow, yellowtail and shortbelly)
  - Dover sole, English sole, petrale sole, other flatfish
  - jack mackerel, shortbelly rockfish
  - all other groundfish except Pacific ocean perch

(Certain species may be selected initially and others added over time, eventually phasing in a complete ITQ system for the groundfish fishery. However, such a program would not be an immediate alternative to license limitation.)

- Species not covered: Pacific ocean perch

- Vessels would be allowed to land up to some amount of groundfish species (to be specified) in one day without any ITQ. Of this amount, not more than U pounds may be species V, not more than W pounds may be species X, not more than Y pounds may be species Z, etc.

Basis for Initial Allocation.

- ITQs would be issued to current vessel owners who owned, or held a charter lease for a vessel during a qualifying window (recent years). The amount of ITQ issued would be based on the share of total harvest during the window while it was owned or chartered by the individual. More

recent landings would be given greater weight in determination of the amount of ITQ to be issued.

- Past Participants: To receive an initial allocation of ITQs, a person must be an owner or lessee of a U.S. fishing vessel which took part in the West Coast groundfish fishery in the 365 days prior to issuance of quota (hardships which prevented participation would be considered).

- New Entrants: Owners of recently constructed vessels would receive a share equivalent to the average share received for similar size vessels on the basis of the most recent year of the qualifying period.

(If a license limitation system were already in place, the individuals to whom ITQs would be issued could be defined as the group of current permit holders.)

ITQ Characteristics.

- An ITQ would be a share of the OY or ABC for each species. The amount of catch an ITQ represents would vary yearly as the OY or ABC varies from year to year. (With such a structure, there would be no need for a ITQ buy-back program.)

- ITQs would be species, stock or species/stock complex specific. Where appropriate for biological or community impact reasons, ITQs may be restricted to certain geographic areas.

Transferability.

- ITQs would be fully transferable.

Duration.

- ITQs would be valid until an amendment to the FMP specified otherwise.

Enforcement.

- Vessel owners would need to have the ITQs before landing the fish (or in the case of offshore processors, before making their weekly reports).

Problems.

- How to prevent discarding fish for which vessels do not have ITQs (e.g., a vessel owner fishes the deepwater complex, but rather than acquiring arrowtooth flounder ITQs, the vessel owner discards all arrowtooth flounder).

- How to prevent highgrading; i.e., discarding smaller or less valuable individual fish from the catch (this is also a problem under the current trip limit system).

- How to minimize incentive for fish smuggling; nonreporting of landings. (Arguments have been made that this may not be significantly different from incentives for smuggling under trip quotas or frequency limits).

- How to prevent circumventing any maximum poundage limit (landings under a certain amount would not require ITQs) by delivering to several processors in a single day and misreporting landings.

Possible Solutions.

- Severe penalties for not landing any ITQ species caught and circumventing the use of ITQs by attempting to avoid detection of landings.

- Require certain combinations of ITQs be held whenever certain species are caught.

- Extensive monitoring and enforcement.

2.2 How the Alternatives Address Overcapacity

The following discussion outlines how each of the three general alternatives might address the overcapacity problem. The specifics of each alternative are discussed in Section 2.1

As discussed in Section 1.2, the presence of excess fleet capacity creates or accentuates several problems the Council faces in its attempt to achieve the goals and objectives it has adopted for the fishery. As the capacity of the fleet increases, species yielding high rates of economic return become increasingly subject to targeting, which may lead to overfishing. In order to protect the resource, management measures, such as quotas, are implemented. If harvest capacity continues to increase due to the fisheries profitability, increased fleet harvest rates reduce the amount of time required to reach these quotas.

In an effort to meet its objectives within the context of an "open access" fishery, the Council has traditionally relied upon trip landing and frequency limits as well as quotas and closures. The effect of such restrictions is to reduce utilization of the full harvest capacity of many vessels in the fleet. For instance, a restriction limiting vessels to 1 delivery of no more than 50,000 pounds per week would reduce the usable capacity of any vessel capable of delivering more than 50,000 pounds in a week or in a single delivery. A vessel capable of landing 80,000 pounds in 1 week–long trip, for example, would have its usable capacity cut by 30,000 pounds a week. The effects of such restrictions are not limited to large vessels. This limit would also reduce the usable capacity of vessels needing more than 1 trip to land as much as 50,000 pounds in 1 week. A vessel with a 10,000 pound hold, but capable of making 5 trips per week, would find its usable capacity cut by 40,000 pounds per week with this trip limit.

Quotas and closures also reduce usable vessel capacity. Capacity is the ability of a vessel to harvest some amount of fish over a period of time. If the period of time is one year, then a closure prior to the end of the year reduces usable capacity. Similarly, quarterly quotas and closures prior to the end of the quarter would reduce usable vessel capacity.

Assuming that the trip limit or quota and closure approach is generally effective in restricting the usable capacity of many individual vessels, reliance on trip limits does not prevent **fleet** capacity from expanding (and thus harvest rates from increasing) through the entry of additional vessels into the fishery. If fleet capacity continues to expand, or if stocks begin to decline, progressively lower trip

limits and earlier closures are usually implemented in an effort to restore a lower level of usable fleet capacity (harvest rate).

Through limiting the effectiveness of increases in vessel fishing power, the use of trip limits **may** succeed in preserving some desirable aspects of the fishery, such as season length, and closures may help to conserve the fish resources, but neither of these tools places a check on increases in fleet harvesting capacity that occur with the entry of new vessels. As fishery revenues are shared among more vessels and regulations impose higher costs on participants, the nonfish resources utilized in prosecution of the fishery are not conserved, resulting in a dissipation of potential fishery profits (net benefits). Clearly, for any management regime to have a chance of meeting the economic/utilization objectives set forth by the Council, it must effectively limit all potential sources of increase in fleet capacity. Additionally, the use of trip limits and closures may lead to significant discard and conservation problems (by-catch during closures, catch in excess of trip limits and highgrading all lead to unreported fishing mortality). Trip limits may also provide incentives for the employment of vessels which are not optimally sized for efficient harvest.

Two general alternatives to status quo management have been suggested to help meet Council management goals and objectives. The first involves the implementation of direct limits on the number of vessels allowed to participate in the fishery. Depending on the manner and extent that licenses for the fishery are limited, effective containment of fleet capacity may also require the continued presence of measures, such as trip limits, which are designed to reduce the impacts of increases in the productivity of individual vessels. As mentioned above, status quo management may control the usable harvest capacity of individual vessels, but fails to control the number of active vessels. A license limitation system in combination with some use of status quo management measures may overcome that shortfall. The primary focus of Amendment 6 is a plan which would limit licenses for the West Coast groundfish fishery.

Although licenses and trip limits together may appear to reach the root of the excess capacity problem, they do not. The underlying cause of this continuing tendency to introduce more capacity than necessary into the fishery is the "olympic system"[2/] under which most of the fishery is currently managed.[3/] Under this system, there is a lack of clearly assigned "property" rights (or fishing "privileges") for the harvesting of the resource. A lack of property rights creates a situation in which all fishermen together bear the costs (lost opportunity to harvest) from the harvest activities of any given fisherman. Thus, the incentive under the open access system is to harvest as many fish as possible as fast as possible; i.e., to increase capacity. When property rights are assigned, the costs borne by the fisherman are closer to the actual costs of the fisherman's activity. For example, if a fisherman were given the right (or privilege) to harvest a set amount of fish within a given period of time (an individual quota), then the harvest of some part of the quota would reduce his harvest opportunity within the period by an identical amount; i.e., the fisherman would bear the full cost in terms of the reduction of his/her future harvest opportunities. In a situation where the rights to harvest a certain amount of fish have been assigned, the fisherman would tailor the vessel's capacity to that appropriate to the fisheries in which it engages. In this way, the overcapacity problem is solved not through direct regulation, but rather by creating the economic incentive for fishermen to tailor their capacity to the amount of quota available. At the same time the assignment of ITQs does

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2/ An "olympic system" is one in which the catch quota goes to whomever harvests it first.

3/ Trip frequency limits reduce the importance of speed of catch for the particular species to which the limit applies.

not result in a complete emulation of private property rights. For example, when a fishermen highgrades catch to optimize the value of his/her ITQ, the cost of the adverse effect on the resource caused by the highgrading is borne by all fishermen.

To further illustrate the difference between a management system in which property (use) rights are assigned to a public resource and one in which they are not, it may be useful to consider briefly the harvesting of timber on public lands. Under existing management, companies are assigned the right to harvest a given amount of timber from a particular area based upon the company's bid; however, for the purposes of this discussion, they could just as easily be given the right for free based upon their history of cutting. A company has an incentive to maximize the profits it earns from each block of trees. Implicit in this calculation are issues such as log quality, use of the most efficient combination of labor and capital, and the flow of product to the processing site. If the U.S. Forest Service employed an olympic approach instead of this system, they might establish a quota for how many board-feet could be cut from an area, set a starting data at which time cutting could commence, and then attempt to close the logging season when the target was attained. One would expect to see more congestion and equipment in the logging areas; less attention paid to maintaining the quality of logs and a faster-paced cutting process; with greater hazard to participants. Each of these problems has its counterpart in the groundfish fishery.

Section 2.1 contained a more detailed description of the three alternatives which have been identified; status quo, license limited entry and ITQs. While each of the alternatives (including status quo) addresses the overcapacity problem to differing degrees, each also creates other problems which must be considered in determining which alternative best addresses the overcapacity problem along with other fishery goals and objectives. The assessment of these alternatives is contained in the following chapters.

3.0 APPROACH TO THE ANALYSIS

3.1 Introduction

The analysis is divided into two parts. The first part (Chapter 4) reviews the rationale and provides analysis of key provisions of the license limitation alternative. The second part (Chapters 5, 6, 7, and 8) provides an analysis of the license limitation alternative in constrast to the other amendment alternatives (status quo and ITQs). Chapter 5 provides a description of trends in the Pacific Coast groundfish and other fisheries in order to allow the reviewer to form an opinion about the likely state of the future fishery under status quo. Chapters 6 and 7 analyze biophysical and socio-economic effects of license limitation and ITQ alternatives in contrast to status quo management, and Chapter 8 provides a summary. The majority of this chapter is devoted to the analytical approach used in the second part of the analysis.

3.2 Scenarios for Analysis and Definition of Effectiveness

The following scenarios will be compared to status quo management in the bio-physical and socio-economic analysis.

- License limitation which is:

    1. effective in holding capacity to below levels which would have occurred under status quo management, and
    2. ineffective in holding capacity to below levels which would have occurred under status quo management.

- ITQs.

The performance of each alternative presented is compared with that of status quo in an effort to evaluate the desirability of changing the management regime for the groundfish fishery. To this end, defining what is meant by the term "status quo" is not a trivial matter. One view of status quo is that it represents the current conditions of the fishery. The issues embodied in this discussion however, are of a long-term nature. Under the license limitation alternative, the full impact of the license system does not occur until 1997 when "B" endorsements expire. Consequently, most of the benefits associated with the alternative are delayed until then. Furthermore, whatever management regime is in place at that time will continue to have major impacts upon the condition of the fishery for many years. Thus, while it may be interesting to assess how conditions in 1997 under license limitation would compare to the current fishery, the more relevant issue is how they would compare with a 1997 fishery that has been managed for the next five years using only the array of management tools available now. Beyond 1997, how might the various alternatives act to compound or diminish the causes of existing fishery problems? A determination of whether a program is expected to be "effective" depends as much upon presumptions of what will happen under status quo management as it does on the number of vessels initially qualifying for a permit with an "A" endorsement.

3.3 Likelihood of License Limitation Effectiveness

In order to be effective, a license limitation system must reduce fleet harvesting capacity below status quo management. This would be achieved principally through placing a limit on the number of

vessels allowed in the fishery, and secondarily putting constraints on increases in capacity of participating vessels. Additionally, the degree to which individual vessel capacity is utilized would affect the likelihood of program success as well as limits on the type of gear used with the vessel.

3.3.1 Control of Number of Vessels

From a practical standpoint, if a license limitation system is to be effective, it must result in fewer participating vessels than would have been active under status quo management. If the number of active vessels would have increased under status quo management, then a license limitation system may be effective if it simply limits the increase. If the number of participants would have remained at or declined below current levels under status quo management, then effectiveness of the limited entry system is likely to require a decrease in the number of active vessels below current fleet size.

It will be impossible to determine with advance certainty whether the license limitation proposals before the Council will be effective in reducing the number of active vessels compared to what would have occurred under the status quo management. What can be done is to provide information on conditions, trends and events in this and other fisheries which will help individuals assess for themselves whether vessel numbers are likely to be higher without a license limitation system. This is the focus of Chapter 5.

Limiting vessel numbers is only a prerequisite for an effective license limitation system. Increases in vessel fishing power and the degree to which individual vessel capacity is utilized must also be considered in determining whether a license limitation system will be effective.

3.3.2 Control of Vessel Capacity (Power)

Under the proposed license limitation program, expansion of capacity would be limited by the size endorsement for overall length of the qualifying vessel. This is not expected to completely prevent expansion of vessel capacity, however, it may slow the growth in capacity of individual vessels and put an ultimate ceiling on growth. An example of its effectiveness is that size may limit movement of vessels into different strategies. For example, it is difficult to turn a small nearshore trawler into a midwater trawler without increasing vessel size. Size limits also prevent permits from moving to larger vessels which may have higher annual capacity simply because they are less limited by weather than smaller vessels.

The Council considered a number of measures for limiting vessel growth including horsepower and various volumetric measures such as under-deck-volume, gross tons and net tons and combinations thereof (see Squires and Huppert 1988 for an example of some of the work carried out in exploration of this issue). Horsepower was rejected because of the difficulty of enforcing such a measure and because it related more to trawl vessel capacity than the capacity of other types of vessels. Volumetric measures combined with vessel length were rejected because of measurement difficulties and concern over limiting a vessel's ability to achieve greater stability.

While length may not be completely effective in limiting the growth of individual vessel capacity, as long as trip limits are in place incentive for expansion of vessel capacity will be limited.

3.3.3 Utilization of Vessel Capacity in the Groundfish Fishery

Given the current trip limits and fish prices, much of the capacity for the fleet is not utilized. Many of the vessels which participate have done so only marginally. Even under the license limitation system with high MLRs, many permits will be issued for vessels which have had relatively little activity and much unused capacity. The owners of these permits and vessels may become more active or the permits may eventually be purchased by individuals who intend to be more active, thereby increasing capacity utilization. Again, as long as trip limits are in place, much of the per vessel excess capacity cannot be used so the incentive to increase capital investment will be limited. Trip limits apply to most of the fleet. The primary exception is the two month non-trawl sablefish opening which currently occurs in the spring.

3.3.4 Restrictions on Gear Used

In addition to restricting numbers and sizes of vessels as well as the utilizable capacity of the vessels, the program also works to restrict capacity through restriction of the limited entry gear used. Vessels would not be allowed to switch from a less powerful to a more powerful type of limited entry gear (e.g., longlining to trawling for rockfish).

3.4 Scoping and Issues Covered in the Analysis

In January and February 1989, the Council held 13 workshops on limited entry, one in each of the following ports: Washington – Bellingham, Seattle, Port Angeles, Westport; Oregon – Astoria, Newport, Coos Bay, Brookings; and California – Eureka, Fort Bragg, Sausalito, Monterey, Santa Barbara. These workshops served as scoping sessions for the SEIS. Presentations were made giving the reasons the Council was considering limited entry, pros and cons of limited entry, and proposals which had been developed by the Council's LEC. During the workshops, participants were asked to identify reasons for support and opposition to limited entry and ways to improve the proposals. Their responses were considered carefully by the LEADOC and were the basis of changes to the proposals recommended by the LEADOC to the Council. The responses were also used to identify the issues to be covered in this analysis. A full report on the workshops and issues covered was presented to the Council at its November 1989 meeting and is available from the Council office.

The analysis provided in this document covers the issues identified during the 1989 limited entry workshops and should allow the reviewer to evaluate the effects of the limited entry alternatives on achievement of the Council goals and objectives. The Council goals and objectives are responsive to National Standards of the MFCMA and address conservation, economic and social problems present in the fishery. Council goals and objectives and how they relate to problems in the fishery are reviewed in Chapter 1.

4.0 RATIONALE AND ANALYSIS OF PROVISIONS IN THE LICENSE LIMITATION ALTERNATIVE

4.1 Introduction

The adopted license limitation program is described briefly in Chapter 2 and in detail in the appendix to this document. This chapter covers the rationale and analysis for provisions of the license limitation alternative. Chapters 5 through 8 of this document analyze the license limitation alternative in contrast with other alternatives considered in the amendment (status quo and a comprehensive ITQ system).

4.1.1 Fairness, Equity, Social Factors and Industry Input

Limiting access involves allocation and the MFCMA dictates that allocation be made in a fair and equitable manner. Because of varying views in our society on what constitutes equitable allocation, there are not widely accepted standards against which an objective analysis can conclude that one allocation decision is more fair and equitable than another (or better at generating other socially valued impacts). There are no measuring sticks for equity similar to those for evaluating such factors as efficiency. While one allocation may more evenly distribute wealth, another allocation may be considered fair, if more total wealth is generated without a severe distributional imbalance. It will be up to each individual involved in the process to evaluate for him or herself whether the adopted alternative is, on the whole, fair and equitable, and how it performs against other social values. The major decisions which would affect the perceived fairness and equity of a limited entry system and the rationale for those decisions are discussed in this chapter.

The Council relied heavily on industry in designing the license limitation alternatives. The limited entry proposals on which the adopted alternative was based were designed under the consensus process used by the LEC. The LEC contained individuals both for and against limited entry and representatives from minor and major fisheries on the coast. Included were representatives of southern California gill netters, shrimp trawlers, trollers, and other hook–and–line vessels along with the three major West Coast groundfish gears: groundfish trawl, longline and fishpot. In January and February 1989, the Council held 13 workshops on limited entry in various ports along the coast. During the workshops, participants were asked to identify ways to improve the proposals. Their responses were considered carefully by LEADOC and were the basis of many of the changes to the proposals recommended by LEADOC to the Council. The use of an industry dominated committee to design the program and solicitation of public involvement through workshops was intended to assure that the program would take into account social concerns while having a minimum burden on the industry, and achieve the most widespread support possible, and at the same time be effective.

4.1.2 Complexity of the License Limitation Program

The LEC's final report to the Council in July 1988 admonished reviewers that the limited entry proposal was both complex and detailed, and that a summary of the program should be read before attempting to review the proposal in detail. There are two primary reasons for the complexity of the proposal: (1) the complexity of the fishery which is being managed, and (2) efforts to make the proposal as fair and equitable as possible .

Complexity of the Fishery

The West Coast groundfish fishery is complex:

a) The fishery is comprised of numerous species.
b) Underutilized species have been treated differently from all other species.
c) There are multiple gear types to be covered.

With a permit system covering three gears there were three apparent approaches to designing the system:

(1) Issue a separate permit for each gear, allowing expansion of vessel numbers as vessels issued multiple permits sell some of their permits.
(2) Issue a single permit which allows harvest with any of the three gears, allowing expansion of effort as vessels switch from less productive to more productive gears.
(3) Issue permits which are good only for certain gears; create one permit for each vessel covering the gears historically used by the vessel.

The current system is designed around the third and most complex of these approaches and is the reason for the creation of a gear endorsement system. This approach is also anticipated to be the most effective of the three in that it more tightly controls two aspects of effort: the number of vessels and the type of gear used.

Complexity and Fairness

Much of the complexity of the current proposal was created as the committees struggled to develop an equitable, legal, and effective limited entry system. Most of the elements of complexity are related to endorsements and endorsement qualification requirements that allow groups to initially qualify. Initial qualification criteria were developed with MFCMA standards in mind. (This is discussed in more detail in Section 4.4). Simplifying the endorsement system would mean striking a different balance in the type of access rights granted or the individuals to whom they are granted. Either those thought to be less deserving would be given more, making the program less effective, or individuals thought to be more deserving would be given less; in either case, it is the Council's view that the program would be less equitable and less in line with MFCMA standards.

An example of the affect of equity considerations on complexity is the creation of provisional "A" endorsements for vessels under construction or conversion during the window period and for vessels under several other special circumstances. Without provisional "A" endorsements, all vessels under construction would be treated equally in the ultimate access privileges they are granted, regardless of the fishery for which they were originally destined. (All would either: receive "A" endorsements, including many not destined for the groundfish fishery; or receive "B" endorsements or be excluded, including many for which hundreds of thousands of dollars were invested specifically to participate in the groundfish fishery.) Provisional "A" endorsements allow any vessel under construction to qualify through a demonstration of intent. Another type of endorsement created which adds complexity is the "B" endorsement. "B" endorsements provide a period of adjustment for vessels

which do not qualify under the MLR selected for the "A" endorsement. The purpose of each type of endorsement will be discussed more fully below.

Actions Taken to Simplify and Clarify the Proposals

The following actions have simplified or clarified the proposal since it was first distributed for public review in January, 1991:

- Changed 50th percentile rules on annual upgrade criteria for provisional endorsements to fixed numbers.
- Renamed the endorsements to reflect the underlying two tier structure.
- Selected preferred minimum landing requirements (MLR). (The most often asked question is "Do I qualify?" Selection of an MLR should answer this question for most vessel owners and simplify the task of understanding the implications of the program for their operation.)
- Eliminated two of the endorsements (designated species "A" and provisional designated species "A" endorsements).

4.2 The Open Access Segment

Under the adopted license limitation program, the groundfish fishery off the West Coast (Washington, Oregon and California) would be divided into a limited access segment and an open access segment. Permits would be required to participate in the limited access segment. Vessels without permits for longline and fishpot gear and vessels using gears other than groundfish trawl, longline, and fishpot gear would participate in the open access fishery.

4.2.1 Exempted Gears in the Open Access Segment

The LEC reached a consensus that only three gears should be included under the limited access portion of the fishery: groundfish trawl, longline, and fishpot. All other gears would be exempted. These exempted gears harvest only about 10 percent of the value and 5 percent of the volume of the groundfish resource (**Tables 5–5 and 5–6**). The LEC members also agreed that: (1) there should be a separate allocation for exempted gears based on historical participation and (2) where ABCs were not fully harvested no allocation should be made between the gears.

One of the larger producing of these gears (gill net gear, which takes about 3 percent of the groundfish catch) was under the control of a California run limited entry program. Other exempted gears, such as salmon troll and Oregon shrimp trawl, were also under limited entry systems based on their primary target species. The remainder of the gears had minor catches and large increases in numbers of participants or increases in effort per participant would be required to significantly increase catch. Representatives of the exempted gears agreed that they were willing to take the risk that influxes of participants to these fisheries could occur, reducing the viability of the fishery. Any increases in capital investment in this small producing sector were not expected to be significant relative to the sector taking 95 percent of the available harvest. All on the committee agreed that

members of the exempted gears could come forward at a later date and request inclusion under the program if they so desired. The Council incorporated the LEC's recommendations on exempted gear into the adopted program.

In order to minimize disruption for vessels which may have historically used both limited access and exempt gear, vessels with permits for limited entry gear are also allowed to use exempt gear, or longline or fishpot gear if the permit they hold is not endorsed for that gear. However, any catch by these vessels with an open access gear (exempt gear, or longline or fishpot gear if the permit held is not endorsed for that gear) when the limited access fishery is open will count toward the limited access quota and limited access regulations will apply. There are two reasons for counting the catch in this way. First, when these vessels have the opportunity to fish under the larger limited access quotas with a powerful limited access gear, they should not be allowed to compete with the open access vessels for their quota. Second, severe enforcement and monitoring problems would have been created if it necessary to determine which of multiple gears on board a vessel were used to harvest a particular landing. If the limited access fishery for a species is closed, and a vessel with a permit uses an exempted gear or a limited entry gear for which it does not hold a permit, the catch by that vessel will count against the open access quota, however, the vessel may not carry the gear for which it has a permit on board the vessel while using the open access gear. This restriction simplifies enforcement and monitoring.

4.2.2 Limited Entry Gears in the Open Access Segment

After considering comment received during the initial 45 day public comment period on the draft SEIS, Council members began to search for ways to reduce the impact of the program on small longline and fishpot vessels and recent entrants to the longline sablefish fishery from the depressed salmon fishery[1/]. The Council decided to allow vessels making small landings with longline and fishpot gear to continue to operate in the open access fishery without a permit. This would reduce the compliance burden on vessels with minimal impact on the fishery and still allow the vessels to fish at the historical levels of that group. This action was combined with provisions that required landings to be greater than 500 pounds in order to count toward the MLR.[2/] The 500 pound screen effectively prevented many small longline and fishpot vessels from qualifying for a permit, but the open access option relieved these vessels of the need to obtain such permits, unless they desired to expand their production level. This substantially reduced the administrative costs and burdens of the program by reducing the number of potential "A and "B" endorsement recipients by over 1,000 (Tables 4–1 and 4–2). The 500 pound screen also substantially reduced the magnitude of an implementation problem that will be encountered in evaluating the fishing history of California longline vessels. For a large majority of these vessels, longline landings were coded as pole rather than longline. Most of the vessels with pole code made relatively small landings. Allowing these vessels to fish without a permit, relieves the program administrators of the need to evaluate other

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1/ Longline gear is currently the most effective hook and line gear for catching sablefish.

2/ Provisions allowing longline and fishpot vessels to participate in the open access fishery, adding a 500 pound threshold to the MLRs, and reducing the number of days and poundage requirements in the MLRs are linked together but addressed a number of separate objectives. The full rationale for each of these linked provisions will be discussed in detail in the appropriate sections of this document.

Table 4–1. Numbers of qualifying vessels under "A" endorsement MLR options and target fleet (1987 active fleet[a/], Source: PacFIN Research Database).

Landing Requirement		Non–whiting Trawl	Fishpot	Longline	Line[b/]
1987 Fleet (one landing)		344	98	355	1,382
1987 Active Fleet		344	30	218	753
Low MLR (1 pound)		478	295	706	2,735
Mid MLR		391	59	322	1,163
Mid MLR	+ 500 Lb Day Threshold Condition[c/]	381	42	229	410
High MLR		344	41	236	791
High MLR	+ 500 Lb Day Threshold Condition	334	37	161	263

a/ For all gears except trawl, an active vessel was defined as three landings in 1987. No minimum poundage was applied to the landings. For trawl gear only, one landing was required. See Section 4.4.4 for a complete discussion.

b/ Includes vessels with landings coded as longline and, for California landings, pole.

c/ To count toward meeting the MLR for numbers of days of landings, landings for a day must be greater than 500 pounds.

Table 4–2. Numbers of vessels qualifying for "B" endorsements under combinations of "A" and "B" endorsements landing requirement options.

Minimum Landing Requirements (MLR)	Vessels Qualifying for "B" Endorsements but Not Receiving "A" Endorsements[a/]					
	Active During the Window Period (7/11/84 to 8/1/88)			Entering After the Window Period (and Prior to 9/30/90)		Vessels with Three Trips between 7/11/84 and 9/30/90
	One Trip in the Window	Three Trips in the Window	Three Trips in Window Plus Extended Window[b/]	One Trip After the Window	Three Trips After the Window	
Trawl (including whiting)						
Mid MLR	92	47	66	89	60	126
Mid MLR + 500 Lb Day Threshold Condition	89	50	66	85	57	123
High MLR	141	96	115	89	60	175
Fishpot						
Mid MLR	236	31	49	150	35	84
Mid MLR + 500 Lb Day Threshold Condition	76	10	13	60	12	25
High MLR	254	49	67	150	35	102
Longline						
Mid MLR	384	132	167	224	100	267
Mid MLR + 500 Lb Day Threshold Condition	262	85	115	138	70	185
High MLR	470	218	253	224	100	353
Line (Longline and California Pole)						
Mid MLR	1,572	527	790	1,184	631	1,421
Mid MLR + 500 Lb Day Threshold Condition	704	208	297	489	199	496
High MLR	1,944	899	1,162	1,184	631	1,793

a/ Where a "B" endorsement landing requirement is matched with an "A" endorsement landing requirement which stipulates a 500 pound threshold condition, the same condition is applied to the "B" endorsement requirement for number of days of landings.

b/ Vessels with three trips between July 11, 1984 and September 30, 1990 and at least one tripduring the window period, but not meeting the "A" endorsements MLR.

evidence that landings coded as pole were actually longline landings. An open access option was not provided for trawl gear because this gear generally makes landings much larger than 500 pounds. Because of the power of the gear, the effect of the 500 pound screen on the number of vessels qualifying for trawl gear was very slight. Additionally, significant discard mortality would likely result if trawl gear was used in a fishery under restrictive open access trip limits.

The following are seen as beneficial effects of allowing small producing longline and fishpot vessels to participate in the open access fishery while at the same time adding a 500 pound screen to the MLR:

- The burden on small businesses would be reduced (making the program more responsive to the Regulatory Flexibility Act).
- Administrative burden would be reduced with fewer permits to administer and fewer cases of miscoded longline tickets to evaluate.
- Effectiveness would be increased as small producing vessels would have to remain small producing vessels, unless their owners purchased a permit and displaced a more active vessel.
- Vessels from other fisheries having poor years may be able to make up some income loss through easier access to the groundfish fisheries at small production levels. (In particular, salmon trollers would be able to fish small amounts of longline gear to catch sablefish.)

The following are seen as negative effects of the provisions:

- Open access management measures will be required which may potentially affect a large number of small vessels, increasing management enforcement costs for that sector. (Under status quo management, regulations such as trip limits would affect only the larger producers, primarily those which will now operate in the limited access segment of the fishery.)
- Some opportunity remains for increasing capitalization in the fishery through growth in the small vessel fleet.

4.2.3 Allocation to the Open Access Segment

When allocations are made, the open access fishery would be apportioned a specified percentage of available yield each year based on the catch history of nonpermitted longline, fishpot and exempted gear vessels between July 11, 1984 and August 1, 1988 (the window period---see Section 4.4.3), the same period which is used to establish qualification for "A" endorsements. This base period is the same to which the MLR are applied and is believed to encompass the active participants in the fishery. Tables 4-3 through 4-8 show 1984-1988 average historical catch by vessel gear. These tables provide approximate information on the relative size of quotas which may be allocated. Some care is required in interpretation. For example, after permits are issued and gear used is known with more certainty, much of the vessel landing history for line gear will be shown to be landings made with exempted line gears and so will count toward determining the exempted gear quota.

Table 4–3. Average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and vessels using exempted gears—sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 1 of 2)

GEAR		Sablefish	Dover sole	Arrow–tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground–fish
Trawl	"A" Endorsements	7,182	19,700	2,587	4,330	2,940	4,113	8,321	1,824	19,029	2,376	1,233
	"B" Endorsements	72	221	20	82	77	24	94	27	202	26	32
	Total	7,254	19,921	2,607	4,412	3,017	4,137	8,415	1,851	19,231	2,402	1,265
	No Endorsements	140	191	39	275	242	19	39	25	324	106	593
Longline	"A" Endorsements	1,854	3	13	1	trace	5	1	1	474	55	13
	"B" Endorsements	76	trace	trace	trace	trace	trace	–	trace	18	2	trace
	Total	1,930	3	13	1	trace	5	1	1	492	57	13
	No Endorsements	103	trace	trace	trace	trace	2	trace	trace	33	7	1
Line (Pole)[a/]	"A" Endorsements	462	25	–	6	6	13	2	trace	1,042	54	1
	"B" Endorsements	23	2	–	1	6	trace	1	–	99	16	trace
	Total	485	27	–	7	12	13	3	trace	1,141	70	1
	No Endorsements	7	9	trace	2	7	1	1	trace	283	36	trace
Fishpot	"A" Endorsements	2,701	trace	1	trace	trace	trace	trace	trace	16	2	–
	"B" Endorsements	29	2	trace	1	trace	1	trace	–	1	trace	–
	Total	2,730	2	1	1	trace	1	trace	trace	17	2	–
	No Endorsements	34	16	–	4	3	8	trace	–	23	2	–
Exempt Gear	Shrimp Trawl	39	53	21	7	4	6	3	5	992	68	13
	Other Net	188	13	1	28	68	2	182	trace	2,917	209	2
	Other Line	51	3	trace	trace	trace	1	1	trace	540	203	14
	Other	12	2	trace	trace	trace	1	1		3	2	
	Total	290	71	22	35	72	10	187	5	4,452	482	29

Table 4-3. Average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and vessels using exempted gears—sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 2 of 2)

GEAR		Sablefish	Dover sole	Arrow-tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground-fish
Unspecified Gear:	"A" Endorsements	395	386	2	192	147	156	206	–	707	42	1
	"B" Endorsements	131	22	trace	24	37	1	9	–	150	15	–
	No Endorsements	30	3	–	7	23	trace	75	trace	1,080	81	1
Totals:	Limited Entry	13,065	20,552	2,662	4,912	3,455	4,332	8,673	1,877	22,062	2,694	1,873
	Open Access	464	99	22	48	105	21	263	5	5,871	608	31

a/ Primarily gear coded as pole in California. It is uncertain as to whether these landings were made with traditional longline or other hook and line gear.

Table 4–4. Vancouver INPFC area ports average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and for vessels using exempted gears—sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 1 of 2)

GEAR		Sablefish	Dover sole	Arrow–tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground–fish
Trawl	"A" Endorsements	607	1,058	1,414	299	27	4	54	382	2,315	577	500
	"B" Endorsements	3	11	11	4	3		trace	4	42	4	9
	Total	610	1,069	1,425	303	30	4	54	386	2,357	581	509
	No Endorsements	31	15	23	10	33	–	–	9	70	4	90
Longline	"A" Endorsements	876	1	6	trace	trace	3	trace	trace	140	24	4
	"B" Endorsements	64	trace	trace	trace	–	trace	–	–	7	1	trace
	Total	940	1	6	trace	trace	3	trace	trace	147	25	4
	No Endorsements	96	trace	trace	trace	trace	2	–	–	11	2	trace
Line (Pole)[a/]	"A" Endorsements	–	–	–	–	–	–	–	–	–	–	–
	"B" Endorsements	–	–	–	–	–	–	–	–	–	–	–
	Total	–	–	–	–	–	–	–	–	–	–	–
	No Endorsements	–	–	–	–	–	–	–	–	–	–	–
Fishpot	"A" Endorsements	191	–	trace	–	–	–	–	–	1	trace	–
	"B" Endorsements	13	–	–	–	–	–	–	–	trace	–	–
	Total	204	–	trace	–	–	–	–	–	1	trace	–
	No Endorsements	3	–	–	–	–	–	–	–	trace	trace	trace
Exempt Gear	Shrimp Trawl	trace	trace	–	trace	trace	–	–	–	1	trace	trace
	Other Net	134	trace	1	–	trace	–	–	–	53	77	trace
	Other Line	1	trace	trace	trace	trace	–	trace	–	88	88	3
	Other	–	2	–	–	–	–	–	–	–	–	–
Total		135	2	1	trace	trace	–	trace	–	142	165	3

Table 4–4. Vancouver INPFC area ports average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and for vessels using exempted gears––sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 2 of 2)

GEAR		Sablefish	Dover sole	Arrow–tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground–fish
Unspecified Gear	"A" Endorsements	–	–	–	–	–	–	–	–	–	–	–
	"B" Endorsements	–	–	–	–	–	–	–		–	–	–
	No Endorsements	–	–	–	–	–	–	–	–	–	–	–
Totals:	Limited Entry	1,785	1,085	1,454	313	63	7	54	395	2,575	610	603
	Open Access	234	2	1	trace	trace	2	trace	–	153	167	3

a/ Primarily gear coded as "POL" in California. It is uncertain as to whether these landings were made with traditional longline or other hook and line gear.

Table 4-5. Columbia INPFC area ports average 1984-1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and for vessels using exempted gears--sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 1 of 2)

GEAR		Sablefish	Dover sole	Arrow-tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground-fish
Trawl	"A" Endorsements	2,960	7,388	1,115	1,815	1,313	781	5,821	1,413	9,694	1,261	713
	"B" Endorsements	31	97	8	13	7	10	31	22	74	13	23
	Total	2,991	7,485	1,123	1,828	1,320	791	5,852	1,435	9,768	1,274	736
	No Endorsements	21	94	4	14	9	3	1	15	53	36	4
Longline	"A" Endorsements	757	trace	4	trace	trace	1	1	1	264	19	3
	"B" Endorsements	12	-	trace	trace	trace	trace	trace	trace	7	1	trace
	Total	769	trace	4	trace	trace	1	1	1	271	20	3
	No Endorsements	6	-	trace	trace	trace	trace	trace	trace	9	4	trace
Line (Pole)[a/]	"A" Endorsements	-	-	-	-	-	-	-	-	-	-	-
	"B" Endorsements	-	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-	-
	No Endorsements	-	-	-	-	-	-	-	-	-	-	-
Fishpot	"A" Endorsements	1,592	trace	trace	trace	trace	trace	trace	trace	8	1	-
	"B" Endorsements	2	-	trace		-	trace	-	-	-	-	-
	Total	1,594	trace	trace	trace	trace	trace	trace	trace	8	1	-
	No Endorsements	22	-	-	-	trace	trace	-	-	trace	trace	trace
Exempt Gear	Shrimp Trawl	38	51	21	4	3	6	3	5	974	65	13
	Other Net	trace	-	trace	-	4	-	-	-	trace	trace	-
	Other Line	trace	-	-	trace	trace	-	trace	trace	305	69	trace
	Other	-	trace	-	trace	trace	-	trace	-	1	2	-
Total		38	51	21	4	7	6	3	5	1,280	136	13

Table 4–5. Columbia INPFC area ports average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and for vessels using exempted gears—sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 2 of 2)

GEAR		Sablefish	Dover sole	Arrow–tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground–fish
Unspecified Gear	"A" Endorsements	–	–	–	–	–	–	–	–	–	–	–
	"B" Endorsements	–	–	–	–	–	–	–	–	–	–	–
	No Endorsements	–	–	–	–	–	–	–	–	–	–	–
Totals:	Limited Entry	5,375	7,579	1,131	1,842	1,329	795	5,854	1,451	10,100	1,331	743
	Open Access	66	51	21	4	7	6	3	5	1,289	140	13

a/ Primarily gear coded as "POL" in California. It is uncertain as to whether these landings were made with traditional longline or other hook and line gear.

Table 4–6. Eureka INPFC area ports average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and for vessels using exempted gears—sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 1 of 2)

GEAR		Sablefish	Dover sole	Arrow-tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground fish
Trawl	"A" Endorsements	1,569	5,049	43	708	641	1,959	1,963	29	1,773	191	18
	"B" Endorsements	27	83	1	18	8	11	trace	trace	8	2	–
	Total	1,596	5,132	44	726	649	1,970	1,963	29	1,781	193	18
	No Endorsements	22	15	trace	10	7	6	–	–	8	2	–
Longline	"A" Endorsements	164	–	trace	trace	–	trace	trace	trace	32	10	trace
	"B" Endorsements	1	–	–	trace	–	–	–	–	2	1	–
	Total	165	–	trace	trace	–	trace	trace	trace	34	11	trace
	No Endorsements	trace	–	–	–	–	–	–	–	2	1	–
Line (Pole)[a/]	"A" Endorsements	82	3	–	trace	trace	1	trace	–	179	27	–
	"B" Endorsements	6	–	–	–	–	–	–	–	15	9	–
	Total	88	3	–	trace	trace	1	trace	–	194	36	–
	No Endorsements	1	4	–	trace	trace	–	–	–	38	16	–
Fishpot	"A" Endorsements	320	trace	–	–	–	trace	–	–	trace	trace	–
	"B" Endorsements	–	–	–	trace	trace	–	–	–	trace	trace	–
	Total	320	trace	–	trace	trace	trace	–	–	trace	trace	–
	No Endorsements	4	9	–	3	1	8	–	–	5	1	–
Exempt Gear	Shrimp Trawl	1	1	trace	trace	trace	trace	trace	trace	8	2	trace
	Other Net	1	trace	–	trace	trace	trace	–	–	3	trace	–
	Other Line	trace	–	–	–	trace	–	trace	trace	50	15	–
	Other	1	2	–	–	trace	1	trace	–	1	trace	–
Total		3	3	trace	trace	trace	1	trace	trace	62	17	trace

Table 4-6. Eureka INPFC area ports average 1984-1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and for vessels using exempted gears--sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 2 of 2)

GEAR		Sablefish	Dover sole	Arrow-tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground fish
Unspecified Gear	"A" Endorsements	127	202	2	64	51	123	172	-	123	12	trace
	"B" Endorsements	1	2	trace	trace	trace	1	-	-	19	2	-
	No Endorsements	2	trace	-	trace	trace	trace	trace	-	67	8	-
Totals:	Limited Entry	2,319	5,354	46	800	707	2,101	2,135	29	2,159	256	18
	Open Access	10	16	trace	3	1	9	trace	trace	174	43	trace

a/ Primarily gear coded as "POL" in California. It is uncertain as to whether these landings were made with traditional longline or other hook and line gear.

Table 4–7. Monterey INPFC area ports average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and for vessels using exempted gears—sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 1 of 2)

GEAR		Sablefish	Dover sole	Arrow-tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground-fish
Trawl	"A" Endorsements	1,632	4,163	1	877	629	867	480	trace	4,263	305	2
	"B" Endorsements	10	26	trace	33	51	3	62	trace	66	7	–
	Total	1,642	4,189	1	910	680	870	542	trace	4,329	312	2
	No Endorsements	59	19	trace	12	18	4	32	–	87	14	–
Longline	"A" Endorsements	10	1	–	–	–	1	–	–	5	trace	–
	"B" Endorsements	trace	–	–	trace	–	–	–	–	2	trace	–
	Total	10	1	–	trace	–	1	–	–	7	trace	–
	No Endorsements	trace	–	–	–	trace	–	–	–	8	trace	trace
Line (Pole)[a/]	"A" Endorsements	375	22	–	6	6	13	1	–	328	26	trace
	"B" Endorsements	16	2	–	1	2	trace	1	–	46	5	–
	Total	391	24	–	7	8	13	2	–	374	31	trace
	No Endorsements	3	2	–	1	4	trace	1	–	125	15	trace
Fishpot	"A" Endorsements	375	trace	–	–	trace	trace	–	–	7	trace	trace
	"B" Endorsements	13	2	–	trace	trace	1	trace	–	1	trace	–
	Total	388	2	–	trace	trace	1	trace	–	8	trace	trace
	No Endorsements	5	6	–	2	2	1	trace	–	14	1	trace
Exempt Gear	Shrimp Trawl	trace	trace	–	trace	trace	trace	–	–	trace	trace	–
	Other Net	46	10	–	22	49	1	177	trace	1,443	116	trace
	Other Line	12	3	trace	trace	trace	1	1	–	15	2	–
	Other	11	trace	–	–	trace	trace	1	–	1	trace	trace
Total		69	13	trace	22	49	2	179	trace	1,459	118	trace

Table 4-7. Monterey INPFC area ports average 1984-1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's adopted option and for vessels using exempted gears---sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 2 of 2)

GEAR		Sablefish	Dover sole	Arrow-tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground-fish
Unspecified Gear	"A" Endorsements	246	146	trace	117	88	24	33	-	419	29	trace
	"B" Endorsements	95	20	trace	24	36	trace	9	-	115	13	-
	No Endorsements	23	trace	-	3	17	trace	74	trace	802	71	trace
Totals:	Limited Entry	2,831	4,401	1	1,070	830	913	618	trace	5,339	399	2
	Open Access	100	21	trace	28	72	3	254	trace	2,408	205	trace

a/ Primarily gear coded as "POL" in California. It is uncertain as to whether these landings were made with traditional longline or other hook and line gear.

Table 4–8. Conception INPFC area ports average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's preferred options and for vessels using exempted gears––sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 1 of 2)

GEAR		Sablefish	Dover sole	Arrow–tooth Flounder	Petrale Sole English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground–fish
Trawl	"A" Endorsements	313	2,007	trace	159	166	502	2	trace	786	11	trace
	"B" Endorsements	1	trace	–	5	3	trace	–	–	8	trace	–
	Total	314	2,007	trace0	164	169	502	2	trace	794	11	trace
	No Endorsements	6	26	–	13	14	6	6	trace	92	2	trace
Longline	"A" Endorsements	trace	–	–	–	–	–	–	–	9	–	–
	"B" Endorsements	–	–	–	–	trace	–	–	–	trace	trace	–
	Total	trace	–	–	–	trace	–	–	–	9	trace	–
	No Endorsements	–	–	–	–	trace	–	–	–	3	trace	–
Line (Pole)[a/]	"A" Endorsements	5	trace	–	trace	trace	trace	trace	trace	535	1	1
	"B" Endorsements	trace	–	–	trace	4	–	–	–	38	1	trace
	Total	5	trace	–	trace	4	trace	trace	trace	573	2	1
	No Endorsements	3	2	–	trace	3	trace	trace	trace	120	2	trace
Fishpot	"A" Endorsements	224	–	–	–	–	–	–	–	trace	–	–
	"B" Endorsements	1	–	–	–	–	–	–	–	–	–	–
	Total	225	–	–	–	–	–	–	–	trace	–	–
	No Endorsements	trace	2	–	trace	1	trace	–	–	4	trace	–
Exempt Gear	Shrimp Trawl	trace	1	trace	3	trace	–	trace	trace	9	1	–
	Other Net	8	3	–	6	14	1	5	trace	1,417	15	2
	Other Line	trace	trace	–	trace	trace	–	–	–	2	trace	–
	Other	–	–	–	trace9	trace14	–1	–5	–	1,428	–16	–2
Total		8	4	trace	18	28	0	0	trace	2,856	0	0

Table 4–8. Conception INPFC area ports average 1984–1988 groundfish catch (mt) for vessels expected to receive gear endorsements under the Council's preferred options and for vessels using exempted gears––sharks, skates, and Pacific whiting are not included. (Source: PacFIN Research Database)(Page 2 of 2)

GEAR		Sablefish	Dover sole	Arrow–tooth Flounder	Petrale Sole	English Sole	Other Flatfish	Thorny heads	Widow Rockfish	Pacific Ocean Perch	Other Rockfish	Lingcod	Other Ground–fish
Unspecified Gear	"A" Endorsements	22	38	trace	11		8	10	trace	–	164	1	trace
	"B" Endorsements	36	trace	–	trace		1	–	trace	–	16	trace	–
	No Endorsements	5	2	–	3		6	trace	trace	trace	202	2	trace
Totals:	Limited Entry	608	2,071	trace	188		196	518	8	trace	1,648	16	1
	Open Access	16	10	trace	21		38	0	0	trace	3,185	4	0

a/ Primarily gear coded as "POL" in California. It is uncertain as to whether these landings were made with traditional longline or other hook and line gear.

Additionally, many shrimp landings in California are coded as "other trawl" (OTW). Since this table is based on annual summary files, there was no way to separate shrimp "OTW" landings from groundfish "OTW" landings. Therefore, any groundfish by-catch in shrimp landings coded as "OTW" is counted as a trawl landings. A more detailed data analysis will likely result in some of the trawl groundfish landings being moved to the shrimp category. Unspecified gear landings will count toward the limited access fishery if the vessel qualifies for a limited entry permit, otherwise the history will count toward the open access fishery.

The areas and species for which allocations are made will be determined as necessary and appropriate effort control measures specified. A starting point may be an all groundfish allocation. If it is assumed there is a need for explicit allocation only if more than 200 tons of a particular species or species group is landed by open access gears, species and species group allocation categories may include sablefish, widow rockfish, other rockfish, and lingcod (Table 4-3).

An allocation base period including more recent years was considered because of recent changes in the fishery (the primary change being the entry of vessels from the declining fisheries such as the salmon fishery). However, the window period encompasses periods of prosperity and decline in nongroundfish fisheries in which groundfish vessels also participate. It was therefore believed to be sufficiently representative. Additionally, fishing history established after the window period is beyond the period which delineates present and historical participation for the purposes of this program.[3/] No separate allocation for longline and fishpot vessels operating in the open access fishery has been specified, however, the Council indicated it would maintain the activities of these vessels at a level in line with the historical levels of the nonqualifying group which used limited entry gears during the window period.

After the expiration of longline and fishpot "B" endorsements, the window period catch history of vessels which received these "B" endorsements would be added to the catch histories used to determine the open access fishery allocation. This shift will help reduce the impacts of any increased open access effort which may occur when the "B" endorsements expire. Additionally, the small amount of quota represented by the historical landings by these "B" endorsement vessels may have a significant effect in reducing any restrictions which have been imposed on the open access fishery, while the proportional change in the quota for the limited access fishery will be negligible (See Table 4-3). Since vessels using trawl gear may not enter the open access fishery, the catch history of vessels with "B" endorsements for trawl gear would remain with the limited access fishery when their "B" endorsements expire.

3/ It would be extremely difficult to design, analyze, and take public comment on a system which considers present participation and dependence (as required under the MFCMA) if during that process these factors are constantly changing. Therefore, these factors are defined and delineated primarily on the basis of the status of the fishery at the time the fishermen were put on notice that new entrants into the fishery would be at risk of not qualifying for a permit (announcement of the August 1, 1988 cut-off date). While less weight is given to present participation as it may be considered relative to the implementing date, account of changing ownership in the fishery occurring after the announcement of the cut-off date is addressed by providing permits to current owners of qualifying vessels rather than past owners. However, no weigh is given to new vessels entering the fishery without historic participation relative to the August 1, 1988 cut-off date.

Table 4–3 shows the 1984–1988 average catch by vessels according to whether they are expected to receive "A" or "B" endorsements or use exempted gears. Tables 4–4 through 4–8 provide the same information by INPFC area. Landings by "B" endorsement vessels are an indicator of the amount of revenue these vessels may try to make up in the open access fishery when endorsements expire. These landings can be compared to the total open access fishery landings. For longline and fishpot vessels the "B" endorsement landings of all species except sablefish are small relative to the exempt gear landings or open access landings (landings of exempt gear and longline and fishpot vessels not receiving endorsements). For sablefish, the landings of "B" endorsement vessels comes to about 130 percent of the exempt gear sablefish landings and 78 percent of the open access vessel landings. In addition to the actual historical landings of these vessels, some vessels may have increased effort since the window period and will be trying to make up their increased landings as well. However, not all of the vessels with expiring "B" endorsements will be entering the open access fishery. It is likely that "B" endorsement holders which are more active at time of expiration will buy out less active "A" endorsement holders and remain in the limited access fishery.

If any group of vessels is recategorized from the open access fishery to the limited access fishery, the catch history is also moved from calculation of the former groups share to the latter since these vessels will no longer fish on the open access allocation and their effort will be added to the limited access fishery.

4.2.4 Management of the Open Access Segment

Management Objectives

As necessary, trip limits and other management measures would be used to control harvest rates for the open access fisheries. One of the primary management objectives for the open access fishery would be to provide year–round fishing opportunities. For small vessel operations longer periods of opportunity are necessary to generate sufficient income to support the operation and provide opportunity to make up for periods of time when bad weather keeps vessels off the water. Additionally, these vessels often cater to specialty markets which can make use of a steady supply of fresh product. In addition to providing year round opportunities for open access longline and fishpot vessels, trip limits will be important in reducing the incentive for larger producers to enter the open access fishery. The longline and fishpot vessels for which this open access opportunity was intended are primarily those which have historically fished at low levels with minimal impacts on the resource. Because of the low historical landing levels of this group, fairly restrictive trip limits may be necessary to keep this group of vessels' activities close to historical levels. For some exempted gears, any needed trip limits probably will be higher than for open access longline and fishpot vessels because their historical fishing levels are higher.

Trip Limits and Impacts

Once open access fishery allocations are established, increases in numbers of vessels in the open access fishery and increasing power of exempted gears may result in the need for trip limits to keep the open access fishery within its quota. The degree of restriction required and the viability of the open access fishery will depend on the effect of trip limits on fleet harvest rates. Increasingly restrictive trip limits will decrease the incentives for new entrants and for the development of more

powerful exempted gear. Although the license limitation alternative leaves the Council latitude in setting the levels of trip limits and other management measures from the open access fishery, some analysis is presented for the effects of an array of possible trip limit levels.

Open Access Longline and Fishpot Gear Trip Limits

Since the Council has opted to disregard trips of less than 500 pound in determining whether a vessel meets the qualifying landing requirements, it would seem likely that the portion of the open access allocation fished using longline and fishpot gear for which no endorsement is held will include trip limits that may not range much higher than 500 pounds per trip. The rationale for such a limit is that vessels which were actively landing amounts greater than 500 pounds had an opportunity to qualify for an "A" endorsement. Those which did not qualify either had landings under 500 pounds or were only minimally dependent on the groundfish resource (see Section 4.4.4. for a discussion of the derivation of the MLR). Therefore, relative to window period activity, a 500 pound trip limit would not have a significant adverse impact on vessels which were dependent on the fishery. The following is a discussion of the likely effects of trip limits for longline and fishpot gears in the open access fishery.

In general, it takes a relatively small amount of quota to support the harvest of a large number of small vessels. There are enough nonqualifying vessels that made a few large landings during the period on which quota shares will be based, that it is expected there will be sufficient quota available to support the activity of a large number of small producing longline and fishpot vessels. Thus, under a 500 pound limit, it would be possible to withstand considerable expansion without the need for more restrictive trip limits.

In 1988, the proportion of number of landings over 500 pounds by vessels not expected to receive "A" or "B" endorsements was about 25 percent of the fishpot landings and 60 percent of the longline landings (Table 4-9). Over 95 percent of the catch taken by these nonqualifying vessels was taken in trips in which over 500 pounds was landed (Table 4-10). For all line vessels (including California vessels for which it is uncertain at present as to whether longline gear was used) about 5 percent of the landings and over 65 percent of the catch was taken in trips in which over 500 pounds was landed. If these figures for nonqualifying vessels hold up after permits are issued and a 500 pound trip limit is applied, the proportion of historical harvest used as a guideline for controlling the harvest rates of longline and fishpot vessels in the open access fishery would allow the possibility for significant expansion of the number of vessels in the small producing fleet without the need for more restrictive trip limits. The expansion could occur through vessels using either exempted or longline and fishpot open access gear, so long as the effort level of the individual participants remains about the same.[4/5/] These figures also indicate that the Council may be able to use somewhat higher trip

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4/ It seems even more likely that the fishery may be able to absorb some expansion when it is considered that expansion in number of vessels is most likely to occur in the other line category, which generally has smaller landings per vessel than the other exempted gears. The largest exempted gear landings are taken in the other net category and the second largest by shrimp trawlers, both of which are substantially controlled under state license limitation programs. The other net category is primarily made up of gill net vessels (controlled under a California limited entry system) and Oregon shrimpers (which land the bulk of the West Coast shrimp harvest, Table 5-8) are also under a limited entry program.

Table 4–9. Trip frequency in 1988 by pounds[a/] for selected exempt gears and limited entry gears grouped according to vessel permit status based on the Council's adopted options. (Source: PacFIN Research Database)

Vessel Permit Status	Number Of Boats	Average Trips Per Boat	Total Number of Trips	Percentage Of Trips Within Each Poundage Interval										
				Less Than 200 lbs	201–300 lbs	301–400 lbs	401–500 lbs	501–600 lbs	601–700 lbs	701–1,000 lbs	1,001–1,500 lbs	1,501–3,000 lbs	3,000–10,000 lbs	More Than 10,000 lbs
NON–WHITING TRAWL														
'A' Permit	289	23	6,531	0.91	0.77	0.88	0.83	0.65	0.97	2.65	3.54	8.61	22.29	57.90
'B' Permit	20	6	116	3.77	1.89	2.83	1.89	0.00	1.89	1.89	0.00	3.77	23.58	58.49
No Permit	58	3	188	14.12	2.94	2.35	2.35	1.76	0.00	5.88	5.29	14.71	25.29	25.29
Total	367	19	6,835	1.29	0.84	0.95	0.89	0.66	0.96	2.72	3.53	8.69	22.38	57.09
FISHPOT														
'A' Permit	22	15	322	2.59	0.97	0.97	0.00	0.65	0.65	6.15	11.33	9.71	31.72	35.28
'B' Permit	5	3	13	0.00	0.00	0.00	0.00	7.69	7.69	0.00	15.38	23.08	30.77	15.38
No Permit	78	1	115	61.11	6.48	2.78	3.70	5.56	1.85	0.93	4.63	2.78	2.78	7.41
Total	105	4	450	17.21	2.33	1.40	0.93	2.09	1.16	4.65	9.77	8.37	24.42	27.67
LONGLINE														
'A' Permit	162	13	2,145	12.49	4.68	5.01	5.69	4.05	3.52	8.20	8.44	15.77	22.90	9.26
'B' Permit	39	6	237	45.50	4.05	5.41	3.15	4.05	4.50	4.50	6.76	7.66	10.36	4.05
No Permit	185	3	643	50.00	7.75	5.28	2.99	2.29	2.64	2.99	5.99	5.99	7.75	6.34
Total	386	8	3,025	22.49	5.24	5.10	4.96	3.70	3.42	6.88	7.82	13.20	18.92	8.28

a/ Pounds of non–whiting groundfish.

Table 4-10. Percentage catch[a/] by trip size in 1988 for selected exempt gears and limited entry gears grouped according to vessel permit status based on the adopted endorsements landing requirements. (Source: PacFIN RDB)

Vessel Permit Status	Number Of Boats	Average Annual Landings Per Boat (mt)	Total Landings by Group (mt)	Percentage Of Trips Within Each Poundage Interval										
				Less Than 200 lbs	201–300 lbs	301–400 lbs	401–500 lbs	501–600 lbs	601–700 lbs	701–1,000 lbs	1,001–1,500 lbs	1,501–3,000 lbs	3,000–10,000 lbs	More Than 10,000 lbs
NON-WHITING TRAWL														
'A' Permit	289	181	52,443.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.1	7.9	90.6
'B' Permit	20	42	830.2	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.4	7.9	91.4
No Permit	58	9	535.6	0.2	0.1	0.1	0.2	0.1	0.0	0.7	0.9	4.6	21.6	71.5
Total	367	147	53,809.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.1	8.0	90.4
FISHPOT														
'A' Permit	22	79	1,735.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.1	1.7	15.3	81.3
'B' Permit	5	7	36.5	0.0	0.0	0.0	0.0	0.7	0.8	0.0	2.8	9.4	38.2	48.2
No Permit	78	2	160.0	1.1	0.5	0.3	0.5	0.9	0.4	0.3	1.7	1.7	5.2	87.4
Total	105	18	1,931.6	0.1	0.1	0.0	0.0	0.1	0.1	0.4	1.2	1.9	14.9	81.2
LONGLINE														
'A' Permit	162	21	3,322.2	0.3	0.3	0.5	0.7	0.6	0.6	2.0	2.9	9.7	34.9	47.4
'B' Permit	39	4	161.8	1.1	0.6	1.2	0.9	1.4	1.9	2.4	5.2	10.5	32.3	42.4
No Permit	185	3	550.1	1.5	0.9	0.9	0.6	0.6	0.8	1.2	3.5	6.0	22.1	61.8
Total	386	10	4,034.1	0.5	0.4	0.6	0.7	0.7	0.7	1.9	3.1	9.2	33.0	49.2
ALL LINE (longline together with California pole codes)														
'A' Permit	294	16	4,561.8	0.8	0.9	1.2	1.3	1.3	1.3	3.9	5.8	13.5	33.5	36.5
'B' Permit	105	4	414.7	3.7	2.9	2.6	2.5	2.7	2.4	4.7	4.9	13.4	27.7	32.5
No Permit	988	1	734.3	18.8	8.0	4.7	2.4	1.8	1.3	2.8	3.9	5.7	16.6	34.0
Total	1,387	4	5,710.8	3.3	2.0	1.7	1.6	1.4	1.4	3.8	5.5	12.5	30.9	35.9

a/ Catch of non-whiting groundfish.

limits for longline and fishpot open access gear so that the same trip limit might be used for all open access gears, thereby simplifying enforcement. In making that choice, the Council would have to consider the effect a higher limit would have in encouraging additional investment in the fishery. While there may be room within harvest guidelines for significant expansion of the small producer open access fleet (including expansion from vessels which may enter when "B" endorsements expire), the total amount of harvest available to this group of vessels would not be such that increased investment in small producer operations could significantly deteriorate the gains made in controlling capitalization in the portion of the fleet landing about 95 percent of the groundfish catch.

Open Access Exempted Gear Trip Limits

Exempted gears have no opportunity to qualify for a limited entry permit. If the same trip limit were applied across all open access gears (e.g. 500 pounds) some operations landing thousands of pounds per trip with exempted gears might face a significant drop in production under such a limit. If it is deemed necessary, the Council may enact different trip limits for vessels using exempted gears and vessels using fishpot and longline gears operating without a permit. In order to assess the degree to which exempted gears would be affected by various trip limits, individual trip-level records from 1990 and 1987 for exempted gears were reviewed to see the effect of selected poundage restrictions in terms of the number of affected vessels and trips and the amount of poundage that was landed in excess of the restriction level being analyzed. A summary of this analysis is provided in Tables 4-11a and b through 4-13a and b.

In general, the results show that for the largest limit analyzed, (a 3,000 pound general groundfish limit) many exempted gear vessels would remain unaffected or have only a few affected trips. "Other net" vessels (primarily gill net) would be most affected with 18 percent of the vessels experiencing a dramatic reduction in the level of their allowed landings on a per trip basis. Despite small proportions of vessels and trips affected for other exempted gears, relatively large amounts of the exempted gear catch would be over the 3,000 pound limit. Depending on the degree to which affected vessels respond by increasing the number of trips taken, the reduction in catch which results from a 3,000 pound limit may be sufficient to allow for a relatively large increase in the effort of smaller producing vessels, if conditions in the fishery are such that expansion is encouraged.

As a point of departure, the exempted gear landings in 1990 were analyzed relative to a 500 pound per trip limit on all groundfish. Four groups of vessels were included: shrimp trawl, salmon troll, other net, and line gear not designated as longline (see Chapter 15 for a discussion of the data methods). In the shrimp trawl category, 178 boats (77 percent of the total landing groundfish) had at least one trip which would have been affected. Forty two percent of the trips with groundfish would have exceeded 500 pounds, with 56 percent of the total groundfish poundage being landed in

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5/ The exempted gear landings have been relatively small compared to the limited entry gear landings, but these small landings have supported a large number of vessels. In 1987, relatively small amounts of landings supported about 3,900 vessels in their use of exempted gear, Table 4-11. The landings by the 1,200 vessels using longline and pot gear during the window but not receiving endorsements are also very small relative to the total number of vessels in the group, Table 4-3 and 4-10.

Table 4–11a. Effect of possible groundfish trip limits on 1990, exempt gear landings.

Gear	Number of Vessels	Percent Vessels Affected	Total Trips	Percent Trips Affected	Total Pounds (Thousands)	Percent Pounds: Over Limit	Percent Pounds: Unaffected Trips	Number of Vessels by Percent of Income Affected: 10	10 – 50	50 – 90	90
500 Pound Limit											
Shrimp	231	77	3,079	42	2,232	56	15	179	0	0	0
Salmon	1,863	5	8,325	3	867	45	41	89	12	1	0
Other Net	339	27	3,150	35	6,154	89	2	31	20	33	9
Other Line	1,754	32	16,600	20	8,388	55	24	313	193	62	1
Total	3,495	25	31,091	19	17,641	67	16	541	210	102	10
1500 Pound Limit											
Shrimp		50		14		22	50	116	0	0	0
Salmon		2		1		26	54	29	9	1	0
Other Net		21		26		74	6	17	22	31	0
Other Line		14		7		32	47	146	80	18	0
Total		12		8		45	33	274	106	51	0
3,000 Pound Limit											
Shrimp		25		3		7	79	57	0	0	0
Salmon		1		0		14	72	13	4	0	0
Other Net		18		20		56	13	17	28	16	0
Other Line		7		3		18	64	83	38	4	0
Total		7		4		30	48	152	70	20	0

Table 4–11b. Effect of possible groundfish trip limits on 1987, exempt gear landings.

Gear	Number of Vessels	Percent Vessels Affected	Total Trips	Percent Trips Affected	Total Pounds (Thousands)	Percent Pounds		Number of Vessels by Percent of Income Affected			
						Over Limit	Unaffected Trips	10	10 – 50	50 – 90	90
					500 Pound Limit						
Shrimp	250	78	3,955	51	3,652	62	10	77	0	0	1
Salmon	2,307	2	9,480	1	495	25	65	45	5	2	1
Other Net	494	39	4,591	36	8,205	87	3	74	53	54	14
Other Line	1,445	30	10,909	22	7,106	65	18	234	143	54	2
Total	3,874	21	28,909	21	19,459	73	12	488	193	111	21
					1,500 Pound Limit						
Shrimp		58		20		27	41	145	0	1	0
Salmon		1		0		15	78	10	3	1	0
Other Net		30		25		71	8	44	56	46	1
Other Line		13		7		45	38	106	74	5	0
Total		12		10		52	27	278	131	54	1
					3,000 Pound Limit						
Shrimp		32		6		9	73	79	0	1	0
Salmon		0		0		11	83	4	1	1	0
Other Net		23		18		53	17	30	66	18	0
Other Line		7		3		34	51	69	25	4	0
Total		7		5		37	41	168	91	25	0

Table 4–12a. Effect of possible sablefish trip limits on 1990, exempt gear landings.

Gear	Number of Vessels	Percent Vessels Affected	Total Trips	Percent Trips Affected	Total Pounds (Thousands)	Percent Pounds: Over Limit	Percent Pounds: Unaffected Trips	Number of Vessels by Percent of Income Affected: 10	10 – 50	50 – 90	90
					500 Pound Limit						
Shrimp	94	27	363	9	46	36	42	25	0	0	0
Salmon	26	35	98	74	155	85	1	6	3	0	0
Other Net	60	60	471	24	136	49	25	36	0	0	0
Other Line	128	46	1,170	33	904	75	13	45	12	2	0
Total	285	41	2,101	29	1,241	72	14	102	14	2	0
					1500 Pound Limit						
Shrimp		15		5		25	56	14	0	0	0
Salmon		23		61		76	5	3	3	0	0
Other Net		45		14		36	40	27	0	0	0
Other Line		37		20		68	19	38	9	0	0
Total		31		18		64	21	77	11	0	0
					3,000 Pound Limit						
Shrimp		3		1		9	78	3	0	0	0
Salmon		15		36		43	23	3	1	0	0
Other Net		17		4		10	72	10	0	0	0
Other Line		18		9		50	33	18	5	0	0
Total		13		8		43	38	30	6	0	0

Table 4–12b. Effect of possible sablefish trip limits on 1987, exempt gear landings.

Gear	Number of Vessels	Percent Vessels Affected	Total Trips	Percent Trips Affected	Total Pounds (Thousands)	Percent Pounds		Number of Vessels by Percent of Income Affected			
						Over Limit	Unaffected Trips	10	10 – 50	50 – 90	90
					500 Pound Limit						
Shrimp	134	35	821	12	117	37	38	47	0	0	0
Salmon	19	21	23	22	13	83	5	4	0	0	0
Other Net	87	41	234	25	80	54	24	36	0	0	0
Other Line	87	48	368	57	1,900	96	1	28	10	3	1
Total	318	40	1,446	26	2,111	91	4	113	10	3	1
					1,500 Pound Limit						
Shrimp		24		6		25	53	32	0	0	0
Salmon		16		17		76	8	3	0	0	0
Other Net		26		14		43	37	23	0	0	0
Other Line		40		48		94	2	23	8	3	1
Total		29		18		88	6	80	8	3	1
					3,000 Pound Limit						
Shrimp		7		1		6	82	9	0	0	0
Salmon		11		9		54	22	2	0	0	0
Other Net		5		2		25	68	4	0	0	0
Other Line		25		38		86	3	11	7	4	0
Total		11		11		79	10	25	7	4	0

Table 4–13a. Effect of possible rockfish trip limits on 1990, exempt gear landings.

Gear	Number of Vessels	Percent Vessels Affected	Total Trips	Percent Trips Affected	Total Pounds (Thousands)	Percent Pounds Over Limit	Percent Pounds Unaffected Trips	Number of Vessels by Percent of Income Affected: 10	10 – 50	50 – 90	90
500 Pound Limit											
Shrimp	230	75	2,907	39	1,925	55	16	172	0	0	0
Salmon	1,770	4	7,637	2	524	31	57	64	4	0	0
Other Net	230	37	2,064	47	5,034	89	2	26	23	34	2
Other Line	1,695	29	15,802	17	6,556	52	27	281	160	50	1
Total	3,291	23	28,370	17	14,039	65	17	482	177	89	3
1500 Pound Limit											
Shrimp		47		13		21	50	108	0	0	0
Salmon		1		1		18	69	22	2	0	0
Other Net		29		34		72	7	18	24	25	0
Other Line		13		6		28	50	135	66	15	0
Total		12		7		43	35	251	90	41	0
3,000 Pound Limit											
Shrimp		23		3		6	81	52	0	0	0
Salmon		0		0		9	80	8	0	0	0
Other Net		25		26		54	14	17	27	13	0
Other Line		6		3		14	68	72	34	1	0
Total		6		4		27	50	132	63	14	0

Table 4-13b. Effect of possible rockfish trip limits on 1987, exempt gear landings.

Gear	Number of Vessels	Percent Vessels Affected	Total Trips	Percent Trips Affected	Total Pounds (Thousands)	Percent Pounds Over Limit	Percent Pounds Unaffected Trips	Number of Vessels by Percent of Income Affected: 10	10 – 50	50 – 90	90
					500 Pound Limit						
Shrimp	247	76	3,712	45	3,007	60	13	73	0	1	0
Salmon	2,169	2	8,483	1	356	20	71	30	2	1	0
Other Net	351	50	3,150	47	7,393	88	2	56	55	53	10
Other Line	1,372	26	10,217	20	4,356	51	26	200	114	46	0
Total	3,576	20	25,542	21	15,112	70	13	419	163	107	10
					1,500 Pound Limit						
Shrimp		53		17		25	44	131	0	1	0
Salmon		1		0		11	84	10	1	0	0
Other Net		41		34		71	8	44	66	33	1
Other Line		11		6		25	53	98	58	1	0
Total		12		9		47	30	259	120	37	1
					3,000 Pound Limit						
Shrimp		28		5		8	75	69	1	0	0
Salmon		0		0		8	88	4	0	0	0
Other Net		32		24		52	17	34	59	18	0
Other Line		6		2		12	73	70	15	0	0
Total		7		5		31	46	163	74	19	0

excess of the limit. This indicates that, if needed to reduce harvest rates, limits for shrimp gear could be set at higher levels and still have a significant impact in reducing landed catch.

In the salmon fishery, only 5 percent of the more than 1,800 vessels which landed groundfish would have had at least one trip of more than 500 pounds. And even though only 3 percent of the trips would have been affected, nearly half of the total groundfish landed would have come from portions of trips that exceeded a 500 pound limit. This indicates the potential for a 500 pound trip limit affecting relatively few vessels to provide significant reduction in harvest rates, provided bycatch in excess of 500 pounds can be avoided.

Net gear is used for groundfish primarily off of California. Of the 249 vessels landing groundfish with nets in 1990, 92 (57 percent) had at least one trip with more than 500 pounds, while 62 percent of all trips would have been affected. Further, 5.5 million pounds (87 percent of all of the groundfish landed) would have been in excess of the 500 pound limit. Clearly, a 500 pound limit for these fishermen would have a considerable impact on a majority of their operations and, if needed to reduce harvest rates, the trip limits for net gear could be set at much higher levels.

Finally, nearly 1800 vessels had landings with gear identified as other line. Of these, 32 percent would have had at least one landing affected by a 500 pound limit. Eighteen percent of all line trips had poundage greater than 500 pounds, and 55 percent (4.6 million pounds) of the total groundfish poundage landed by these boats were in excess of the limit. As noted elsewhere throughout this review, however, longline codes were not used reliably for California landings during the study period. Many longline landings were actually coded as pole, which is included in the exempt gear other line category. Therefore, it is reasonable to expect that many of the vessels with affected trips within the line group were actually longliners, and do not belong in this section of the analysis.

It should be noted that at least one-fifth of the affected vessels in each of the gear categories had only one affected trip. Roughly one-third of the affected line boats (32 percent of the total) had only one affected trip, thus only 10 percent of the all the line vessels would have had 2 or more trips affected by a 500 pound limit. It is also informative to compare the numbers of vessels that would have been affected in the 1987 fishery, compared to 1990. The number of affected shrimp trawl vessels would have been 196 in 1987 compared to 179 in 1990. The number of affected salmon vessels would have risen from 53 in 1987 to 102 in 1990, while the number of affected net vessels would have dropped from 195 to 93. Finally, 813 line vessels would have been affected in 1987, which would have dropped to 569 in 1990. Across all categories, 1990 would have produced 25 percent fewer affected vessels than 1987. It is also important to note that the largest percentage decline occurs in the net group which clearly is the group which would be most adversely affected by a 500 pound limit. The number of California gill net vessels has been on a downward trend which has coincided with increasingly restrictive regulations within state waters. With the State of California's ban on the use of set gill nets within state waters, it seems likely that this trend may continue, freeing up more of the groundfish in the southern California area for harvest through use of other exempted gear, allowing these gears to absorb an increase in the number of vessels or effort per vessel without creating a need for extremely restrictive trip limits.

The effects of two higher landing limits were also considered. With a 1,500 pound limit, the number of affected trips is less than 15 percent of the total for all gears. Nearly 30 percent of the net trips

were still restricted at this level, with about three-quarters of the poundage being landed in excess of the limit. For the shrimp, salmon, and line vessels, the percentages of landings over the limit were 18, 26 and 32 percent, respectively. These 3 percentages were all less than 15 percent with a 3,000 pound restriction. Even at 3,000 pounds, however, just over half of the net poundage came from trips exceeding the limit, with about a quarter of all net vessels and trips being affected. And while 14 of the 61 affected boats had only one trip that would have been restricted, 26 vessels would have had more than 14 trips restricted. The diversity of effort levels in the fishery indicates that trip limits would first affect only highliners with the reduction in harvest rates by these vessels creating significant opportunity for the participation of smaller vessels (similar to the current situation in which trip limits on trawl vessels create year-round opportunity for many other vessels to continue harvesting).

The effect of restrictions on particular species/assemblages was also reviewed. A 300 pound restriction on sablefish would have affected more than a third of the sablefish poundage landed in each group. All groups except the line group had total sablefish landings less than 200,000 pounds. The line group harvested 75 percent of the sablefish with total landings over the 500 pound limit of 650,000 pounds. Out of the 156 non-line exempt vessels landing sablefish, in only 3 cases did the sablefish overage account for more than 10 percent of vessel revenue.

Rockfish landings were also examined, and were found to make up the vast majority of the poundage and trips affected by a more general groundfish restriction. In the shrimp, net, and line fisheries, at least three-quarters of the affected pounds and trips observed with a 500 pound groundfish limit are retained with a 500 pound restriction on rockfish alone. At higher landing limits, this percentage declines in the line and shrimp fisheries, but remains near 80 percent for net gear.

To summarize the findings of the analysis of exempted gear vessels, it is apparent that even if fairly liberal trip limits of 3,000 pound per trip are imposed, many exempt gear vessels, particularly those using net gear, will experience a dramatic reduction in the level of their allowed landings on a per-trip basis. The effect that this would have on an annual basis will depend on the extent to which larger numbers of smaller trips can profitably be substituted for the current number of large-volume trips. The necessity for limits and the degree of imposition accompanying such limits placed in the future on net boats may be lessened somewhat by new state regulations and an existing downward trend in use of this gear.

Particularly with a 500 pound limit many line vessels would be affected, however, only about 10 percent of the vessels would have more than one trip affected by a 500 pound groundfish limit. It is not known with any degree of certainty how many of the large landings coded as pole in this analysis were delivered from longline vessels. Since the longline code has only been rarely used on California fish tickets (the bulk of the line vessels in this review were from California) it is suspected that the data reported above reflect considerable upward bias regarding the percentage of trips and pounds that would be affected.

In addition to the question of how these vessels will be affected by the imposition of trip limits, the data also suggest that some additional discard problems may be created. Obviously, the data do not inform us as to how much of the overage amounts could have been avoided if the fishermen had known that a particular limit was in place. Fishermen have stated that many participants in the net

and line fisheries experience a baseline success rate which is rather low, wherein the occasional large trip is a largely unpredictable occurrence (Table 4-14 through 4-16). While the occurrence may be unpredictable, once the fisherman is aware of a high CPUE for the trip it may be possible to end trips earlier, thereby avoiding the need for excessive discards. It is also reported that the discard mortality rate for exempted gears such as line gear may be lower than for net gears.

Effect of Vessels with Expiring "B" Endorsements on the Open Access Fishery Trip Limits

Open access fishery trip limits set at levels which allow most open access gear vessels to continue fishing relatively unrestricted, will likely be sufficiently restrictive that larger vessels leaving the limited access fishery would have difficulty continuing in the open access fishery. When "B" endorsements expire, owners of vessels no longer able to continue in the fishery will seek alternative employment for their vessels. The displaced vessels will either go into other fisheries or industries, or operate in the open access groundfish fishery. Some vessels may purchase a permit with an "A" endorsement, however, this would just displace another vessel, so there would be no net change in the number of vessels for which alternative employment is sought (unless a permit is purchased from the owner of a sunken vessel). Owners of vessels which choose to enter the open access groundfish fishery would have to be able to survive on smaller trip limits. If they cannot do so and have no better alternative employment, the vessels may remain in the fishery under different ownership after bankruptcy and refinancing (provided that variable and fixed variable costs can be covered under the smaller trip limits). Given that holders of "B" endorsements generally have not been very dependent on the groundfish fishery, it is likely that alternatives for most of the vessels are available and bankruptcy is not a likely result (unless there have been downturns in the other fisheries in which the vessels have participated in the past).

For those "B" endorsement vessels which do enter the open access fishery and operate under restrictive trip limits, it appears that sufficient quota will be available to absorb them without resulting in significantly lower trip limits. As discussed above, a 500 pound trip limit which would have little impact on longline and fishpot vessels excluded from qualifying for a limited entry permit because the MLR 500 pound screen, would likely result in a significant reduction in the total catch by nonqualifying vessels. This would allow more small producers to enter the fishery without creating the need for a more restrictive trip limit. The exact amount of reduction would depend, in part, on the extent to which reduced size of trips is made up with an increased number of trips per vessel.

4.3 Delineation of the Limited Entry Gears

Designation of the limited entry gears is discussed in Section 4.2 under the subsection on exempted gears in the open access segment. This section discusses some of the issues which arose in delineating the limited entry gear categories. The Council defined groundfish trawl, longline, and fishpot for purpose of the license limitation program as they are defined under current regulations. Issues arose with respect to the grouping of the gears, and the use of shrimp trawl landings of groundfish to qualify a vessel for a groundfish trawl endorsement.

Table 4–14. Number of exempted gear vessels by average groundfish trip size and maximum trip size (pounds) for 1990 and 1987.

Maximum Pounds in One Trip	Average Groundfish Trip Size															
	Shrimp Trawl				Salmon Troll				Other Net				Other Hook and Line			
	<500	501–1500	1501–3000	>3000	<500	501–1500	1501–3000	>3000	<500	501–1500	1501–3000	>3000	<500	501–1500	1501–3000	<3000
1990																
1–200	22	–	–	–	1590	–	–	–	204	–	–	–	779	–	–	–
201–300	11	–	–	–	109	–	–	–	19	–	–	–	168	–	–	–
301–400	11	–	–	–	36	–	–	–	14	–	–	–	138	–	–	–
401–500	8	–	–	–	26	–	–	–	9	–	–	–	100	–	–	–
501–600	6	–	–	–	16	3	–	–	4	2	–	–	61	13	–	–
601–700	6	2	–	–	12	1	–	–	3	–	–	–	32	7	–	–
701–1000	14	3	–	–	11	7	–	–	3	3	–	–	77	36	–	–
1001–1500	19	13	–	–	7	6	–	–	3	5	–	–	36	63	–	–
1501–3000	19	39	1	–	3	15	4	–	–	5	4	–	6	86	27	–
3001–10000	2	39	13	1	–	4	7	4	–	4	10	7	1	24	44	35
>10000	0	0	1	1	0	0	0	2	0	0	1	39	0	0	4	17
1987																
1–200	28	–	–	–	2085	–	–	–	247	–	–	–	668	–	–	–
201–300	11	–	–	–	93	–	–	–	29	–	–	–	177	–	–	–
301–400	6	–	–	–	47	–	–	–	14	–	–	–	109	–	–	–
401–500	9	–	–	–	28	–	–	–	9	–	–	–	58	–	–	–
501–600	8	1	–	–	4	2	–	–	9	1	–	–	51	5	–	–
601–700	7	1	–	–	10	–	–	–	2	3	–	–	31	6	–	–
701–1000	13	3	–	–	11	3	–	–	6	7	–	–	58	27	–	–
1001–1500	11	6	–	–	6	3	–	–	7	13	–	–	16	54	–	–
1501–3000	13	51	2	–	1	4	3	–	6	14	13	–	4	58	25	–
3001–10000	1	35	37	6	1	–	–	2	–	5	22	32	–	17	36	16
>10000	–	–	–	1	–	–	–	3	–	–	3	52	–	–	–	29

Table 4–15. Number of exempted gear vessels by average sablefish trip size and maximum trip size (pounds) for 1990 and 1987.

Maximum Pounds in One Trip	Average Sablefish Trip Size															
	Shrimp Trawl				Salmon Troll				Other Net				Other Hook and Line			
	<300	301–500	501–1500	>1500	<300	301–500	501–1500	>1500	<300	301–500	501–1500	>1500	<300	301–500	501–1500	>1500
1990																
<200	58	–	–	–	17	–	–	–	19	–	–	–	55	–	–	–
201–300	11	–	–	–	–	–	–	–	5	–	–	–	14	–	–	–
301–400	6	1	–	–	–	1	–	–	4	–	–	–	7	2	–	–
401–500	4	–	–	–	–	2	–	–	5	–	–	–	3	–	–	–
501–600	3	–	–	–	–	–	–	–	3	1	2	–	2	2	2	–
601–700	2	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–
701–1000	2	–	2	–	–	–	1	–	2	1	–	–	–	3	2	–
1001–1500	–	–	2	–	–	–	1	–	4	1	2	–	1	1	10	–
1501–3000	–	–	1	1	–	–	1	1	1	4	2	1	–	1	7	2
3001–10000	–	–	–	1	–	–	–	1	–	–	–	2	–	–	–	9
>10000	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	4
1987																
<200	81	–	–	–	15	–	–	–	45	–	–	–	39	–	–	–
201–300	6	–	–	–	–	–	–	–	6	–	–	–	6	–	–	–
301–400	8	2	–	–	–	–	–	–	2	3	–	–	2	1	–	–
401–500	4	1	–	–	–	1	–	–	4	4	–	–	1	3	–	–
501–600	3	–	1	–	–	–	–	–	3	–	1	–	–	2	–	–
601–700	4	1	–	–	–	–	–	–	–	2	–	–	–	–	2	–
701–1000	3	–	2	–	–	–	–	–	–	3	4	–	–	2	1	–
1001–1500	3	5	1	–	–	–	1	–	1	1	4	–	1	1	4	–
1501–3000	3	–	3	1	–	–	1	–	–	–	1	1	–	–	1	1
3001–10000	–	1	1	–	–	–	–	1	–	–	1	–	–	–	1	7
>10000	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	12

Table 4-16. Number of exempted gear vessels by average rockfish trip size and maximum trip size (pounds) for 1990 and 1987.

Maximum Pounds in One Trip	Average Rockfish Trip Size															
	Shrimp Trawl				Salmon Troll				Other Net				Other Hook and Line			
	<500	501–1500	1501–3000	>3000	<500	501–1500	1501–3000	>3000	<500	501–1500	1501–3000	>3000	<500	501–1500	1501–3000	<3000
1990																
<200	33	–	–	–	1542	–	–	–	114	–	–	–	832	–	–	–
201–300	11	–	–	–	100	–	–	–	14	–	–	–	164	–	–	–
301–400	5	–	–	–	36	–	–	–	10	–	–	–	126	–	–	–
401–500	9	–	–	–	24	–	–	–	7	–	–	–	81	–	–	–
501–600	8	–	–	–	13	1	–	–	3	1	–	–	54	8	–	–
601–700	4	2	–	–	11	1	–	–	–	1	–	–	31	5	–	–
701–1000	17	3	–	–	6	4	–	–	3	3	–	–	62	34	–	–
1001–1500	21	9	–	–	3	5	–	–	2	5	–	–	28	54	–	–
1501–3000	20	35	1	–	2	11	3	–	–	7	3	–	10	75	24	–
3001–10000	2	38	11	1	1	–	3	4	2	2	10	6	–	24	42	28
>10000	–	–	–	–	–	–	–	–	–	–	2	35	–	–	3	10
1987																
<200	31	–	–	–	2010	–	–	–	150	–	–	–	709	–	–	–
201–300	11	–	–	–	80	–	–	–	16	–	–	–	161	–	–	–
301–400	5	–	–	–	27	–	–	–	5	–	–	–	83	–	–	–
401–500	12	–	–	–	18	–	–	–	6	–	–	–	59	–	–	–
501–600	9	1	–	–	4	–	–	–	3	2	–	–	33	6	–	–
601–700	6	1	–	–	4	–	–	–	1	1	–	–	31	4	–	–
701–1000	15	3	–	–	9	1	–	–	3	5	–	–	44	28	–	–
1001–1500	15	6	–	–	2	2	–	–	6	9	–	–	16	41	–	–
1501–3000	16	45	1	–	1	4	2	–	4	14	15	–	5	48	19	–
3001–10000	3	34	26	6	–	1	–	2	–	7	25	28	1	21	36	18
>10000	–	–	1	–	–	–	1	–	–	1	50	–	–	–	9	

Separation of Longline and Fishpot Gears into Separate Categories

One major issue left unresolved by the LEC was whether there should be a "fixed gear" endorsement for vessels using longline and fishpot gear or separate endorsement categories for each of these gears. A single fixed gear category would have provided more flexibility to longline and fishpot vessels and would have been consistent with the way sablefish are allocated. However, the Council chose to separate the gear categories for two reasons.

- Less flexibility in moving between these gears means there will be a greater constraint on capacity. Vessel owners will only want to move between these gears primarily if their profits would be increased. The increase in profits may often correspond with an increase in vessel capacity and effective effort.

- The connection between fishpot and longline gear did not appear to be stronger than the connection between fishpot and trawl gear in terms of vessels switching between gears. The LEC report showed that between July 11, 1984 and December 31, 1986 51 vessels had at least one landing with trawl gear and one with pot gear, while only 24 vessels landed one landing with pot and one with longline gear.

Treatment of Shrimp Trawl Landings

The LEC proposals presented and accepted by the Council at its July 1988 meeting did not contain a recommendation on whether landings of groundfish caught with shrimp trawl gear would qualify a vessel for a limited entry permit because the committee was unable to reach a consensus on the issue. In July 1987, a motion adopted by the Council to implement a cutoff date stated: "A vessel owner is qualified if the vessel had commercial landings of groundfish or shrimp caught off the coast of Washington, Oregon or California prior to July 11, 1987. . . ."

The following clarification of these criteria was released July 31, 1987: ". . . . while vessels which have priority according to these criteria may be given access initially, that access may be conditional and/or given lower priority depending on any future criteria which may be developed."

When the Council accepted the LEC's proposals in July 1988, it adopted a new cutoff date (August 1, 1988) and qualification window which did not specifically identify shrimp vessels as potential qualifiers. A limited entry ad hoc committee was convened to address issues left unresolved by the LEC. The ad hoc committee report on inclusion of shrimp vessels stated that continued landing of groundfish with shrimp trawl gear would not be precluded by implementation of the limited entry proposal. However, shrimp trawl vessels which never used legal groundfish trawl gear during the window period would be precluded from doing so unless they first obtained LE permit from another permit holder. The arguments from both sides of the issue were presented in the report. The rationale by those who supported allowing shrimp trawl vessels to qualify revolved around arguments that these vessels are multigear vessels. It was stated that the option of switching to groundfish trawl during hard times in the shrimp fishery is often assumed when the decision is made to buy a trawler for shrimping. The counter argument presented was that all vessel owners want to have an opportunity to switch to another gear or another West Coast fishery, if their current fishery goes bad, just as all businesses have contingency plans. Under the limited entry program switching to the

limited access groundfish fishery would require possession of a permit either through initial issuance or purchase. Those who would have to purchase a permit would have had minimal dependence on the fishery during the four year qualification window as demonstrated by their lack of groundfish trawl landings. Their situation would be similar to that of groundfish trawlers who must acquire shrimp permits if they wish to shrimp trawl in Oregon, where most shrimp landings are made. After reviewing the LEADOC's report and providing opportunity for public comment at its September 1988 meeting, the Council agreed that shrimp trawl landings would not qualify a vessel owner for an LE permit. While shrimp landings should not count toward the "A" endorsement MLR, "A" endorsement MLRs were set at a low level with the intent, in part, of reducing their impact on multigear vessels including shrimp trawlers.

4.4 Endorsement system

One of the principles and primary rationales followed in designing the endorsement system was that no more than one permit should be issued as a result of the activity of a given vessel. This was done to assure a more effective program. Issuing a different gear endorsement for each of the gears with which a vessel qualifies, rather than a separate permit, prevents a single vessel from generating more than one permit and hence the potential for bringing more vessels into the fishery. Townsend (1990) discusses issuance of multiple permits for different areas or gears as one of the factors which can lead to failure in license limitation programs. Separate endorsements were given for each gear rather than a single endorsement for all gears to minimize opportunity for expansion of effort. For example, a longline vessel the same size as a trawl vessel has different fishing power and generally targets on different species. Allowing unrestricted movement between these gears could result in increased harvest capacity directed toward a given species. Movement and flexibility is allowed through the ownership of a permit with more than one gear endorsement or purchase of a second permit. Flexibility achieved through the latter means will help reduce capacity, making the program more effective.

4.4.1 General Characteristics of the Endorsements

"A" Endorsements

The Council intends that "A" endorsements be granted to those with a significant level of historical participation and dependence on the fishery. The determination of who should be allowed to qualify and derivation of the qualifying period and required activity level are discussed below. The endorsements are made transferable (i.e. remain valid with the transfer of the permit) as a way of allocating future access rights when current participants decide to leave the fishery. "A" endorsements are issued to current owners of qualifying vessels as a means of taking present participation into account (see Section 4.4.2)

Provisional "A" Endorsements

Provisional "A" endorsements were developed primarily for those who had recently made significant investments in the groundfish fishery and are dependent on those investment returns for their future ability to earn an income from the fishery, (i.e. individuals who purchased a vessel part way through the window period, or had a vessel under construction or conversion during the window). In order

to enhance the effectiveness of the license limitation program, the endorsements were made provisional, pending the endorsement holders demonstration of intent to be a participant in the fishery. If the intent is not demonstrated through actual landings the endorsement expires. The provisional "A" endorsement requires that for the first three years after the initiation of the upgrade period a certain minimum amount of groundfish landings be made. The amount required to demonstrate intent is the approximate equivalent of the annualized MLR, which vessels receiving "A" endorsements are required to meet. If that amount is landed in each of the three years of the vessel's upgrade period, the provisional "A" endorsement would be replaced by an "A" endorsement. For most vessels which apply under the upgrade provisions, by the time a limited entry system is implemented, the three year upgrade period will have passed and the owners will already have had to demonstrate their intent to enter the fishery by making sufficient landings to meet the upgrade criteria. Thus, any effort increase resulting from the upgrade provisions is anticipated to be small and short term. The demonstration of intent is required as a means of preventing any individual who may have purchased/constructed/converted a vessel, for any purpose or fishery from qualifying for an "A" endorsement in the West Coast groundfish fishery only because their activity happened to coincide with the qualifying periods established for the program. The endorsements were made nontransferable between vessels or vessel owners because they were intended to benefit only those who had made investment in a groundfish trawl, longline or fishpot vessel prior to the end of the window period. Allowing transfer after the window period may allow vessels into the fishery which may previously not have been committed to the fishery, thus degrading effectiveness of the program. There was no need to allow transfer of these endorsements as a way of allocating future rights, as sufficient "A" endorsements will be available from vessels which met the MLRs.

In addition to situations of purchase, construction, or conversion, the opportunity to qualify through a provisional "A" endorsement has been provided for two other special circumstances where a demonstration of intent to participate is desired prior to the issuance of an "A" endorsement: (1) where endorsements are to be issued to vessel owners who relied on a gear which has subsequently been banned; and (2) where endorsements are to be issued for replacement vessels which are larger than the vessel replaced, when the replacement occurred prior to the Council's notice that length restrictions would restrict the size of the replacement vessel.

"B" Endorsements

"B" endorsements were initially designed to allow owners of vessels which may have participated in the fishery at a low level during the window period, or at higher levels prior to the window period, to continue in the fishery for an adjustment period before they would be required to have a permit with an "A" endorsement. Those vessels with a small number of landings in the fishery had the ability to participate, had at least a marginal amount of involvement in the fishery, and may have anticipated the opportunity to freely increase their activity to groundfish if it became advantageous to do so. Those vessels with greater histories prior to the window period may have helped pioneer the fishery, but had since moved on to other activities, possibly with the intent of eventually returning to the groundfish fishery. "B" endorsements provide short term access rights to allow an opportunity for these vessel owners to plan and prepare for any adjustments in their fishing activity which might be required. The duration of these endorsements (valid through the end of 1996) was established such that there would be at least seven years between the announcement of the cutoff date and expiration

of the endorsements.[6/] Seven years was reported as the minimum tax depreciation period for fishing vessels and the one commonly chosen by vessel owners. Thus, the adjustment period would insure that a large number of the vessel owners receiving the endorsement would have the opportunity to completely depreciate their vessels prior to making their adjustment to another fishery or investing in a groundfish permit. The "B endorsements should aid in making an orderly transition to an effective license limitation system by reducing any rush to acquire permits once an effective license limitation system is put into place. "B" endorsements are nontransferable because they are intended only to provide an adjustment period for those receiving the endorsement while potential fleet size is reduced. The recipient of a "B" endorsement must have owned the vessel at the time the qualifying landings were made. Since it is intended that the "B" endorsements be phased out, there was no reason to provide for the transfer of rights to the endorsements through the transfer of the vessel. It was not felt necessary to provide an adjustment period for persons who had never participated with the vessel in the fishery. Those purchasing a vessel prior to the window period had full opportunity to qualify for "A" endorsements and those purchasing during the window period had an opportunity to qualify for provisional "A" endorsements. Those purchasing after the window period were on notice that they may not be able to continue in the fishery.

Designated Species "B" Endorsements

Designated species "B" endorsements would be issued only if more domestic harvesting capacity needs to be allowed into the fishery in order to prevent an apportionment of a particular species to foreign harvesters or JV operations. The license limitation program, as adopted, requires that the NMFS assess the commitments of the limited entry fleet to harvest Pacific whiting, shortbelly rockfish and jack mackerel (north of 39°N), and issue designated species "B" endorsements to harvest that portion of the annual harvest guideline or quota that is surplus to the needs of the limited entry fleet. The Council adopted a tiered system based on seniority for issuing designated species "B" endorsements. Under this system all applicants with four years seniority, if four years is the greatest number of years in the fishery, would receive permits in a given year, even if the needs of the entire group exceeded the remaining surplus quota. The next tier to receive permits, if surplus still remained, would be all vessels with three years in the fishery and so forth. Since this system would allow more capacity into the fishery than necessary, a harvest limit for these vessels was necessary to prevent them from preempting the harvest commitments of the limited entry fleet. A mechanism for evaluating the progress of the harvest of the designated species by the limited entry fleet would allow any surplus fish not harvested by the limited entry fleet to be released to the designated species "B" endorsement fleet to insure full utilization of the species. A tiered system was adopted because

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6/ At the March 1991 Council meeting, the Council tentatively decided that "B" endorsements should expire upon change in ownership. After reviewing the various kinds and degrees of "ownership", different kinds of "owning" entities, and numerous special circumstances which might occur, the Council determined that change in ownership would not be a viable alternative for determining when a "B" endorsement expires. Opportunities for circumvention would be so great that considerable enforcement effort would be required. Without such enforcement effort it is likely that individuals who try to circumvent the system will be rewarded while those who are honest about the nature of a transaction will be penalized. An ad hoc committee advising the Council on this issue identified as viable only those options which were based on expiration after a predetermined period of time.

of difficulties which might arise if endorsements were issued one at a time until the commitment was sufficient to take the harvest.[7/]

Designated Species "A" endorsements and Provisional Designated Species "A" Endorsements

Designated species "A" endorsements and provisional designated species "A" endorsements were part of the draft program sent out for public review in January 1991, but were eliminated from the adopted program in order to prevent further capitalization in the harvesting sector of the fishery and simplify the license limitation program.

Options Considered

During the development of the license limitation alternative it was assumed that underutilized species had to be treated differently from all other species in that new entrants interested in harvesting underutilized species could not be prevented or deterred from entering the fishery for that purpose. Lack of an ongoing harvest right was viewed as a deterrent to the new investment which might be required to develop a domestic fishery for the underutilized species. For this reason an endorsement system was set up to allow new entrants to harvest underutilized species and at the same time limit the degree of overcapitalization which would result. The potential was created for these endorsements to become permanent access rights to the specified underutilized species in order to encourage development of the fishery and reward fishery pioneers. The following endorsements were developed:

- Designated species "A" endorsements
- Provisional designated species "A" endorsements
- Designated species "B" endorsements (valid for one year)

Provisional designated species "A" endorsements would be issued on demand as long as a foreign directed fishery for the underutilized species exists (while a TALFF apportionment exists). The fishery for an underutilized species would essentially remain an open access fishery until the elimination of TALFF triggers the end of issuance of provisional designated species "A" endorsements. Acquiring a provisional designated species "A" endorsement and upgrading it would be the only means of acquiring the fully transferable designated species "A" endorsements. These fully transferable designated species "A" endorsements would be valid only for the specified species,

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7/ Under the other alternative for issuing permits, endorsements would be issued one at a time to applicants arrayed in priority order until the commitment of the total fleet, including those receiving the designated species "B" endorsements, reached but did not exceed the allowable harvest cap. Priority would have been based on seniority, first-come-first-serve and lottery. Under certain circumstances, one or two vessels with the ability to harvest large amounts might be the only vessels receiving "B" endorsements, effectively creating an exclusive fishery for a few vessels. This would become a particular problem if these unmet harvest needs were generated by mothership or shorebased processors and the first vessels to receive the endorsements were factory trawlers. The ordered method of issuance endorsements, also brings up the question of how to treat the person whose delivery commitments take the total commitments over the allowable amount. For example, if the commitment of the permitted fleet is 100 mt under the cap and the next person in line to receive an endorsement has a commitment to deliver 150 mt, should that person be issued an endorsement? If not, then what if the person directly after the individual with the 150 mt commitment has a commitment to deliver only 25 mt? Adoption of the tiered system for issuing endorsements addressed both these issues by allowing a broader variety of vessels to qualify.

valid for an unlimited period of time, and could be a valuable asset once issuance of the provisional designated species "A" endorsements is halted. Thus, the provisional designated species "A" endorsement would allow a vessel owner, not otherwise qualifying for an "A" endorsement, to demonstrate an intent to participate in a specific underutilized species fishery and then be rewarded for helping to pioneer the fishery.

Once TALFF was no longer allocated, thereby halting the issuance of provisional designated species "A" endorsements and effectively triggering limited access to an underutilized species fishery, a situation could arise in which U.S. vessels with limited entry permits are unwilling to harvest underutilized species for domestic processors. This could give rise to a JV fishery despite interest by U.S. processors. In order to give preference to U.S. processors over JV processors, designated species "B" endorsements would be issued to harvesters willing to deliver to domestic processors. The designated species "B" endorsement would provide an opportunity for temporary entrance (one year) to those willing to fulfill unmet needs of domestic processors. With elimination of the designated species "A" endorsements and provisional designated species "A" endorsements from the program, the designated species "B" endorsements were changed to allow their issuance for delivery to foreign processors if TALFF would otherwise be apportioned.

Impacts of Elimination of the Designated Species "A" Endorsements and Provisional Designated Species "A" Endorsements

Elimination of designated species "A" endorsements and provisional designated species "A" endorsements reduced the incentive for fishermen to develop underutilized species in order to lay claim to a permit for the species, however, opportunity is provided for access through the issuance of designated species "B" endorsements in the event that failure to issue endorsements might result in an apportionment to TALFF or JV operations or while TALFF. Processor representation on the original limited entry committee felt: (1) a vessel desiring to harvest an underutilized species must be allowed to enter the fishery if foreign directed fishing or foreign processing was active in the fishery, and (2) allowing only short term or temporary access to the fishery would be a disincentive for investment by potential new participants and would represent a barrier to development of a domestically processed fishery.

If provisional designated species "A" endorsements had been included in the program, there are four vessels which may have expected to receive provisional designated species "A" endorsements for the whiting fishery that might not otherwise qualify for a permit in the fishery. These vessels participated in the fishery at a time while TALFF existed and would therefore be eligible to receive such an endorsement. There were a total of 55 vessels that participated in the JV mid-water trawl whiting fishery at some time during the window period, 51 of which are expected to receive "A" endorsements under the Council's preferred options. The number of vessels participating in the JV fishery grew to 65 in 1989 of which at least 32 are not expected to receive permits. An analysis of the JV fleet shows 64 percent of the midwater trawlers participating in the JV whiting fishery during the window period were between 60 and 79 feet in length, 32 percent were greater than 79 feet in length, and 4 percent were less than 60 feet in length. The total number of vessels of at least 60 ft in length that would receive "A" endorsements for trawl gear under the adopted MLR is 172, compared to 151 under the high MLR. These numbers are estimates of upper bounds for participation in the whiting and other underutilized species fisheries. The numbers compared to those participating in the JV fishery would indicate there is sufficient capacity in the fleet to harvest the whiting resource

without allowing new entrants. The 65 vessels fishing whiting in 1989 harvested over 200,000 mt for the JV fishery in a three month period.

In deciding whether to provide endorsements which might allow additional harvest capacity into the fishery, existing capacity which might be directed to other underutilized species had to be considered. These species are jack mackerel and shortbelly rockfish. The MSY for shortbelly rockfish has been estimated at between 13,900 and 47,000 mt. The MSY for jack mackerel north of 39°N is estimated at 12,000 mt, though the current ABC is 52,600 mt. These are preliminary estimates for species for which no current fishery exists. Using the upper ends of these ranges, capacity to harvest at least 99,600 mt may be needed to fully develop the fisheries for these two species. (It is likely that jack mackerel will soon be moved into a coastal pelagic plan, dropping the harvest capacity required for underutilized groundfish species to a minimum of 47,000 mt.) Total groundfish landings for all other species and domestic whiting deliveries was 98,000 mt. Given the number of additional vessels which may be capable of participating in the midwater trawl fisheries, the short duration of the JV whiting fishery and the restrictions in place on the harvest of other species (see Section 4.3.2 of the draft SEIS), it would appear that capacity already exists to harvest at least an additional 47,000 to 98,000 mt. Any allocation of TALFF would more likely be due to inadequate economic incentives for harvest or a lag in the development of the JV relationships necessary to harvest an underutilized species, rather than a shortage of domestic harvesting capacity. Therefore, providing opportunity for long term participation to anyone who does not acquire an "A" endorsement unnecessarily allows more harvest capacity into the fishery and adds unnecessary complexity to the administration of the limited entry system. The method of determining priority for issuance of designated species "B" endorsements (seniority) provides incentive for their acquisition and use, and hence for the development of the fishery.

4.4.2 Transferability of Endorsements

In order to prevent expansion of capacity from a reconfiguration of the fleet, endorsements may not be transferred from one permit to another. For example, suppose the most productive gears in declining order are trawl, longline and fishpot and a vessel receives a permit with "A" endorsements for trawl and longline gear. If transfers of endorsements were allowed, the owner of the permit might decide it would be financially better to sell the longline endorsement to the holder of a permit endorsed only for pot gear. Under the assumed order of productivity of the gears, this would result in an increase in fishing power.

4.4.3 Qualification "Window Period"

The qualifying criteria for endorsements are generally structured around a qualifying window period of July 11, 1984 through August 1, 1988. The end date of the window period was chosen as the earliest which could be set after the Council began its consideration of limited entry. The purpose of the cutoff date is to prevent persons from entering the fishery only on the speculation that they might qualify for a valuable permit which might later be sold at a profit. Such actions would frustrate the purpose of the program and damage those who have a history of real dependence on the fishery. The opening date of the window was chosen because:(1) it created a four year window encompassing both good and bad years in the groundfish and some of the other West Coast fisheries in which

groundfish vessels participate (salmon and shrimp);[8/] (2) it was a long enough period that anyone with significant dependence in the fishery would have participated, and (3) the objective was to qualify present participants in the fleet (i.e. those with a recent history of participation). While vessels may be absent from the fishery for short periods of time for many reasons, the Council felt that any vessel absent for more than four years was not really a current participant. The Council did not want to qualify vessels which had departed the groundfish fishery and upon qualifying might sell the permit back into the fishery without ever returning to it. The Council considered extending the window period through September 30, 1990 so those entering the fishery during the depressed salmon fishery and other fisheries might qualify for "B" endorsements, however, the current window was retained for three reasons: (1) the current window contains a period in which there was a downturn in the salmon fishery; (2) a major extension of the duration of "B" endorsements was rejected reducing the benefit to those who would receive an endorsement under the extended window (see footnote 6); and (3) a change in window would change the balance of equities. It would reduce the benefit to the fishermen qualifying during the original window period, and transfer benefit to the later entrants, those without the history and the dependence on the fishery.

4.4.4 Selection of Qualifying Criteria

There are a number of methods which may be used to decide who should receive the LE permits. For example, a lottery might be held, individuals might be required to purchase permits through an auction[9/], or permits may be granted to individuals on the basis of some qualifying criteria. Under the adopted license limitation system, permits would be initially issued on the basis of qualifying criteria and issued to future entrants through purchase from initial recipients. The initial qualifying criteria chosen takes into account current participation, historical fishing patterns, and dependence on the fishery, as well as social and cultural factors.[10/]

Initial issuance primarily based on qualification criteria rather than a lottery was selected because the Council believed it would be unfair and inefficient to subject long-time participants and fishery pioneers to the random chance of exclusion in a lottery. Under a lottery those with large time and capital investments in the fishery might be excluded, causing a dislocation of resources. Included in the effects of dislocation under a lottery would be underemployment and a net decline in national benefits resulting from the potential initial exclusion of individuals with specialized skill and knowledge of the fisheries.

8/ It did not include the period of heavy groundfish participation which occurred during the major fishing down period prior to Council implementation of effort control.

9/ Charging a fee for a permit greater than that necessary to cover administrative costs is currently not allowed under the MFCMA.

10/ With respect to social and cultural factors, treaty-Indian fisheries and the recreational fisheries were considered and placed outside the scope of the alternatives considered under the amendment. The cultural significance of the Newport Beach dory fleet (a historic landmark) was considered in determining that special provisions should be made for such fleets. Other cultural and social factors were considered in evaluating the impacts of the program and determining whether the license limitation program should be adopted. These are reviewed at the end of Chapter 7 and summarized in Chapter 8.

4.4.4.1 General Categories for Initial Issuance

Vessel Owners

The Council has decided that permits with "A" endorsements would be initially issued to current owners of vessels with a history of using limited entry gear to fish groundfish during the qualifying window period. The level of historical use required and its derivation will be discussed in a following subsection. The emphasis on current ownership (i.e. ownership at the time permits are issued) allows the program to take into account changing fishery conditions and present participation relative to the date of program implementation.

Those Who Do Not Own Groundfish Vessels

Qualification criteria for permits which might be applied to the individual rather than the vessel were not considered because of concern about the security of the vessel owner's investment and uncertainty about the number of permits created and consequent negative effect on the ability of the program to generate benefits. Owners were qualified, rather than operators, crew members or leaseholders because they had placed their personal wealth at risk to own the vessel. To give permits to these individuals and not the owners, could substantially reduce the value of the owner's assets.

Recent Sellers and Purchasers

The announcement of the qualifying window indicated that permits would be issued on the basis of the vessel's fishing history. Individuals who owned a qualifying vessel, but sold it, would not qualify for a permit on the basis of the vessel they sold. Past ownership of a vessel with a qualifying history was rejected as a possible qualification criteria in order to limit the number of permits created from one vessel. One of the primary principals followed to design an effective limited entry program was that a single vessel should not give rise to more than one permit. The purchaser of a vessel with a qualifying history would be granted a permit, as opposed to the seller, because the purchase price was based in part on the vessel's ability to catch groundfish. Also, in this way the program takes into account present participation as it exists at the time of program implementation. Individuals who sold a qualifying vessel may or may not have intended to remain in the fishery. Those who sold a vessel but intended to remain in the fishery were on notice that LE permit issuance would be based on ownership of qualifying vessels. Provisional "A" endorsements are provided for individuals who prior to announcement of the qualifying window period purchased a vessel with intent to participate in the groundfish fishery (including those who may have sold a qualifying vessel and purchased a nonqualifying vessel)[11/]. As discussed in detail above, provisional "A" endorsements require demonstration of intent to participate in the West Coast groundfish fishery. That demonstration is required to begin with the date of vessel purchase. Once intent is adequately demonstrated through actual fishing activity over a three year period an "A" endorsement would be issued.

11/ Provided the purchase takes place during the window period and the purchaser retains ownership.

Owners of Vessels Under Construction or Conversion

Owners of vessels under construction or conversion[12/] during the window period[13/] would qualify for provisional "A" endorsements (construction or conversion is essentially another type of groundfish vessel purchase). For these vessels, the upgrade period begins with the date the vessel is first operational, i.e. date of first landing of any species anywhere[14/]. The last date for completion of vessels whose owners intend to qualify under construction and conversion provisions was September 30, 1990, announced in the August 28, 1990 Federal Register.[15/] No provisions were made to cover individuals undertaking the purchase/construction/conversion of a vessel after the Council announcement of the qualifying window period because those individuals were considered to have adequate notice of their potential status for access to the fishery.

12/ The Council defined conversion with the intent that the conversion covered by the endorsement require substantial, irretrievable investment and modification of the vessel sufficient to identify the vessel owner's intent to alter the vessel's historic fishing practices. The investment should also be one that could not be recovered by simply selling the materials purchased, therefore a structural modification was required and the purchase of gear alone was not considered to be sufficient to establish conversion.

13/ A definition of the beginning of conversion was required to determine whether a conversion had begun during the window period. Conversion was defined to begin with the first structural modification to the vessel which is specific for use of the limited entry gear to which the conversion is being made. For many vessels, there was some question as to whether a structural change would be necessary to switch to the use of longline or pot gear. Therefore, for the purpose of the license limitation regulations, structural modification for longline and fishpot gear was defined to include the installation of a gear hauler.

14/ First landing or delivery of any species anywhere (after the beginning of conversion for vessels qualifying under the conversion criteria) is considered to demonstrate completion of construction or conversion (reference footnote 21 of the adopted license limitation program). The definition of completion is critical because it determines when the upgrade period for the provisional "A" endorsement begins. It was the Council's view that an individual constructing or converting a vessel for the purpose of participating in the groundfish fishery should enter and participate in the fishery at first opportunity. Diversion to another fishery for a period of more than a year was considered evidence that either the converted or constructed vessel was not primarily intended for participation in the groundfish fishery or that it was not very dependent on the fishery. Identifying vessels "under conversion" is very difficult. It is not clear whether some long term conversions underway will ever be finished unless a sudden advantage to participation arises, (such as the opportunity to acquire a valuable permit or a sudden increase in the relative profitability of the fishery). The Council therefore sought to limit those who would qualify to individuals who completed their conversion rapidly in order to begin to recoup their investment in the conversion. Those who could withstand making an investment without needing to begin immediately to reap proceeds from that investment and who could thus take longer at their conversion were not seen as being substantially vested in and dependent on the fishery for continuation of their activity in the fishing industry. These individuals may enter the fishery through the purchase of a permit.

15/ The LEC's original proposals specified that construction and conversion should be completed within two years of the end of the window period. This was considered sufficient time for completion by any individual with a serious interest and financial commitment to entering the fishery. A serious financial commitment is one that would cause a vessel owner financial distress if the owner were unable to recoup the investment through productive use of the invested asset. Because development of the limited entry amendment took longer than anticipated, it became necessary to publish a Federal Register notice to warn individuals that should a program be implemented, construction or conversion would be required to have been completed within two years of the end of the window period. September 30, 1990 was the earliest reasonable date that could be set and published in the Federal Register.

Under the adopted MLR, there is the potential that some individuals who actually owned a vessel, which used one of the limited entry gears during the window period, would not have the opportunity to be issued transferable access rights (via provisional "A" endorsements), while an individual who owns a vessel under construction or conversion which did not use the gear during the window would have an opportunity to acquire such rights through a provisional endorsement. In short, an individual without landings would be given more than an individual with landings. The argument favoring granting provisional "A" endorsements to individuals with newly constructed/converted/purchased vessels was presented as follows:

> The type of rights granted should be determined by the degree of investment and dependence on the fishery. Individuals who have made only a few landings during the window period, most likely, do not have a substantial investment specific to the groundfish fishery. On the other hand, individuals who have made many landings (meet the minimum landing requirements) or who have recently paid for the construction of a new groundfish vessel (or made substantial investment in conversion), or have purchased a vessel for use in the fishery during the window period have made sizable investments in the groundfish fishery. Owners of vessels under construction or conversion, where those investments are sizable, and those who purchased vessels part way through the qualifying window should therefore be given the opportunity to qualify for a "A" endorsement via a provisional "A" endorsement.

Opponents to granting provisional "A" endorsements to owners of vessels which may have no landings in the fishery countered that while vessels which landed less than the MLR during the window may not have been substantially dependent on the fishery in terms of amount of income, the groundfish fishery may be part of a strategy which combines a mix of fisheries. Without groundfish landings, these vessels may not be able to remain profitable. These vessel owners may have substantial investments in the combination strategy, similar to those of the owners of vessels newly constructed/converted/purchased for the groundfish fishery. The opponents argued, it would not be fair to exclude vessels which rely on a combination of fisheries, while including vessels which were constructed/converted/purchased during the window period. Additionally, they stated granting construction/conversion/purchase vessel owners provisional "A" endorsements would degrade the effectiveness of the program by admitting more capacity. The Council agreed with proponents that vessels not meeting the MLRs could not be extremely dependent on the fishery, while those not meeting the conversion/construction/purchase criteria might be very dependent and deserved the opportunity to extend their present participation by establishing a history in the fishery on which basis they may qualify for an "A" endorsement.

Small Fleets of Special Concern

Special provisions are made for small fleets which are operated under a local limited entry system that have special social, cultural and historical significance allowing these vessels to qualify for "A" endorsements. This is because the benefits from the fleet are important, the fishery impacts are minimal, and the capacity and power of the fleet is already controlled by local jurisdiction. In addition, the goals of the limited entry program and of the small fleet are best served by this provision (described in Section 14.3.1.4 of the plan). If the members of a small limited entry fleet are granted permits with regular "A" endorsements, these permits could be transferred to other vessels, beyond the control of the small fleet. The incorporation provision allows the pre-existing fleet to

continue to operate as it has, allowing it to go through normal changes, without increasing its impact on the resource. Permits may be granted based on the special circumstances of the fleet, but may not be transferred outside the fleet. The impetus for this provision is that in at least one instance it is known that such a fleet (the Newport Beach Dory Fleet) did not become integrated into the state's fish ticket reporting system until after the close of the window period. In this instance, the fleet was dependent on the groundfish resources, had been in existence for 100 years, and was recognized as a historical landmark and an important attraction which benefitted a large number of businesses in the local community. The fleet had always sold directly to consumers; not having delivered to processors it was not part of the normal flow of information about changing fishery regulations. The result of these circumstances was that the fleet had only recently been advised of the need to report their landings on state fish tickets. The Council determined it was in the community's and the nation's interest to see that such fleets were not disrupted, and provisions were drafted so that fleets such as this would be allowed to continue to operate, but would have their size controlled through the Federal limited entry program as well as through a local program. One of the keys for special treatment was that the members of the fleet were already under a local limited entry system so that fleet size had already been controlled and membership in the fleet is easily determined. However, the Council did not want effectiveness of the program to deteriorate through a proliferation of new "local limited entry fleets" applying for consideration under these provisions. Therefore, the permits issued under these special provisions would be valid only while the vessel operated as part of the local limited entry fleet, and only those fleets with limited entry programs in existence prior to July 11, 1991 (when this provision was first considered by the Council) will be considered under the program.

Prohibited Gear Provisions

Vessels may qualify for provisional "A" endorsements if they have historically relied on a gear that is subsequently banned by a state or the Federal government. The prohibited gear provision has been created to provide an opportunity for vessel owners to adjust if a state or Federal government prohibit use of an exempted gear. The situation motivating consideration of these provisions was the impending vote on a ban of gill net vessels under California Proposition 132.[16/] The extensiveness of the ban is important in determining whether prohibited gear provisions should be applied. A prohibition should be extensive enough to prevent vessels dependent on the prohibited gear from continuing to derive sufficient income from use of the gear. The adjustment opportunity will only be provided to those vessels active in the fishery during the original qualifying period. Owners of vessels entering the groundfish fishery after that date are considered on notice that should they need to switch from the gear they enter with, they may not be able to use one of the limited entry gears without first acquiring a permit. Owners of vessels already in the groundfish fishery, which switch to a gear after the cutoff date, would presumably have the opportunity to resume use of the former gear if the gear to which they switched is subsequently banned.

16/ Most provisions of this program are motivated by one or a number of example situations presented to the Council. After consideration of the examples and implications for program effectiveness, fairness, and equity, a decision was then made as to whether or not to include general provisions which would cover any similar situations.

4.4.4.2 Specific Issuance Criteria

Criteria for Issuance of "A" Endorsements

Vessels owners qualify for "A" endorsement by ownership of vessels which met the MLRs during the window period, which qualified for and upgraded a provisional "A" endorsement, or which are incorporated under small fleet provisions. The MLR options are specified in the discussion of the license limitation alternative in Chapter 2. Under MLR Option 1, any vessel which used one of the three limited entry gears during the window period would qualify for a "A" endorsement. Therefore, only the current vessel owners with an "interest" in the fishery who would not receive a permit would be those whose "interest" is the value they placed on the option to participate (including those who took part prior to 1984) and those who entered the fishery after announcement of the qualification window. Additionally, under MLR Option 1, there may have been many vessels which never participated in the fishery which could receive permits simply because of the high probability that during the window period they had at least one landing which was miscoded to indicate that one of the three limited entry gears was used. The group of all vessels with at least one groundfish landing coded for a limited entry gear during the four year window period has been termed "the window fleet".[17/]

Under the high MLR option and the adopted MLR (one half the high MLR plus the 500 pound screen), owners of many vessels in the window fleet would not receive permits. The following discussion focuses on the rationale used to develop the MLRs and some of the characteristics of those vessel's which would receive "A" endorsements (included vessels) as compared to the characteristics of those with some limited entry gear landings during the window which would not receive permits (excluded vessels). Table 4-1 may be referred to for the number of vessels expected to qualify under each option, the total number of vessels with one landing in the window period (the window fleet), and the number of vessels in the "active" 1987 fleet (to be defined below).

The high MLR option was developed with the intent of issuing a number of permits with "A" endorsements, which would be equivalent to the number of vessels on the grounds in recent years. (More than this number would qualify after window period purchase, construction and conversion and

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17/ Chapter 14 discusses the methods used to identify the window fleet for each gear group. The following is a general description of that method. Vessels using trawl gear at least once were identified through the PacFIN RDB. This list was then screened using lists of trawlers generated by the states. Longline vessels were identified through the longline coded landings in the RDB. However, inconsistent use of the longline codes on tickets from California made identification of longline vessels more complicated. A set of criteria was developed to be applied to the catch composition of individual landings which were coded as "pole" gear (the gear code often used in California instead of longline). Landings which met these criteria were identified as "criteria-line" trips; i.e., the landings had certain species in quantities at least equal to that in the landings of most known longline vessels. The criteria-line category affords a less precise estimate of the number of vessel owners who may come forward requesting a permit endorsed for longline gear. An all-line category includes all those with possible longline landings, including those who do not meet the line "criteria." The number of all-line vessels is considered an upper bound on the maximum number of longline vessels that might qualify. Fishpot vessels were identified as vessels with any landings coded as fishpot or any "other pot" landing with more than 50 percent groundfish. Inclusion of the latter was done in an attempt to anticipate how many vessels might be able to demonstrate that landings coded "other pot" were in fact "fish pot" landings.

after other special circumstance qualifiers are taken into account. Also there is the possibility that some unspecified gear landings may have been made with limited entry gear and so count toward the qualifying requirement). In developing the high MLR, the Council first looked at requirements which would effect equal reductions in the window fleet among all gears and across all size classes. There were two important results from the first analysis: (1) numbers of days of landings (as opposed to a poundage criteria) would most evenly affect all size classes of vessels and (2) in comparison to the fleet using a gear in one year, the window fleet[18/] of longline vessels was proportionally greater than the window fleet of trawl vessels. This latter result implied that a reduction from the window fleet equally proportioned across all gears, which would result in a trawl fleet similar to that of a recent year, would result in a longline fleet much larger than a recent year. The reason for this difference was apparently a greater degree of transience in the longline fleet during the four years of the window period. It was therefore decided that (1) the target numbers for setting the high MLR would be the number of vessels actively participating with the gear in a recent year, instead of an equally proportioned reduction among gears and vessel sizes; and (2) the landing requirement would primarily be based on a number of days criteria, but a poundage criteria would be added as an alternative to assure that vessels which took longer trips, making fewer but larger landings, were not disproportionately affected. The possibility of a poundage or number of landings criteria based on size of vessel was discussed, but rejected, because the size categories would be arbitrary. For example, if 40 feet marked the division between two categories, it would be arbitrary to subject a 39.5 foot vessel to one set of qualifying criteria and a 40 foot vessel to another. Additionally, it was decided that because Pacific whiting trawl landings were generally low value but high volume landings, they should be separated in the development of qualification criteria.

The target fleet configuration of vessel sizes and gears was identified by selecting all vessels "actively" using a gear in 1987, the last complete fishing year in the qualifying window. A level of use which would be deemed "active" was identified by examination of the cumulative frequency distribution by gear for numbers of vessels by numbers of days of landings (Figure 4–1). The percent of drop in numbers of vessels was examined as number of days of landings was increased. The days of landings requirement was increased one day at a time until the number of additional vessels dropping out of the "active" group with the next increase would have been less than 10 percent of the number with at least 1 landing in the year (Table 4–17). For the trawl gear days of landings of nonwhiting groundfish requirement, the percentage of drop was always less than 10 percent and relatively constant as the number of trips requirement was increased. This result was quite different compared to other gears and trawl landings which included whiting. Those landings coded as "pole" landings (other line), which did not meet the criteria for criteria–line (see footnote 17), were examined in addition to the longline and criteria–line landings. As reflected in Figure 4–1 and Table 4–17, the active fleet for all three of these line groups and the group of fish pot vessels was identified as those vessels with three or more trips using the gear. The robustness of this result across gear groups lends confidence to its use.

Once the target fleet was identified, the number of days requirements which would achieve the target for each gear were specified (these are the numbers currently incorporated into the high MLR). A similar robustness was found in selection of the days of landings criteria for the line and fishpot vessels as was found in identification of the active fleet. The approximate numbers of vessels in the

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18/ Fleet of all vessels with at least one groundfish landing in the window with a limited entry gear.

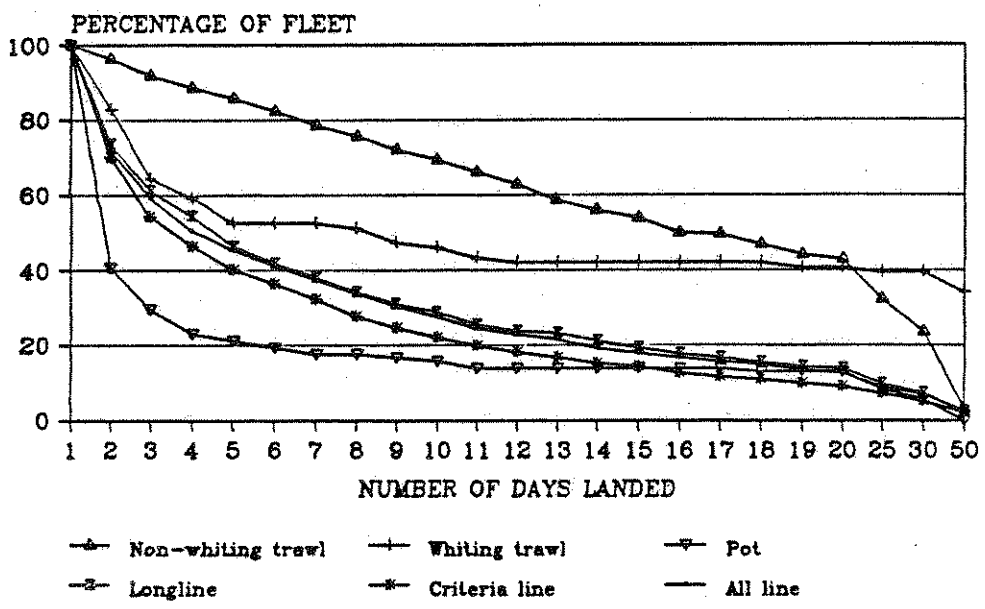

Figure 4-1. Percentage of vessels with one landing during 1987 remaining for each number of days landed during 1987, by gear.

Table 4–17. Numbers of vessels in each of six gear categories having at least the specified number of groundfish trips during **1987** with that gear (based on 1990 PacFIN RDB extraction).

	Number of Trips											
	1	2	3	4	5	6	7	8	9	10	11	12
					CUMULATIVE NUMBER OF BOATS							
Groundfish Trawl	**337**	325	310	299	289	278	265	255	243	234	223	212
Whiting Trawl	**76**	63	49	45	40	40	40	39	36	35	33	32
Pot	108	44	**32**	25	23	21	19	19	18	17	15	15
Longline[a]	353	260	**216**	192	164	148	135	121	110	102	90	84
Criteria–line[b]	905	634	491	420	365	330	292	252	223	200	180	165
All Line[c]	1,27	915	753	645	577	525	477	431	390	350	311	291
					PERCENTAGE OF 1987 FLEET REMAINING							
Groundfish Trawl		96.4	92.0	88.7	85.8	82.5	78.6	75.7	72.1	69.4	66.2	62.9
Whiting Trawl		82.9	64.5	59.2	52.6	52.6	52.6	51.3	47.4	46.1	43.4	42.1
Pot		40.7	29.6	23.1	21.3	19.4	17.6	17.6	16.7	15.7	13.9	13.9
Longline[a]		73.7	61.2	54.4	46.5	41.9	38.2	34.3	31.2	28.9	25.5	23.8
Criteria–line[b]		70.1	54.3	46.4	40.3	36.5	32.3	27.8	24.6	22.1	19.9	18.2
All Line[c]		72.0	59.2	50.7	45.4	41.3	37.5	33.9	30.7	27.5	24.5	22.9

	Number of Trips										
	13	14	15	16	17	18	19	20	25	30	50
					CUMULATIVE NUMBER OF BOATS						
Groundfish	198	189	182	169	167	158	149	145	109	80	11
Whiting Trawl	32	32	32	32	32	32	31	31	30	30	26
Pot	15	15	15	15	15	14	14	14	9	6	0
Longline[a]	82	75	68	63	59	55	51	49	35	26	9
Criteria–line[b]	152	138	129	115	105	99	90	82	65	47	18
All Line[c]	274	244	228	214	199	189	172	160	113	89	30
					PERCENTAGE OF 1987 FLEET REMAINING						
Groundfish	58.8	56.1	54.0	50.1	49.6	46.9	44.2	43.0	32.3	23.7	3.3
Whiting Trawl	42.1	42.1	42.1	42.1	42.1	42.1	40.8	40.8	39.5	39.5	34.2
Pot	13.9	13.9	13.9	13.9	13.9	13.0	13.0	13.0	8.3	5.6	0.0
Longline[a]	23.2	21.2	19.3	17.8	16.7	15.6	14.4	13.9	9.9	7.4	2.5
Criteria–line[b]	16.8	15.2	14.3	12.7	11.6	10.9	9.9	9.1	7.2	5.2	2.0
All Line[c]	21.6	29.2	17.9	16.8	15.7	14.9	13.5	12.6	8.9	7.0	2.4

NOTES: **Bold** and Underlined values indicate the target fleet size employed. The rule of thumb used to define the active 1987 fleet for each gear was to increase the level of participation (trips) required until the marginal number of boats removed from the list fell below 10 percent of the total. All vessels fishing for whiting were included because the fishery was not fully utilized by domestic harvesters during 1987.

[a] "Longline" includes all trips by those vessels having at least 1 ticket clearly coded as longline gear during the window.

[b] "Criteria–line" includes longline trips and other line trips in which more than 300 pounds of groundfish, or 225 pounds of sablefish or 100 pounds of rockfish were landed. These criteria were used only for the purposes of estimating the number of line vessels that would qualify and should not be interpreted as a standard to be used in issuing permits.

[c] "All Line" includes all trips coded with a commercial line gear during the window.

1987 active fleet was achieved for all 3 line groups at the 11 trip level and at the 10 trip level for pot vessels (Table 4–18). The stability of the results, both in identification of the active fleet and in selection of the days of landing criteria, indicates that while data problems may make it uncertain as to the actual number of longline vessels active in 1987 and in the window period, the selected criteria should result in the desired proportional reduction relative to the real number of vessels in the window fleet.

After the number of days of landings requirements was identified for each gear, the pounds of window period landings of vessels which would qualify under the days of landings requirements were compared to those which would not qualify (Table 4–19). For trawlers qualifying under the criteria for whiting landings, no excluded vessel landed more than the 29th percentile of the included vessels (none had more than 2,500 mt for the 4 year window period.) For trawlers qualifying under the criteria for non–whiting landings, one vessel which did not qualify under either the whiting or non–whiting criteria landed more than the 41st percentile of the included vessels (the 1 vessel landing in excess of 300 mt landed between 450 to 500 mt, equivalent to the 57th percentile of vessels qualifying under the non–whiting criteria). For pot vessels, 2 excluded vessels landed more than the 75th percentile of the included vessels, 300 to 350 mt. No other vessel had more than the 43rd percentile of the included vessels, 50 to 75 mt. Because of the clear break between the 43rd and 75th percentiles, 300 mt of landings was selected as the poundage alternative for the pot landing criteria, so the 2 high poundage performance vessels would be included. For longline vessels, 4 vessels landed more than the 79th percentile of all longline vessels. No nonqualifying vessels landed between 75 and 100 mt, which corresponded to the 75th to 78th percentile performance for qualifying vessels. Since there was a break at this point, and the poundage requirement for pot vessels had been set at the 75th percentile, the 75th percentile range was used to establish the poundage alternative for longline vessels (75 mt). To be consistent between gear groups, the 75th percentile was used for trawl vessels, resulting in a 900 mt poundage alternative for non–whiting landings and a 7,500 mt poundage alternative for whiting landings.

The adopted MLRs were derived reducing the high MLR by half and adding a 500 pound screen or screen requirement. Under this requirement, a vessel's groundfish landings for a day must be greater than 500 pounds in order for the day to count toward meeting the MLR. The 500 pound screen was linked to provisions allowing longline and fishpot gear to participate in the open access fisheries to accommodate vessels making small landings with longline and fishpot gear. The addition of a 500 pound screen allowed the Council to adopt a number of days and a poundage requirement which are half those of the high MLR but perform like the high MLR in terms of the numbers of endorsements issued for longline and fishpot vessels (Table 4–1). The number of endorsements issued for trawl vessels will be above the target achieved by the high MLR by 40 to 50 vessels, however, trawl vessels were not provided the same opportunity to fish in the open access fishery that was provided to longline and fishpot vessels. The number of permits issued would be fewer than the total number of endorsements indicated in Table 4–1 because about 20 to 30 permits are expected to be issued to vessels receiving more than one gear endorsement.

The 500 pound screen provides four advantages over the MLR which did not have such a condition. First, if trip limits in the open access fishery are maintained above the 500 pound level, the need for small vessels to acquire a permit would be significantly reduced, thus reducing regulatory burden for small businesses as is consistent with the Regulatory Flexibility Act. During the window period, 60 percent of the 3,500 vessels fishing groundfish averaged under 500 pounds per day of landings with

Table 4–18. Numbers of vessels in each of six gear categories having at least the specified number of groundfish trips during the window period with that gear, and also if trips with unspecified gear are included (based on 1990 PacFIN RDB extraction).

	Number of Trips											
	1	2	3	4	5	6	7	8	9	10	11	12
	CUMULATIVE NUMBER OF BOATS											
Groundfish Trawl	469	440	426	420	416	405	395	391	383	376	372	369
W/ Unspecified Trips	469	448	439	431	425	415	410	401	394	387	383	380
Whiting Trawl	158	119	107	98	90	88	85	83	80	79	<76>	74
W/ Unspecified Trips	158	137	129	123	113	109	106	100	96	93	88	86
Pot	293	<127>	84	65	51	44	39	38	36	**33**	31	31
W/ Unspecified Trips	293	232	202	182	168	153	136	128	120	114	108	102
Longline[a]	686	506	431	384	<340>	304	283	264	247	234	**218**	207
W/ Unspecified Trips	686	514	441	394	354	315	294	273	253	241	225	214
Criteria–line[b]	1,876	1,315	1,041	908	799	706	644	592	542	503	**471**	439
W/ Unspecified Trips	1,876	1,466	1,245	1,098	999	888	810	749	707	665	621	579
All Line[c]	2,557	1,872	1,557	1,367	1,188	1,070	966	895	839	786	**735**	681
W/ Unspecified Trips	2,557	2,046	1,773	1,609	1,441	1,318	1,219	1,119	1,044	984	921	872

	Number of Trips										
	13	14	15	16	17	18	19	20	25	30	50
	CUMULATIVE NUMBER OF BOATS										
Groundfish Trawl	363	356	349	342	340	<337>	334	334	306	290	228
W/ Unspecified Trips	374	368	363	357	354	353	350	347	323	307	246
Whiting Trawl	74	73	72	67	66	65	63	61	55	50	40
W/ Unspecified Trips	86	86	84	79	79	77	75	74	68	62	44
Pot	28	28	27	26	25	24	24	24	22	19	14
W/ Unspecified Trips	93	90	87	84	81	76	74	70	58	52	28
Longline[a]	200	193	177	170	160	150	143	138	114	92	53
W/ Unspecified Trips	205	198	188	182	174	166	159	152	127	106	62
Criteria–line[b]	414	392	357	337	318	297	282	269	221	175	90
W/ Unspecified Trips	543	515	484	462	434	409	390	373	301	247	121
All Line[c]	657	622	580	547	523	495	468	444	358	286	149
W/ Unspecified Trips	831	789	746	716	683	651	621	591	476	390	195

NOTES: <Bracketed> values indicate the size of the 1987 fleet having at least 1 trip with that gear. **Bold** and Underlined values indicate the target fleet size employed. For both trawl groups, the 1987 fleet with 1 trip was used. For pot and longline, the number of boats making at least 3 landings during 1987 was used.

[a] "Longline" includes all trips by those vessels having at least 1 ticket clearly coded as longline gear during the window.

[b] "Criteria–line" includes longline trips and other line trips in which more than 300 pounds of groundfish, or 225 pounds of sablefish or 100 pounds of rockfish were landed. These criteria were used only for the purposes of estimating the number of line vessels that would qualify and should not be interpreted as a standard to be used in issuing permits.

[c] "All Line" includes all trips coded with a commercial line gear during the window.

Table 4–19. Cumulative percentages of vessels for given levels of landings by gear and groups that did or did not meet the qualifying standards (based on 1990 PacFIN RDB extraction). (Page 1 of 2)

	Whiting Trawl				Non–Whiting Trawl				Pot				Longline			
	Qualified		Not Qualified		Qualified		Not Qualified		Qualified		Not Qualified		Qualified		Not Qualified	
Mt Interval	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %
0–0.25	0	0.0	4	17.4	0	0.0	10	8.0	2	6.1	181	69.6	1	0.5	165	35.3
0.25–0.5	0	0.0	0	17.4	0	0.0	4	11.2	1	9.1	19	76.9	4	2.3	47	45.3
0.5–1	0	0.0	0	17.4	0	0.0	3	13.6	0	9.1	14	82.3	11	7.3	54	56.8
1–2	0	0.0	1	21.7	0	0.0	11	22.4	1	12.1	9	85.8	11	12.4	60	69.7
2–3	0	0.0	0	21.7	0	0.0	8	28.8	0	12.1	4	87.3	7	15.6	39	78.0
3–4	0	0.0	0	21.7	0	0.0	3	31.2	1	15.2	4	88.8	7	18.8	20	82.3
4–5	0	0.0	0	21.7	1	0.3	4	34.4	0	15.2	1	89.2	6	21.6	14	85.3
5–7.5	0	0.0	1	26.1	0	0.3	7	40.0	1	18.2	6	91.5	12	27.1	17	88.9
7.5–10	1	2.0	0	26.1	3	1.2	6	44.8	0	18.2	4	93.1	18	35.3	15	92.1
10–15	0	2.0	0	26.1	3	2.1	12	54.4	1	21.2	3	94.2	19	44.0	9	94.0
15–20	0	2.0	0	26.1	7	4.2	7	60.0	3	30.3	3	95.4	9	48.2	4	94.9
20–30	1	4.1	0	26.1	8	6.5	10	68.0	1	33.3	6	97.7	17	56.0	6	96.2
30–40	0	4.1	2	34.8	11	9.8	8	74.4	1	36.4	1	98.1	13	61.9	6	97.4
40–50	0	4.1	0	34.8	5	11.3	4	77.6	0	36.4	2	98.8	10	66.5	4	98.3
50–75	0	4.1	1	39.1	20	17.2	2	79.2	2	42.4	1	99.2	17	74.3	4	99.1
75–100	0	4.1	0	39.1	17	22.3	7	84.8	0	42.4	0	99.2	12	79.8	0	99.1
100–150	0	4.1	3	52.2	25	29.7	11	93.6	0	42.4	0	99.2	17	87.6	3	99.8
150–200	0	4.1	1	56.5	19	35.3	2	95.2	3	51.5	0	99.2	14	94.0	1	100.0
200–250	0	4.1	0	56.5	8	37.7	3	97.6	0	51.5	0	99.2	6	96.8	–	–
250–300	0	4.1	2	65.2	11	40.9	2	99.2	5	66.7	0	99.2	2	97.7	–	–
300–350	0	4.1	0	65.2	8	43.3	0	99.2	3	75.8	2	100.0	0	97.7	–	–
350–400	0	4.1	1	69.6	20	49.3	0	99.2	2	81.8	–	–	2	98.6	–	–
400–450	0	4.1	1	73.9	14	53.4	0	99.2	0	81.8	–	–	2	99.5	–	–
450–500	0	4.1	0	73.9	12	57.0	1	100.0	1	84.8	–	–	0	99.5	–	–
500–600	1	6.1	0	73.9	19	62.6	–	–	0	84.8	–	–	0	99.5	–	–

Table 4–19. Cumulative percentages of vessels for given levels of landings by gear and groups that did or did not meet the qualifying standards (based on 1990 PacFIN RDB extraction.)

	Whiting Trawl				Non–Whiting Trawl				Pot				Longline			
	Qualified		Not Qualified		Qualified		Not Qualified		Qualified		Not Qualified		Qualified		Not Qualified	
Mt Interval	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %	No.	Cum. %
600–700	0	6.1	1	78.3	12	66.2	–	–	1	87.9	–	–	1	100.0	–	–
700–800	0	6.1	1	82.6	14	70.3	–	–	2	93.9	–	–	–	–	–	–
800–900	0	6.1	0	82.6	9	73.0	–	–	1	97.0	–	–	–	–	–	–
900–1,000	1	8.2	0	82.6	12	76.6	–	–	1	100.0	–	–	–	–	–	–
1,000–1,250	1	10.2	0	82.6	21	82.8	–	–	–	–	–	–	–	–	–	–
1,250–1,500	0	10.2	0	82.6	18	88.1	–	–	–	–	–	–	–	–	–	–
1,500–1,750	4	18.4	1	87.0	20	94.1	–	–	–	–	–	–	–	–	–	–
1,750–2,000	2	22.4	1	91.3	8	96.4	–	–	–	–	–	–	–	–	–	–
2,000–2,500	3	28.6	2	100.0	8	98.8	–	–	–	–	–	–	–	–	–	–
2,500–5,000	16	61.2	–	–	4	100.0	–	–	–	–	–	–	–	–	–	–
5,000–7,500	4	69.4	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7,500–10,000	4	77.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
10,000+	11	100.0	–	–	–	0.0	–	–	–	–	–	–	–	–	–	–
Total Vessels	49		23		337		125	–	33	–	260	–	218	–	468	–

groundfish trawl, longline (fish tickets coded for longline or with codes which may have been used for longline gears) or fishpot gear. Of these vessels, 94 percent did not have more than three landings greater than 500 pounds. Second, a 500 pound screen condition prevents the creation of a large number of permits for relatively inactive vessels. Permits issued to marginally active vessels might be transferred to more active vessels expanding effort within the license limitation system. Third, almost 80 percent of the 2,000 vessels fishing line gear in California averaged under 500 pounds per day of landing (including unspecified gear landings). For most of these vessels the need to determine whether a trip was made with longline gear or other kinds of line gear would be eliminated. This could significantly reduce the administrative burden and burden on small vessel owners to provide the necessary evidence of their longlining activity. Finally, by adding a 500 pound screen the Council was able to adopt an MLR which allows more vessels to qualify which might be combination vessels or vessels which may have an important but intermittent reliance on the fishery to qualify, while at the same time meeting its targets for numbers of longline and fishpot endorsements issued.

Vessels not qualifying for a permit because of the 500 pound condition will be adversely affected relative to their window period landings only to the extent that their landings are constrained by regulations in the open access fishery. The harvest rates under the open access allocation will likely be controlled with trip limits. Using a minimum poundage makes it certain and known to the public the minimum trip limit which could be imposed in the open access fishery without significantly impacting those who were disqualified from receiving a permit because of a poundage screen placed on the MLR. As an example, under the preferred option, any longline vessel prevented from receiving a permit because of the poundage per day screen would at most have five days during the four year window period in which landings with the gear were at or above 500 pounds (the MLR for longline vessels would be six days of landings). Such a vessel would not be considered to have significant dependence on making large landings in the groundfish fishery. Compared to their window period activity, as long as future trip limits are above 500 pounds, the poundage per day screen would at most deprive vessels excluded by the screen from having five similar days over a similar period in the future. One disadvantage of a poundage screen is that it may be viewed as locking the Council into a minimum trip limit for the open access fisheries, however this is not the case. The poundage cutoff is not intended to be a definite minimum for trip limits.

Vessel information related to present and historical involvement, as well as dependence, is shown by gear in Tables 4–20 through 4–23. This discussion focuses on the impacts of the adopted MLR. The results for the adopted and high MLR are similar, with the primary difference being a slightly greater number of trawlers qualifying under the adopted MLR. Approximately 26 percent of the trawl vessels, 46 percent of the longline vessels and 86 percent of the fishpot vessels[19/] with one landing in 1989, are not expected to receive "A" endorsements under the adopted MLR. Some portion of these excluded vessels may eventually receive "A" endorsements via the provisional "A" endorsement. The proportions of qualifying vessels for 1989 are similar to the proportion of qualifying vessels which made a landing in 1987 (a year within the window period), except for trawl gear. For trawl gear a larger portion of the vessels with one landing in 1987 will qualify than will qualify out of the 1989 fleet. For every gear the number of qualifying vessels which participated in 1989 is lower than

19/ The number of fishpot vessels receiving endorsements will be similar to the number of vessels in the active fleet (vessels with three landings) in 1987. Many of the vessels shown as being excluded are vessels with small landings which may continue to participate in the open access fishery, or vessels which had "other pot" gear code with more than 50 percent of the landing groundfish.

Table 4-20. Number of vessels and trips and landing amounts (mt) of whiting and non-whiting groundfish by groups of vessels that did or did not qualify under **either** the whiting or non-whiting standard during the window period.

	Number of Vessels Participating In			Groundfish Landings				Number of Trips	
				Non-whiting Trawl		Whiting Trawl		Non-whiting Trawl	Whiting Trawl
	1989[a]	1987	Window	Sum	Mean	Sum	Mean	Mean	Mean
WINDOW FLEET									
Total	326 (389)[b]	348	490	219,283	448	296,395	605	59	17
VESSELS WHICH HAVE AT LEAST 11 WHITING OR 18 NON-WHITING GROUNDFISH TRAWL LANDING DAYS DURING THE WINDOW PERIOD									
<40 Ft	8	10	13	668	51	19	1	45	2
40-59 Ft	141	160	201	82,019	408	22,770	113	77	6
60-79 Ft	128	134	156	131,082	840	229,073	1,468	77	40
>79 Ft	11	9	16	3,915	245	32,952	2,059	17	44
TOTAL	289	314	388	217,832	561	294,531	759	73	22
TRAWL VESSELS NOT MEETING EITHER THE WHITING OR NON-WHITING STANDARDS FOR TRAWL LANDINGS DURING THE WINDOW PERIOD									
<40 Ft	4	7	18	45	3	0	0	6	0
40-59 Ft	20	17	48	537	11	734	15	5	1
60-79 Ft	12	10	31	815	26	248	8	3	1
>79 Ft	1	-	5	54	11	883	177	1	3
TOTAL	37	34	102	1,452	14	1,864	18	4	1

[a] Includes only vessels which had at least 1 landing in 1989 and during the window period. Apparently, 53 vessels participated in 1989 but had no landings during the window period.

[b] Total vessels participating in 1989, including those with no landings in the window.

Table 4-21. Number of vessels and trips and landing amounts (mt) of groundfish landed with pot gear during the window period.

	Number of Vessels			Groundfish Landings			Number of Trips	
				Pot Gear		All Gears/ Species	Pot Gear	All Gears/ Species
	1989	1987	Window	Sum	Mean	Sum	Mean	Mean
WINDOW FLEET								
Total	49 (134)[a/]	98	295	10,590	36	60,809	10	182
VESSELS HAVING AT LEAST 10 DAYS ON WHICH GROUNDFISH WAS LANDED WITH POT GEAR OR HAVING MORE THAN 300 MT POT LANDINGS DURING THE WINDOW PERIOD								
<40 Ft	4	7	12	1,160	97	2,025	60	220
40-59 Ft	10	12	19	4,405	232	10,138	68	186
60-79 Ft	1	1	4	1,944	486	2,580	70	98
>79 Ft	4	3	7	2,612	373	2,983	13	15
TOTAL	19	23	42	10,122	241	17,727	57	159
VESSELS WITH BETWEEN 1 AND 9 DAYS ON WHICH GROUNDFISH WAS LANDED WITH POT GEAR AND WITH LESS THAN 300 MT OF POT LANDINGS DURING THE WINDOW PERIOD								
<40 Ft	23	51	176	102	1	6,319	2	198
40-59 Ft	6	17	60	165	3	18,825	2	176
60-79 Ft	–	5	12	76	6	17,219	1	129
>79 Ft	1	2	5	125	25	718	3	6
TOTAL	30	75	253	468	2	43,082	2	185

a/ Total vessels participating in 1989, including those with no landings in the window.

Table 4–22. Number of vessels and trips and landing amounts (mt) of groundfish landed with longline gear during the window period.

	Number of Vessels			Groundfish Landings			Number of Trips	
				Longline Gear[a/]		All Gears/ Species	Longline Gear	All Gears/ Species
	1989	1987	Window	Sum	Mean	Sum	Mean	Mean
WINDOW FLEET								
Total	222 (222)[b/]	355	706	16,713	24	58,211	16	72
VESSELS HAVING AT LEAST 10 DAYS ON WHICH GROUNDFISH WAS LANDED WITH POT GEAR OR HAVING MORE THAN 300 MT POT LANDINGS DURING THE WINDOW PERIOD								
<40 Ft	63	93	131	4,919	38	8,759	43	112
40–59 Ft	46	68	82	9,053	110	16,625	33	76
60–79 Ft	10	10	15	1,587	106	3,511	19	26
>79 Ft	–	–	1	–	–	–	–	–
TOTAL	119	171	229	15,668	68	29,007	38	93
VESSELS WITH BETWEEN 1 AND 9 DAYS ON WHICH GROUNDFISH WAS LANDED WITH POT GEAR AND WITH LESS THAN 300 MT OF POT LANDINGS DURING THE WINDOW PERIOD								
<40 Ft	50	128	323	304	1	5,355	7	74
40–59 Ft	37	40	115	352	3	9,629	3	41
60–79 Ft	16	14	30	301	10	14,124	3	39
>79 Ft	–	2	9	88	10	96	2	2
TOTAL	103	184	477	1,045	2	29,204	6	62

a/ All line landings by vessels with at least one landing coded as longline.
b/ Total vessels participating in 1989, including those with no landings in the window.

Table 4-23. Number of vessels and trips and landing amounts (mt) of groundfish landed with all-line gear during the window period.

	Number of Vessels			Groundfish Landings			Number of Trips	
				All-line Gear[a/]		All Gears/ Species	All-line Gear	All Gears/ Species
	1989	1987	Window	Sum	Mean	Sum	Mean	Mean
				WINDOW FLEET				
Total	923 1604[b/]	1,382	2,735	21,775	8	164,247	13	77
	VESSELS HAVING AT LEAST 10 DAYS ON WHICH GROUNDFISH WAS LANDED WITH POT GEAR OR HAVING MORE THAN 300 MT POT LANDINGS DURING THE WINDOW PERIOD							
<40 Ft	150	205	266	7,640	29	14,797	47	119
40-59 Ft	63	96	119	9,729	82	23,852	29	82
60-79 Ft	14	17	23	1,854	81	5,203	19	34
>79 Ft	–	–	2	–	57	121	6	7
TOTAL	227	318	410	19,339	47	43,974	40	103
	VESSELS WITH BETWEEN 1 AND 9 DAYS ON WHICH GROUNDFISH WAS LANDED WITH POT GEAR AND WITH LESS THAN 300 MT OF POT LANDINGS DURING THE WINDOW PERIOD							
<40 Ft	544	876	1830	1,287	1	31,960	10	74
40-59 Ft	121	154	406	691	2	46,896	4	74
60-79 Ft	28	28	66	362	5	40,798	3	61
>79 Ft	3	5	21	96	5	619	3	9
TOTAL	696	1,064	2,325	2,436	1	120,273	9	73

a/ All line landings by vessels with at least one landing coded as longline.
b/ Total vessels participating in 1989, including those with no landings in the window.

the total number of vessels qualifying for "A" endorsements (26 percent lower for trawl and about 50 percent for other gears). The number of vessels with one landing in 1989 is approximately equal to or greater than the number of permits to be issued for vessels meeting the high MLR. If the level of participation remains constant when "B" endorsements expire, either those receiving permits will be able to increase their landings, or, more likely, permits will be transferred to more recent entrants and rents extracted from the fishery through the sale or lease of permits. Some number of provisional "A" endorsements will be issued, and any growth in the number of vessels greater than the number of provisional "A" upgrades will be thwarted by the permit system. The landings by excluded and included vessels for the total window fleet show that vessels not qualifying for a permit generally had very small landings during the window period (less than one half percent of the total for trawl, four percent of the total for fishpot, and six percent of the total for longline). Examination of the number of qualifying vessels by size class reveals a somewhat greater proportion of vessels under 40 feet in length are affected compared to other size classes.[20/]

Tables 4-24a and b through 4-27a and b, show vessels which would be included and excluded from the limited entry fleet by the average amount of income they earned from the limited entry gear during six month periods of the window period, and the percentage of their total six month income which was derived from groundfish landings. The "a" tables in this series provide information on the high MLR and the "b" tables the adopted MLR. Vessel information for the low MLR (one pound) can be derived by summing the information provided for included and excluded vessels under the high MLR (the "a" tables). This discussion focuses on the impacts of the adopted MLR. In general, the more income earned from groundfish, the greater the relative number of vessels which would be included under the adopted MLR. For example, of vessels earning less than $5,000 per six month period from their groundfish trawl activities, 61 of 85 would not receive "A" endorsements. For trawl vessels earning more than $100,000 per six month period from groundfish trawl landings, 96 of 102 vessels would receive "A" endorsements. The six vessels averaging more than $100,000 per period but not receiving "A" endorsements earned an average of 87 percent of their total fishing income from groundfish. For vessels earning less than $5,000 from their groundfish trawl landings, most of those not qualifying, either earned less than 10 percent or more than 90 percent of their income from groundfish. Those nonqualifying vessels earning less than 10 percent are not very dependent on the fishery and have substantial involvement in other fisheries where they may attempt to make up part of their earnings loss. Those earning more than 90 percent of their income from groundfish are either recent entrants, vessels which participated in the fishery for only a short period or at the start of the window period, or vessels owned by individuals with other income sources.[21/] Tables 4-28 through 4-31 show the number of vessels in the fishery by first period of activity and number of periods of activity. The bottom half of the table shows activity for the nonqualifiers. In general, more than 85 percent of the nonqualifiers were active in only two periods (75 percent for the all line group).[22/] If the nonqualifying vessels are recent entrants and were purchased, constructed or converted during the window period, then their owners would have an opportunity to qualify for a provisional "A"

20/ Table 7-24 shows that a greater proportionate reduction in the under 40 feet size class was required than for the 40 to 80 foot size classes in order to approach the target 1987 fleet level.

21/ The excluded vessels earning less than $5,000 from groundfish trawl and the 6 excluded vessels earning more than $100,000 from groundfish participated in an average of only 2 of the 8 six-month intervals in the window period as compared to qualifying vessels in the same earning categories, which participated an average of 5.6 and 7.1 periods, respectively.

22/ Similar tables in Chapter 7 show the first and last periods of activity (Tables 7-1 through 7-5).

Table 4–24a. Income level and gear dependence information for all trawl vessels (including vessels landing only whiting) included and excluded under the high MLR.

Average Groundfish Income Per Period From Trawl–Gear Landings	Number of Vessels	Percentage of Total Fishing Revenue From Trawl–Caught Groundfish	Mean Number of Six Month Periods Fished With Trawl Gear	Number of Vessels, by Percentage of Total Fishing Income Earned From Trawl Groundfish					
				0–10 Percent	10–30 Percent	30–50 Percent	50–70 Percent	70–90 Percent	90–100 Percent
$0 to 5,000									
Excluded	66	13.8	2.0	51	8	0	1	0	6
Included	24	20.6	5.6	10	10	0	3	0	1
$5,001 to 15,000									
Excluded	37	26.8	2.0	21	7	0	2	2	5
Included	59	41.4	6.1	10	18	11	8	7	5
$15,000 to 25,000									
Excluded	9	36.0	1.8	5	1	0	0	0	3
Included	33	48.9	5.7	3	11	5	3	5	6
$25,001 to 50,000									
Excluded	12	46.2	2.3	3	2	3	0	0	4
Included	60	63.0	6.5	0	9	14	8	14	15
$50,001 to 100,000									
Excluded	11	49.3	1.4	0	4	2	2	1	2
Included	77	73.1	6.3	0	6	10	14	20	27
$100,001 to 250,000									
Excluded	6	81.7	2.0	0	1	0	0	2	3
Included	82	80.8	7.1	0	3	5	14	25	35
$250,001 +									
Excluded	–	–	–	0	0	0	0	0	0
Included	14	86.8	5.9	0	0	0	0	10	4

Table 4–24b. Groundfish trawl gear income dependence (included and excluded vessels under the high MLR).

Average Groundfish Income Per Period From Trawl–Gear Landings	Number of Vessels	Percentage of Total Fishing Revenue From Trawl–Caught Groundfish	Mean Number of Six Month Periods Fished With Trawl Gear	Number of Vessels, by Percentage of Total Fishing Income Earned From Trawl Groundfish					
				0–10 Percent	10–30 Percent	30–50 Percent	50–70 Percent	70–90 Percent	90–100 Percent
$0 to 5,000									
Excluded	61	11.2	1.9	50	6	0	1	0	4
Included	29	24.9	5.2	11	12	0	3	0	3
$5,001 to 15,000									
Excluded	26	29.6	1.7	14	5	0	1	2	4
Included	70	38.1	5.6	17	20	11	9	7	6
$15,000 to 25,000									
Excluded	7	30.4	1.4	5	0	0	0	0	2
Included	35	49.2	5.5	3	12	5	3	5	7
$25,001 to 50,000									
Excluded	3	77.5	1.7	0	0	1	0	0	2
Included	69	59.5	6.0	3	11	16	8	14	17
$50,001 to 100,000									
Excluded	5	40.7	1.0	0	3	1	0	0	1
Included	83	71.9	6.0	0	7	11	16	21	28
$100,001 to 250,000									
Excluded	–	–	–	–	–	–	–	–	–
Included	88	80.8	6.8	0	4	5	14	27	38
$250,001 +									
Excluded	–	–	–	–	–	–	–	–	–
Included	14	86.8	5.9	0	0	0	0	10	4

Table 4–25a. Income level and gear dependence information for all fishpot vessels included and excluded under the high MLR.

Average Groundfish Income Per Period From Fishpot Landings	Number of Vessels	Percentage of Total Fishing Revenue From Fishpot–Caught Groundfish	Mean Number of Six Months Periods Fished With Fishpot Gear	Number of Vessels, by Percentage of Total Fishing Income Earned From Fishpot Groundfish					
				0–10 Percent	10–30 Percent	30–50 Percent	50–70 Percent	70–90 Percent	90–100 Percent
$0 to 5,000									
Excluded	230	7.1	1.2	209	7	1	0	1	12
Included	4	35.5	3.8	2	0	1	0	0	1
$5,001 to 15,000									
Excluded	15	14.8	1.3	13	0	0	0	1	1
Included	8	17.6	2.5	2	5	1	0	0	0
$15,000 to 25,000									
Excluded	1	6.7	2.0	1	0	0	0	0	0
Included	6	29.7	3.3	2	2	0	2	0	0
$25,001 to 50,000									
Excluded	4	2.3	1.0	4	0	0	0	0	0
Included	6	51.8	6.2	0	2	0	3	1	0
$50,001 to 100,000									
Excluded	3	56.3	1.3	0	1	0	1	1	0
Included	11	66.2	5.3	0	1	2	3	3	2
$100,001 to 250,000									
Excluded	1	11.2	1.0	0	1	0	0	0	0
Included	5	87.2	4.6	0	0	1	0	0	4
$250,001 +									
Included	1	34.5	2.0	0	0	1	0	0	0

Table 4–25b. Groundfish fishpot gear income dependence (included and excluded vessels under the high MLR).

Average Groundfish Income Per Period From Fishpot Landings	Number of Vessels	Percentage of Total Fishing Revenue From Fishpot–Caught Groundfish	Mean Number of Six Month Periods Fished With Fishpot Gear	Number of Vessels, by Percentage of Total Fishing Income Earned From Fishpot Groundfish					
				0–10 Percent	10–30 Percent	30–50 Percent	50–70 Percent	70–90 Percent	90–100 Percent
$0 to 5,000									
Excluded	233	7.6	1.3	210	7	2	0	1	13
Included	1	1.3	1.0	1	0	0	0	0	0
$5,001 to 15,000									
Excluded	12	10.5	1.3	11	0	0	0	0	1
Included	11	21.6	2.2	4	5	1	0	1	0
$15,000 to 25,000									
Excluded	1	6.7	2.0	1	0	0	0	0	0
Included	6	29.7	3.3	2	2	0	2	0	0
$25,001 to 50,000									
Excluded	4	2.3	1.0	4	0	0	0	0	0
Included	6	51.8	6.2	0	2	0	3	1	0
$50,001 to 100,000									
Excluded	2	57.2	1.0	0	1	0	0	1	0
Included	12	65.2	5.0	0	1	2	4	3	2
$100,001 to 250,000									
Excluded	1	11.2	1.0	0	1	0	0	0	0
Included	5	87.2	4.6	0	0	1	0	0	4
$250,001 +									
Excluded	–	–	–	–	–	–	–	–	–
Included	1	34.5	2.0	0	0	1	0	0	0

Table 4–26a. Income level and gear dependence information for all longline vessels included and excluded under the high MLR.

Average Groundfish Income Per Period From Longline Landings	Number of Vessels	Percentage of Total Fishing Revenue From Longline–Caught Groundfish	Mean Number of Six Month Periods Fished With Longline Gear	Number of Vessels, by Percentage of Total Fishing Income Earned From Longline Groundfish					
				0–10 Percent	10–30 Percent	30–50 Percent	50–70 Percent	70–90 Percent	90–100 Percent
$0 to 5,000									
Excluded	408	19.0	1.4	296	29	20	9	5	49
Included	115	39.8	4.2	42	27	15	6	8	17
$5,001 to 15,000									
Excluded	37	18.0	1.9	26	5	0	1	1	4
Included	52	67.8	4.7	7	9	8	4	6	18
$15,000 to 25,000									
Excluded	11	18.1	2.6	8	1	1	0	0	1
Included	21	48.2	5.0	4	3	5	4	2	3
$25,001 to 50,000									
Excluded	10	23.8	2.1	7	1	0	0	0	2
Included	24	59.7	5.1	1	6	4	4	4	5
$50,001 to 100,000									
Excluded	3	7.3	1.7	2	1	0	0	0	0
Included	16	47.3	5.3	2	5	3	4	0	2
$100,001 to 250,000									
Excluded	1	27.9	1.0	0	1	0	0	0	0
Included	8	47.4	5.4	1	3	2	0	0	2

Table 4-26b. Groundfish longline gear income dependence (included and excluded vessels under the high MLR).

Average Groundfish Income Per Period From Longline-Gear Landings	Number of Vessels	Percentage of Total Fishing Revenue From Longline-Caught Groundfish	Mean Number of Six Month Periods Fished With Longline Gear	Number of Vessels, by Percentage of Total Fishing Income Earned From Longline Groundfish					
				0-10 Percent	10-30 Percent	30-50 Percent	50-70 Percent	70-90 Percent	90-100 Percent
$0 to 5,000									
Excluded	430	20.2	1.7	302	36	21	11	10	50
Included	93	39.1	3.7	36	20	14	4	3	16
$5,001 to 15,000									
Excluded	31	15.4	1.8	23	4	0	0	1	3
Included	58	64.1	4.4	10	10	8	5	6	19
$15,000 to 25,000									
Excluded	6	19.2	2.3	5	0	0	0	0	1
Included	26	42.2	4.6	7	4	6	4	2	3
$25,001 to 50,000									
Excluded	6	19.3	1.7	5	0	0	0	0	1
Included	28	55.5	4.8	3	7	4	4	4	6
$50,001 to 100,000									
Excluded	3	7.3	1.7	2	1	0	0	0	0
Included	16	47.3	5.3	2	5	3	4	0	2
$100,001 to 250,000									0
Excluded	1	27.9	1.0	0	1	0	0	0	2
Included	8	47.4	5.4	1	3	2	0	0	

Table 4–27a. Income level and gear dependence information for line vessels included and excluded under the high MLR.

Average Groundfish Income Per Period From Line Landings	Number of Vessels	Percentage of Total Fishing Revenue From Line–Caught Groundfish	Mean Number of Six Month Periods Fished With Line Gear	Number of Vessels, by Percentage of Total Fishing Income Earned From Line Groundfish					
				0–10 Percent	10–30 Percent	30–50 Percent	50–70 Percent	70–90 Percent	90–100 Percent
$0 to 5,000									
Excluded	1,854	30.9	1.5	1,328	89	63	39	36	299
Included	600	53.3	4.0	209	100	60	40	33	158
$5,001 to 15,000									
Excluded	62	32.8	1.7	34	13	1	1	2	11
Included	110	107.1	4.4	7	12	10	8	7	66
$15,000 to 25,000									
Excluded	13	15.9	2.5	10	1	1	0	0	1
Included	30	77.1	5.3	4	3	6	4	2	11
$25,001 to 50,000									
Excluded	11	23.3	2.0	7	2	0	0	0	2
Included	26	62.9	5.2	1	7	4	4	4	6
$50,001 to 100,000									
Excluded	3	7.3	1.7	2	1	0	0	0	0
Included	17	55.2	5.2	2	5	3	4	0	3
$100,001 to 250,000									
Excluded	1	27.9	1.0	0	1	0	0	0	0
Included	8	47.4	5.4	1	3	2	0	0	2

Table 4–27b. Groundfish line gear income dependence (included and excluded vessels under the high MLR).

Average Groundfish Income Per Period From Line Landings	Number of Vessels	Percentage of Total Fishing Revenue From Line–Caught Groundfish	Mean Number of Six Months Periods Fished With Line Gear	Number of Vessels, by Percentage of Total Fishing Income Earned From Line Groundfish					
				0–10 Percent	10–30 Percent	30–50 Percent	50–70 Percent	70–90 Percent	90–100 Percent
$0 to 5,000									
Excluded	2,250	33.7	2.0	1,488	145	100	67	64	386
Included	204	66.6	4.1	49	44	23	12	5	71
$5,001 to 15,000									
Excluded	57	46.9	1.6	28	12	0	0	2	15
Included	155	96.9	4.3	13	13	11	9	7	62
$15,000 to 25,000									
Excluded	7	16.4	2.1	6	0	0	0	0	1
Included	36	66.8	4.9	8	4	7	4	2	11
$25,001 to 50,000									
Excluded	7	19.1	1.6	5	1	0	0	0	1
Included	30	58.6	4.9	3	8	4	4	4	7
$50,001 to 100,000									
Excluded	3	7.3	1.7	2	1	0	0	0	0
Included	17	55.2	5.2	2	5	3	4	0	3
$100,001 to 250,000									
Excluded	1	27.9	1.0	0	1	0	0	0	0
Included	8	47.4	5.4	1	3	2	0	0	2

Table 4–28. Matrices indicating, for qualifying and non–qualifying groups of **trawl** vessels, the number of vessels that were first active within the window during each six month period during the window period and the number of period in which they were active with trawl gear.

VESSELS MEETING EITHER THE NON–WHITING OR WHITING TRAWL–GEAR ADOPTED MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active								
	1	2	3	4	5	6	7	8	Row Total
1	6	16	16	15	26	24	40	162	305 78.6
2	–	7	3	4	2	7	12	–	35 9.0
3	–	–	–	–	2	5	–	–	7 1.8
4	–	2	1	1	8	–	–	–	12 3.1
5	–	–	–	3	–	–	–	–	3 0.8
6	–	–	8	–	–	–	–	–	8 2.1
7	–	7	–	–	–	–	–	–	7 1.8
8	11	–	–	–	–	–	–	–	11 2.8
COLUMN TOTAL	17 4.4	32 8.2	28 7.2	23 5.9	38 9.8	36 9.3	52 13.4	162 41.8	388 100.0

VESSELS NOT MEETING EITHER THE NON–WHITING OR WHITING TRAWL–GEAR ADOPTED MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active							
	1	2	3	4	5	6	7	Row Total
1	14	7	7	1	–	–	1	30 29.4
2	2	1	3	3	1	–	–	10 9.8
3	4	3	1	–	1	1	–	10 9.8
4	1	3	1	–	–	–	–	5 4.9
5	2	1	–	–	–	–	–	3 2.9
6	5	2	2	–	–	–	–	9 8.8
7	9	3	–	–	–	–	–	12 11.8
8	23	–	–	–	–	–	–	23 22.5
COLUMN TOTAL	60 58.8	20 19.6	14 13.7	4 3.9	2 2.0	1 1.0	1 1.0	102 100.0

Table 4–29. Matrices indicating, for qualifying and non–qualifying groups of **pot** vessels, the number of vessels that were first active within the window during each six month period during the window period and the number of period in which they were active with pot gear.

VESSELS MEETING THE POT–GEAR ADOPTED MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active								
	1	2	3	4	5	6	7	8	Row Total
1	3	2	2	3	2	1	–	6	19 45.2
2	–	2	2	3	–	3	1	–	11 26.2
3	1	1	–	–	–	–	–	–	2 4.8
4	–	–	–	–	2	–	–	–	2 4.8
5	–	–	1	1	–	–	–	–	2 4.8
6	1	–	2	–	–	–	–	–	3 7.1
7	–	1	–	–	–	–	–	–	1 2.4
8	2	–	–	–	–	–	–	–	2 4.8
COLUMN TOTAL	7 16.7	6 14.3	7 16.7	7 16.7	4 9.5	4 9.5	1 2.4	6 14.3	42 100.0

VESSELS NOT MEETING THE POT–GEAR ADOPTED MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active					
	1	2	3	4	5	Row Total
1	23	11	2	–	–	36 14.2
2	21	7	2	1	–	31 12.3
3	33	4	1	–	1	39 15.4
4	12	2	1	–	2	17 6.7
5	25	5	–	–	–	30 11.9
6	28	8	–	–	–	36 14.2
7	27	3	–	–	–	30 11.9
8	34	–	–	–	–	34 13.4
COLUMN TOTAL	203 80.2	40 15.8	6 2.4	1 0.4	3 1.2	253 100.0

Table 4–30. Matrices indicating, for qualifying and non–qualifying groups of **longline** vessels, the number of vessels that were first active within the window during each six month period during the window period and the number of period in which they were active with longline gear.

VESSELS MEETING THE LONGLINE–GEAR ADOPTED MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active								
	1	2	3	4	5	6	7	8	Row Total
1	11	6	2	5	12	7	13	15	71 31.0
2	9	6	4	4	11	9	3	–	46 20.1
3	3	1	1	3	3	2	–	–	13 5.7
4	4	4	4	6	11	–	–	–	29 12.7
5	1	4	6	5	–	–	–	–	16 7.0
6	3	9	13	–	–	–	–	–	25 10.9
7	4	7	–	–	–	–	–	–	11 4.8
8	18	–	–	–	–	–	–	–	18 7.9
COLUMN TOTAL	53 23.1	37 16.2	30 13.1	23 10.0	37 16.2	18 7.9	16 7.0	15 6.6	229 100.0

VESSELS NOT MEETING THE LONGLINE–GEAR ADOPTED MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active						
	1	2	3	4	5	6	Row Total
1	42	21	11	6	3	3	86 18.0
2	31	18	–	1	1	1	52 10.9
3	22	6	3	1	–	–	32 6.7
4	39	16	6	1	1	–	63 13.2
5	44	8	2	–	–	–	54 11.3
6	34	21	1	–	–	–	56 11.7
7	51	13	–	–	–	–	64 13.4
8	70	–	–	–	–	–	70 14.7
COLUMN TOTAL	333 69.8	103 21.6	23 4.8	9 1.9	5 1.0	4 0.8	477 100.0

Table 4-31. Matrices indicating, for qualifying and non-qualifying groups of **all line** vessels, the number of vessels that were first active within the window during each six month period during the window period and the number of period in which they were active with all line gear.

VESSELS MEETING THE ALL LINE ADOPTED MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active								
	1	2	3	4	5	6	7	8	Row Total
1	4	7	7	15	16	18	23	40	130 31.7
2	3	6	6	11	19	18	19	–	82 20.0
3	2	2	6	9	10	14	–	–	43 10.5
4	3	9	7	12	15	–	–	–	46 11.2
5	1	3	13	9	–	–	–	–	26 6.3
6	4	9	29	–	–	–	–	–	42 10.2
7	5	17	–	–	–	–	–	–	22 5.4
8	19	–	–	–	–	–	–	–	19 4.6
COLUMN TOTAL	41 10.0	53 12.9	68 16.6	56 13.7	60 14.6	50 12.2	42 10.2	40 9.8	410 100.0

VESSELS NOT MEETING THE ALL LINE ADOPTED MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active								
	1	2	3	4	5	6	7	8	Row Total
1	102	73	57	33	33	21	10	19	348 15.0
2	91	71	30	23	14	17	8	–	254 10.9
3	136	105	59	25	12	12	–	–	349 15.0
4	86	61	21	11	10	–	–	–	189 8.1
5	195	83	41	21	–	–	–	–	340 14.6
6	111	76	58	–	–	–	–	–	245 10.5
7	245	87	–	–	–	–	–	–	332 14.3
8	268	–	–	–	–	–	–	–	268 11.5
COLUMN TOTAL	1,234 53.1	556 23.9	266 11.4	113 4.9	69 3.0	50 2.2	18 0.8	19 0.8	2,325 100.0

endorsement and upgrade it to a "A" endorsement through their continued participation in the fishery after the close of the window period.

Under the license limitation program, anyone who does not receive the right to continue participating in the fishery would at least take some loss, including those who would not have participated but valued the option to participate. Someone who has typically received a very high percentage of his or her income from groundfish is likely to have available fewer short-run options for restoring income from other fisheries. On the other hand, if such an owner did not qualify, he or she may be better able to justify the purchase of a groundfish license, because of the higher degree of participation in the fishery and therefore, higher value of the permit to the individual. Someone who plans to fish groundfish only 20 percent of the time probably would not find it profitable to purchase a license for which the price is based on someone spending 80 percent of their time in the fishery, but would have more short-run options for restoring that income.

Criteria for Issuance of "B" Endorsements

When the draft license limitation proposal was first sent out for public review it specified that only one landing of groundfish with limited entry gear prior to August 1, 1988 would be required for vessels to qualify for a "B" endorsement. After further consideration of the nature of "B" endorsements, the Council adopted an option for public comment which required three landings greater than 500 pounds. The 500 pound screen was consistent with the screen applied to the "A" endorsement MLR and had similar benefits and rationale (i.e. reduced administrative burden and the existence of compensating opportunities in the open access fishery). The landing requirement was increased from one to three days because it was not felt that a single landing was sufficient involvement in the fishery to justify the granting of the adjustment period which the "B" endorsements provides. Other aspects of the "B" endorsements are discussed in Section 4.4.1.

Upgrade Landing Requirements for Provisional "A" Endorsements

To upgrade a provisional "A" endorsement, a vessel must have been "used" in the groundfish fishery for each of the first 365 day periods commencing with the first opportunity by the vessel owner to participate with the vessel. The "use" level (number of days or pounds of landings) would have to be equivalent to the annualized MLR, thus requiring an annual level of activity similar to the average annual level of activity for vessels qualifying for "A" endorsements. Level of use criteria equivalent to the 50th percentile of permit holders for similar size and grade vessels in the upgrade year were considered, but rejected by the Council because (1) the criteria were too complex, and (2) uncertainty as to the use standard would result in excessive effort as vessels sought to ensure that they met the use criteria for a particular year without knowing what the standard would be until after the fact. Table 4-32 shows indicators of the level of use which would have been required under various percentile performance requirements. The level of use selected by the Council is between the 25th and 50th percentile performance levels for all window vessels in the fishpot, longline, and criteria-line categories. It is less than the 25th percentile for all window vessels in the trawl category. Since the upgrade period for many vessels which may qualify for provisional "A" endorsements has already past, the effect of upgrade requirements on fleet effort is expected to be minor.

Table 4–32. The 25th, 50th and 75th percentiles for landing days and amount of landings (mt) of window–fleet vessels for annual periods from 1985–1987; non–whiting and whiting trawl gears, and pot and line gears.

Vessel Class	All Window Vessels						Vessels Meeting High MLR[a]					
	Annual Landing Days			Annual Amounts of Landings (mt)			Annual Landing Days			Annual Amounts of Landings (mt)		
	25th	50th	75th	25th	50th	75th	25th	50th	75th	25th	50th	75th
NON–WHITING TRAWL												
<40 Ft	3	8	14	1.0	6.0	17	5	11	17	4	8	22
40–59 Ft	7	17	31	10.0	45.0	159	10	20	34	16	55	181
60–79 Ft	9	18	31	70.0	171.0	360	12	20	32	91	200	370
>79 Ft	4	11	17	84.0	170.0	254	11	15	22	110	199	296
ALL	7	17	30	17.0	85.0	237	10	19	32	28	108	273
WHITING TRAWL												
<40 Ft	b/	b/	b/	b/	b/	b/	b/	b/	b/	b/	b/	b/
40–59 Ft	1	3	10	1.0	5.0	11	3	24	61	2	588	2,150
60–79 Ft	3	63	111	26.0	2,080.0	4,286	68	88	122	2,247	3,314	4,877
>79 Ft	27	61	115	1,268.0	2,332.0	4,894	47	63	117	1,784	2,780	5,060
ALL	2	9	79	2.0	40.0	2,786	51	83	115	1,668	2,965	4,623
POT												
<40 Ft	1	1	2	0.01	0.05	2	8	22	37	1	9	66
40–59 Ft	1	2	10	0.08	1.0	28	17	25	29	70	126	163
60–79 Ft	1	3	18	1.0	7.0	104	9	34	41	48	161	273
>79 Ft	2	3	6	21.0	89.0	150	3	4	6	74	121	209
ALL	1	1	3	0.02	0.1	3	6	20	29	18	78	146
LONGLINE												
<40 Ft	1	4	11	0.1	1.0	5	5	10	23	1	4	16
40–59 Ft	1	4	11	1.0	7.0	28	4	10	16	7	22	53
60–79 Ft	1	3	6	2.0	10.0	37	4	6	10	10	19	58
>79 Ft	1	1	3	0.2	5.0	26	b/	b/	b/	b/	b/	b/
ALL	1	4	10	0.3	2.0	12	5	10	19	1	9	30
CRITERIA–LINE												
<40 Ft	1	3	8	0.1	0.5	2	4	9	18	1	2	8
40–59 Ft	1	3	7	0.4	2.0	11	4	8	15	3	12	37
60–79 Ft	1	2	5	1.0	4.0	16	5	6	10	6	16	52
>79 Ft	1	2	2	0.3	1.0	9	b/	b/	b/	b/	b/	b/
ALL	1	3	8	0.2	1.0	4	4	9	16	1	3	13

a/ High MLR is the high minimum landing requirements for each gear that would reduce the window fleet to roughly the size of the active 1987 fleet.

b/ Data are not reported for this category in order to protect the confidentiality of these vessels.

4.4.4.3 Hardship Exemptions to Qualifying Criteria

Hardship exemptions to the qualifying criteria may be granted due to inadequate or incorrect official documentation of landings; construction or conversions criteria not being met due to delays beyond the control of the vessel owner; or death, illness or injury of a vessel owner; or litigation involving the vessel, preventing the vessel from meeting the MLRs, landing requirements, construction, conversion, replacement, or upgrade criteria during the applicable qualifying period. Death, illness or injury of someone other than the vessel owner is not included among the hardship conditions. If a person owning a vessel is significantly dependent on the income from the vessel, it would be possible to hire someone to operate the vessel if, for example, a family illness prevented the owner from going to sea. Economic conditions are not considered a hardship, because economic situations keep a large number people from acquiring vessels. To consider economic conditions as a hardship could result in an ineffective program. Inactivity of a vessel because of violation of federal or state laws (including non-fisheries violations involving the vessel) are also not considered hardship. It was felt that individuals who were kept from the fishery because of legal violations should not be given an opportunity to qualify, because those who were prevented from qualifying due to circumstances less directly under their control (e.g. economic hardship) were not given hardship consideration.

4.4.4.4 Criteria for Allocating Access Subsequent to Initial Permit Issuance

Any individual who does not initially receive an "A" endorsement would have access to one through purchase. Returning the permits of vessel owners leaving the fishery to a pool from which the permits would be reissued on a lottery basis was also considered, but rejected. It was believed that this type of system would lead to the continuous ownership of permits in the hands of corporations or other legal entities not bound by the same working life span as human owners.

In evaluating the fairness and equity of requiring the purchase of permits to enter the fishery, the degree of the barrier or financial burden must be examined; i.e., the price paid for the permits. Limitations in documentation of the cost structures for subfleets within the groundfish fishery, as well as the opportunities for these vessels to offset losses in groundfish revenue with earnings from other fisheries, make it difficult to determine with much precision the level of permit prices. This does not preclude a more general discussion of whether "significant" barriers to entry to the groundfish fishery would be created by the existence of a permit system.

It is important to clarify what exactly is being referred to when the phrase "barrier to entry" is used. It might be argued that if a fisherman has to have $500,000 to buy a boat so he or she can make a decent living, this represents a barrier which would keep many people from entering the fishery. However, it should be recognized that the vessel is an asset, against which the would-be owner can secure financing. Naturally, the owner's experience in the fishery and provisional assets or collateral would probably be of considerable importance in determining whether he or she is an acceptable risk for a loan of this magnitude.

A permit to participate in the groundfish fishery is also an asset, the value of which would be closely related to its price in the market. This asset is not as fluid as a boat, since it has no alternative uses, with the exception of leasing it to another party. The financial rewards that a permit conveys would depend upon the relative skill of the vessel's captain and crew and the capabilities of the vessel, as well as the condition of the West Coast groundfish stocks. If the market-clearing price for permits

were $10,000, for example, this would be a price which some recent purchasers felt could be paid and still make more money than if they stayed out of the fishery. If a lending institution agreed with this appraisal, then financing the initial cost of the permit would facilitate entry by those who could not otherwise afford the cost of a permit.

During Council-sponsored workshops on limited entry, concern was expressed that some permit recipients could hold on to permits speculating that their value would increase, thus preventing vessel owners who wanted to fish from participating. If this situation arises, leasing would allow these vessel owners to participate. However, those holding permits on speculation would be willing to sell the permits for the present value of future profits anticipated from holding the permit. The owner/operator who is willing to give up some of the returns from superior fishing skills would be able to offer the individual leasing the permit sufficient compensation to the owner to sell the permit.

4.5 Vessel Length as a Measure and Control of Capacity

The Council considered many alternative measures which might be used to constrain capacity. The program as designed constrains investment in increasing fleet capacity through controls on the number of vessels, gear used with the vessel, length of the vessel, and trip limits (except for the unrestricted nontrawl sablefish fishery which now lasts about 2 months). Horsepower was considered as a possible control but rejected because of the ease with which horsepower could be increased by the temporary installation of special equipment on the engine. Various measures of volume were considered both alone and in conjunction with length but were rejected. Volume in conjunction with length was rejected because it might constrain flexibility as vessels attempted to meet safety requirements. Volume alone was rejected because it is difficult to measure, the measure is sometimes subject to much judgement, and analysis did not show that it performed significantly better than length as an indicator of capacity. Length is a simple measure which is relatively easy to determine. It is not expected to halt any growth in capacity but will place an upward limit on it. "Square" vessels are not expected because of the lack of incentive for vessels operating under trip limits. Absent a restriction on length, an increase in size of vessel might be expected as was seen in the Alaskan halibut fishery (Table 5-37)

If the length endorsement specified the maximum size of vessel which might be used with a permit, an individual who could not find a vessel of exactly the same size as a vessel to be replaced would either be penalized by being forced to acquire a smaller vessel, or, be forced to build a vessel to maintain the same length. To provide flexibility, permits may be used with vessels up to five feet longer than the size endorsed on the permit. Once issued the size endorsement on the permit does not change, regardless of what size of vessel the permit is used with, except in the case of the combination of permits (see Section 4.6) or the downsizing of a trawl vessel.

When a permit with a trawl endorsement is used with a vessel more than five feet less in length than the size endorsed on the permit, the size endorsement will be reduced to the size of the smaller vessel. For permits with fishpot and longline gear endorsements the size endorsement is not decreased when the permit is used with a smaller vessel in order not to create a disincentive for reduction of vessel size. Council members heard testimony that with respect to the trawl fishery at the present time there is significant economic incentive for trawl vessels to decrease their size and that this economic incentive would overcome any disincentive created by the permanent reduction in the size endorsement on the permit. This testimony is reflected in cost information provided in Section 5.5.

The Council saw this as an opportunity to lock-in a reduction in capacity which might occur through economic incentives. The Council also heard testimony that intragear equity issues were involved in that various sizes of trawl vessels tend to target on different species. Owners of small trawl vessels felt they would be disadvantaged relative to large vessels in that owners of large vessels would be able to choose to switch strategies and compete with smaller trawl vessels while size endorsements would prevent owners of small trawlers from switching and competing in fisheries with larger trawlers. Therefore, to be equitable, small trawlers requested that if a large trawler decided to go down in size they not retain the advantage of being able to go back up at a later date.

4.6 Permit Combination

Permit combination allows upward flexibility in the size distribution of vessels in the fleet. The endorsement qualification system was designed to result in a fleet with a size distribution similar to that of recent years. However, this size distribution may not be the ideal configuration for the future. While size endorsements would allow a decrease in the vessel sizes in the fleet, a provision was needed in case optimal fleet configuration would entail an increase in vessel size. For this reason the decision was made to allow the purchase and combination of two or more permits into a single permit with a larger size endorsement. A schedule or formula will be developed by NMFS with the intent that any combination of permits should not result in an increase in the capacity of the fleet. Division of permits was not allowed because: (1) it was not necessary since vessel size can decline without allowing the division of permits, and (2) one of the primary controls over capacity is control over the number of hulls. With trawl vessels, trip limits hold most vessels below their capacity; an increase in the number of hulls increases the number of vessels which may go up to the trip limit, hence increasing the usable capacity of the fleet under the regulations. The combination of permits for vessels which are capable of harvesting up to current trip limits will actually result in a reduction in active capacity because only one trip limit may be taken.

4.7 Restriction on Foreign Ownership

Ownership of an operable fishing vessel gives an individual unrestricted access to resources held in common for the people of the United States. These resources are currently harvested by vessels controlled by U.S. citizens. Foreign ownership of permits would allow foreigners control over fishing vessels and benefits from the fishery, effectively frustrating provisions of the Anti-reflagging Act.

4.8 Limits on the Concentration of Permits

The Council decided to rely on antitrust law to control the concentration of permits. Concern was expressed that any direct limit could be circumvented by corporate structuring. Limiting ownership to individuals was considered as an indirect method of inhibiting concentration. The Council's rationale for allowing corporations and partnerships to hold permits was that many fishermen in the groundfish fishery hold their vessels in partnerships or corporations. Because issuance is to be based on ownership of the vessel the permits should be issued to whatever legal entity owns the vessel. Requiring the permit owner to be onboard would be another indirect way to limit concentration. However, once it is determined that permits will be issued to entities other than individuals, requiring owners to be aboard a vessel becomes problematic. The Council did not feel that inability to come up with an alternative means of limiting the concentration of permits would significantly inhibit the

viability or effectiveness of the adopted alternative. Likelihood of concentration of market power is discussed in Section 7.4.

4.9 Vessel Loss Provisions

Provision is made for the replacement of a lost vessel. In general, prior to permit issuance, vessels should be replaced within two years. When longer than two years is taken to replace a vessel, a question arises as to whether the vessel owner intended to remain in the fishery. Once permits are issued, vessel replacement is allowed for vessels with provisional "A" and "B" endorsements provided the two year replacement limit is met. For vessels with "A" endorsements there is no limit on the amount of time which may be taken to replace a vessel. Replacement vessels are limited to the length overall endorsed on the permit, or the length overall of the lost vessel, plus 5 feet. An exception is made when the replacement occurred prior to Council's announcement that length overall would be used to constrain the size of vessel used with a permit. Under the exception, a vessel owner with a replacement vessel would be allowed to choose between an "A" endorsement on a permit endorsed for the length of the replaced vessel or a provisional "A" endorsement endorsed on a permit for the length of the replacement vessel.

4.10 Permit Renewal Provisions

As initially worded, the draft license limitation program of Amendment 6 provided no means by which the number of permits with "A" endorsements might be reduced through attrition. A vessel could leave the fishery without transferring the permit to another vessel, and a number of years later the permit could be resurrected and effort reintroduced. The Council requested an option be developed such that, if a permit holder failed to maintain continuous interest in participating in the fishery, as evidenced by annual permit renewal, the permit would expire. In this way, when attrition occurs, i.e., someone discontinues interest in the fishery without transferring the access rights to someone else, that attrition may be "locked in" and the permit may not be brought back "on-line" at a later date.

Many license limitation systems provide for attrition through "use it or lose it" provisions. These provisions result in expiration of a permit if the holder fails to make a certain minimum amount of landings in a fishing year. This type of measure is counter productive to effort reduction policies and its use was therefore minimized in development of the license limitation alternative. Annual renewal requirements provide an alternative means for locking in attrition without encouraging effort.

Sixty days is allowed for the renewal period in order to provide permit holders with a sufficient window in which to make their renewal application. The time period for this renewal is chosen so as to coincide with the renewal period for many of the state licenses and other Federal permits. Following the 60 day renewal period, a four month appeal period is provided for those who failed to renew.

The provisions for permit expiration on failure to renew will increase program costs to the degree that the number of appeals is increased and that annual renewals must be processed and to the degree the burden of notifying permit holders of the need to renew is placed on the program administrators.

4.11 Appeals Provisions

The Council and LEC view the appeals process and appeals board as an integral part of the permit issuance process. The opportunity for vessel owners to have their appeals heard by a board of knowledgeable industry members was an important element in making the limited entry program acceptable to industry. In accordance with the MFCMA, NMFS should be able to recover the cost of the appeals and the appeals board through permit issuance fees (see Section 7.9).

Appeals will be made to the Regional Director. At the request of the appellant, the Regional Director will consult with the Council. However, because Council meetings are open to the public, any appeal involving the Council must be accompanied by an appellant waiver of confidentiality. The Council will convene an advisory committee which shall function as an appeals board, advising the Council on the recommendations to be made to the Regional Director. Oral and written testimony will be presented to the appeals board. In order to make the process as efficient as possible while still giving the appellant opportunity to make his or her case before the Council, the Council will receive only written testimony when it reviewing the appeal and board findings, prior to making its recommendation.

5.0 THE GROUNDFISH FISHERY: DESCRIPTION, TRENDS AND ISSUES

In considering limited entry, one of the first questions to be asked is "Where is the fishery today and where is it going?" As discussed in Chapter 4.0, the status quo management alternative is not a choice which will leave the fishery unchanged. The status quo alternative, like the license limitation alternative, will send the fishery on a different path of development. The choice among the alternatives is not between a fishery as it is today or a changed fishery tomorrow under limited entry, but rather between different directions of change tomorrow.

The purpose of this chapter is to provide reviewers of this document with a description of the fishery and information which will allow them to make their own assessment of what the future of the groundfish fishery may hold under status quo management. Each reviewer will likely form an independent assessment of the direction of the fishery, and from that assessment, evaluate the likelihood of the impacts summarized in Chapter 8 (discussed in detail in Chapters 6 and 7).

When assessing probable futures for the West Coast fishery, it is helpful to keep in mind some of the factors which may lead to increases in relative profit opportunities and hence in the size of the West Coast groundfish fleet, as follows.

> Exvessel prices increase. This could occur through increases in local or world demand, increases in access to markets or changes in the timing of harvest to result in higher quality product.
>
> Fishing cost decrease. In addition to changes in input prices, such as fuel costs, other factors may cause indirect changes in fishing costs. Changing technologies which allow vessels to consume fuel more efficiently or find fish more quickly decrease costs. Costs might also be decreased by an adjustment of resource management measures which increase fishery ABCs and hence allowable harvests, thus allowing a reduction in the restrictiveness of the regulations. Such actions might include measures which improve habitat conditions or allow single species of multispecies complexes to be overfished so that more benefits may be achieved through the harvest of other species.
>
> Profitability in other fisheries worsen relative to the groundfish fishery. For example, declining profits in the salmon fishery may encourage fishermen to turn to the groundfish fishery as an alternative source of income.
>
> The timing of other fisheries change. If currently conflicting seasons are altered so they no longer conflict, vessels may choose to participate in the groundfish fishery in addition to their traditional fishery. For example, changes in season opening dates or the implementation of ITQs in Alaskan fisheries may provide vessels the flexibility to participate in the West Coast groundfish fishery as well.

On the other hand, the inverse of each of these factors would be likely to decrease participation in West Coast fisheries. In addition to assessing factors which influence trends in number of participants, it is also useful to consider trends observed in the recent past in this fishery as well as other fisheries. Information provided in this chapter is intended to aid the reader in reviewing all of these considerations.

5.1 Introduction

The West Coast groundfish fishery consists of business firms and anglers that harvest the groundfish resources of the region. Additionally, there is some treaty Indian harvest of groundfish along the north coast. Commercial firms exploiting groundfish include U.S. commercial fishing vessels employing a wide variety of gear, processing vessels, party/charter vessels for recreational fishing, at sea and shoreside fish processing firms, and foreign processor vessels engaged in JVs with domestic commercial vessels. The main focus of this chapter will be on the commercial groundfish industry which produces fish for food. The Pacific coast groundfish fishery for food fish is one of the most important commercial food fish fisheries occurring off California, Oregon and Washington. In 1987 and 1988, groundfish provided between 20 and 30 percent of the revenues from all West Coast fisheries, as reported in Table 5-1. The treaty Indian commercial fishery and recreational industry will be discussed briefly in two sections towards the end of this chapter. Treaty Indian and recreational groundfish fisheries (including the commercial sport vessels) would not be affected by a license limitation system for commercial groundfish vessels producing food fish except that appropriate management of the commercial fishery is necessary if resource availability for these other fisheries is to be assured.

The commercial groundfish fishery is comprised of several different gear and vessel combinations which are used to harvest a wide variety of species and species complexes. The gears include otter trawl (bottom and midwater), fish pots and traps, setlines and longlines, gill and trammel nets, as well as a number of miscellaneous gears (e.g., troll and jig, Portuguese longline). Species commonly harvested by such gear types are indicated in Table 5-2. The overall fishery can be subdivided by species and gear (e.g., groundfish trawl fishery) and will be discussed accordingly herein.

5.2 Area and Stocks Involved

Groundfish fisheries regulated under the groundfish FMP occur on the continental shelf and upper slope off Washington, Oregon and California. The fishery is prosecuted over a wide range of depths, from 20 fathoms for English sole and sanddabs to as deep as 700 fathoms for thornyheads, Dover sole and sablefish. Similarly, fishing may occur on smooth mud/sand substrates, rocky reefs, pinnacles or canyons.

A wide variety of groundfishes are harvested in the Washington, Oregon and California fishery. A list of fishes covered under the groundfish FMP is presented in Table 5-3. Pacific coast groundfishes range from semipelagic types like Pacific whiting, shortbelly rockfish and widow rockfish to demersal types like Dover sole, lingcod and thornyheads. Most species primarily inhabit the continental shelf, but Dover sole, thornyheads, sablefish and some other species occur in greatest abundance on the continental slope. The basic character of the fishery and the composition of landings are distinctive in each INPFC area (Figure 5-1). The close spatial relationship of certain species in any given area often results in large catches of non-target species, creating a multispecies fishery. This is particularly true in the case of bottom trawl catches. For example, vessels targeting on Dover sole

Table 5-1. Distribution of West Coast exvessel revenues by fishery.[a/]

Fishery	1987 Revenue		1988 Revenue	
	Millions of Dollars	Percent	Millions of Dollars	Percent
Tuna	41.8	12.9	42.5	11.2
Groundfish	89.1	27.5	87.8	23.2
Crab	28.9	8.9	47.9	12.6
Salmon[b/]	49.4	15.3	81.8	21.6
Shrimp	51.2	15.8	32.8	8.7
Wetfish[c/]	16.5	5.1	19.9	5.3
Other	46.8	14.5	66.1	17.4
TOTAL	323.7		378.8	

SOURCE: Korson and Kinoshita (1990)

a/ Includes all marine fish caught in INPFC statistical areas under Council jurisdiction and landed in Washington, Oregon and California, excluding fish taken from Puget Sound and landed in these three states.
b/ Excludes Columbia River salmon landings.
c/ Excludes live-bait anchovy landings in California and a trace amount landed in Oregon.

Table 5–2. Species harvested by gear type in the West Coast groundfish fishery.

Species	Set Net	Trawl/ Midwater	Trawl/Bottom 0–250 Fathoms	Trawl/Bottom 250–700 Fathoms	Pot	Longline
ROUNDFISH						
Lingcod	*		*		*	*
Pacific Cod			*			
Pacific Whiting (Hake)		*	*			
Sablefish			*	*	*	*
ROCKFISH						
Black Rockfish	*	*	*			*
Blue Rockfish	*					*
Bocaccio	*	*	*			*
Canary Rockfish	*	*	*			*
Chilipepper	*	*	*			*
Cowcod			*			*
Darkblotched Rockfish			*			
Olive Rockfish	*		*			*
Pacific Ocean Perch		*	*			*
Shortbelly Rockfish		*	*			
Silvergray Rockfish			*			
Splitnose Rockfish			*			
Stripetail Rockfish			*			
Thornyhead				*		
Vermillion Rockfish	*		*			*
Widow Rockfish	*	*	*			*
Yellowtail Rockfish	*	*	*			*
FLATFISH						
Arrowtooth Flounder (Turbot)			*	*		
Dover Sole			*	*		
English Sole			*			
Pacific Sanddab	*		*			*
Petrale Sole			*			
Rex Sole			*			
Starry Flounder	*		*			*

Table 5-3. Common and scientific names of species included in the groundfish FMP.

Common Name	Scientific Name
	SHARKS
Leopard shark	Triakis semifasciata
Soupfin shark	Galeorhinus zyopterus
Spiny dogfish	Squalus acanthias
	SKATES
Big skate	Raja binoculata
California skate	R. inornata
Longnose skate	R. rhina
	RATFISH
Ratfish	Hydrolagus colliei
	MORIDS
Finescale codling	Antimora microlepis
	GRENADIERS
Pacific rattail	Coryphaenoides acrolepis
	ROUNDFISH
Lingcod	Ophiodon elongatus
Cabezon	Scorpaenichthys marmoratus
Kelp greenling	Hexagrammos decagrammus
Pacific cod	Gadus macrocephalus
Pacific whiting (hake)	Merluccius productus
Sablefish	Anoplopoma fimbria
Jack mackerel	Trachurus symmetricus
	ROCKFISH[a/]
Aurora rockfish	Sebastes aurora
Bank rockfish	S. rufus
Black rockfish	S. melanops
Black and yellow rockfish	S. chrysomelas
Blackgill rockfish	S. melanostomus
Blue rockfish	S. mystinus
Bocaccio	S. paucispinis
Bronze spotted rockfish	S. gilli
Brown rockfish	S. auriculatus

Table 5-3. Common and scientific names of species included in the groundfish FMP.

Common Name	Scientific Name
	ROCKFISH (continued)
Calico rockfish	S. dallii
California scorpionfish	Scorpaena gutatta
Canary rockish	Sebastes pinniger
Chilipepper	S. goodei
China rockfish	S. nebulosus
Copper rockfish	S. caurinus
Cowcod	S. levis
Darkblotched rockfish	S. crameri
Dusky rockfish	S. ciliatus
Flag rockfish	S. rubrivinctus
Gopher rockfish	S. carnatus
Grass rockfish	S. rastrelliger
Greenblotched rockfish	S. rosenblatti
Greenspotted rockfish	S. chlorostictus
Greenstriped rockfish	S. elongatus
Harlequin rockfish	S. variegatus
Honeycomb rockfish	S. umbrosus
Kelp rockfish	S. atrovirens
Longspine thornyhead	Sebastolobus altivelis
Mexican rockfish	Sebastes macdonaldi
Olive rockfish	S. serranoides
Pink rockfish	S. eos
Pacific ocean perch	S. alutus
Quillback rockfish	S. maliger
Redbanded rockfish	S. babcocki
Redstripe rockfish	S. proriger
Rosethorn rockfish	S. helvomaculatus
Rosy rockfish	S. rosaceus
Rougheye rockfish	S. aleutianus
Sharpchin rockfish	S. zacentrus
Shortbelly rockfish	S. jordani
Shortraker rockfish	S. borealis
Shortspine thornyhead	Sebastolobus alascanus
Silvergray rockfish	Sebastes brevispinis
Speckled rockfish	S. ovalis
Splitnose rockfish	S. diploproa
Squarespot rockfish	S. hopkinsi
Starry rockfish	S. constellatus

Table 5-3. Common and scientific names of species included in the groundfish FMP.

Common Name	Scientific Name
	ROCKFISH (continued)
Stripetail rockfish	S. saxicola
Tiger rockfish	S. nigrocinctus
Treefish	S. serriceps
Vermilion rockfish	S. miniatus
Widow rockfish	S. entomelas
Yelloweye rockfish	S. ruberrimus
Yellowmouth rockfish	S. reedi
Yellowtail rockfish	S. flavidus
	FLATFISH
Arrowtooth flounder (turbot)	Atheresthes stomias
Butter sole	Isopsetta isolepis
Curlfin sole	Pleuronichthys decurrens
Dover sole	Microstomus pacificus
English sole	Parophrys vetulus
Flathead sole	Hippoglossoides elassodon
Pacific sanddab	Citharichthys sordidus
Petrale sole	Eopsetta jordani
Rex sole	Glyptocephalus zachirus
Rock sole	Lepidopsetta bilineata
Sand sole	Psettichthys melanostictus
Starry flounder	Platichthys stellatus

a/ The category "Rockfish" includes all genera and species of the family Scorpaenidae, even if not listed, that occur in the Washington, Oregon and California area. The Scorpaenidae genera are Sebastes, Scorpaena, Sebastolobus and Scorpaenodes.

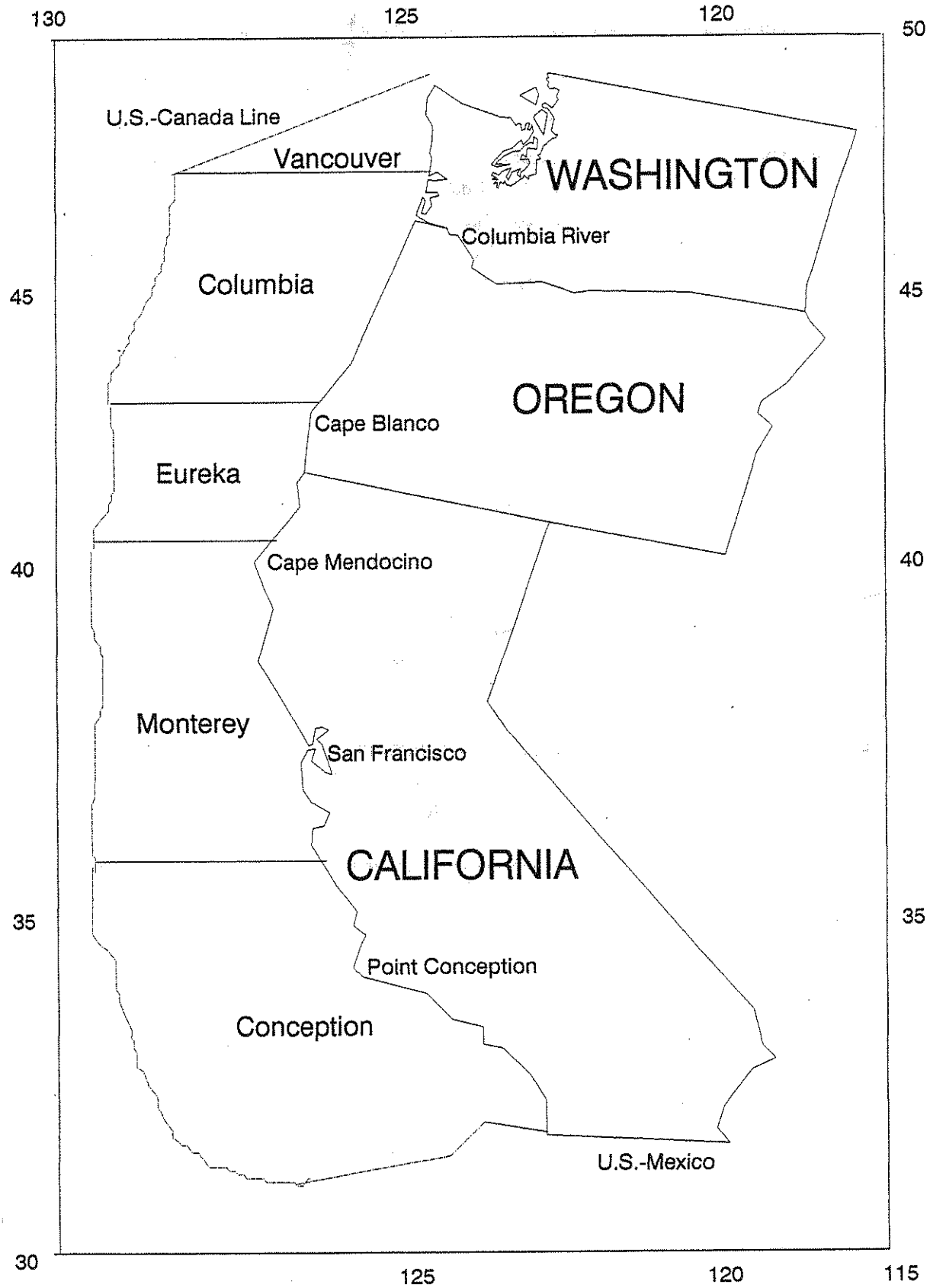

Figure 5–1. INPFC statistical area in the U.S. EEZ seaward of Washington, Oregon and California.

in the Columbia area also may catch thornyheads, sablefish and darkblotched rockfish. Several species of rockfish may be caught in a single trawl tow or gill net set, the species composition may change from north to south. Widow, yellowtail and canary rockfishes are particularly important in rockfish catches in the Vancouver and Columbia areas, while bocaccio and chilipepper rockfishes are significant components in the Monterey and Conception areas. Fishermen can exercise some control over the proportions of various species in catches by bathymetric and area shifts in effort as well as modifying the manner in which gear is fished. However, it is often impossible to totally avoid the catch of some non-target species. The fishery's multispecies nature is further complicated by seasonal changes in fish availability, weather and market conditions (prices and poundage limits); factors which may cause a trawler to fish on several species assemblages in a single fishing trip. Detailed information on the biological and physical characteristics of the resource may be found in Chapter 11 of the groundfish FMP (Council 1990).

5.3 Management Issues in the Groundfish Fishery

5.3.1 Overview of the History of Exploitation and Management

Domestic landings from the Pacific coast groundfish fishery were relatively stable, averaging about 30,000 mt annually, until the early 1970s when they began a fairly steady increase. By 1976, when the MFCMA was passed, annual groundfish landings had reached 60,000 mt generating $36.2 million in real exvessel revenues.[1/] By 1982, when the FMP for Pacific coast groundfish was implemented, total landings (excluding foreign and JV catch) had peaked at 116,000 mt valued at $71.5 million (Figure 5-2).

A major reason for this rapid growth in groundfish landings was a substantial buildup in harvesting capacity that greatly exceeded the sustainable production capacity of the groundfish resource taken in traditional fisheries (Council 1989). Harvesting capacity increased as newly constructed vessels entered the fishery (Figure 5-3) and as vessels were displaced from other fisheries due to changing economic and regulatory conditions (e.g., in 1978, U.S. trawlers were prohibited from fishing in Canadian waters). The number of trawlers alone rose from 286 in 1977 to 472 in 1979 (Korson and Silverthorne 1985). Furthermore, improved electronic, navigational and fish-finding equipment significantly increased the harvesting efficiency of the fleet. Over the last 5 years, about 75 percent of Capital Construction Fund program agreements have been with fishermen from Oregon, Washington and Alaska (personal communication by Dorothy Bostic, NMFS, Office of Trade and Industry Services, Washington, DC). The overall result has been that in just a few years the Pacific coast groundfish fishery had progressed from harvesting surplus production, from generally healthy or underharvested fish stocks, to the point of excessive effort with major stocks at MSY levels and limited room for expansion of traditional fishing operations. These problems characterize a rapidly maturing open access fishery and signal the need for management.

In general, fisheries management tends to focus on solutions to these problems stemming from open access instead of changing the open access system. Such was the course initially taken in the development of an FMP for the groundfish fishery, where aggregate harvest quotas (or guidelines) were established for certain species and other restrictive measures (e.g., trip limits) on fishing enterprises have been instituted in order to achieve economic and social objectives. As Huppert (1987) and others have pointed out before, while these harvest regulations may have been sufficient

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1/ All revenue or value measures reported herein are in constant, 1988 dollars, unless otherwise indicated.

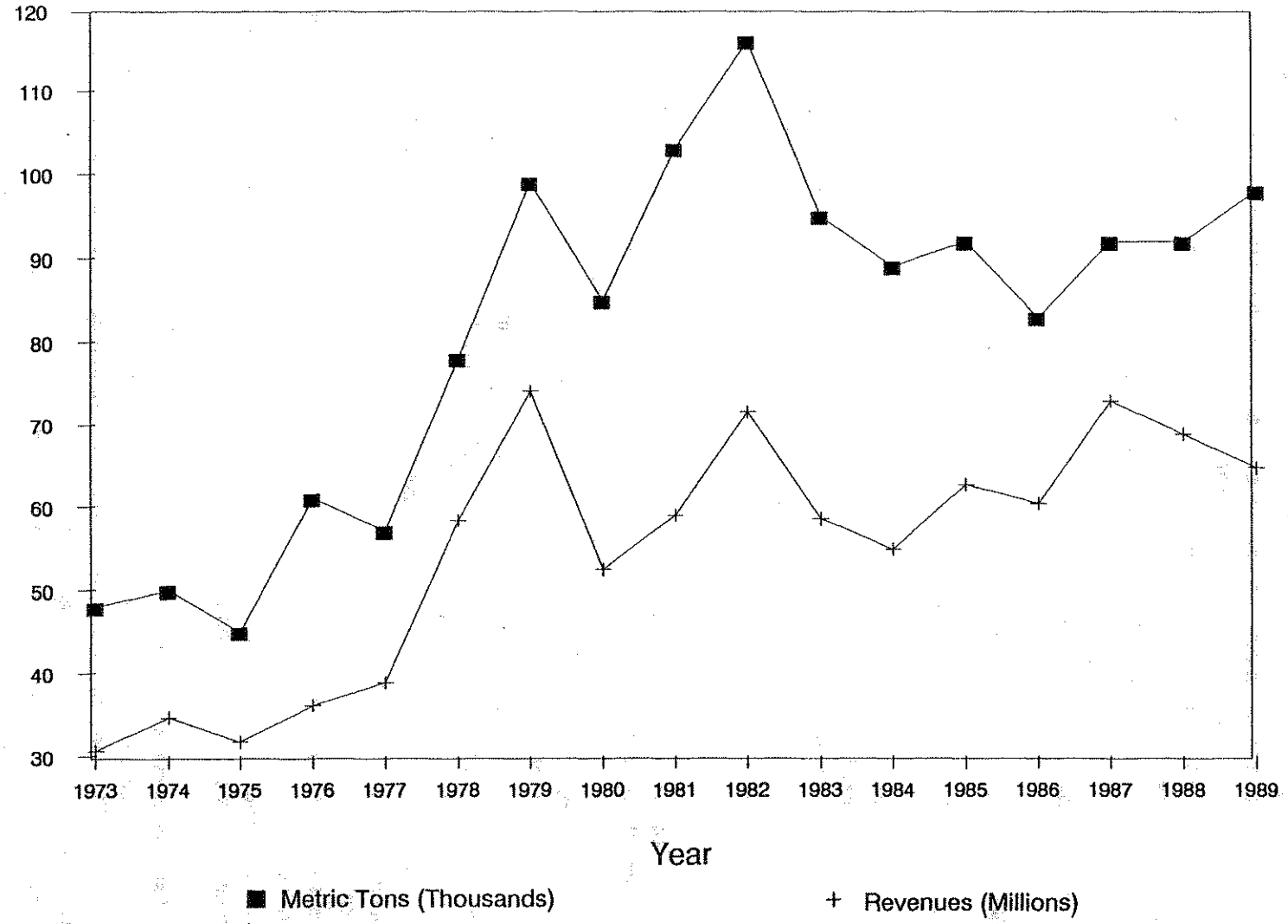

Figure 5-2. West Coast domestic commercial groundfish landings and real revenues (1988 dollars), 1973-1989.

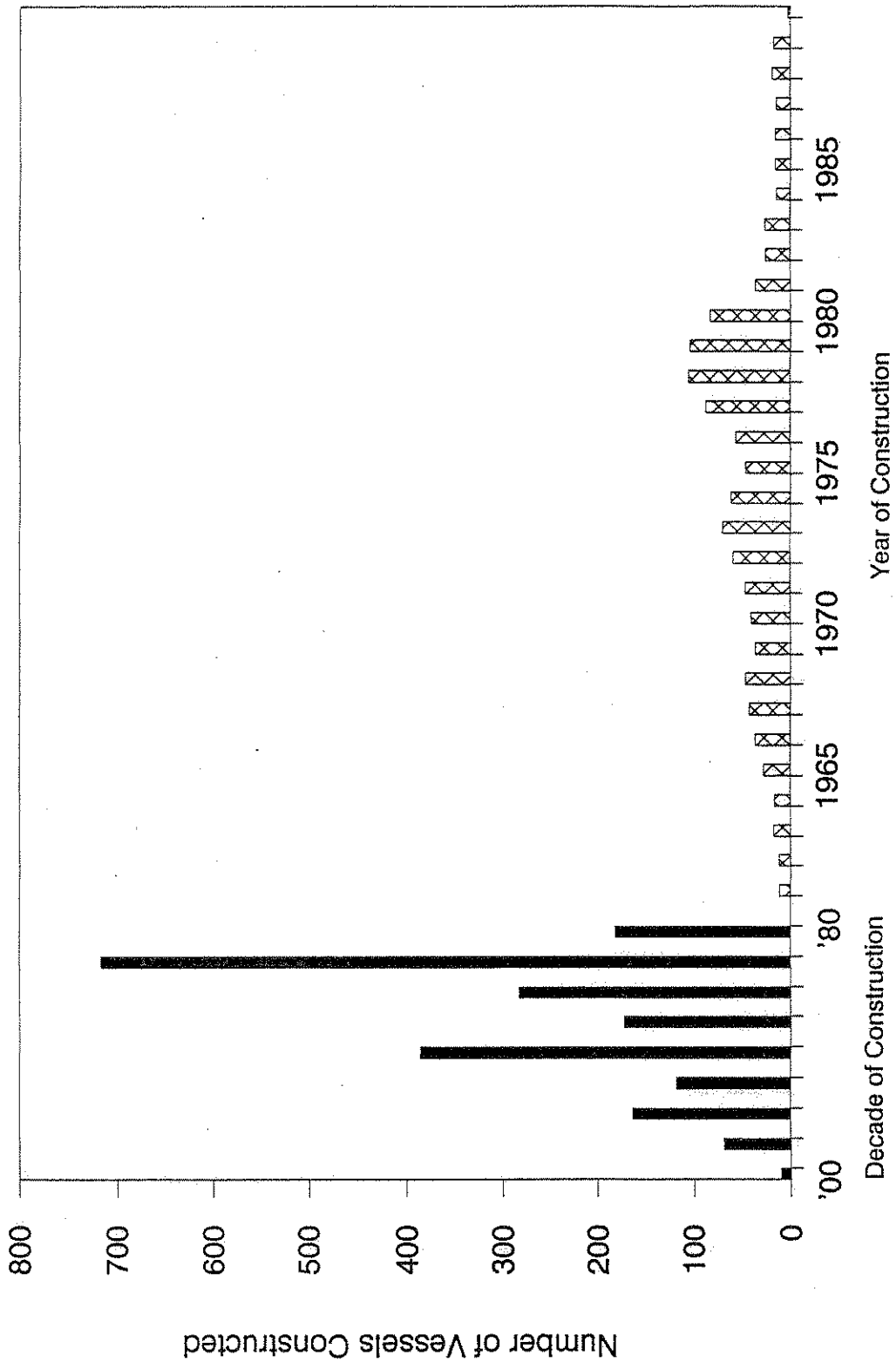

Figure 5-3. Decade and year of construction for U.S. Coast Guard documented vessels which were active in the groundfish fishery between July 11, 1984 and September 30, 1990. There are 145 U.S. Coast Guard documented vessels for which no construction date is available.

to prevent fish stock depletion, they have not addressed the economic problem of excess harvesting capacity that tends to arise in quota-regulated open access fisheries.

In an open access quota-regulated fishery, individual fishermen can maintain or expand their individual harvest shares only by catching fish at a faster rate. Fishermen tend to compete by increasing their fishing capacity. While this is costly for the individual fisherman, it may result in increased earnings for the vessel. However, when fish stocks are under quotas, a fleetwide increase in harvesting capacity does not result in a greater total catch but does raise the cost of taking the quota.

With implementation of the FMP in 1982, domestic groundfish landings stabilized around the 90,000 mt level (Figure 5-2) due in part to the imposition of management regulations. The growth in the overall Pacific coast groundfish harvest that occurred during the 1980s is attributable to the development of the JV fishery for Pacific whiting. Total revenues and landings of groundfish, including JV whiting, and total landings and revenues from pink shrimp are reported in Table 5-4. Except for 1985, groundfish landings and revenues rose from 1981-1989. Pink shrimp are included in the discussion of the groundfish fishery because this species is an important component in the overall fishing strategy of many trawlers, and therefore economic conditions in the pink shrimp fishery are believed to heavily influence the number of vessels active in the groundfish trawl fishery.

The shares of total revenue and total landings for each gear type from 1981-1989 are reported in Tables 5-5 and 5-6. Figure 5-3 shows historic landings by gear for 1973-1980 as recorded in the HAL data base. Canadian data is included to provide a longer time series. However, the lines graphed for U.S. trawl only and Canadian non-trawl illustrates the importance of the U.S. portion of the catch. Bottom trawl gear consistently accounted for the largest share of total groundfish revenues in the 1980s with about 50 percent of all groundfish revenues in any year being generated by this gear. Midwater trawl gear, used to harvest Pacific whiting and widow rockfish, then setline and longline, are the next most important gear groups averaging 24 and 8 percent, respectively, of total annual groundfish revenues over the decade. The proportions of total groundfish landings by gear type, reported in Table 5-6, indicate that groundfish trawl gear regularly contributed the bulk of groundfish landings over the period.

The geographical distributions of 1989 groundfish and pink shrimp revenues and landings (other than JV whiting) by gear are reported in Tables 5-7 and 5-8, respectively. Oregon had the largest revenues and quantities landed followed by California then Washington.

5.3.2 Quotas, Closures and Trip Limits

Declining stocks and the presence of harvesting capacity in excess of that required to take the available resource in the Pacific coast groundfish fishery have led to an increase in the number and complexity of regulations which act to constrain the economic performance of the existing fleets. Accordingly, the Council faces the difficult challenges of balancing the need for conserving the resource with the need to provide sufficient allowable catch to sustain the fleet and allocating the resultant allowable catch among user groups.

The presence of excess fleet capacity creates or accentuates several problems confronting the Council in its effort to achieve the goals and objectives it has adopted for the fishery. As fleet capacity

Table 5-4. Total West Coast domestic groundfish and shrimp revenue and landings, 1981-1989.[a/b/]

	Groundfish		Pink Shrimp	
Year	Landings	Revenue	Landings	Revenue
1981	147.0	67.5	18.1	25.9
1982	183.8	83.5	12.6	17.3
1983	167.5	71.4	6.0	11.4
1984	168.3	67.6	4.4	5.0
1985	123.5	65.2	12.4	10.5
1986	164.4	64.8	25.9	32.5
1987	198.3	82.0	30.8	47.7
1988	227.5	85.6	32.0	28.8
1989	301.3	85.9	35.2	27.3

SOURCE: PacFIN management data base and Korson and Kinoshita

a/ Includes JV for Pacific whiting.
b/ Landings in thousands of mt and revenue in millions of real (1988) dollars.

Table 5–5. Distribution (in percentages) of groundfish revenues by gear.

	Gear					
Year	Bottom Trawl (Percent)	Midwater Trawl (Percent)	Pot/ Trap (Percent)	Setline/ Longline (Percent)	Gill/ Set Net (Percent)	Other/ Miscellaneous (Percent)[a/]
1981	54.7	27.7	3.9	6.9	2.7	4.1
1982	54.3	27.6	7.0	6.5	2.6	2.0
1983	58.6	23.7	5.8	3.4	2.8	5.7
1984	52.6	27.9	3.9	3.4	3.2	8.9
1985	60.1	15.2	5.3	8.9	5.6	4.9
1986	51.0	17.1	3.6	11.2	6.1	10.9
1987	55.3	19.3	3.1	12.3	4.9	5.2
1988	54.9	20.6	3.8	11.7	3.7	5.4
1989	49.1	33.5	2.7	8.9	2.6	3.2
MEAN	54.5	23.6	4.3	8.1	3.8	5.6

a/ Other/miscellaneous includes troll and jig gears.

Table 5-6. Distribution (in percentages) of groundfish landings by gear.

Year	Gear					
	Bottom Trawl (Percent)	Midwater Trawl (Percent)	Pot/ Trap (Percent)	Setline/ Longline (Percent)	Gill/ Set Net (Percent)	Other/ Miscellaneous (Percent)[a/]
1981	42.3	49.3	2.7	1.1	1.9	2.7
1982	40.1	51.4	2.4	1.1	1.5	3.6
1983	40.6	49.8	1.3	1.3	3.6	3.2
1984	35.7	54.1	1.2	1.3	5.4	2.3
1985	50.8	36.2	3.7	3.2	3.0	3.0
1986	29.5	57.6	3.6	2.6	5.3	1.4
1987	29.1	62.0	3.5	2.0	2.4	1.0
1988	24.3	67.5	2.5	1.3	3.4	1.0
1989	21.1	74.3	1.9	0.8	1.3	0.7
AVERAGE	34.8	55.8	2.5	1.6	3.1	2.1

a/ Other/miscellaneous includes troll and jig gears.

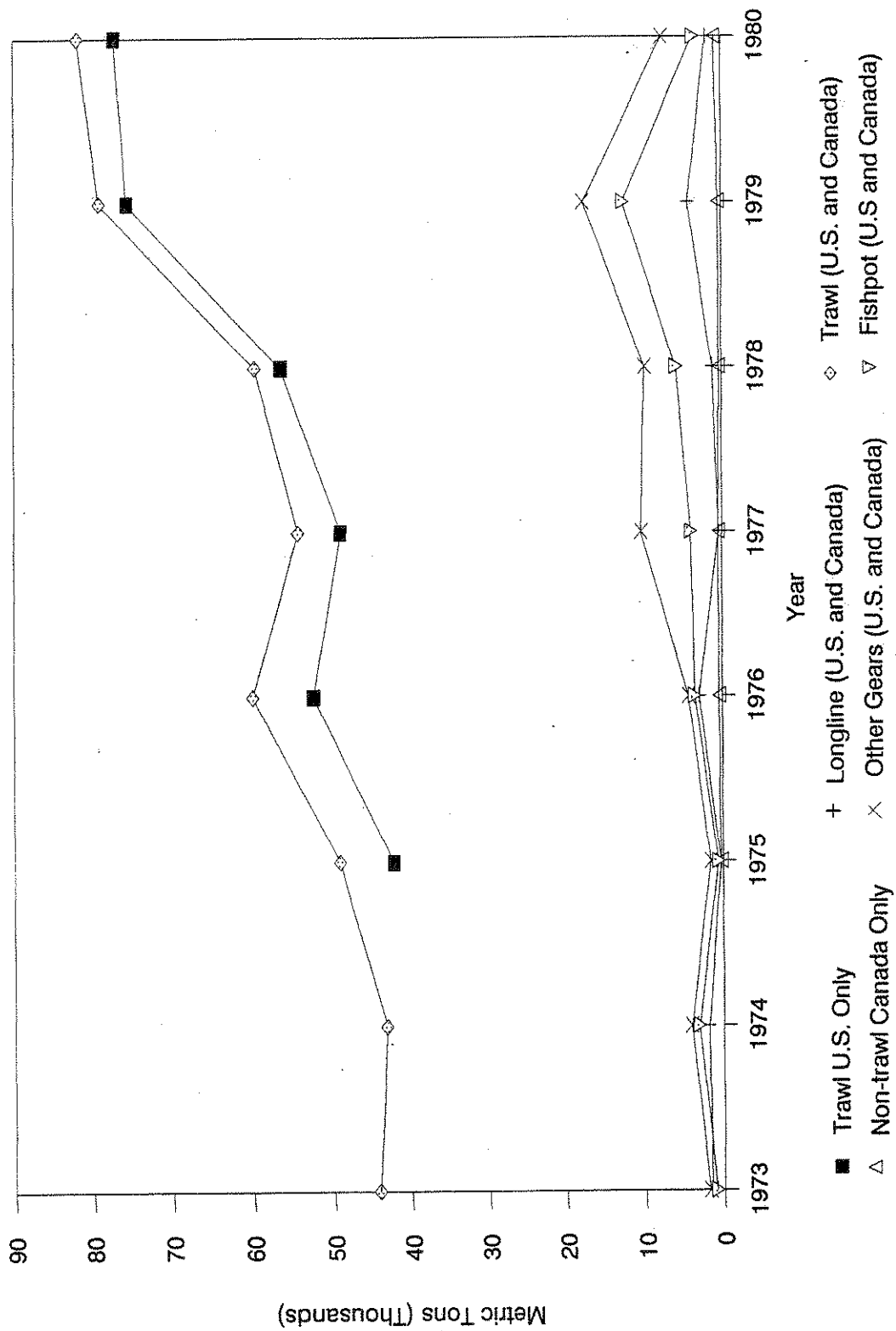

Figure 5-4. Groundfish landings (mt) for the West Coast by geartype, 1973-1980. Canadian and U.S. landings together except as noted. (SOURCE: HAL Data Base)

Table 5–7. Geographic distribution of 1989 groundfish and pink shrimp (excluding JV landings) revenues by gear.[a/]

Gear	Region			Total
	Washington	Oregon	California	
Trawl	9,699	22,504	19,905	52,108
Pink Shrimp	5,853	17,906	4,536	28,295
Pots	123	1,146	1,103	2,372
Hook–and–Line	3,248	1,074	4,175	8,497
Nets	28	6	2,280	2,314
Trolls	175	80	15	270
Other/Miscellaneous	–	3	1,322	1,325
TOTAL	19,126	42,719	33,336	95,181

SOURCE: PacFIN management data base

a/ All values in thousands of real (1989) dollars.

Table 5-8. Geographic distribution of 1989 groundfish and pink shrimp (excluding JV landings) landings by gear.[a/]

Gear	Region			Total
	Washington	Oregon	California	
Trawl	16,770	34,219	32,793	83,782
Pink Shrimp	7,210	22,264	5,690	35,164
Pots	163	897	934	1,994
Hook-and-Line	2,388	927	3,013	6,328
Gill/Set Net	37	9	2,293	2,339
Trolls	189	89	14	292
Other/Miscellaneous	-	6	1,720	1,726
TOTAL	26,757	58,411	46,457	131,625

SOURCE: PacFIN management data base

a/ Values in mt.

increases, species yielding high rates of economic return have increasingly become subject to targeting which may lead to conservation problems. In order to protect the resource, management measures such as quotas are implemented. If harvesting capacity continues to increase due to the fishery's profitability, increased fleet harvest rates will reduce the time required to reach these quotas.

The Council has established a system of trip landing and frequency limits, as well as quotas and closures, to meet its management objectives within the context of an "open access" fishery. The effect of such restrictions is to reduce utilization of the full harvesting capacity of many vessels in the fleet. While the trip limit and closure approach to management may be effective in restricting the utilizable harvesting capacity of many individual vessels, these measures do not prevent fleet capacity from expanding (and thus harvest rates from increasing) through the entry of additional vessels into the fishery (or the increase of vessel capacity which occurs when vessel owners try to increase harvest rates to maximize harvests prior to fisheries closures). If fleet capacity continues to expand or if stocks begin to decline, progressively lower trip limits and closures will be necessary to affect a lower level of utilizable fleet capacity and harvest rate. By limiting the effectiveness of increases in fleet fishing power, the use of trip limits may succeed in preserving some desirable features of the fishery, such as season length, and closures may help to conserve the fish resources. However, neither action places a check on expansion of fleet harvesting capacity and the dissipation of potential fishery profits that occur with the entry of new vessels. Additionally, trip limits create problems such as unreported mortality through the discarding of fish caught in excess of trip limits. And, highgrading (the discarding of less valuable individual fish in favor of more valuable fish) may occur as fishermen try to maximize the value of their catch under restrictive trip limits.

Those Pacific coast groundfish species for which ABCs have been determined are shown in Table 5-9. In the trawl fishery, the deepwater sablefish/Dover sole/thornyhead complex, sablefish, thornyheads, widow rockfish, the Sebastes complex, yellowtail rockfish, boccacio and Pacific ocean perch are subject to trip landings and frequency limits.

Landings and Harvest Limits. Historic commercial landings are shown in Table 5-10 and ABCs in Table 5-9. The harvest limits for several of these species changed in 1991. Amendment 4 manages all species under a general OY defined as all the fish landed under current management measures. To prevent biological stress or provide the necessary base for the calculation of JVP and TALFF, harvest guidelines and quotas are established for some species and appropriate management measures developed. In recent years, the harvest guidelines for the following species have been significantly reduced below previous ABCs or catch levels.

- Deepwater Complex. Because of declining ABCs for members of the deepwater complex, in 1991 for the first time, the fishery for this complex began the year on a trip limit. The ABCs for one species member of the deepwater complex (Dover sole) was reduced significantly and another member (thornyheads) was specified for the first time. The ABC for sablefish has remained unchanged since 1990 after declining in previous years (Figure 5-5).

  - Thornyheads. An ABC and harvest guideline for thornyheads was set the first time in 1991. The catch of thornyheads between 1987 and 1989 increased from 3,700 to 6,200 mt (Figure 5-6). Landings in 1990 were 10,100 mt. The ABC and harvest guideline for 1991 and 1992 were set at 7,900 and 7,000 mt, respectively.

Table 5-9. ABCs for 1983-1992 in mt for Washington, Oregon and California by INPFC areas.

Species	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Roundfish										
Lingcod	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Pacific Cod	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.2
Pacific Whiting[a/]	175.5	175.5	175.0	300.0	195.0	327.0	300.0	245.0	253.0	232.0
Sablefish	13.4	13.4	12.3	10.6	12.0	10.0	9.0	8.9	8.9	8.9
Rockfish										
Pacific Ocean Perch	1.55	1.55	1.55	1.55	0.0	0.0	0.0	0.0	0.0	0.0
Shortbelly	10.0	10.0	10.0	10.0	10.0	10.0	10.0	13.0[b/]	13.0	13.0
Widow	10.5	9.3	7.4	9.3	12.5	12.1	12.4	8.9[c/]	7.0	7.0
Other Rockfish										
Bocaccio	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	0.8	0.8
Canary	2.7	2.7	3.5	3.5	3.5	3.5	3.5	3.5	2.9	2.9
Chilipepper	2.3	2.3	2.3	2.3	3.6	3.6	3.6	3.6	3.6	3.6
Yellowtail	3.2	3.2	3.0	4.0	4.0	4.0	4.3	4.3	4.6	4.7
Remaining Rockfish	14.0	13.7	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Thornyheads	–	–	–	–	–	–	–	–	7.9	7.0[d/]
Flatfish										
Dover Sole	19.0	23.6	27.9	27.9	27.9	27.9	27.9	27.9	22.5	19.4
English Sole	4.5	4.5	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.9
Petrale Sole	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Other Flatfish	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Other Fish										
Jack Mackerel[e/]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	52.6	46.5
Others	16.0	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7

a/ Coastwide, including Canadian waters.

b/ The FMP limits ABC increases to 30 percent per year; 13,000 mt is below the ABC of 13,900 to 43,000 mt recommended by the GMT.

c/ The GMT recommended 7,900 mt; the Council set ABC at 8,900 mt and OY at 9,800 to 10,000 mt.

d/ The combined ABC for shortspine and longspine thornyheads totals 12,000 mt, however, only 7,000 mt of the two species combined may be harvested without resulting in overfishing.

e/ All areas north of 39°N latitude.

Table 5-10. Estimated commercial groundfish landings (mt) for all INPFC areas, 1982-1990.[a/] (Excludes JV and foreign catches.)

Species	All Areas								
	1982	1983	1984	1985	1986	1987	1988	1989	1990
Roundfish									
Lingcod	3,733	4,088	4,043	3,906	1,882	2,585	2,628	3,447	2,929
Pacific Cod	909	597	576	460	333	2,270	3,332	2,184	1,065
Pacific Whiting	1,021	1,026	2,718	3,893	3,462	4,768	6,876	7,418	12,825
Sablefish	18,379	14,059	13,929	14,283	13,144	12,794	10,789	10,255	8,996
Total Roundfish	24,042	19,770	21,266	22,542	18,821	22,417	23,625	23,304	25,815
Rockfish									
Pacific Ocean Perch	1,035	1,621	1,553	1,273	1,431	1,010	803	1,456	984
Shortbelly	4	0	1	11	2	0	0	2	0
Widow	25,954	10,482	9,759	8,915	9,358	12,231	10,887	12,722	10,554
Other Rockfish									
Bocaccio	3,669	4,237	2,992	1,421	1,033	1,264	1,307	868	684
Canary	5,200	3,983	2,081	2,245	1,910	2,751	1,699	2,230	1,334
Chilipepper	1,496	1,423	1,665	1,315	669	971	1,194	724	732
Thornyheads	2,143	2,654	3,144	4,113	3,638	3,739	5,592	7,925	10,118
Yellowtail	8,101	8,722	4,963	3,062	3,970	3,950	4,652	4,217	4,251
Remaining Rockfish[b/]	6,121	7,400	4,735	5,872	4,232	5,446	9,889	4,593	2,983
Unspecified Rockfish	6,961	5,246	9,090	9,579	10,686	9,008	4,571	9,140	11,557
Total Rockfish	60,684	45,768	39,983	37,806	36,929	40,370	40,594	43,877	43,202
Flatfish									
Dover Sole	19,928	19,604	18,940	20,719	17,286	18,442	18,002	18,797	15,693
English Sole	2,712	2,272	1,716	1,947	2,029	2,472	2,094	2,396	1,913
Petrale Sole	2,086	2,194	1,724	1,869	1,732	2,204	2,131	2,135	1,765
Other Flatfish[c/]	3,950	3,205	2,654	3,486	3,279	2,916	2,711	6,513	8,327
Total Flatfish	28,676	27,275	25,034	28,021	24,326	26,034	24,938	29,841	27,698
Other Fish									
Jack Mackerel	4	0	0	0	0	0	65	0	0
Others	2,924	2,577	3,086	3,448	2,646	3,502	2,499	694	906
Total Other Fish	2,928	2,577	3,086	3,448	2,646	3,502	2,564	694	906
GRAND TOTAL	116,330	95,390	89,369	91,817	82,722	92,323	91,721	97,716	97,621

SOURCE: Extracted from PacFIN September 16, 1991.

a/ The data are preliminary. There are minor discrepancies in landings due to deficiencies in data supplied by the three states, difficulties in determining where actual catches were made when the port of landing was in another catch reporting area, adjustments made on the basis of logbook information, inaccuracies in estimates of rockfish species composition and other factors.

b/ Remaining rockfish are all species of rockfish not specifically listed on this page.

c/ Arrowtooth flounder landings are included with "Other Flatfish". Prior to 1989, arrowtooth flounder landings were recorded under "Other Fish".

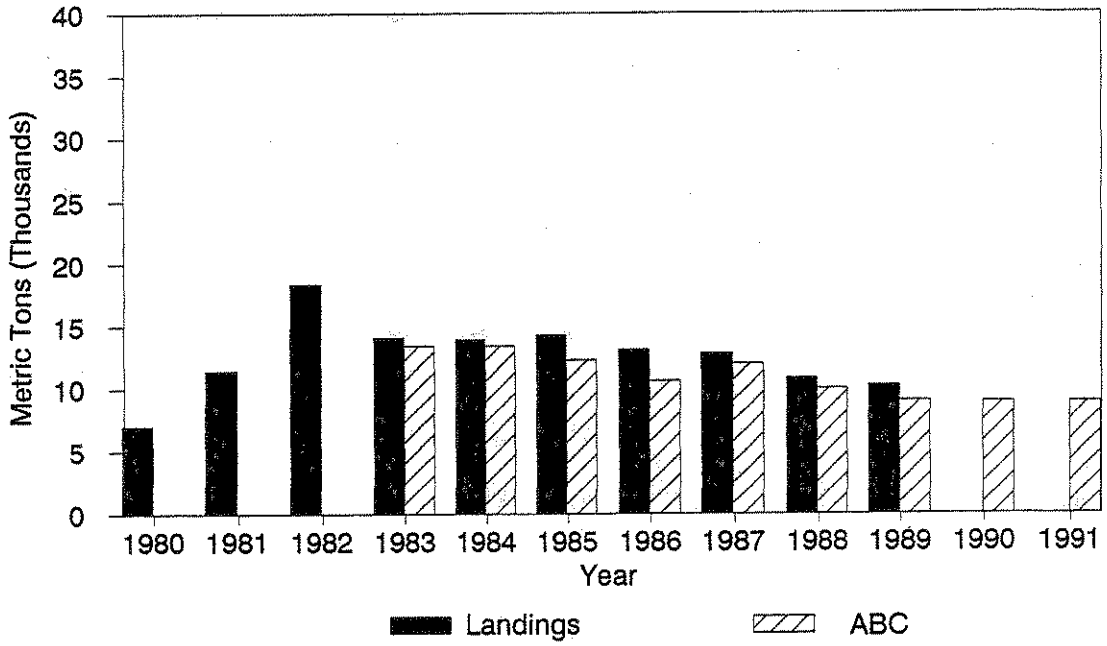

Figure 5-5. Sablefish landings and ABCs for the West Coast groundfish fishery, 1980-1991.

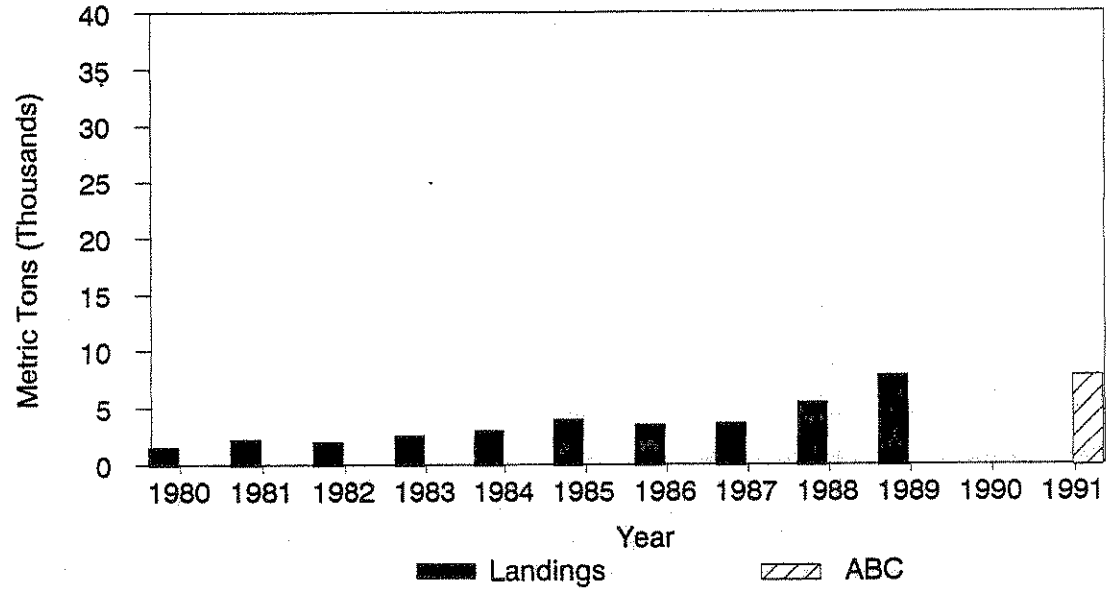

Figure 5-6. Thornyhead landings and ABCs for the West Coast groundfish fishery, 1980-1991.

- Dover Sole. Landings of Dover sole have remained fairly constant in recent years (Figure 5-7), although fishermen in the Columbia area have developed new fishing grounds in order to sustain yields. While ABCs for Dover sole in the 1980s were about 27,900 mt, the catch of Dover sole has fluctuated between 17,000 and 21,000 mt, declining to 15,700 mt in 1990. The catches in 1989 and 1990 were low due, in part, to a limit on the deepwater complex designed to restrict the catch of sablefish. Dover sole are longer-lived than previously thought and therefore more susceptible to the effects of fishing. The ABC and harvest guideline for 1991 and 1992 were reduced to 22,500 and 19,400 mt, respectively.

- Widow Rockfish. Widow rockfish landings dropped dramatically in 1983, when trip limits were imposed to keep catch levels from exceeding the ABC. ABCs had been raised in the late 1980s but dropped in 1990. In 1991, the ABC was reduced further from 8,900 to 7,000 mt (Figure 5-8).

- Boccacio. Boccacio had been managed without a harvest guideline or quota from 1983-1990 (the ABC was 6,100 mt for that period). The catches of bocaccio in recent years have been about 2,000 mt. For 1991 and 1992, the ABC was set at 800 mt; however, the harvest guideline was set at 1,100 and 1,000 mt for each year, respectively, to buffer the industry from the affects of a rapidly declining ABC.

- Pacific Whiting. Pacific whiting is a groundfish species of major economic importance. Directed foreign fishing was eliminated in 1989, being displaced primarily by JV operations with U.S. catcher vessels (Figure 5-9). The 1992 ABC is below that of recent years. However, in 1991, for the first time, the full quota was domestically harvested and processed (to a large extent by U.S. catcher-processors and motherships operating with catcher vessels). This issue is discussed at greater length in Section 5.3.4.

For a few other species, harvest guidelines and quotas were increased as follows.

- Yellowtail Rockfish. The yellowtail rockfish catch, at a high of 8,700 mt in 1983, dropped sharply with the imposition of trip limits in 1984 and have increased since a low harvest of 3,100 mt in 1985 (Figure 5-10). The catch in 1989 was about 4,200 mt. The ABC and harvest guideline for 1991 is being raised from 4,300 to 4,600 mt, the amount caught in 1988. A recent analysis of yellowtail rockfish and Sebastes trips indicated that yellowtail rockfish appears to be the target species of the Sebastes complex in northern areas. While the yellowtail rockfish ABCs and harvest guidelines have been increased in 1991, because harvests have generally been in excess of the harvest guidelines, regulations are likely to be more restrictive.

- Sebastes. The Sebastes ABC and harvest guideline for the area north of Coos Bay has been about 10,500 mt. Catch has averaged 11,400 mt over the last 5 years; however, the 1990 catch is projected to be 9,700 mt. Landings in 1990 appear to have been held down by yellowtail rockfish landing limits. The ABC for 1991 was 11,100 mt, and the ABC for 1992 is 11,200 mt.

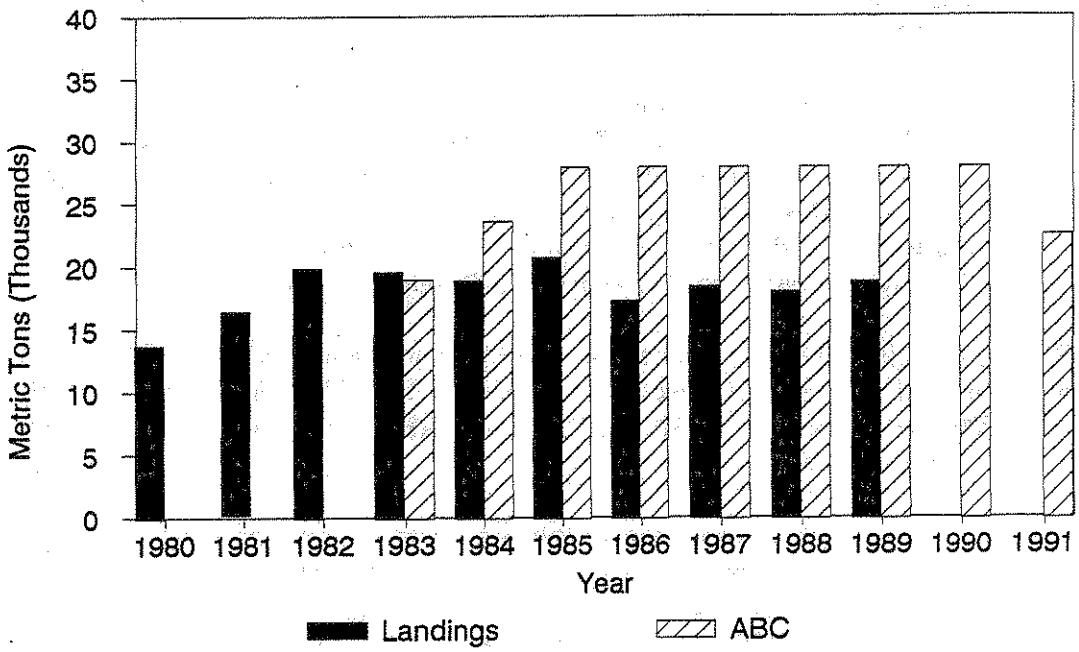

Figure 5-7. Dover sole landing and ABCs for the West Coast groundfish fishery, 1980-1991.

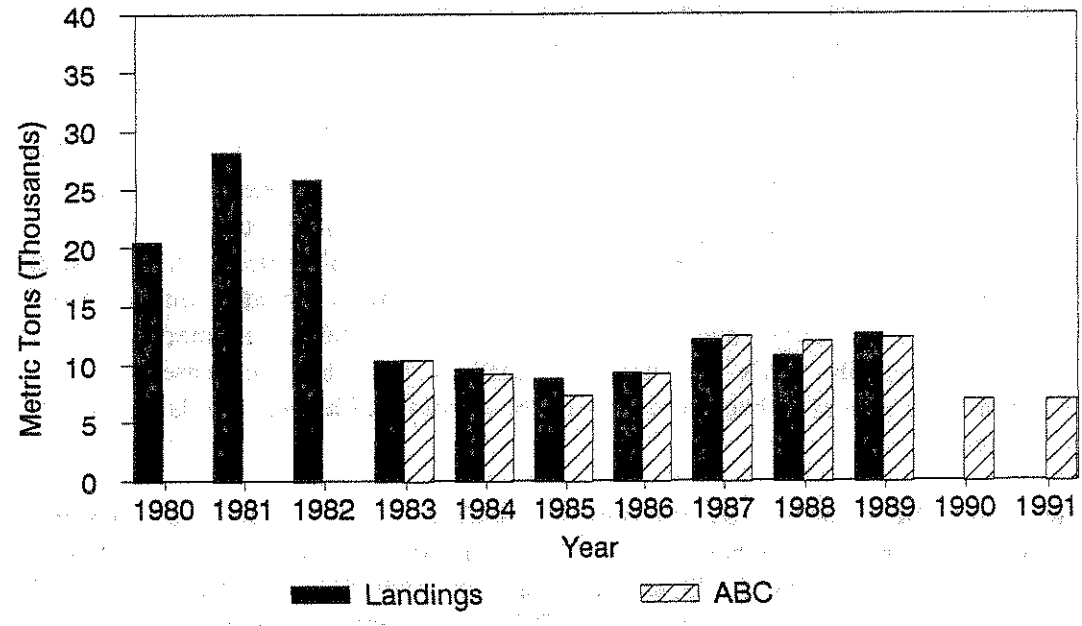

Figure 5-8. Widow rockfish landings and ABCs for the West Coast groundfish fishery, 1980-1991.

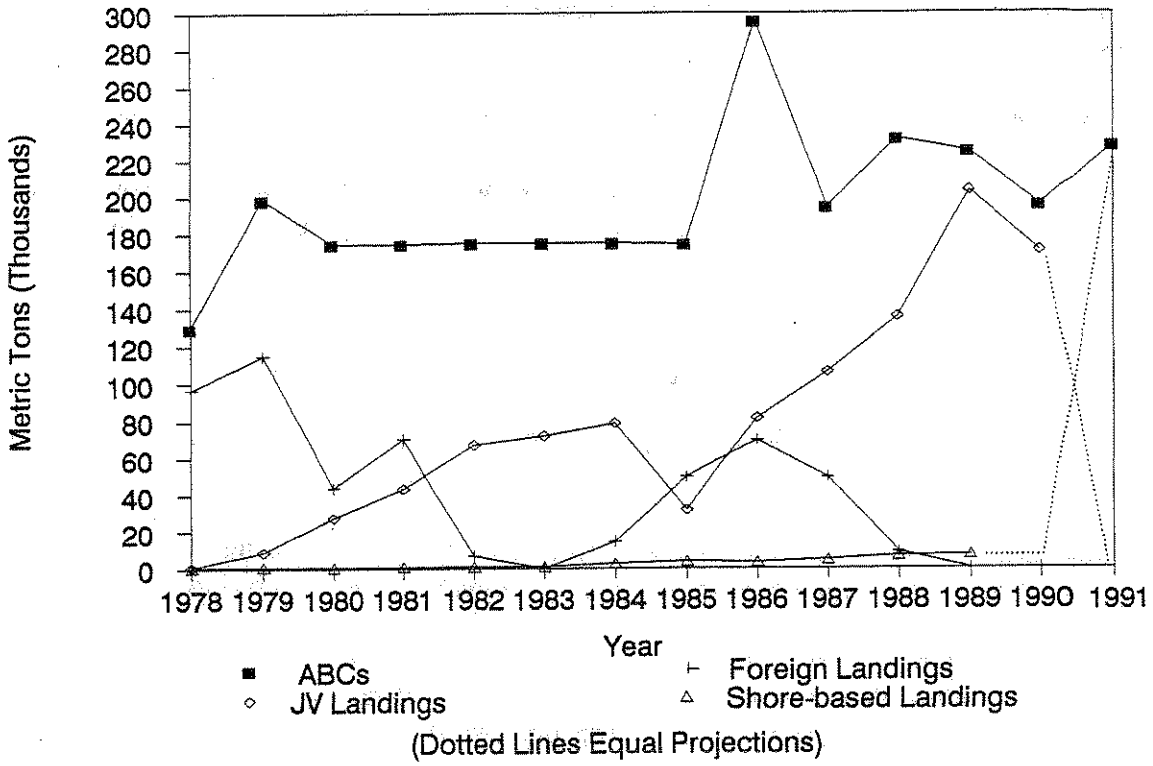

Figure 5-9. Pacific whiting ABCs, and foreign JV and shore-based landings for the West Coast groundfish fishery, 1978-1991.

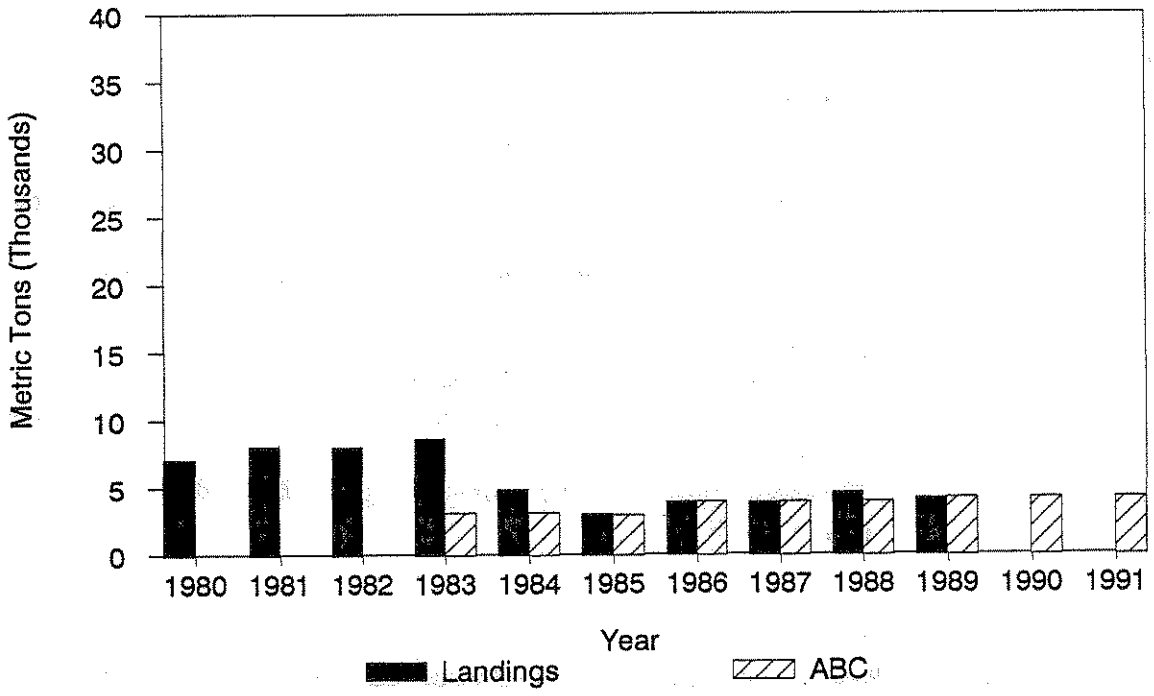

Figure 5-10. Yellowtail landings and ABCs for the West Coast groundfish fishery, 1980-1991.

Landing Restrictions. This section contains a list of landing restrictions and season closure dates for species managed under trip limits.[2/] The following terminology is used to abbreviate the details of these restrictions.

xxx lb trip limit	indicates an unlimited number of trips under xxx pounds
yyy lb/wk	indicates a single trip per week up to yyy pounds, in some cases there may be unlimited numbers of landings below some lower poundage limit
w/options	indicates fishermen were given options such as landing twice the limit every two weeks or half the limit twice a week.

Sablefish (and Deepwater Complex Beginning in 1989).[3/] Closures for the non-trawl gear sablefish fishery have been occurring earlier in the year since the first closure in December 1985. Trawl trip limits have been imposed each fall since 1985, and in 1988, a start of the year trip limit was imposed for the first time. In April 1989, for the first time, the effort to control the trawl sablefish catch restricted the catch of other species in the deepwater complex (Dover sole and thornyheads). Before this time, the catch of Dover sole had not been directly restricted by trip limits. It essentially had been managed by a trawl minimum mesh size, which will be increased for bottom trawls in 1991 (see Section 5.3.3). In 1991, the catch of the deepwater complex will be subject to a trip limit at the start of the year. Included in the species complex trip limit will be a separate trip limit for thornyheads and sablefish.

All Gears.

1982	October 13	3,000 lb trip limit.
1985	December 6	Closed.
1986	August 22	Emergency regulation establishes 55 percent trawl/ 45 percent non-trawl gear split of remaining quota (OY = 13,600 mt).
1987		52 percent trawl/48 percent non-trawl gear split of the sablefish quota (OY = 12,000 mt).
1988		52 percent trawl/48 percent non-trawl gear split of the sablefish quota (OY = 10,000 mt).
1989		52 percent trawl/48 percent non-trawl gear split of the sablefish quota (OY = 10,378 mt).
	April 26	Revised quotas establish what was effectively a 58 percent trawl/ 42 percent non-trawl gear split of the 1989 sablefish OY.
1990		58 percent trawl/42 percent non-trawl gear split of the sablefish quota (OY = 8,900 mt).
1991		58 percent trawl/42 percent non-trawl gear split of the sablefish quota (OY = 8,900 mt).

2/ SOURCE: Status of the Pacific Coast Groundfish Fishery Through 1991 and the 1992 ABCs, Council, 1989, Table 7.

3/ Incidental trip limits for fish smaller than 22 inches are not included in this summary.

1987	January 1	30,000 lbs/wk, unlimited trips under 3,000 pounds.
	November 25	Closed.
1988	January 1	30,000 lbs/wk, unlimited trips under 3,000 pounds.
	September 21	3,000 lb trip limit, no frequency limit.
1989	January 1	30,000 lbs/wk, unlimited trips under 3,000 pounds.
	April 26	10,000 lbs/wk.
	October 11	3,000 lb trip limit, no frequency limit.
1990	January 1	15,000 lbs/wk, unlimited trips under 3,000 pounds.
	December 12	Closed.
1991	January 1	10,000 lbs/wk w/options, unlimited trips under 3,000 pounds.
	September 25	3,000 lb trip limit, no frequency limit.
1992	January 1	An unlimited number of landings cumulating to a maximum of 30,000 lbs per four week period.

Sebastes. Since 1983, there had been a 40,000 pound trip limit south of the Coos Bay boundary (approximately south of the Vancouver and Columbia areas). In 1991, this trip limit will be reduced to 25,000 pounds. The following terminology is used to abbreviate geographic locations. **NCB** is north of Coos Bay and **SCB** is south of Coos Bay.

1983	January 1	40,000 lb trip limit (coastwide).
	June 28	40,000 lb trip frequency limit NCB.[4/]
	September 10	3,000 lb trip limit with no frequency limit SCB.
1984	January 1	30,000 lbs/wk, unlimited trips under 3,000 pounds (NCB) and 40,000 lb trip limit (SCB).
	May 6	15,000 lbs/wk w/options (NCB).
	August 1	7,500 lbs/wk w/option (NCB).
1985	January 1	30,000 lb trip limit w/options, unlimited trips under 3,000 pounds (NCB) and 40,000 lb trip limit (SCB).
	April 28	15,000 lbs/wk w/options (NCB).
	October 6	20,000 lbs/wk w/options (NCB).
1986	January 1	25,000 lbs/wk w/options, unlimited trips under 3,000 pounds (NCB) and 40,000 lb trip limit (SCB).
	August 31	30,000 lbs/wk w/options (NCB).
1987	January 1	25,000 lbs/wk w/options, unlimited trips under 3,000 pounds (NCB) and 40,000 lb trip limit (SCB).
1988	January 1	25,000 lbs/wk w/options, unlimited trips under 3,000 pounds (NCB) and 40,000 lb trip limit (SCB).
1989	January 1	25,000 lbs/wk w/options, unlimited trips under 3,000 pounds (NCB) and 40,000 lb trip limit (SCB).
1990	January 1	25,000 lbs/wk w/options, unlimited trips under 3,000 pounds (NCB) and 40,000 lb trip limit (SCB).

4/ The southern boundary of the area to which these management measures apply has not always been exactly at Coos Bay. Within a narrow area just north of the southern boundary of the Columbia area, the line moved around in the earlier years and eventually settled at Coos Bay (43°21'34"N).

1991	January 1	25,000 lbs/wk w/options, unlimited trips under 3,000 pounds (NCB) and 25,000 lb trip limit (SCB).
1992	January 1	An unlimited number of landings cumulating to a maximum of 50,000 lbs per two week period (coastwide).

Bocaccio – South of Coos Bay. With development of an ABC for the first time in 1991, bocaccio, part of the Sebastes complex, was placed on a trip limit.

1991	January 1	5,000 lb trip limit.
1992	January 1	Line moved to Cape Mendocino. South of Cape Mendocino: An unlimited number of landings cumulating to a maximum of 10,000 lbs per two week period. No limit north.

Yellowtail Rockfish – Vancouver and Columbia INPFC Areas Only. Yellowtail rockfish is harvested as part of the Sebastes complex and a recent trip analysis indicated that yellowtail rockfish trip limits appear to constrain harvest of the Sebastes complex in northern areas. Vessels often meet their trip limit for yellowtail rockfish without meeting their trip limit for the Sebastes complex.

1985	January 1	10,000 lbs/wk w/options, unlimited trips under 3,000 pounds.
	April 28	5,000 lbs/wk w/options.
1986	January 1	10,000 lbs/wk w/options, unlimited trips under 3,000 pounds.
	August 31	12,500 lbs/wk w/options.
1987	January 1	10,000 lbs/wk w/options, unlimited trips under 3,000 pounds.
	July 22	7,500 lbs/wk w/options.
1988	January 1	10,000 lbs/wk w/options, unlimited trips under 3,000 pounds.
	October 5	7,500 lbs/wk w/options.
1989	January 1	7,500 lbs/wk w/options, unlimited trips under 3,000 pounds.
	July 26	Greater of 3,000 or 20 percent of the Sebastes complex trip limit.
1990	January 1	7,500 lbs/wk w/options, unlimited trips under 3,000 pounds.
	July 25	Greater of 3,000 or 20 percent of the Sebastes complex trip limit.
1991	January 1	5,000 lbs/wk w/options, unlimited trips under 3,000 pounds.
	April 21	5,000 lbs/2 wks.
1992	January 1	Line moved to Cape Lookout. North of Cape Lookout, an unlimited number of landings cumulating to a maximum of 8,000 lbs per two week period. No limit south.

Pacific Ocean Perch – Vancouver and Columbia INPFC Areas Only. Pacific ocean perch are under a rebuilding program. Trip limits are intended to limit catch to bycatch amounts.

1983	January 1	5,000 pounds or 10 percent of total weight on board trip limit in Vancouver area.
	November 10	Closure of Columbia area.

1984	January 1	5,000 pounds or 10 percent of total weight on board trip limit in Vancouver area.
	August 1	20 percent of total catch trip limit, but not more than 5,000 pounds (Vancouver and Columbia areas).
	August 16	Closure of Columbia area.
1985	January 1	20 percent of total weight on board trip limit in the Vancouver and Columbia areas.
	April 23	Lesser of 5,000 pounds or 20 percent of total weight on board trip limit in Vancouver and Columbia areas (no percentage restriction on landings under 1,000 pounds).
1986	January 1	Greater of 10,000 pounds or 20 percent of total weight on board trip limit in Vancouver and Columbia areas (no percentage restriction on landings under 1,100 pounds).
	December 1	Fishery closed.
1987	January 1	Lesser of 5,000 pounds or 20 percent of total weight on board trip limit (no percentage restriction on landings under 1,000 pounds).
1988	January 1	Lesser of 5,000 pounds or 20 percent of total weight on board trip limit (no percentage restriction on landings under 1,000 pounds).
1989	January 1	Lesser of 5,000 pounds or 20 percent of total weight on board trip limit (no percentage restriction on landings under 1,000 pounds).
	July 26	Lesser of 2,000 pounds or 20 percent of total weight on board trip limit (no percentage restriction on landings under 1,000 pounds); Columbia area only.
1990	January 1	Lesser of 3,000 pounds or 20 percent of total weight on board trip limit (no percentage restriction on landings under 1,000 pounds).
1991	January 1	Lesser of 3,000 pounds or 20 percent of total weight on board trip limit (no percentage restriction on landings under 1,000 pounds).
1992	January 1	Lesser of 3,000 pounds or 20 percent of total weight on board trip limit (no percentage restriction on landings under 1,000 pounds).

At the November 1990 Council meeting, the SSC reported to the Council on its discussions of management measures for 1991.

> In discussing proposed 1991 management measures for the groundfish fisheries, several general observations became evident. The period of "fishing down" West Coast groundfish stocks is over. Most stocks are now reduced to the level that produces MSY and restraint is needed to maintain current population sizes. The harvest capacity of the fleet is many times greater than the combined ABCs. Management tools traditionally used by the Council (landing limits, trip frequency limits, ratios and quotas) have reached the limits of their usefulness in achieving the Council's conservation goals.

The Council made a commitment for 1991 to search for new management alternatives.

5.3.3 Mesh Size Restrictions

When the groundfish FMP was initially adopted, three-inch mesh was allowed with roller gear in the Vancouver, Columbia and Eureka areas to enable targeting on rockfish. At its November 1990 meeting, the Council received recommendations from various state agencies and fishermen that codend mesh less that 4-1/2 inches not be allowed with any bottom trawls. Testimony was provided that use of this gear for Dover sole and other deepwater complex species has increased over the years. The Council took final action in April 1991 to prohibit mesh smaller than 4-1/2 inches with all bottom trawls. The new regulation is expected to go into effect sometime in 1992; the Council hopes it will reduce the need for more stringent regulations in the future.

5.3.4 Resource Allocation

Sablefish. Quotas for sablefish were first established in 1983. Soon after a quota was established for sablefish, it became necessary to address the issue of allocating the quota between the trawl and non-trawl fleets. Also, the issue of season opening date for non-trawl vessels arose along with its closely connected allocational implications among non-trawl vessels.

Trawl/Non-trawl Allocation. The trawl/non-trawl allocation issue was brought to a head by the reduction of the sablefish quota from 13,000 mt in 1986 to slightly over 10,800 mt in 1988, causing substantial hardship. Non-trawl gear fishermen maintain that because a higher value product is landed by their vessels, they should receive a larger allocation. The non-trawl vessels tend to garner higher exvessel prices, due in part to the larger sizes of fish caught and the value added from onboard processing. The non-trawl fishery for sablefish is predominantly a directed fishery with very little bycatch of species other than sablefish. In contrast, the groundfish trawl fishery is multispecies, sablefish are caught in conjunction with other species giving a cost advantage to trawlers and producing economic benefits from the species caught in the complex with sablefish in addition to the benefits from the sablefish catch. Trawlers argue that without a sufficient sablefish allocation they are limited in the amount of time their vessels can engage in multispecies fishing operations without resorting to discarding large amounts of sablefish. Much of the allocation dispute has revolved around who generates the greatest value from the resource. In other sectors of the economy, such disputes are resolved through the market system. In the groundfish fishery, there is currently no such mechanism for allocation and the matter is left to managers to determine.

From 1987-1989, 52 percent of the annual sablefish OY was allocated to trawlers and 48 percent to fixed gear vessels. Trip limits were used in the trawl fishery in an attempt to reduce trawl needs for sablefish by inducing less targeting on sablefish while continuing to allow trawl catch of other species. Initially, these trip limits allowed the Council to provide more sablefish to the non-trawl gears. As trip limits became more restrictive, their ability to further reduce trawl harvest without inducing significant discard mortality from unavoidable bycatch has diminished. It is believed that sablefish trip limits cannot be made more restrictive without inducing substantial discards. In April 1989, the Council deviated from the 52/48 allocation to give more sablefish to the trawlers in order to provide continued access to other species. This resulted in a 58/42 trawl/non-trawl allocation which was applied in 1990, 1991 and 1992. Limits on catch of the total complex have also been implemented to reduce trawl catch.

Allocation Among Non-trawl Gears. As the non-trawl season shortened from a year-round season in 1985 to a January 30 through June 28 season in 1990, opening dates for the fishery and

length of the season have taken on allocational significance. Different segments of the fleet have different opportunities in the sablefish and other fisheries at different times of year.

Many coastal fishermen, primarily longliners with relatively small vessels, avoid fishing during the first few months of the year for a variety of reasons (especially weather). With an opening early in the year, longliners fear that larger vessels will enter the West Coast fishery and take the whole quota before the weather improves enough for small boats. These bigger boats are capable of deploying large amounts of gear and are designed to compete in the "derby" style fisheries for sablefish and halibut in Alaska. It is conceivable that these larger vessels could take the entire West Coast non-trawl quota in a few weeks. Since the Alaska sablefish season does not open until mid-spring, these vessels could augment their incomes considerably before leaving for Alaska. The small boat fishermen believe that delaying the unrestricted opening until April or May will keep large vessels from taking most of the non-trawl allocation because, if faced with a choice, these bigger vessels would choose the more profitable Alaska fisheries. In addition to large longline vessels, large pot vessels that freeze their catches are capable of fishing during the early part of the year. Pot fishermen in the past have generally opposed a delayed opening because they feel the need to begin operations earlier than other vessels in order to catch enough fish.

Not all West Coast small vessel fishermen avoid winter through early spring fishing. In central and southern California, weather is often better during this period than it is during April and May. Also, some non-trawl fishermen supply domestic fresh fish markets and wish to maintain a year-round fishery. A delayed season would not appear to benefit these fishermen.

For 1991, faced with these allocational effects and a rapidly shortening season, the Council decided to open the sablefish season on April 1 in order to provide some opportunity for all types of vessels. However, the Alaska sablefish opening date was changed to May 15 for 1991 so the action to delay until April 1 did not have its full desired effect. For 1992, the Council has set its unrestricted season opening date to be three days before the opening of the Alaska fishery. Between March 1 and the opening date (or the catch of 440 mt which ever comes first) there will be a 1,500 pound trip limit in place. For the remainder of the year, the Council will attempt to maintain a 500 pound trip limit.

Pacific Whiting Allocation.

U.S./Canada. Allocation of the annual yield of Pacific whiting between the U.S. and Canadian fisheries has become an important issue as the combined U.S. and Canadian harvests have reached the total ABC. In 1990, the total harvest was probably greater than ABC because the U.S. quota was 80 percent of ABC and the Canadian quota was 30 percent. The fleets in each national zone generally harvest their entire quota. Similar circumstances occurred in 1991 when the Council adopted a 90 percent U.S. share of the coastwide ABC, while the Canadians stayed with a 30 percent share. This situation is expected to recur in 1992.

Allocation Among Domestic Fishermen. Domestic at-sea processors entered the whiting fishery for the first time in late 1990 during a period when whiting are generally unavailable in large amounts (the at-sea processing fleet is described in Section 5.12). In 1991, U.S. fish processors completely displaced the JV fishery for whiting. Much of the increased domestic effort was in the form of U.S. catcher-processor ships which will either catch and process the fish or process fish purchased at sea from U.S. harvesting vessels. A large scale domestic processing fleet has never occurred previously in this management area, although this type of operation is common in Alaskan waters. Acute

competition in the Alaska region has led to early achievement of quotas for several important species and these large catcher-processor vessels are now seeking new opportunities in order to meet their production requirements. The Council is concerned that this increased effort in the Washington, Oregon and California region will displace those vessels that have historically harvested the majority of the U.S. catch and also the emerging shore-based whiting processing industry. These changes may have significant impacts on the coastal communities.

The shore-based whiting industry has existed for many years, but production remained minimal until 1991, reaching less than 10,000 mt annually compared to overall annual quotas ranging from about 130,000 to nearly 300,000 mt. As of September 3, 1991, at-sea processors had taken 194,000 mt of the 228,000 mt 1991 quota. Landings for shore-based processing were about 20,000 mt as of November 22, 1991. The Council's proposed allocation for 1992 would give the entire 208,800 mt quota to nonprocessing vessels delivering either to shore-based or at-sea processors. Of this amount, 80,000 mt would be initially allocated to vessels that deliver to shore-based processors and 30,000 mt will be held in reserve. The remainder will go to at-sea processors taking deliveries from catcher vessels.

5.3.5 Offshore Processor Reporting Regulations

The potential influx of domestic catcher-processors has raised concerns about adequate at-sea monitoring, data collection and enforcement. Domestic catcher-processors primarily target whiting; however, there is substantial concern over the amounts of other groundfish species which may be caught and the catch of salmon, a prohibited species, in the groundfish fisheries. In November 1990, the Council took final action on reporting requirements for offshore processing vessels. The regulations apply to processing vessels (defined as vessels over 125 feet that process groundfish) and all vessels that deliver unprocessed fish to processing vessels.

5.3.6 Observer Program

At the November 1990 Council meeting, the Council decided to begin exploring the need and feasibility of an observer program for all gear types harvesting groundfish. The observer program is needed for collection of data on the discard of bycatch and biological information.

5.4 Pacific Coast Groundfish Markets

If prices for whitefish increase, it would be expected to put an upward pressure on West Coast groundfish prices which in turn would increase the profitability of the fishery. This increased profitability would attract new entrants exacerbating current difficulties with trip limits and other means used to restrain harvest rates and meet conservation objectives. A decrease in prices would likely result in increased bankruptcies and reduced numbers of vessels in the fishery, easing the difficulty in meeting conservation objectives.

Prices for groundfish are at least partially tied to the world supply of whitefish. The following is excerpted from a report by the Natural Resources Consultants:

> World production of whitefish exceeded 22 million mt in 1986 and is estimated to have exceeded 25 million mt in 1989, including catch of the DPRK [Democratic

> Peoples Republic of Korea] (Exhibit 3-1) [Figure 5-11]. This level is only slightly greater than that available during the mid-1970s, and if it were not for the sharp upswing in Alaska pollock production in the North Pacific region during the 1980s, whitefish production would have declined over this period. . . . If we assume the growth of surimi production over the next decade will be based primarily on whitefish we must conclude there will be increased competition for a relatively constant supply of whitefish. . . . a major increase in production of whitefish surimi would rely on raw material now used for other whitefish commodities. If the market demand for surimi remains strong, one must also expect further use of other world whitefish supplies such as hake and codlike species. Competition for whitefish supplies will occur among producers of surimi and fillets, blocks and steaks. (Natural Resource Consultants 1990)

With stable supplies and an increasing demand for whitefish, prices would be expected to increase. At the start of 1991, Pacific whiting surimi prices were 50 percent higher than in 1989 and by October they were 160 percent above that of the previous year. Other Pacific whiting product prices also increased.

Average annual exvessel per pound prices for groundfish over the last 10 years are shown in Table 5-11. Real exvessel prices (in 1986 dollars) for most species generally declined from decade peaks in 1987 and 1988, but remained above prices present in the early 1980s, the notable exceptions begin English and Dover soles. The real exvessel price for sablefish in the late 1980s was still lower than the 1979 real price.

ESTIMATED 1989 AND 1991 FOB PROCESSOR PRICES FOR THE MAJOR WHITING PRODUCTS

	1990	1991
Surimi (average)	$.80	$1.28
Block Fillets	.50	1.10
Fillets	NA	.75
Headed and Gutted	.27-.35	.38
Fish Meal	.23	.30

Another factor affecting the price for West Coast groundfish is demand by U.S. consumers. This demand is in turn dependent on such things as taste and the price of other protein sources such as chicken. Average annual wholesale price (nominal prices) per pound over the last 14 years are shown in Table 5-12. In 1987, strong consumer demand resulted in record high prices for many groundfish species. A five percent drop in U.S. consumption of all fillets in steaks in 1988 as compared to 1987, indicated a drop in consumer demand which was reflected by lower prices. It appears that many of the higher-priced species suffered the major declines and the more moderately priced species experienced little change or modest increases. For example, the price of petrale sole fell 11.5 percent while Dover sole increased 6.9 percent (Korson and Kinoshita 1990).

5.5 Operating Costs

A decrease in operating costs with stable revenues would be expected to result in an influx of new effort in the fishery. There are no currently available historic cost data bases with sufficient sample sizes to allow reasonably certain conclusions about cost trends. Table 5-13 and 5-14 show 1980s cost information for trawl vessels under 59 feet in length and between 59 and 74 feet in length,

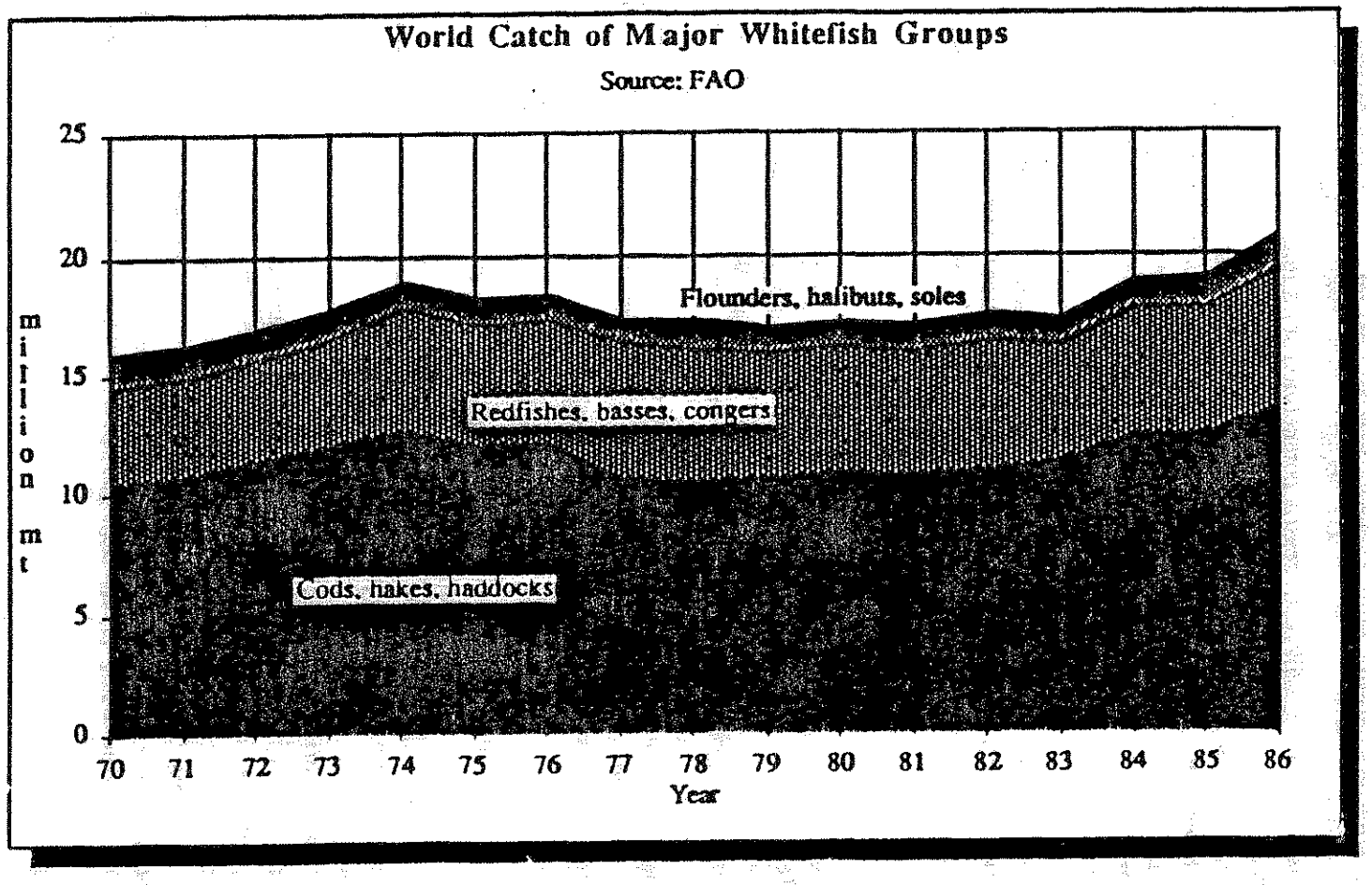

Figure 5–11. World catch of major whitefish groups.

Table 5–11. Average annual West Coast exvessel prices (dollars per pound) paid for some commercially important groundfish species, 1979–1990.[a/]

	Sablefish		All Rockfish Combined		Widow Rockfish		Dover Sole		English Sole		Petrale Sole	
Year	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real
1979	.356	.518	.199	.290	–	–	.215	.313	.286	.416	.447	.651
1980	.199	.256	.159	.212	–	–	.211	.281	.328	.437	.458	.611
1981	.215	.262	.169	.206	.135	.164	.223	.270	.297	.362	.512	.624
1982	.252	.289	.195	.224	.157	.180	.233	.267	.318	.365	.606	.696
1983	.237	.262	.223	.246	.192	.212	.224	.247	.322	.356	.682	.755
1984	.218	.232	.251	.267	.225	.240	.231	.246	.321	.343	.709	.755
1985	.334	.343	.281	.289	.250	.257	.240	.246	.333	.342	.736	.756
1986	.374	.374	.313	.313	.275	.275	.258	.258	.360	.360	.777	.777
1987	.472	.461	.350	.343	.322	.314	.305	.298	.402	.393	.816	.797
1988	.525	.496	.323	.305	.286	.270	.304	.287	.392	.370	.816	.771
1989	.476	.433	.319	.290	.258	.235	.275	.261	.365	.332	.816	.735
1990	.480	.415	.338	.292	.262	.227	.268	.232	.328	.284	.825	.714

SOURCE: PacFIN, Groundfish Report Series, October 1991

a/ Real prices were adjusted for inflation using the gross national product implicit price deflator, where 1986 – 1.00. All prices are weighted averages.

Table 5-12. Average wholesale prices (dollars per pound) of West Coast groundfish processed products by species group, 1976-1988.[a/]

Year	All Flounders	Dover Sole	English Sole	Petrale Sole	Lingcod	Rockfish	Sablefish
1976	1.062	–	–	–	0.785	0.696	0.581
1977	1.255	–	–	–	0.887	0.800	0.516
1978	1.472	–	–	–	0.878	1.085	0.653
1979	1.608	–	–	–	1.198	1.044	0.797
1980	1.600	–	–	–	1.103	0.906	0.792
1981	1.598	–	–	–	1.157	0.985	0.814
1982	1.812	–	–	–	1.142	1.078	0.891
1983	1.866	–	–	–	1.232	1.276	0.823
1984	1.763	–	–	–	1.296	1.267	0.844
1985	1.776	1.743	1.783	3.183	1.454	1.388	1.158
1986	1.764	1.874	2.069	3.987	1.561	1.477	1.566
1987	2.068	2.006	2.281	4.017	1.643	1.824	1.421
1988	2.085	2.144	2.103	3.569	1.663	1.554	1.542

SOURCE: U.S. Department of Commerce, NOAA, NMFS, Fishery Statistics Division, Silver Spring, MD 20910. U.S. Production of Fish Fillets and Steaks, 1976-1985; and unpublished data from Processed Products Survey, 1986-1987.

a/ Average prices computed by dividing total value by pounds of processed product.

Table 5–13. Cost time series for West Coast trawl vessels less than 59 feet in length.[a/]

Year	Cost Per Week Fished					Input Prices		Ratio of Total Tax Revenues to Total Variable Costs[b/]
	Fuel Costs	Total Variable Costs Excluding Crew Share[c/]	Crew Share	Total Variable Costs	Number of Vessels in Sample[d/]	Real Fuel Prices[e/]	Capital Costs[f/]	
1981	516	1,134	1,305	2,439	9	1.41	.12	1.71
1982	604	1,170	985	2,155	11	1.33	.12	2.18
1983	464	1,097	1,190	2,287	6	1.14	.10	1.99
1984	546	1,443	1,173	2,616	8	1.06	.10	1.74
1985	533	1,202	894	2,096	9	–	.10	2.66
1986	493	1,253	1,012	2,265	17	.63	.08	1.83
1987	411	1,234	1,644	2,878	20	.74	.11	2.11
1988	307	1,093	1,322	2,415	11	.69	.11	2.26
1989	243	906	1,136	2,042	10	–	.10	2.32

SOURCE: West Coast fishing fleet cost earnings data base.

a/ All values in 1988 dollars.

b/ The vessels in the samples for total variable costs and total tax revenue are identical for the years 1986–1989. For 1981–1985, there were about 75 percent more vessels in the tax revenue sample than in the total variable costs sample.

c/ Annual expenditures on provisions, ice, gear, repairs, supplies and fuel expenses divided by number of weeks fished.

d/ Estimates of fuel costs are made with larger sample sizes than indicated here for 1981–1985.

e/ Average price for Number 2 marine diesel fuel. Values in 1988 dollars.

f/ The measure of capital costs chosen is the long-term bond rate for seasoned corporate issues rated BAA. This bond rating was chosen because it represents a fair amount of risk and is therefore similar to what might be expected for the fishing industry.

Table 5–14. Cost time series for West Coast trawl vessels between 59 and 74 feet in length.[a/]

Year	Cost Per Week Fished: Fuel Costs	Cost Per Week Fished: Total Variable Costs Excluding Crew Share[c/]	Cost Per Week Fished: Crew Share	Cost Per Week Fished: Total Variable Costs	Number of Vessels in Sample[d/]	Input Prices: Real Fuel Prices[e/]	Input Prices: Capital Costs[f/]	Ratio of Total Tax Revenues to Total Variable Costs[b/]
1981	874	2,414	2,603	5,017	14	1.41	.12	1.60
1982	976	2,306	2,809	5,115	15	1.33	.12	1.69
1983	742	1,890	1,404	3,294	9	1.14	.10	2.09
1984	736	1,696	2,412	4,108	4	1.06	.10	1.35
1985	656	1,544	1,866	3,410	10	–	.10	1.91
1986	549	1,452	1,493	2,945	11	.63	.08	3.84
1987	655	2,282	2,655	4,937	19	.74	.11	2.28
1988	754	2,055	2,537	4,592	17	.69	.11	2.29
1989	483	1,651	1,483	3,134	11	–	.10	1.99

SOURCE: West Coast fishing fleet cost earnings data base.

a/ All values in 1988 dollars.
b/ The vessels in the samples for total variable costs and total tax revenue are identical for the years 1986–1989. For 1981–1985, there were about 75 percent more vessels in the tax revenue sample than in the total variable costs sample.
c/ Annual expenditures on provisions, ice, gear, repairs, supplies and fuel expenses divided by number of weeks fished.
d/ Estimates of fuel costs are made with larger sample sizes than indicated here for 1981–1985.
e/ Average price for Number 2 marine diesel fuel. Values in 1988 dollars.
f/ The measure of capital costs chosen is the long–term bond rate for seasoned corporate issues rated BAA. This bond rating was chosen because it represents a fair amount of risk and is therefore similar to what might be expected for the fishing industry.

respectively, derived from the West Coast Fishing Fleet Cost Earnings Data Base maintained at the NMFS, Southwest Fisheries Center. Costs are shown per week fished, proxies for fuel and capital input prices are shown, and a ratio of total tax revenue to total variable costs is calculated. The cost and revenue information provided is for all fisheries in which the vessel participated and not just the activities of the vessels in the groundfish fishery. While the data for the smaller trawlers indicates a possible recent year trend of decreasing costs (excluding crew share) and an increasing revenue to variable cost ratio, the data for larger trawlers show similar decreasing variable costs but a decreasing revenue to variable cost ratio for recent years. The cost and revenue values in the time series tend to jump around a lot, particularly in the years with small sample sizes. However, the Council has received a substantial amount of testimony that larger trawlers are becoming less profitable than smaller trawlers, and the data for recent years would tend to support those statements.

For smaller trawlers, weekly fuel costs appear to have been on a downward trend since 1984. The column showing per unit input prices display fuel price per gallon. Of interest, here is a comparison of real fuel prices to per week fuel costs for small trawlers. While fuel prices were higher in 1987 and 1988 than in 1986, per week fuel costs were down. One might attribute this to less fishing effort; however, the ratio of total tax revenues to total variable costs indicate higher revenues than in 1986 (the ratios increase more than the decrease in total variable costs would indicate). Thus, the revenue generated per unit of fuel consumed increased (this result might be caused by increased fuel efficiency, increased price per pound of catch or higher catching efficiencies by the vessels sampled). Also, of note is the lower capital costs in the latter part of the decade as compared to the early 1980s. With the decline of interest rates in recent months, these capital costs would be expected to have declined further, encouraging more investment. If variable and capital costs over the last few years have been decreasing, investment in segments of the fishery may be expected to increase as long as revenues are maintained.

5.6 "Seasonal Rounds"

Section 7.2.3 provides extensive information on the participation of vessels in other fisheries.

Trawl. The bottom trawl fishery is a year-round fishery in terms of resource availability, and in this sense, would not be considered a seasonal fishery. However, many vessels may choose to operate in the trawl fishery on a seasonal basis depending on the relative strength of other seasonal fisheries in which they are capable of participating. As previously mentioned, the shrimp fishery is an alternative for groundfish trawlers and typically occurs from April through October. Some smaller trawlers (about 30 to 35 percent of trawlers under 60 feet in length), may switch to the ocean troll salmon fishery during its spring through summer season. Similar numbers of smaller trawlers also take part in the halibut fishery and about half that number participate in the tuna fishery. Larger trawlers may switch from bottom trawling to the midwater whiting trawl fishery during the spring and summer. During the winter months, many trawl vessels engage in the Dungeness crab fishery. The decision to forego bottom trawling to participate in one of these alternative fisheries would therefore be mainly influenced by relative regulatory, biological, environmental and economic conditions in the alternative fisheries.

The whiting fishery has been seasonal in nature, spring through summer, and therefore vessels that participate in this fishery usually engage in offseason alternatives. These would typically include shrimp, JV fisheries in Alaska (in the past) and the other Pacific coast groundfish fishing strategies.

Pot. There are a number of large pot vessels (greater than 50 feet in length) equipped with specialized deck and freezer equipment that are designed to fish sablefish exclusively. Until recently, because of their highly specialized mode of operation, these vessels had no alternative fishery in which to engage when the sablefish fishery closed. Now some of these vessels are participating in a developing hagfish fishery off the West Coast. Hagfish are in demand for their skins which have become highly fashionable as a substitute for leather.

Smaller vessels which engage in the sablefish pot fishery will also participate in the salmon (spring through summer), albacore tuna (summer through fall) and crab (winter) fisheries on a seasonal basis.

Longline. The longline vessels that participate in the Pacific coast groundfish fishery are largely dependent on sablefish and will also harvest minor amounts of rockfish, Pacific cod and thornyheads, and participate in the halibut, salmon and crab fisheries when they are open. The longliner's groundfish fishing activities are significantly limited by the non-trawl sablefish quota allocation and progressively shorter seasons. Smaller vessels often participate in the halibut, salmon and crab fisheries when they are open, while larger vessels also participate in the West Coast halibut and Alaskan sablefish and halibut fisheries.

There have been anecdotal reports that more salmon vessels looking for alternative fisheries have begun participating in the groundfish fishery with various kinds of line gear (portuguese, vertical and longline; anchored and buoyed groundline). Of these, the use of longline gear will be affected by limited entry.

5.7 Pacific Coast Groundfish Trawl Fishery

5.7.1 Overview

Trawling has been the dominant means of harvesting Pacific coast groundfish for the past 50 years. In 1978, large productive trawl grounds in British Columbia, Canada were closed to U.S. fishermen. This action forced Washington fishermen to fish exclusively in U.S. waters, primarily off Washington. Foreign fishing fleets have also operated in the Washington, Oregon and California area. The Soviet Union operated a large trawl fleet as early as the mid-1960s for rockfish and Pacific whiting. Poland, the German Democratic Republic, the Federal Republic of Germany and the Republic of Korea also sent vessels, primarily trawlers/processors, to fish in this area prior to the implementation of the MFCMA. Foreign trawl fleets were one of the principal causes for the depletion of the Pacific ocean perch stock.

In the late 1970s and early 1980s, the creation of the 200-mile EEZ, the availability of federal low-interest vessel construction funds, significant improvements in electronic navigation and fish-finding equipment, gear advancements and the growth of a directed widow rockfish fishery helped fuel a broad expansion of the trawl fleet. For example, California's trawl fleet grew from 126 vessels in 1977 to 195 in 1983 (Korson 1984, 1986). Similar expansions occurred in the Oregon and Washington trawl fleets.

Trawl vessels vary in length from 30 to 110 feet, weigh up to 200 gross registered tons and are powered by engines producing from 100 to 1,000 horsepower. Vessels may operate full or part time with crews of one to eight, and deliver their catch to one port for the entire year or deliver to several ports over the year. Fish destined for domestic markets are iced or placed in refrigerated sea water

for delivery to shoreside processing facilities. Groundfish fishing trips range from 1 to 10 days in duration.

To augment their earnings from West Coast groundfish landings, many of the larger Pacific coast groundfish trawlers, particularly those based in Washington and Oregon, have fished part of the year in the Gulf of Alaska or Bering Sea JV fisheries for pollock, cod or flounder. Moreover, a number of large Alaskan trawlers have entered the West Coast groundfish fishery as the domestic catcher-processor fleet has undergone rapid expansion off Alaska. The 1988 Alaskan JV trawler fleet delivered 1.3 million mt to foreign at-sea processors, valued at $204.6 million. Compared to 1987, this was a six percent decrease in deliveries but an increase of almost nine percent in earnings (Korson and Kinoshita 1990). The size of the landings indicate the potential harvest capacity which could move into the West Coast fisheries.

The importance of groundfish species groups, in terms of their relative contributions to annual fleet revenues, is indicated in Table 5-15. Until 1987, the rockfish group had been the leading contributor to annual groundfish revenues. On the basis of JV whiting revenues, roundfish (lingcod, Pacific cod, Pacific whiting and sablefish) have since taken over, while flatfish have tended to decline in relative importance since 1985. The decline in the rockfish share has partly resulted from the imposition of management restrictions reducing the pursuit of the directed rockfish strategy.

The geographic distribution of trawl revenues (excluding JV whiting revenues) is reported in Table 5-16. California has consistently accounted for the greatest revenue share, averaging about 46 percent annually over the period, followed by Oregon then Washington. Oregon's share has increased since the early 1980s, while Washington's and California's share has decreased.

5.7.2 Groundfish Trawl Strategies

Groundfish trawling strategies can be defined according to the type of trawl gear used and how it is deployed, the geographic area and depth at which the gear is fished, and the species targeted. Of these, the target species is the main determinant of the trawl strategy. Gear and location are elements of the fishing process under control of the individual fishermen and can be altered to more effectively capture a particular species or group of species. Many trawlers carry multiple net reels, enabling them to change strategies quickly, even during a fishing trip. Trawl strategies have changed over time in response to changes in technology and market conditions.

Bottom Trawl Strategies.

Deepwater Slope. The deepwater slope bottom trawl strategy is characterized by the use of bottom trawls equipped with mudlines between the trawl doors and a net footrope to startle flatfish off the sea floor. The gear is fished at depths greater than 100 fathoms over mud and sand substrates for several target species, primarily Dover sole, arrowtooth flounder, thornyheads (Sebastolobus) and sablefish. Other groundfish are incidentally harvested. Dover sole has historically been the predominant species in the deepwater slope catches from the INPFC Conception to Columbia areas, but is replaced by arrowtooth flounder in the Vancouver area. In recent years, sablefish and thornyheads have increased in importance, due in part to the development of major export markets in Japan. A significant portion of the trawl sablefish catch is harvested using this strategy.

Table 5-15. Revenue shares (in percentages) by species groups for groundfish trawlers.

Year	Species Group				
	Roundfish (Percent)	Rockfish (Percent)	Flatfish (Percent)	Other Groundfish (Percent)	Pink Shrimp (Percent)
1981	14.3	25.8	20.7	10.7	28.4
1982	19.6	26.2	24.0	12.8	17.4
1983	21.6	25.4	24.7	14.7	13.7
1984	26.2	24.0	24.5	18.5	6.7
1985	18.3	31.1	33.8	3.3	16.5
1986	18.6	22.9	21.3	2.2	37.1
1987	18.7	20.1	17.9	1.1	43.3
1988	25.1	22.7	19.6	1.0	31.7
1989	29.5	23.7	20.1	0.2	26.5

Table 5-16. Revenue share (in percentages) by state for groundfish trawlers (excluding JV landings).[a/]

Year	Washington (Percent)	Oregon (Percent)	California (Percent)	Fleet Total Revenue[b/]
1981	22.0	32.0	46.0	59,903
1982	19.0	34.0	47.0	72,587
1983	22.0	36.0	43.0	60,426
1984	22.0	31.0	47.0	54,945
1985	22.0	30.0	47.0	61,355
1986	19.0	30.0	51.0	59,989
1987	23.0	34.0	43.0	74,373
1988	23.0	35.0	41.0	68,014
1989	20.0	37.0	43.0	65,099
AVERAGE	21.0	33.0	46.0	64,076

SOURCE: PacFIN management data base

a/ Groundfish trawl but not JV whiting or Conception area.
b/ Revenues are in thousands of real (1988) dollars.

Bottom Rockfish. Roller trawls deployed in depths less than 200 fathoms typify the bottom rockfish strategy. Roller trawls incorporate hard rollers or bobbins to raise the net's footrope off the bottom, thereby allowing the net to move over irregular, rocky substrates without snagging. The important species in the bottom rockfish harvest are yellowtail and canary rockfishes, Pacific ocean perch, bocaccio and chilipepper. This strategy developed rapidly from 1978–1982 with advancements in gear design and the use of electronics. Previously, most rockfish were caught with gear primarily designed for harvesting sole. In recent years, roller trawls have been increasingly used in the deepwater slope and other bottom groundfish fisheries.

Nearshore Mixed. The nearshore mixed trawl strategy is conducted using "mud gear" at depths less than 100 fathoms for a variety of flatfish, principally petrale, English, and rex soles; sanddabs; and starry flounders. Vessels engaged in this strategy tend to be smaller, lower in horsepower and older than those involved in other trawl strategies.

Midwater Trawl. The midwater trawl strategy developed in the late 1970s when larger trawlers began towing specialized off–the–bottom trawl nets at varying depths to capture a single species (with some bycatch on occasion). The species currently targeted using this strategy are widow rockfish and Pacific whiting (hake). In 1989, 73 percent of the revenue from midwater trawling came from JV whiting deliveries, 24 percent from shoreside widow rockfish landings and 3 percent from shoreside whiting landings. Shortbelly rockfish and jack mackerel, currently underutilized species, can also be harvested using midwater trawl gear. Because of the difficulty in towing and positioning the net, this strategy requires a vessel with more horsepower and electronics than a vessel typically used in other tactics such as bottom or shrimp trawling.

5.7.3 Groundfish Trawl Vessel Numbers and Fishing Activity (Excluding JV Whiting Landings)

During the early 1980s, the groundfish trawl fishery continued the expansion that began following the 1976 enactment of the MFCMA. Table 5–17 shows the number of coastwide groundfish trawl vessels that participated in the fishery between 1981–1988. Some of the vessels that entered the fishery during this period were pink shrimp trawlers that switched to groundfish trawling following declines in pink shrimp catches and availability.

The decline in the number of groundfish trawl vessels during 1983 and 1984 can be partly attributed to declining rockfish quotas and stocks (particularly widow rockfish), a decline in real groundfish prices from a high in 1979 (Figure 5–12), and the effects of high interest loans taken out to finance the fleet's expansion. Some of the larger vessels transferred their operations to Alaska, while other trawl vessels sank, burned, were repossessed, transferred to other fisheries or simply tied up due to financial difficulties (high debt service, escalating operating costs, a significant increase in insurance costs). The number of vessels declined to 308 through 1986, before rising to 346 in 1988 and remaining relatively stable in 1989 (Table 5–17). A considerable decline in vessel numbers (9 percent in 1985 and 34 percent in 1986) was due to vessels entering the resurging pink shrimp fishery. The disposition of trawl vessels leaving the fleet from 1985–1988 is reported in Table 5–17. Vessels leaving the fleet one year may reenter in another, particularly repossessed and idle vessels. The size distribution of groundfish trawl vessels is reported in Table 5–19. Most vessels are in the 40 to 59 and 60 to 79 foot classes.

Total Volume and Value of Landings. Pacific coast bottom trawl landings for the 1981–1989 period peaked in 1982 at 73,700 mt valued at $46.2 million then fell to 48,900 mt in 1986 valued at

Table 5-17. Total number of groundfish trawl vessels by state, 1981-1989.

Year	Washington	Oregon	California	Total[a/]
1981	86	147	179	412
1982	93	166	184	443
1983	80	161	193	434
1984	82	146	169	397
1985	80	121	155	356
1986	72	110	126	308
1987	83	122	128	331
1988	84	129	133	346
1989	-	-	-	342[b/]

SOURCE: Korson otter trawl inventory and status of stocks

a/ Includes any JV vessel that also made shoreside landings.
b/ Preliminary.

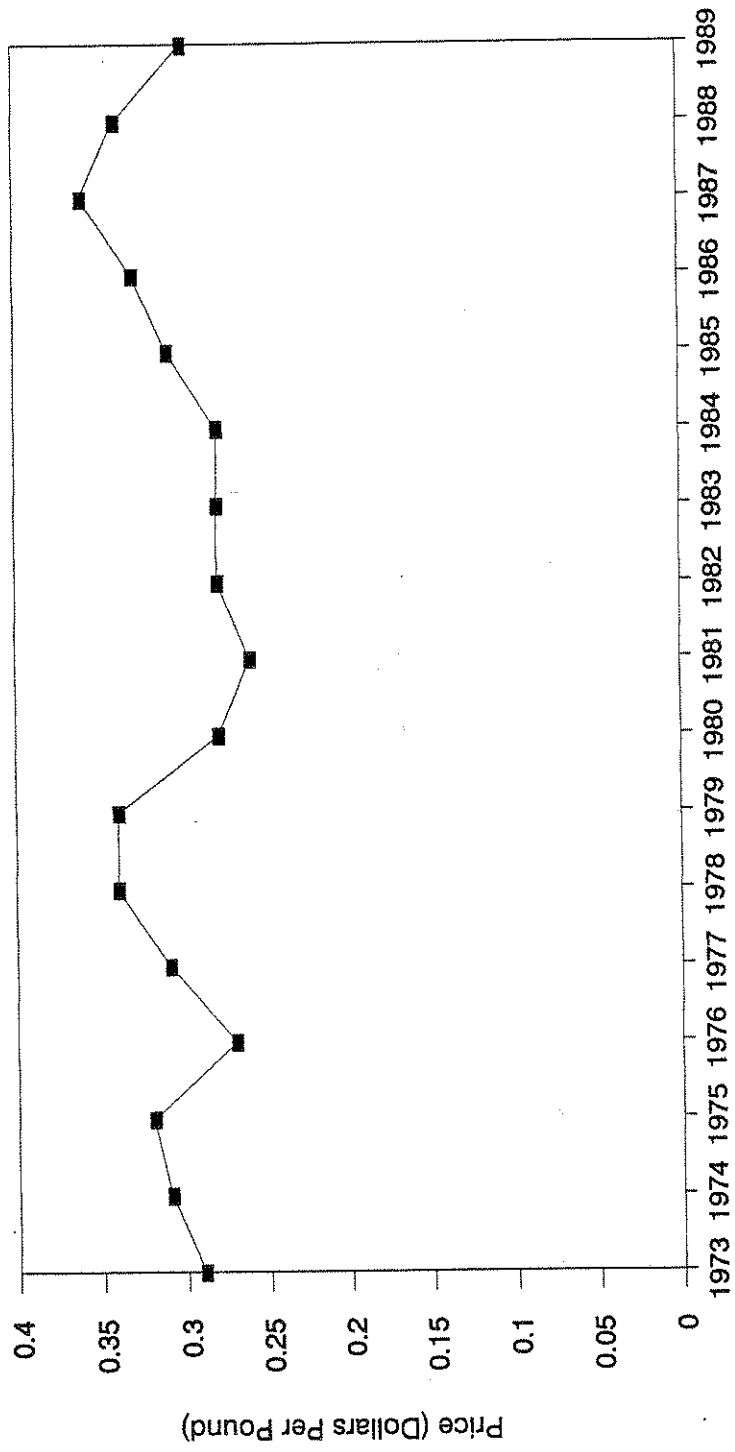

Figure 5-12. Pacific coast domestic commercial groundish real prices, 1973-1989.

Table 5–18. Disposition of West Coast groundfish trawl vessels leaving fleet in 1985–1988.

Status	Frequency (Percentage in Parentheses)			
	1985	1986	1987	1988
Alaska	15 (17.6)	10 (13.0)	–	–
West Coast Shrimp Fishery	8 (9.4)	26 (33.8)	9 (17.3)	6 (25.0)
Other Gears (Longline, Gill Net, Etc.)	4 (4.7)	7 (9.1)	20 (38.5)	7 (29.2)
Bank Repossession	6 (7.1)	2 (2.6)	–	–
Lost at Sea (Sank, Burned)	17 (20.0)	15 (19.5)	4 (7.7)	3 (12.5)
Idle	10 (11.8)	7 (9.1)	1 (1.9)	–
Unknown	25 (29.4)	10 (13.0)	6 (11.5)	4 (16.7)
Total	85	77	52	24

SOURCE: Korson and Silverthorne, "Economic Status of the Washington, Oregon, and California Groundfish Fishery in 1986" and "1988", reported in "Status of the Pacific Groundfish Fishery through 1987" and "1988," Council.

Table 5-19. Number of West Coast groundfish trawl vessels by size class, 1981-1988.

Year	Length Category (Feet)			
	1 to 39	40 to 59	60 to 79	80+
1981	21	221	150	20
1982	26	230	153	34
1983	24	235	151	24
1984	22	207	149	19
1985	17	186	138	15
1986	10	159	128	11
1987	10	166	137	17
1988	17	168	144	14

$33.0 million and recovered in more recent years (Table 5-20). Annual bottom trawl landings averaged 61,300 mt over the period generating average exvessel earnings of $40.2 million.

Annual midwater trawl landings (excluding JV whiting) averaged 17,700 mt from 1981-1989, and exvessel revenues averaged $7.8 million. Midwater trawl landings and exvessel revenues fell to a low of 12,300 mt valued at and $5.8 million in 1984, then climbed to 19,700 mt worth $7.9 million in 1989 as widow rockfish landings rebounded somewhat, and shoreside whiting landings showed a significant increase (Table 5-20).

Total Number of Landings and Average Catch Rates. There was a marked decline in the number of combined bottom and midwater groundfish trawl landings (excluding JV whiting) in 1986 (Table 5-21). This corresponds to a similar decrease in the number of vessels. The number of landings per vessel rose from 26 in 1981 to 43 in 1985 then fell to 31 in 1988. The volume per trawl landing (excluding JV whiting) fell from 8,400 mt in 1981 to 4,900 mt in 1985 and then climbed to about 7,000 mt in 1987 and 1988 (Table 5-22). In addition to economic factors, trip limits used to manage the fishery influence the changes.

Volume and Value of Landings Per Vessel. There is no clear trend in either the pattern of average volume landed per vessel or average gross earnings per vessel over the period, as reported in Table 5-22. However, these averages tend to move together, both average volume and average gross earnings per vessel reached respective lows in 1984, both peaked in 1987. While average volume was lower than at the start of the decade, the value of those landings was 22 percent higher.

5.7.4 JV Trawl Vessels, Numbers and Fishing Activity (Pacific Whiting Catch Only)

Background. Of the more than 80 species of groundfish currently included in the FMP for Pacific coast groundfish, only Pacific whiting, shortbelly rockfish and jack mackerel have been made available for foreign exploitation. Although there has been some foreign interest in shortbelly rockfish and jack mackerel, only a fishery for Pacific whiting has developed. Since 1976, foreign fishing activity off the Pacific coast has involved the Soviet Union, Poland, Bulgaria, Greece, the Peoples Republic of China, the Republic of Korea, and beginning in 1988, Japan.

Two types of foreign fishing operations have been conducted off the Pacific coast: (1) the foreign trawl fishery (directed fishery) in which fish are both caught and processed by foreign vessels and (2) the JV fishery in which U.S. trawl (catcher) vessels deliver their catch to foreign vessels for processing at sea. In the JV whiting fishery, U.S. midwater trawlers deliver their catches (in the codend of the trawl net) to foreign processing vessels. The annual JV whiting allocation is available on a "first come first serve basis" for the foreign nations participating in the JVs. By 1989, harvesting of Pacific whiting had become completely domesticated, and the only type of foreign fishing operation conducted off the Pacific coast was the JV fishery for Pacific whiting. A few domestic processors participated in the Pacific whiting fishery in the latter part of 1990. In 1991, Pacific whiting was harvested entirely by domestic catcher-processors and catcher vessels delivering shoreside and to motherships. Figure 5-13 shows the numbers of JV catcher vessels which fished for domestic motherships in 1991.

A small experimental JV fishery for shortbelly rockfish was conducted in 1982 with Soviet processing vessels, but markets for the product did not evolve and no further requests were received until 1989. In 1989, JV companies associated with Japan and the Soviet Union requested JV allocations for

Table 5–20. Volume and value of West Coast landings by trawl gears, 1981–1989.[a/]

			Midwater Trawl							
	Bottom Trawl		Widow Rockfish		Shoreside Whiting		JV Whiting		Total Trawl	
Year	Landings	Value	Landings	Value	Landings	Value	Landings	Value	Landings	Value
1981	61.9	37.8	28.2	10.9	0.8	0.3	43.6	8.0	134.5	57.0
1982	73.7	46.2	26.0	10.9	1.0	0.1	67.5	12.5	168.2	69.7
1983	67.9	42.7	10.5	5.2	1.1	0.1	72.1	12.0	151.5	60.0
1984	59.7	35.9	9.6	5.5	2.7	0.3	78.9	13.3	151.1	55.0
1985	63.0	39.4	8.9	5.4	3.9	0.4	31.7	4.1	107.5	49.4
1986	48.9	33.0	9.4	6.0	3.5	0.4	81.6	4.7	143.3	44.2
1987	57.7	44.5	12.2	8.9	4.8	0.5	106.0	6.0	180.6	60.0
1988	55.4	51.3	10.9	6.9	6.9	0.9	135.8	7.3	208.9	55.4
1989	63.7	41.0	12.7	7.0	7.0	0.9	204.0	20.9	287.4	71.0
AVERAGE	61.3	40.2	14.3	7.4	3.4	0.4	91.2	9.9	170.3	57.9

a/ Landings in thousands of mt and value in millions of real (1988) dollars.

Table 5-21. Number of West Coast groundfish trawl landings (in thousands) by region and landings per vessel, 1981-1989.[a/]

Year	Washington	Oregon	Northern California	Central California	Southern California	Total	Landings/ Vessel
1981	1.5	4.2	2.1	2.0	1.0	10.8	26.2
1982	1.6	4.8	3.5	3.6	1.9	15.3	34.4
1983	1.5	6.6	3.5	3.2	1.2	15.9	36.5
1984	1.6	5.4	3.3	2.9	1.0	14.1	35.4
1985	1.4	4.7	3.8	3.5	2.0	15.4	43.1
1986	1.1	2.5	2.4	2.0	1.2	9.3	30.2
1987	1.3	3.1	2.7	2.0	1.3	10.4	31.2
1988	1.5	3.6	2.3	1.9	1.3	10.6	30.6
1989	1.4	3.8	2.5	1.9	1.2	10.8	-

SOURCE: PacFIN management data base

a/ Does not include JV deliveries.

Table 5–22. Mt landed and revenue[a/] per West Coast groundfish trawl vessel[b/] and mt per landing, 1981–1988.

Year	Mt Per Vessel	Revenue Per Vessel	Mt Per Landing
1981	220.6	118.9	8.4
1982	227.3	129.1	6.6
1983	182.9	113.2	5.0
1984	181.9	105.0	5.1
1985	212.9	127.2	4.9
1986	200.3	128.2	6.6
1987	225.4	163.1	7.2
1988	211.3	144.8	6.9

SOURCE: PacFIN management data base

a/ Revenue in thousands of real (1988) dollars.
b/ Groundfish trawl includes bottom, roller, midwater rockfish and shoreside whiting.

Mothership Catcher Boat in 1991	Joint Venture Participation											
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
1										X		
2												
3											X	
4					X	X		X	X	X	X	X
5	X		X								X	X
6								X	X	X	X	X
7										X	X	
8											X	
9	X	X								X	X	X
10						X		X	X	X	X	X
11											X	
12												
13												
14					X					X	X	
15								X	X	X	X	X
16							X	X	X	X	X	X
17											X	X
18				X			X		X	X	X	X
19				X						X	X	X
20											X	X
21												
22											X	X
23											X	X
24												X
(A) Total 1991 = 24	2	1	1	2	2	2	2	5	6	11	18	14
(B) Total JV Catchers	11	16	21	19	19	21	18	25	31	40	65	48
Percent = (A/B)x100	18	6	5	11	11	10	11	20	19	28	28	29

Number 1991 mothership catchers that fished hake JV in any of 3 of the last 5 years (1986–1990) = 8 (8/24 = 33 percent)

Number 1991 mothership catchers that fished hake JV at least once since 1988 (first year of surimi production) = 19 (19/24 = 79 percent)

Number 1991 mothership catchers that never fished hake JV = 4 (4/24 = 17 percent)

Figure 5–13. Participation in the whiting JV by catcher boats delivering whiting to U.S. motherships in 1991.

shortbelly rockfish and permission to conduct these fishing operations as far south as 36°N latitude. For 1992, U.S. harvesters have expressed interest in both the shortbelly rockfish and jack mackerel fisheries. U.S. catcher vessels participating in the JV whiting fishery have also operated in the Pacific coast midwater trawl widow rockfish and pink shrimp fisheries, and JV fisheries in Alaska. Moreover, because the JV whiting fishery is mainly a summer fishery, many of the U.S. JV vessels engage in bottom trawl strategies during the remainder of the year.

Total Value and Volume of Landings. JV deliveries of Pacific whiting increased between 1981 and 1989 from 43,600 to 203,800 mt. Exvessel revenues exhibited a similar pattern increasing from $8.0 million in 1981 to $20.9 million in 1989 (Table 5-22). Over this period, annual Pacific whiting revenues, as a percentage of total groundfish revenues, more than doubled from 12 to over 25 percent. The measure of JV deliveries in 1990 is 171,000 mt (Council 1991). This fell to zero in 1991 with the domestication of Pacific whiting processing.

Number of Vessels. The number of U.S. catcher vessels participating in the Pacific whiting fishery increased from 21 in 1981 to 65 in 1989; an increase of over 200 percent. The number of foreign processing vessels ranged from 15 to 23 between 1981 and 1986, climbing to 45 in 1989 (Table 5-23).

Value and Volume of Landings Per Vessel. In the late 1980s, the average annual quantities of Pacific whiting delivered per U.S. catcher vessel to JV processors remained quite stable, averaging 3,300 mt per vessel over the 1981-1989 period. The stability in average quantities delivered per vessel is a function of the processing rates and the optimal processor/vessel ratio controlled by the JV companies. The mean revenue per vessel averaged $389,000 over the period, ranging from a high of $734,000 per vessel in 1982 to a low of $175,000 in 1988, before rising to $321,000 in 1989 (Table 5-22).

5.7.5 Productivity Advancements in the Trawl Fleet

The Pacific trawl fleet has experienced significant technological growth since 1976. Dewees (1986) examined the rates of adoption for eight technological innovations during this period. Innovations mostly contributing to increases in the "fishing power" of trawlers were the development of midwater trawling, chromoscopes, sonar and track plotters. Midwater trawling represents a major change in the harvesting process, and since 1980, the use of chromoscopes, sonar and track plotters (vessel electronics used to locate fish) has become more widespread. Midwater trawlers have shown a greater reliance on these electronics than bottom trawlers. Although bottom trawlers can still function satisfactorily without the electronic devices, they are nonetheless increasingly adopting these innovations. The period 1978-1982 witnessed important advancements in gear and electronics used in the bottom rockfish trawl strategy. Previously, most rockfish were caught with bottom trawl gear primarily designed for harvesting flatfish. With other factors affecting productivity held constant, trawlers adopting these technological innovations should realize an increase in fishing power.

5.7.6 Groundfish Trawl Fleet in the 1980s: A Summary

During the 1980s, there was an overall decline in the number of trawl vessels participating in the Pacific coast groundfish fishery, though numbers of vessels over the last 3 years are up compared to the low of 308 vessels in 1986. Nonetheless, the total number of landings at the end of the 1980s was roughly the same as at the beginning, and therefore the number of landings per vessel increased over most of the period. Annual tonnages of groundfish landed increased during the period mainly

Table 5–23. Number of vessels participating, tonnage delivered, revenues generated, catch per vessel and revenues per vessel for the West Coast JV Pacific whiting fishery, 1981–1989.[a/]

	Number of Vessels		U.S. Catcher Vessels			
Year	U.S. Catcher	Foreign Processors	Tonnage	Revenue	Tonnage/ Vessel	Revenue/ Vessel
1981	21	20	43.6	8.0	2.1	.381
1982	17	15	67.5	12.5	4.0	.735
1983	19	15	72.1	12.0	3.8	.632
1984	21	20	78.9	13.3	3.8	.633
1985	17	15	31.7	4.1	1.9	.241
1986	25	23	81.6	4.7	3.3	.188
1987	31	30	106.1	6.0	3.4	.194
1988	42	31	135.8	7.3	3.2	.175
1989	65	45	203.8	20.9	3.1	.321
AVERAGE	29	24	91.2	9.9	3.3	.389

SOURCE: PacFIN management data base

a/ Tonnage in thousands of mt and revenue in millions of real (1988) dollars.

due to significant growth in JV whiting operations. The number of midwater trawlers active in the JV whiting fishery showed a substantial increase between 1986 and 1989.

Average annual catch rates for trawl vessels remained relatively unchanged over the 1981–1989 period. Average groundfish trawler revenue was increasing toward the end of the period as were number of participating vessels.

5.8 Pacific Coast Groundfish Pot Fishery

5.8.1 Overview

Pot or trap gear harvests of Pacific coast groundfish are made up almost exclusively of sablefish. Sablefish traps were developed for commercial use by fishermen and NMFS scientists in the early 1970s and quickly found widespread use by 1974. These traps proved to be effective, species-specific and produced a high quality product. Between 1981 and 1988, sablefish comprised over 97 percent of the average annual Pacific coast pot gear groundfish landings (Table 5–24). Fishing is conducted using baited rectangular or conical traps attached to a groundline. The gear is typically set on the continental slope at depths ranging from 200 to 600 fathoms. The catch may be landed whole, in headed-and-gutted form or it may be processed and frozen at sea. Although comparatively minor with respect to overall Pacific coast groundfish landings, the pot gear fishery has developed into a highly effective means of producing high quality landings of sablefish, primarily in response to a strong market for this species in Japan.

5.8.2 Number of Vessels

The pot sablefish fleet quickly grew from 60 to 207 vessels in 1979, primarily in response to a strong market demand for sablefish in Japan, as well as high availability of sablefish along the West Coast. In 1980, prices dropped sharply and there was a corresponding drop in the number of trap vessels in the fishery (Korson 1984b, 1988). Since 1981, the groundfish pot fishery has remained relatively small in terms of fleet size (Table 5–24). The number of vessels participating in the pot fishery fell from 39 in 1981 to 26 in 1988, a decrease of 33 percent. Besides sablefish, pot vessels also land lingcod. Many vessels that use pot gear to fish groundfish use this type of gear to harvest Dungeness crab, as well as participate in fisheries using other gears (e.g., longline) as part of their overall fishing strategy.

5.8.3 Total Value and Volume of Landings

The exvessel value of groundfish landings by pot gear declined from a high of $5.9 million in 1982 to $2.3 million in 1989 (Table 5–24). Because exvessel prices for sablefish increased over the period, the exvessel value of pot landings declined proportionately less than the volume of landings. Annual groundfish landings by the pot fleet are substantially below those of the trawl fleet. From 1982 (when pot landings peaked at 6,500 mt) through 1989, landings declined almost 70 percent.

5.8.4 Total Number of Landings and Average Catch Rates

The annual number of pot gear groundfish landings, which varied considerably from 1981–1989, is reported in Table 5–24. The average tonnage per landing (Table 5–24) dropped dramatically from

Table 5–24. Number of vessels participating, tonnage landed, revenues generated, landings and earnings per vessel and catch rates in the West Coast groundfish pot fishery, 1981–1989.

Year	Number of Vessels	Tonnage[a/] All Species	Tonnage[a/] Sablefish	Revenue[b/]	Number of Landings	Mt Per Vessel	Earnings Per Vessel[c/]	Mt Per Landing
1981	39	4.0	3.9	2.7	198	102.6	69.2	20.2
1982	38	6.5	6.5	5.9	1,116	171.1	155.3	5.8
1983	37	5.4	5.4	4.2	758	145.9	113.5	7.1
1984	31	3.9	3.8	2.6	429	125.8	83.9	9.1
1985	27	3.7	3.6	3.5	557	137.0	129.6	6.6
1986	30	2.2	2.1	2.3	311	73.3	76.7	7.1
1987	30	2.1	2.0	2.4	336	70.0	80.0	6.3
1988	26	2.2	2.1	2.8	198	84.6	107.7	11.1
1989	–	2.0		2.3	173	–	–	11.6
AVERAGE	32	3.6	3.7	3.2	453	113.8	102.0	9.4

SOURCE: Korson and Kinoshita 1990

a/ Tonnage in thousands of mt.
b/ Revenue in millions of real (1988) dollars.
c/ Thousands of real (1988) dollars per vessel.

20,200 mt per landing in 1981 to 5,800 mt per landing in 1982 remaining fairly stable until the end of the period when it rose to over 11,000 mt per landing.

5.8.5 Mean Volume and Value of Landings Per Vessel

The average annual earnings per pot vessel reported in Table 5-24, displays a rather irregular pattern, jumping noticeably from $69,200 in 1981 to $155,300 in 1982, then moving up and down before reaching $107,700 in 1988. The average annual tonnage landed per vessel (Table 5-24), has similarly been rather unstable. Average tonnage per vessel rose from 102,600 mt in 1981 to 171,100 mt in 1982 then proceeded downward with slight reversals in 1985 and 1988.

5.9 Pacific Coast Groundfish Longline Fishery

5.9.1 Overview

Longline gear has been utilized for sablefish since the late 19th century. Longline fleet size has varied considerably over the years, but unfortunately accurate records of these vessels in the Washington, Oregon and California area were unavailable until 1987.

The commercial longline harvest is primarily composed of sablefish, rockfish, halibut and lingcod. Longline-caught fish are landed either in the whole, bled-and-gutted or dressed forms. Growth within the longline component of the Pacific coast groundfish fishery during the late 1980s has been attributed to robust foreign demand for sablefish, the introduction of very efficient circle hooks and reduced halibut and sablefish fishing opportunities in Alaskan waters. Sablefish is one of the most important groundfish species harvested by the longline fleet. The majority of the longline-caught sablefish are landed in dressed form which increases the value added by fishermen.

The longline data reported here are subject to some ambiguity concerning the coding of the gear type. Data taken from the PacFIN management data base refer to vessels coded hook-and-line, and data taken from the PacFIN RDB are for vessels coded with longline, setline or commercial pole and line gear and landing at least 500 mt of sablefish in that year. At the time of this analysis, data from the PacFIN RDB covered only the years 1985-1987.

5.9.2 Number of Vessels

Because of the coding problems referred to above, the number of vessels actually active in the longline fishery is difficult to determine. Based on the numbers reported by the Council (1990a), the number of sablefish longline vessels landing in California and Oregon, and all coastal longline vessels landing in Washington was 186 in 1987, decreased to 156 in 1988, and increased to 159 in 1989. This drop coincides with a reduction in sablefish fixed gear quotas and a shortening of the season. As in the case of pot vessels, longline vessels can be quite versatile in terms of their ability to convert to alternative gear fisheries.

5.9.3 Total Value and Volume of Landings

From 1981-1989, annual tonnage of groundfish landed by the longline fleet increased. Annual tonnage rose from 4,000 mt in 1981 to 4,400 mt in 1982, fell to a low of 2,000 mt in 1984, before climbing to a high of 7,000 mt in 1987 then dropped to 5,800 mt in 1989. The value of these

landings dropped from $4.8 million in 1981 to $2.4 million in 1984 and then started to rise reaching $7.7 million in 1989 Table 5-25.

5.9.4 Total Number of Landings and Average Catch Rates

The number of landings by the longline fleet increased rather steadily over the 1981-1989 period, from 3,300 in 1981 to 13,600 in 1989 (Table 5-25). Catch rates fell sharply from 1,200 mt per landing in 1981 to 400 mt per landing in 1982. After rising to 800 mt per landing in 1985, catch rates again fell to 400 mt per landing in 1989.

5.9.5 Mean Volume and Value of Landings Per Vessel

Based on the fleet sizes reported for 1987 and 1988, annual earnings per vessel rose from $53,200 in 1987 to $55,100 in 1988. Annual tonnage landed per vessel showed a slight decrease from 1987 to 1988, 37,600 mt per vessel to 36,500 mt per vessel.

5.10 Pacific Coast Groundfish Set Net Fishery

5.10.1 Overview

California has historically had a small-scale set net fishery for Pacific coast groundfish which occurs mainly off the state's central and southern coasts within three miles of shore. This fishery experienced notable growth off the central coast during the early 1980s, concentrating on rockfishes, white croaker and California halibut. Because of its location, the set net fishery has been subject to rules and regulations promulgated by the State of California, which up until 1990 allowed the use of set nets south of 38°N latitude. In 1990, the citizens of California passed Proposition 132. The Council found this law to be inconsistent with the groundfish FMP and the MFCMA. There is currently an injunction against enforcement of the law in federal waters. If enforcement of the law is eventually allowed, the long-term effect will be to ban the use of gill and trammel nets after January 1, 1994 in certain areas defined as the "zone" and immediately ban the use of gill and trammel nets to take rockfish.

There are two types of set nets: gill and trammel nets. Traditionally, trammel nets have been used to harvest California halibut, soupfin shark, starry flounder, rays and skates at depths to 80 fathoms. More recently, both trammel and gill nets have been used to fish for the above species plus rockfish, lingcod, sablefish, white croaker and other flounders in depths down to 150 fathoms. Rockfish, lingcod and California halibut dominate central California set net landings while California halibut, white sea bass, soupfin shark and angel shark are the principal target species occurring in southern California set net landings.

Other than the set net fishery off California, an experimental set net fishery for sablefish was conducted in Vancouver and northern Columbia area waters from 1982-1985 (Council 1990). This fishery was discontinued in 1986.

5.10.2 Number of Vessels

From a very small fleet prior to 1980, the California set net fleet expanded to 364 groundfish set net vessels by 1986. The State of California imposed a moratorium on the issuance of set net permits

Table 5–25. Setline and longline tonnage landed, revenue and number of landings,[a/] 1981–1989.

Year	Tonnage[b/]	Revenue	Number of Landings	Mt Per Landing
1981	4.0	4.8	3,323	1.2
1982	4.4	5.5	10,586	0.4
1983	2.2	2.4	4,441	0.5
1984	2.0	2.4	3,295	0.6
1985	4.6	5.8	5,463	0.8
1986	5.9	7.3	7,804	0.8
1987	7.0	9.9	10,690	0.7
1988	5.7	8.6	11,054	0.5
1989	5.8	7.7	13,583	0.4
AVERAGE	4.6	6.0	7,724	0.7

SOURCE: Korson and Kinoshita 1990, PacFIN RDB

a/ Revenue in millions of real (1988) dollars with mt in thousands excluding halibut.
b/ Includes California pole catch.

in 1985 to slow the fishery's rapid growth. Vessel numbers declined to 214 vessels in 1990 due to the limited access program and increasing restrictions placed on the fishery (Council 1989). An initiative passed in 1990 banning the use of set nets in certain areas is discussed in the overview to this section.

5.10.3 Value and Volume of Landings

Annual tonnages landed in the set net fishery over the 1981–1989 period are reported in Table 5–26. Tonnage landed climbed from 1,700 mt in 1981 to 4,300 mt in 1986 then fell to 2,300 mt in 1989. Annual revenues from set net landings over the 1981–1989 period are also reported in Table 5–26. The pattern of revenues paralleled that of total landings, rising from $1.9 million in 1981 to around the $4.0 million level from 1985–1987, before dropping to $2.2 million in 1989.

5.11 Groundfish Processing Sector

5.11.1 Shoreside Processing

Each year, NMFS surveys processing plants on the West Coast (including Puget Sound in Washington) to determine the volume and value of processed fish products and employment in the fish processing sector. Response rates vary from year to year and state to state. The response in Washington and Oregon was close to 100 percent in 1986, the most recent year for which data were available. California's response was minimal (20 to 25 percent) and therefore not included in this document.

During recent years, groundfish wholesale prices moved upward more rapidly than the general rate of inflation (Table 5–12). Most of the finished flatfish and rockfish products are sold as fresh, raw fillets to wholesalers, brokers, supermarkets, restaurants and retail fresh fish outlets. A smaller quantity of flatfish and rockfish is sold as frozen fillets. Sablefish are filleted or smoked for the domestic market and dressed for the international market, primarily Japan.

The number of processing plants producing groundfish in 1987 totaled 12 in Oregon, 24 in Washington and 11 in California (Table 5–27). Several of the Washington plants were at-sea processors operating off Alaska, though not all responded to the survey. The reporting of fishery production becomes more complex as increased at-sea processing takes place. Data can be collected as to the area of the fishery, landing of the product or location of the firm.

Employment in West Coast groundfish processing plants is provided for the years 1986–1987 (Table 5–28). California is omitted because several major groundfish plants failed to respond to the survey. Average annual monthly employment in Oregon was virtually unchanged from 1,108 in 1986 to 1,111 in 1987, while it increased in Washington from 1,173 in 1986 to 1,299 in 1987.

5.12 Offshore Processing

5.12.1 Overview

Prior to 1989, there was little domestic offshore processing except for a few pot and longline vessels that dressed their sablefish catches at sea. Domestic offshore processing of whiting began in the winter of 1990 and continued in 1991. Pacific coast groundfish catches have traditionally been

Table 5–26. Groundfish quantities landed and revenues generated by gill and set net gears, 1981–1989.[a/b/]

Year	Tonnage[c/]	Revenue
1981	1.7	1.9
1982	2.1	2.2
1983	2.3	2.0
1984	2.2	2.2
1985	3.9	3.7
1986	4.3	4.0
1987	3.9	3.9
1988	2.9	2.7
1989	2.3	2.2
AVERAGE	2.8	2.8

SOURCE: Korson and Kinoshita 1990

a/ Excluding halibut.
b/ Revenue in millions of real (1988) dollars with mt in thousands.
c/ Gill/set net includes other nets but not dip, trammel, seine or miscellaneous nets.

Table 5–27. Number of reporting plants that processed groundfish on the West Coast, 1980–1987.

Year	California	Oregon	Washington	Total
1980	23	13	25	51
1981	21	16	38	75
1982	19	18	37	74
1983	32	16	34	82
1984	32	11	31	74
1985	30	11	32	73
1986	17	12	25	54
1987	11	12	24	47

SOURCE: U.S. Department of Commerce, NOAA, NMFS, Fishery Statistics Division, Washington, DC 20235, unpublished data from Processed Products Survey.

Table 5-28. Monthly employment in West Coast groundfish processing plants, 1986-1987.

	California		Oregon		Washington		Total	
Month	1986	1987	1986	1987	1986	1987	1986	1987
January	-	-	918	926	1,021	904	-	-
February	-	-	878	903	1,105	992	-	-
March	-	-	897	900	1,279	1,047	-	-
April	-	-	1,108	1,109	1,042	1,237	-	-
May	-	-	1,163	1,167	1,088	1,318	-	-
June	-	-	1,220	1,199	1,150	1,355	-	-
July	-	-	1,257	1,270	1,176	1,479	-	-
August	-	-	1,238	1,293	1,338	1,593	-	-
September	-	-	1,249	1,238	1,283	1,558	-	-
October	-	-	1,204	1,229	1,304	1,480	-	-
November	-	-	1,000	1,014	1,190	1,386	-	-
December	-	-	1,168	1,086	1,096	1,240	-	-
AVERAGE	-	-	1,108	1,111	1,173	1,299	-	-

SOURCE: U.S. Department of Commerce, NOAA, NMFS, Fishery Statistics Division, Washington, DC 20235, unpublished data from Processed Products Survey.

delivered to shore-based facilities for processing into fresh and fresh frozen product forms, the exception being Pacific whiting that is delivered to foreign processors operating at sea. This has not been the case however in the North Pacific where there has been a rapid buildup of a catcher-processor fleet over the last several years. While this fleet is currently concentrated in Alaskan waters, there is growing concern that catcher-processors may be diverted to the Pacific coast groundfish fishery if more stringent management measures are introduced in the North Pacific groundfish fisheries, or if allowable harvests in the North Pacific are unable to support continued expansion of the catcher-processor fleet off Alaska. In 1991, floating processors acted either as motherships or catcher-processors in the harvest of all but about 20,000 to 25,000 mt of the Pacific whiting harvest.

5.12.2 Number of Vessels

The North Pacific U.S. catcher-processors fleet was nonexistent prior to 1980. Since 1986, the fleet has experienced significant and rapid growth from 12 vessels ranging in size from 130 to 340 feet to 50 such vessels in 1989, with an anticipated 70 vessels in operation by the end of 1990. The 1990 fleet will represent an investment of approximately $1.1 billion and harvesting capacity of 2.3 million mt. Because of the enormous capital expenditure and operating overhead, the catcher-processor fleet vitally depends on large harvest volumes and year-round fishing to sustain profitable operations. Thirteen catcher-processors and three motherships had operated in the West Coast Pacific whiting fishery through the fall of 1991.

5.12.3 Value and Volume of Landings

Catcher-processors operate in the Bering Sea and Gulf of Alaska targeting Alaska pollack, Pacific cod, flatfish, rockfish, Atka mackerel and sablefish. Total groundfish catches by the catcher-processor fleet have risen from 106,200 mt valued at $29.3 million in 1986 to 1,047,000 mt valued at $237.1 million in 1989 (Table 5-29). Catch per vessel increased from 8,800 to 20,900 mt and earnings per vessel increased from $2.4 million to $4.7 million over the same period.

As opportunities off Alaska have become more restricted, interest of the catcher-processor fleet in the Pacific coast groundfish fishery has increased. At present, it appears the only developed fishery resource capable of supporting catcher-processor operations off the West Coast would be Pacific whiting. In 1989, the ABC for Pacific whiting was 225,000 mt. Based on an average annual harvesting capacity of 50,000 mt per vessel at the end of 1988, the 1989 Pacific whiting ABC would almost meet the processing needs of 5 catcher-processors, everything else remaining unchanged. Catcher-processors participating in 1991 processed 200 to 400 mt per day and motherships about 200 mt per day.

5.13 Foreign Fisheries

5.13.1 Overview

Since 1988, there has been no directed foreign fishery for Pacific coast groundfish species in the U.S. EEZ. Directed foreign fishing was replaced first by JV operations, in which U.S. vessels harvest groundfish and deliver the catch to foreign vessels for processing at sea, and then by fully domestic operations. Just three species, Pacific whiting, shortbelly rockfish and jack mackerel, have been made

Table 5-29. Annual tonnage landed and revenue from the Alaskan catcher-processor fleet, 1986-1989.[a/]

	Year				
	1986	1987	1988	1989	Mean
Pollack					
Tonnage	56.2	148.4	380.3	847.3	358.1
Revenue	9.2	23.8	62.0	147.2	60.6
Sablefish					
Tonnage	8.3	11.4	14.3	11.8	11.5
Revenue	9.2	13.4	29.4	20.3	18.1
Pacific Cod					
Tonnage	28.3	44.2	73.8	102.4	62.2
Revenue	6.2	15.8	20.9	34.5	19.4
Flatfish					
Tonnage	6.8	21.6	39.4	37.7	26.4
Revenue	2.3	6.5	12.5	10.6	8.0
Rockfish					
Tonnage	6.0	13.5	19.2	29.0	16.9
Revenue	2.1	6.9	10.9	18.0	9.5
Atka Mackerel					
Tonnage	-	-	2.0	18.0	10.0
Revenue	-	-	0.1	6.3	3.2
Other					
Tonnage	0.6	0.3	0.5	0.8	0.6
Revenue	0.3	0.3	1.0	0.2	0.5
Total					
Tonnage	106.2	239.4	529.5	1,047.0	480.5
Revenue	29.3	66.7	136.8	237.1	117.5

SOURCE: NMFS office of the Pacific States Marine Fisheries Commission, PacFIN

a/ Tonnage in thousands of mt round weight, revenues based on exvessel prices that do not include the value added by at-sea processing (nominal dollars).

available for foreign exploitation. Pacific whiting is expected to be completely utilized by domestic harvesters and processors in 1991.

5.13.2 Number of Vessels

The number of foreign vessels participating in Pacific whiting fishing operations from 1981–1989 is reported in Table 5–30. The number of foreign trawlers varied considerably over the period, from 31 in 1981 to 0 in 1989. In the JV fishery, both the number of foreign processor and domestic catcher vessels increased over the period.

5.13.3 Volume of Landings

Since 1981, the relative contribution of Pacific whiting landings from the directed foreign fishery to total landings (foreign, JV and domestic shoreside) has declined. In 1981, the foreign harvest was 61 percent, JV harvest 38 percent and shoreside harvest was 1 percent of the total Pacific whiting harvest, 115,000 mt (Table 5–29). In 1988, directed foreign landings made up 11 percent of the total whiting harvest (161,00 mt), JV catch 85 percent and shoreside harvest 4 percent. By 1989, when the harvesting of Pacific whiting had become completely domesticated, JV deliveries comprised 97 percent of the total harvest (211,000 mt), shoreside landings the balance.

5.14 Treaty Indian Fisheries

Treaties with a number of Pacific Northwest Indian tribes secure to certain treaty tribes particular rights to take fish at their usual and accustomed fishing grounds. Presently, the Makah, Quileute, Hoh and Quinault tribes have been found to have such fishing grounds for salmon in areas managed under the groundfish FMP. The Makah Tribe has requested set aside of sablefish for an Indian fishery. The Quileute Tribe has also indicated an interest in the sablefish fishery. In 1990, 1991, and 1992, 300 mt of sablefish were set aside for coastal treaty Indian fishermen. Additional discussion of Indian treaty rights will be found in Chapter 9.

5.15 Recreational Fisheries

Recreational groundfish fisheries are highly developed in southern and central California and in localized areas in northern California, Oregon and Washington. Groundfish are caught for recreation by anglers who fish from piers, jetties, beaches, banks, party or charter passenger vessels, and private or rental boats. Lingcod and rockfishes are the primary species/species group caught by the ocean recreational fishery. In the Eureka, Columbia and Vancouver INPFC areas, the recreational groundfish fishery is subordinate to the recreational ocean salmon fishery. This may change in the future, as the salmon recreational fishery often witnesses shorter, more restrictive seasons and interest in groundfish grows. Take by recreational fisheries is substantial for some species (e.g., bocaccio and lingcod). The license limitation system for commercial salmon vessels does not appear to have any direct significant impact on the recreational salmon fisheries, similarly, it is not anticipated that a limited entry system for commercial groundfish vessels will adversely affect the recreational groundfish fishery.

Table 5–30. Number of vessels participating in foreign and JV fisheries for Pacific whiting, and total harvest, 1981–1989.

Year	Foreign Vessels		U.S. Catcher Vessels	Total Harvest[a/]	Percent of Total Harvest		
	Foreign Trawlers	JV Processors			Directed Foreign Fishery	JV Fishery	Domestic Shoreside/ At Sea
1981	31	20	21	114.8	61.3	38.0	0.7
1982	4	15	19	75.6	9.3	89.3	1.4
1983	0	15	19	73.2	0.0	98.6	1.4
1984	17	20	21	96.4	15.3	81.9	2.8
1985	22	15	18	85.4	58.4	37.1	4.5
1986	24	23	25	155.0	45.1	52.7	2.2
1987	33	30	31	160.4	31.0	66.0	3.0
1988	16	31	40	160.7	11.2	84.5	4.3
1989	0	45	65	211.0	0.0	96.7	3.3
1990	0	34	48	183.8	0.0	93.0	7.0

a/ Thousands of mt, including shoreside and domestic at–sea processing.

5.16 Trends in Other Fisheries

The total numbers of commercial fishing boats active in the U.S. increased over 60 percent between 1979 and 1986 (from 87,000 in 1970 to 141,000 in 1986) and the number of people engaged in the commercial fisheries increased over 75 percent from 141,000 in 1970 to 247,000 in 1986 (National Fish and Wildlife Foundation 1990). If this vessel inventory has been supported by a process in which stocks are fished down to MSY biomass levels with higher than sustainable annual harvests, one may expect increased allocational conflicts and bankruptcies on a nationwide basis. It would be likely that many vessels will be shifting between fisheries as new buyers in more profitable fisheries buy repossessed or other discounted vessels from less profitable fisheries.

5.16.1 North Pacific Fishery Management Council Groundfish Fisheries

Total numbers of vessels active in the groundfish fisheries off Alaska by gear are shown in Table 5-31 for 1986-1989. This table shows a sharp peak in the number of hook-and-line vessels in 1987. Comparing to Table 5-16, the changes in numbers of trawlers active off Alaska follows the same pattern as that for vessels off the West Coast. Table 5-32 shows that most of the increase in trawl vessel activity has come from non-Alaskan residents. Number of vessels active by gear and month are shown Table 5-33 for 1986-1989. These numbers show a surge in the activity of longline vessels beginning in April of each year which coincides with the start of the longline sablefish season. While many hook-and-line vessels come from outside Alaska, the proportion of non-Alaskan residents involved in the fishery is much greater for trawl gear. The monthly information on trawl activity shows that even though the number of trawl vessels may have decreased from 169 vessels in 1988 to 163 vessels in 1989, the number of vessel participating each month was up substantially.

5.16.2 Alaska Halibut Fisheries

Many longline vessels from the West Coast participate in the Alaska halibut fishery. The number of fishing days from 1975-1986 for the Gulf of Alaska is shown in Table 5-34. The number of fishing days has declined significantly since 1975. The regulatory boundaries from 1976-1980 changed yearly so a straight comparison cannot be made. The boundaries in this area have remained the same from 1982 to the present time (Figure 5-14). The fishing seasons in 1975 and 1976 consisted of an opening date and a closure when the catch limit was taken, therefore continuous fishing occurred. In 1977, split fishing seasons were adopted which have been continued until present day. From 1981, regulatory Areas 3A and 3B were open concurrently, although Area 3B generally had more fishing days. Table 5-35 gives the number of active halibut vessels in Areas 3 and 4 along with catch and numbers of trips. Prior to 1981, Canadian vessels could fish in U.S. waters so the number of Canadian and U.S. vessels has been included. The total catch is included, but the boundaries have shifted and stock conditions improved over the period shown in the table. (Personal Communication, Heather Gilroy, IPHC, 1990). While the number of vessels have increased since the mid-1970s, the average number of trips has declined. Catch per vessel first decreased then increased as abundance increased.

In June 1983, the Office of Management and Budget concluded that the three-year moratorium for the halibut fishery proposed by the North Pacific Fishery Management Council was inconsistent with Executive Order 12291. As a result, none was implemented. Since that time, numbers of vessels have increased significantly as illustrated by the comparison of vessel numbers for 1984 and 1990

Table 5-31. Number of vessels that landed groundfish in the domestic (DAP) fisheries off Alaska by gear, 1986-1989.

Gear	1986	1987	1988	1989[a/]
Hook-and-Line	1,356	1,705	1,549	1,167
Pot	24	31	51	20
Trawl	74	146	169	163
Other	10	26	16	3
TOTAL	1,464	1,908	1,785	1,353

SOURCE: NMFS groundfish fish ticket data base, 7600 Sand Point Way NE, BIN C15700, Seattle, WA 98115-0070.

a/ The 1989 data are incomplete; they were extracted from the catch data bases on August 25, 1989.

Table 5-32. Number of vessels that landed groundfish in the domestic (DAP) fisheries off Alaska by gear, mode of operation and residency, 1986-1989.

		At Sea				Shore Based			
Year	Residency	Hook-and-Line	Pot	Trawl	Other	Hook-and-Line	Pot	Trawl	Other
1986	Alaska	64	3	10	0	1,102	16	41	8
	Other	16	3	20	0	238	8	19	1
	Unknown	0	0	6	0	17	0	10	1
1987	Alaska	43	1	6	1	1,465	15	60	21
	Other	44	9	35	0	258	6	52	2
	Unknown	2	0	13	0	7	1	11	2
1988	Alaska	43	0	6	0	1,340	40	71	13
	Other	37	7	31	0	205	5	63	0
	Unknown	7	0	22	1	7	0	3	2
1989[a/]	Alaska	10	0	3	0	986	15	66	3
	Other	11	3	33	0	171	1	62	0
	Unknown	2	1	20	0	7	1	7	0

SOURCE: NMFS groundfish fish ticket data base, 7600 Sand Point Way NE, BIN C15700, Seattle, WA 98115.

a/ The 1989 data are incomplete; they were extracted from the catch data bases on August 25, 1989.

Table 5-33. Number of vessels that landed groundfish in the domestic (DAP) fishery off Alaska by gear, year, and month, 1986-1989.

Gear/Year	January	February	March	April	May	June	July	August	September	October	November	December
						POTS						
1986	2	4	3	11	11	10	4	3	2	4	1	5
1987	2	4	3	6	5	7	3	4	6	5	6	7
1988	1	8	18	27	23	6	1	3	1	4	10	5
1989[a/]	0	4	9	10	6	4	4	1	–	–	–	–
						LONGLINE						
1986	50	67	110	478	538	194	68	60	184	88	102	87
1987	96	189	254	823	802	608	143	133	359	295	156	136
1988	108	153	238	638	912	648	101	103	389	227	58	37
1989[a/]	35	70	84	576	732	590	87	13	–	–	–	–
						TRAWL						
1986	28	44	45	36	17	12	15	16	19	24	28	28
1987	28	42	50	55	31	26	31	55	61	79	80	79
1988	74	78	97	91	55	57	61	55	70	99	111	95
1989[a/]	92	104	134	113	68	61	61	21	–	–	–	–

SOURCE: NMFS groundfish fish ticket data base, 7600 Sand Point Way NE, BIN C15700, Seattle, WA 98115.

a/ The 1989 data are incomplete; they were extracted from the data base August 25, 1989. All areas include the separate areas reported and unknown areas.

Table 5–34. The number of fishing days for regulatory Area 3.

Year	Regulatory Area and Description	Fishing Days
1975	Area 3 – West of Cape Spencer	128
1976	Area 3 – West of Cape Spencer	96
1977	Area 3A – West of Cape Spencer to Kupreanof Point	47
1978	Area 3 – West of Cape Spencer to 175°W Longitude	43
1979	Area 3 – West of Cape Spencer to 173°W Longitude	32
1980	Area 3 – West of Cape Spencer to 170°W Longitude	20
1981	Area 3A – West of Cape Spencer to Cape Trinity	13
	Area 3B – Cape Trinity (Kodiak Island) to 170°W Longitude	16
1982	Area 3A – West of Cape Spencer to Cape Trinity	11
	Area 3B – Cape Trinity to a Line Southeast from Cape Lutke, Unimak Island	18
1983	Area 3A	7
	Area 3B	10
1984	Area 3A	5
	Area 3B	6
1985	Area 3A	5
	Area 3B	7
1986	Area 3A	4
	Area 3B	5

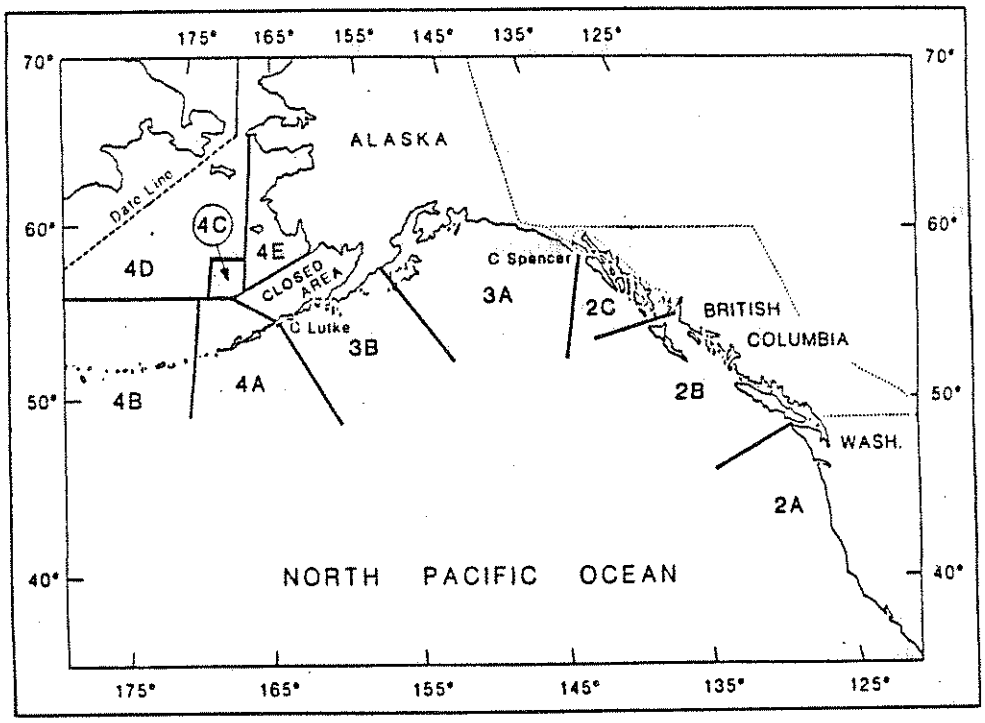

Figure 5–14. Regulatory Areas 3A and 3B, 1982–1990.

Table 5-35. Number of active vessels, number of trips and catch for IPHC Areas 3 and 4.

Year	Active Vessels		Number of Trips	Number of Trips Per Vessel	Catch (Thousands of Pounds)	Catch Per Vessel (Thousands of Pounds)
	Canada	U.S.				
1975	34	458	a/	a/	13,261	27.0
1976	50	627	a/	a/	13,964	20.6
1977	36	746	2,496	3.2	14,183	18.1
1978	39	866	2,746	3.0	14,486	16.0
1979	27	1,284	3,956	3.0	14,633	11.2
1980	26	1,422	3,129	2.2	14,793	10.2
1981	0	1,620	3,764	2.3	16,750	10.3
1982	0	1,784	4,104	2.3	20,914	11.7
1983	0	2,143	5,059	2.4	26,746	12.5
1984	0	1,986	4,345	2.2	30,816	15.5
1985	0	1,501	4,076	2.7	37,775	25.2
1986	0	1,844	4,454	2.4	48,725	26.4

a/ Not available.

in Tables 5-36 and 5-37. The catch amounts and prices which have encouraged this increase in participation are shown in Tables 5-38 and 5-39.

5.16.3 Pacific Coast Pink Shrimp Fishery

The Pacific coast pink shrimp fishery is relatively new, beginning in California and Oregon in 1952 and in Washington in 1956. Large-scale development started in 1957 with the advent of automatic peeling machines. The introduction of automatic peeling machines made it necessary for fishermen to harvest larger quantities of pink shrimp so that processing would be economically feasible.

The fishery is exclusively a domestic trawl fishery with commercial concentrations being harvested from Morro Bay, California to northern Washington in depths from 20 to 250 fathoms (Council 1980). The vessels participating in the pink shrimp fishery are typically combination vessels ranging from 40 to 80 feet in length, which are also used for bottom and midwater groundfish trawling.

Pink shrimp are not uniformly distributed and the fishery centers on a number of rather distinct "beds" along the coast with the bulk of the harvest being taken off Oregon (Table 5-8). The abundance of pink shrimp varies considerably between beds and from year to year. A strong year class entering the fishery produces high landings for a year or two. Conversely, a poor year class results in low landings.

In terms of a long-run fishing strategy, pink shrimp play an important role in determining trawl fleet profitability and signify important trade-off effects with regard to groundfish.

The number of shrimp trawl vessels mirrors the decline and subsequent rise in pink shrimp landings and total returns, as indicated in Table 5-40. The number of vessels active in the shrimp fishery fell from 314 in 1981 to 98 vessels in 1984, increasing thereafter to 236 vessels in 1988. The distribution of vessels by length class is reported in Table 5-41. Most of the vessels are in the 40 to 59 and 60 to 79 foot length categories.

The total number of landings by the shrimp fleet, reported in Table 5-40, dropped precipitously from 4,800 in 1981 to a low of 1,000 in 1984, before climbing to a range of between 5,200 to 4,900 landings from 1987 through 1989, a pattern similar to that for the change in the number of vessels. However, because the number of vessels in 1988 was about 75 percent of that in 1981 and the total number of landings was slightly higher in 1988 and 1989 than in 1981, the average number of landings per vessel increased over the period. The average tonnage in each landing, reported in Table 5-40, has correspondingly risen from 1981-1989.

Table 5–36. Commercial catch, number of vessels and season length by IPHC regulatory area and year, 1984–1990.

Year	Number of Vessels	Catch (Thousands of Pounds)	Average Catch	Season Length (Days)	Number of Vessels	Catch (Thousands of Pounds)	Average Catch	Season Length (Days)	Number of Vessels	Catch (Thousands of Pounds)	Average Catch	Season Length (Days)
	AREA 2C				AREA 3A				AREA 3B			
1984	1,009	5,799	5.75	3.0	1,294	19,917	15.39	5.0	334	6,605	19.78	6.0
1985	1,138	9,202	8.09	4.0	1,230	20,771	16.89	5.0	383	10,949	28.59	7.0
1986	1,339	10,608	7.92	3.5	1,564	32,801	20.97	4.0	568	8,792	15.48	5.0
1987	1,481	10,679	7.21	3.0	1,873	31,232	16.67	3.0	589	7,758	13.17	4.0
1988	1,678	11,372	6.78	4.0	1,986	37,864	19.07	4.0	285	7,082	24.85	4.0
1989	1,590	9,506	5.98	3.0	1,780	33,735	18.95	4.0	273	7,843	28.73	4.5
1990	1,490	9,693	6.51	2.0	2,346	28,790	12.27	3.0	384	8,692	22.64	2.0
	AREA 4A				AREA 4B				AREA 4C			
1984	51	1,047	20.53	7.0	42	1,106	26.33	14.0	35	580	16.57	33.0
1985	54	1,730	32.04	9.0	52	1,240	23.85	16.0	36	620	17.22	24.0
1986	133	3,369	25.33	7.0	21	261	12.43	6.0	29	686	23.66	18.0
1987	179	3,713	20.74	4.0	61	1,500	24.59	6.0	39	878	22.51	6.0
1988	131	1,930	14.73	6.0	60	1,593	26.55	16.0	28	707	25.25	17.0
1989	87	1,025	11.78	4.0	84	2,651	31.56	14.0	35	571	16.31	13.0
1990	153	2,503	16.36	3.0	61	1,333	21.85	11.0	51	529	10.37	5.0

Table 5-37. Number of vessels and catch of Pacific halibut by IPHC vessel length class in the 1984 and 1990 commercial fishery.

Overall Vessel Length	Area 2C			Area 3A			Area 3B			Area 4 (All)		
	Number of Vessels	Catch (thousands of pounds)	Average Catch	Number of Vessels	Catch (thousands of pounds)	Average Catch	Number of Vessels	Catch (thousands of pounds)	Average Catch	Number of Vessels	Catch (thousands of pounds)	Average Catch
1984												
< 26 Feet	250	521	2.08	299	783	2.62	24	187	7.79	47	148	3.15
26-30 Feet	132	332	2.52	150	637	4.25	12	89	7.42	10	74	7.40
31-35 Feet	176	901	5.12	220	1,869	8.50	40	417	10.43	11	301	27.36
36-40 Feet	186	1,308	7.03	185	1,980	10.70	66	449	6.80	3	26	8.67
41-45 Feet	78	802	10.28	95	1,707	17.97	29	291	10.03	4	33	8.25
46-50 Feet	84	1,098	13.07	104	3,263	31.38	48	931	19.40	7	170	24.29
51-55 Feet	9	143	15.89	27	1,038	38.44	14	254	18.14	2	72	36.00
> 56 Feet	22	431	19.59	111	8,151	73.43	92	3,797	41.27	30	2,272	75.73
Unknown	72	263	3.65	103	489	4.75	9	190	21.11	26	68	2.62
TOTAL	1,009	5,799	5.75	1,294	19,917	15.39	334	6,605	19.78	140	3,164	22.60
1990												
< 26 Feet	308	368	1.19	327	276	0.84	5	6	1.20	66	113	1.71
26-30 Feet	132	286	2.17	177	253	1.43	3	2	0.67	37	82	2.22
31-35 Feet	222	840	3.78	371	1,655	4.46	46	424	9.22	117	361	3.09
36-40 Feet	369	2,335	6.33	432	3,114	7.21	71	492	6.93	6	70	11.67
41-45 Feet	181	1,941	10.72	268	3,002	11.20	42	533	12.69	8	193	24.13
46-50 Feet	126	1,679	13.33	207	3,273	15.81	57	905	15.88	11	216	19.64
51-55 Feet	46	616	13.39	98	2,170	22.14	25	651	26.04	8	401	50.13
> 56 Feet	84	1,572	18.71	423	14,836	35.07	131	5,628	42.96	90	3,966	44.07
Unknown	22	56	2.55	43	211	4.91	4	51	12.75	10	29	2.90
TOTAL	1,490	9,693	6.51	2,346	28,790	12.27	384	8,692	22.64	353	5,431	15.39

Table 5-38. Commercial catch of Pacific halibut, 1984-1990.

Year	Total Catch (Thousands of Pounds)	Catch Off Canada (Thousands of Pounds)	Catch Off Alaska		
			Thousands of Pounds	Percent	Average
1984	44,970	9,054	35,485	79	16.590
1985	56,113	10,389	45,180	81	18.623
1986	69,632	11,225	57,784	83	18.761
1987	69,482	12,246	56,553	82	15.635
1988	74,351	12,858	61,011	82	16.068
1989	66,928	10,431	56,018	84	16.102
1990	61,186	8,172	52,606	87	12.964

Table 5-39. Exvessel price (U.S. dollars), value and annual catch of the Pacific halibut fishery for 1984-1990.

Year	Commercial Catch (Thousands of Pounds)	Price (Dollars Per Pound)[a/]	Price (Dollars Per KG)[b/]	Exvessel Value (Thousands of Dollars)
1984	44,970	0.75	1.24	33,698
1985	56,113	0.89	1.47	49,884
1986	69,632	1.44	2.38	100,270
1987	69,482	1.58	2.61	109,782
1988	74,351	1.23	2.03	91,452
1989	66,628	1.53	2.52	101,941
1990	61,186	1.88	3.12	115,029

a/ Dressed weight.
b/ Round weight.

Table 5–40. Number of vessels participating, mt landed, revenues generated, number of landings, earnings per vessel and catch rates in the pink shrimp fishery, 1981–1989.

Year	Number of Vessels	Mt Landed[a/]	Revenue[b/]	Number of Landings[c/]	Mt Per Vessel	Earnings Per Vessel[d/]	Mt Per Landing
1981	314	18.1	25.9	4.8	57.6	82.5	3.8
1982	229	12.6	17.3	3.3	55.0	75.5	3.8
1983	189	6.0	11.4	2.1	31.7	60.1	2.9
1984	98	4.4	5.0	1.0	44.9	50.7	4.4
1985	118	12.4	10.5	1.6	105.1	89.1	7.8
1986	216	24.9	32.5	4.1	119.9	150.6	6.3
1987	243	30.8	47.7	5.3	126.7	196.2	5.8
1988	236	32.0	28.8	4.9	135.4	122.0	6.5
1989	–	35.2	27.3	5.0	–	–	7.0
AVERAGE	205	19.6	22.9	3.6	84.5	103.3	5.4

SOURCE: Korson shrimp trawl inventory.

a/ Tonnage in thousands mt.
b/ Revenue in millions of real (1988) dollars.
c/ Thousands of landings.
d/ Thousands of dollars per vessel.

Table 5–41. Number of pink shrimp trawl vessels by length class, 1981–1988.

Year	Length Category (Feet)			
	1–39	40–59	60–79	80+
1981	10	150	146	8
1982	8	99	119	4
1983	5	84	97	3
1984	1	37	59	1
1985	4	52	61	1
1986	8	105	101	2
1987	7	112	119	5
1988	5	106	122	3

SOURCE: Korson shrimp trawl inventory

6.0 BIOLOGICAL AND PHYSICAL IMPACTS

Regardless of the alternative implemented, the management process and level of allowable catches for the fishery are likely to remain unchanged. Each year, the Council determines the status of stocks, calculates ABCs and sets guidelines or quotas for total allowable catch as appropriate. Annual catch levels should be essentially equivalent for the different alternatives, although differences could arise due to errors in management. For example, undocumented discarding could cause the effect of fishing to be underestimated, and the likelihood of significant discarding varies among the alternatives.

Except due to errors in the stock assessments, none of the alternatives would have an obvious specific impact on average spawning success, population structure and stability, species diversity or distribution of the resource. Specific biological impacts of the alternatives are discussed in the following sections. Impacts associated with measured discards are economic in nature as the impacts are on utilization and net economic benefits rather than on the amounts of mortality.

6.1 Status Quo

Under status quo, the number of participating vessels might vary around current levels or increase. Chapters 3 and 5 contain information to help the reviewer evaluate the probability of alternative future trends in numbers of vessels. It is also assumed the landing quotas used to regulate fishing mortality would be maintained for the species currently managed in that manner. The primary negative biological impact of status quo management, as compared to effective license limitation or ITQs, may be the higher unmeasured discarding that might occur due to more restrictive trip limits and closures.

Trip limits have been used to slow landings of certain stocks caught in multispecies fisheries (e.g., trawl sablefish, Vancouver and Columbia area yellowtail rockfish). The rationale is that trip limits encourage shifts in fishing strategy so that catches of unregulated species might be maintained or increased while the catch of regulated species would be reduced. In practice, substantial discarding occurs when catches of regulated species exceed trip limits (Pikitch et al. 1988). These losses can occur whether fishing effort is directed toward that species (targeting) or toward other co-occurring species (bycatch).

The rate of discard typically varies inversely with the magnitude of the trip limits (Pikitch et al. 1988). Trip limits are made more restrictive as the landed catch of the regulated species approaches the total allowable catch for the year. The rate at which the catch quota is approached would depend on the size of the quota, fishing power of the vessels and number of participating vessels. Thus, an increase in the number of vessels would be expected to increase discarding above current levels. Particularly when trip limits are low, some discarding is also due to highgrading (discarding the least valuable sizes of fish so a greater fraction of the trip limit will be comprised of more valuable size fish) (Pikitch et al. 1988).

Closures have been applied primarily to single-species fisheries in which most of the catch results from directed fishing. In those cases (e.g., widow rockfish, fixed gear sablefish), the directed fishery closes when the landed catch equals the quota less anticipated bycatch in other fisheries. In recent years, rather than closing the fishery, the Council has gone to a low trip limit which allows vessels landing small amounts of fish to continue fishing. Factors that reduce season length (e.g., a decrease in stock size, or an increase in vessel fishing power or the number of participating vessels) would

increase discarding for those species if sufficient allowances are not made for bycatch. For example, significant discarding of widow rockfish in the bottom rockfish fishery was observed following a closure in November 1987 (Pikitch et al. 1988).

Discarding results in direct losses in long-term production of stocks, as some yield available to fishermen would be lost as discard. Indirect losses also are likely, due to errors in the assessments, because the landed catch would be an underestimate of total mortality due to fishing. Except for short-term studies of segments of the fishery, there is no onboard observer program that could provide estimates of amounts discarded. For that reason, stock assessments incorporate assumptions about the level of discard, based on the perceived levels of fishing effort and regulations in effect. The long-term productivity of these stocks will be maintained only if the assumptions about discarding are reasonably accurate.[1/] The impact of discarding would, in general, apply coastwide except when regulations pertain to only one area (e.g., Vancouver and Columbia area yellowtail rockfish trip limits).

One possible result of status quo management could be an increase in the number of participating vessels. An expected impact of an increase in participants would be earlier and stricter trip limits. For example, in 1987, a 30,000 pound trip limit for widow rockfish was in effect from January 1 through October 14, and a 5,000 pound trip limit was in effect from October 14 through November 25 when the fishery closed. Assuming a 10 percent increase in vessels (and, hence, fleet harvest rates), the cumulative total landings would be about one month ahead of 1987 (Table 6-1); thus, restrictive trip limits might begin a month or more earlier.

Table 6-1. Monthly Washington, Oregon and California widow rockfish landings (L) for 1987 and projected landings (1.1L) assuming a 10 percent increase in the number of participating vessels.

Month	Actual 1987 Landings (L)	Actual 1987 Cumulative Total	Projected Landings with 10 Percent Increase in Fleet Size (1.1L)	Cumulative Total Projected Landings
January	1,773	1,773	1,950	1,950
February	2,065	3,838	2,272	4,222
March	1,670	5,508	1,837	6,059
April	1,005	6,513	1,106	7,165
May	603	7,116	663	7,828
June	732	7,848	805	8,633
July	922	8,770	1,014	9,647
August	1,142	9,912	1,256	10,903
September	1,725	11,637	1,898	12,801
October	942	12,579	1,037	13,838
November	60	12,639	66	13,904
December	2	12,641	2	13,906

1/ The assumed discard mortality due to regulations for yellowtail and widow rockfishes is 16 percent. For trawl caught sablefish, the assumed discard mortality is 25 percent of the landed trawl catch.

6.2 Effective License Limitation

Under this scenario, it is assumed the number of active participants would be below status quo levels.[2/] At the outset, the present system of total allowable catch limits, trip limits and closures would most likely be used, with discarding similar in magnitude to that described for status quo management. Eventually, regulations would be less restrictive, as compared to the situation which would have occurred under status quo, and most likely discarding would be lower.

Under the effective license limitation scenarios, it is assumed that at some time in the future there are fewer vessels present than would be present under status quo. How will this affect the resource? Reasons for a decrease in discards would be less restrictive trip limits and fewer number of trips for the fleet as a whole, hence, fewer opportunities to go over the trip limits. However, the effect of increases in vessel fishing power on discards must be considered. There will be impetus for increases in vessel power beyond what would have occurred under status quo from two main sources.

1. Independent of any increase in trip limits, vessel owners may see their profits as more secure (less threatened by increases in vessel numbers) once license limitation is in place and may increase investments in ways which will increase vessel power. However, until trip limits become much less restrictive, there would be little incentive to increase a vessel's fishing power.

2. With an increase in trip limits, vessel owners may increase the power of their vessel to take advantage of new opportunities.

Increases in vessel power would result in larger catches per trip, which would reduce the gains in discard reduction made from higher trip limits and fewer trips. To decide whether discards might increase under license limitation, the question which would have to be answered is "Will increases in vessel power cause vessels to go over the limits a greater portion of the time than they currently do, or by a greater amount each time they go over the limit, and if so, will these increases be sufficiently high to completely offset the effects of fewer trips being taken under higher landing limits?" While there is no particular reason to anticipate an increase in the number of trips exceeding trip limits or the amount by which individual trips exceed limits, sufficient information to answer this question is not available. Given that it will take a significant reduction in trip limits to provide incentive for increasing fishing power, it seems likely that a decrease in discards may result.

There may be some incentives for increased effort created by consideration of limited entry and the limited entry program itself. Gains from an effective license limitation program may be reduced if fishermen believe that an ITQ system will follow and they try to increase their landings to establish claim to a larger initial allocation of ITQs. There may also be a belief that at some time in the future the Council might decide that licenses will be revoked if they have not been used over a period of time. Over time, these kinds of behavioral responses are likely to diminish or increase to the degree that Council discussions allay or reinforce beliefs about the probability for future actions of this nature.

2/ When the program begins, there may be more permits issued than there are vessels currently active; however, many of these will be limited duration endorsements and will expire in 1997. At that time, the "effective license limitation" scenario might apply if a restrictive MLR has been adopted, a buy-back program has been implemented or if vessel numbers would have increased more under status quo management.

Very early in the program there may be a temporary offset of gains from reduced effort due to fishing requirements placed on vessels receiving provisional "A" endorsements. These endorsements require vessel owners to make a certain amount of landings in each of their first three years of activity in order to prove their intent to participate in the groundfish fishery. For many vessels, this period of activity will have passed prior to the decision to implement a license limitation program. The earliest date at which license limitation might be effective in reducing capacity (as compared to status quo) is January 1, 1997 (the date when "B" endorsements expire). By that time, most provisional "A" endorsements will have either expired or been upgraded. The upgraded versions of these endorsements do not require continued fishing to maintain their validity.

It should be re-emphasized, at this point, that references to less restrictive trip limits are references relative to a future status quo management situation. For example, current trip limits might remain unchanged; however, relative to some future year in which the trip limits might be more restrictive under status quo, the trip limits, which are currently in place, may be higher and therefore less restrictive as compared to what would have otherwise occurred.

Currently, fishing capacity is substantially greater than needed to take the allowable catches. Consequently, a considerable decrease in the number of participants relative to status quo and limits on fishing power would be needed in order to eliminate regulations resulting in discarding (Huppert 1986). While under the scenario of an effective license limitation program, a license limitation system may reduce the need for limits on total allowable catch, trip size and trip frequency, it is unlikely to completely eliminate the need for such limits for the foreseeable future.

The final form of the limited entry program adopted by the Council included open access fishing opportunities for all gears except trawl. The open access opportunity for longline and fishpot gears would be restricted to small producers through the use of restrictive trip limits. These trip limits and trip limits for exempted gears could result in increased discards. Vessels which previously had not been impacted by trip limits may now find themselves forced to discard when they have a particularly large catch. Tables in Chapter 4 show that trip limits which reduce the catch of a few vessels making large catches with exempted gear may result in enough of a reduction in catch to meet the needs of many small vessels. Additionally, the discard mortality rate for exempted gear is often much less than for trawl gear,[3/] thus, the wastage from discarding may be lower than for other gears. If discards by open access gears become a problem, then a FMP amendment may become necessary to modify the limited access/open access allocation or change the nature of the open access fishery.

6.3 Ineffective License Limitation

Under ineffective license limitation, no decrease in discarding is expected. At the same time, there may be the same behavioral responses in anticipation of future Council action to further limit entry or more certainty about future income (the assurance that vessels will not continue to enter the fishery and dissipate profits). These expectations and responses are discussed in the above section. The responses may increase fleet harvest rates under ineffective license limitation, and hence increase the restrictiveness of regulations and discards.

3/ The mortality rate for trawl gear discards is assumed to be 100 percent.

6.4 ITQs

Under this alternative, it would be anticipated that the current system of trip limits and closures would not be required since each individual would control the rate at which his or her quota is harvested. Nevertheless, substantial discarding could occur due to highgrading, underreporting and discarding of any catch for which ITQs are not held. Highgrading might occur as fishermen try to maximize revenue received per unit of ITQ. There would be considerable incentive to underreport landings, so the unreported catches would not be deducted from a fisherman's quota. Unreported catches occurring in the absence of an observer program would result in the same type of errors in the stock assessments and in setting the quotas as would unmeasured discarding. However, results under a properly designed and implemented ITQ system may not be all that different from the problems which occur under status quo management with trip limits.

The individual quotas would need to take into account the multispecies nature of the groundfish fishery. Otherwise, fishermen would catch and discard species for which quotas had been reached, in order to land species with remaining quotas. It may be possible to design a carry-over or quota trading system so that species for which an individual's quotas had been reached could still be landed.

ITQs may have a positive effect on stocks if within-year rates of harvest decreased substantially, relative to current levels. Fish harvested later in the year could have a few months of additional growth; consequently, the total allowable catch might be made up of fewer individuals.

6.5 Conclusion

The primary biological impact of the above alternatives is the potential loss in production due to discarding. Under status quo management, discarding would be caused by the trip limits and closures used to limit total annual landings. Increases in discarding over current levels would be expected if the number of participating vessels increases. Under license limitation, discarding would be due to the same system of trip limits and closures and would occur at similar levels, unless the number of active vessels is sufficiently lower than would have been present under status quo (regardless of whether status quo entails an increasing, stable, or decreasing numbers of vessels). Under an individual quota system, discarding could be caused by highgrading or exceeding the quotas held by an individual. Management errors also could arise due to unreported landings and discard mortalities.

The lowest rates of discarding would occur for a license limitation or individual quota system that reduces fishing capacity substantially below future status quo levels, though discard problems may occur in the open access fishery if effort increases above window period levels. If open access fishery discard mortality does become a problem, a FMP amendment may be necessary to alter the open access allocation or the nature of the open access fishery. The rate of discarding could be documented and incorporated into stock assessments if an observer program were to be implemented. The cost of an observer program would probably be similar for the alternatives presented in this document. The least costly observer program would be for a license limitation or ITQ system that results in a substantial reduction in the number of participating vessels.

7.0 ECONOMIC AND SOCIAL ANALYSIS

7.1 Introduction

This section presents an analysis of the costs and benefits for the three different limited entry alternatives to the status quo for controlling the harvest capacity of the groundfish fleet. Before beginning the analysis, it may be useful to briefly review the discussion provided in Chapter 2 regarding the components of fleet harvest capacity, its relationship to existing management problems and the inadequacy of current regulatory tools in solving problems related to overcapitalization.

Harvest capacity has both a quantity and temporal aspect. It identifies an amount of catch that can be made over a period of time; e.g., one day or one year. The fleet's harvest capacity, at any one point in time, can be viewed as having two principal components: the harvest capacity of each vessel and number of vessels in the fleet. One might also draw the distinction between that portion of the fleet's capacity which is actively used during an interval and that which is idle or occupied in a different fishery. The amount of active harvest capacity at any point in time; i.e., the rate at which harvest is actually occurring, would seem to be what is most commonly meant when the term "effort" is used.

Harvest capacity is encouraged to rise above the level required to land all the allowable catch by the presence of economic profits in the fishery and the lack of assigned property rights for harvesting the fish resource. The terms "economic profits" or "above normal profit" refer to earnings from investment in fishing that are in excess of what would be considered a "normal" rate of return for prospects with a similar level of risk in the general economy.[1/] Even though there may be sufficient capacity to harvest all of the allowable catch, access to a fundamental input to the fishery process (the fish resource) is not controlled through "ownership".[2/] Others outside the fishery are therefore encouraged by the lure of economic profits to enter the fishery. As new vessels enter the fishery, those fishermen already inside the fishery are encouraged to increase the capacity of their vessels in an attempt to maintain their previous share of the harvest. In addition to the biological problems associated with this process, it also, over the long run, dissipates much if not all of the surplus, or net value, that society could have extracted from use of its fish resources. Essentially, considerable financial resources are wasted by the buildup of more capacity than is reasonably needed.

Quotas, trip limitations and gear restrictions are the three principal management measures that have been relied upon by the Council to control excess effort; an effect of unfettered overcapitalization. These measures limit the usable harvest capacity of individual vessels over various periods of time, but all three allow at least some members of the fleet to benefit from either increasing the rate at which they can capture fish or the amount of fish that can be stored in their vessels' holds. None of these measures restricts the growth in fleet harvesting capacity that occurs when new vessels enter

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1/ As used here, the notion of "economic profits" or "above normal profits" is often referred to in the economics literature as economic rent or producer surplus.

2/ Once a firm in another industry assembles the resources to produce a good, that firm owns those goods (the firm controls the way the resources it has purchased as inputs are used). The fishermen do not control one of the primary necessary inputs (the fish), and once all the necessary inputs to harvest have been assembled, the fihermen cannot establish ownership over the resource and must invest in the race with other entrants to get to the fish first.

the fishery. Although their use has allowed the Council a greater measure of success in meeting some of its objectives than would have been the case in their absence, the various problems which have evolved using these tools now threaten to outweigh the benefits. As the Council's SSC noted in its supplemental report at the November 1990 Council meeting, "Management tools traditionally used by the Council (landing limits, trip frequency limits, ratios and quotas) have reached the limits of their usefulness in achieving the Council's conservation goals."

The license limitation alternative discussed in this section places some restrictions on the number of vessels which would be allowed to participate in the fishery. One important question is whether the number of permits to be issued under the high, low or adopted MLR options within the license limitation alternative are likely to be small enough to effectively restrict growth in fleet harvest capacity, relative to the existing management regime.

The second alternative to the status quo involves the establishment of a system of ITQs for West Coast groundfish species. This alternative reaches beyond the treatment of overcapitalization's symptoms (excess effort and harvest, to its origin; the lack of clearly defined harvesting rights to the resource). Because the Council determined at an earlier stage in the scoping process that implementation of a comprehensive ITQ program could not feasibly be accomplished in a time frame in which some control of effort is needed, this analysis focuses upon identifying the comparative strengths and weaknesses of the approach in general, rather than upon the impacts of a specific ITQ proposal.

Where applicable and to the extent possible, the analysis attempts to summarize the impacts of each alternative within the following categories.

Vessel owners, including:

- A endorsement recipients (included owners)
- B endorsement recipients and others not receiving permits (excluded owners)
- Those using other groundfish gears (exempted owners)

Labor (crew and non-owner/operators)
Participants in other fisheries
Processors and other industry sector that support fishing
Communities and ports
Consumers

7.2 Efficiency Considerations

7.2.1 Theoretical Impact on Fleet Profitability

Status Quo. The current management regime for groundfish provides for an open access fishery, which assumes the characteristics of an "Olympic"[3/4/] style fishery. It is well-documented within

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3/ The term "Olympic" fishery refers to the characteristic race for fish that occurs when each individual vessel is entitled to catch all the fish it can until the fishery is closed.

4/ There is some moderation of the "Olympic" nature of the fishery to the extent that weekly trip limits are employed for some species. Weekly trip limits constitute a nontransferable vessel quota. The incentives for "Olympic" style competition remain operative for species where there is no limit on the number of trips per week.

the economic literature that, under these conditions, harvesting capacity will tend to be introduced into the fishery beyond the amount required to optimally harvest the fish resource. In comparing the existing fishery with what would be the most efficient manner of harvest, it is instructive to consider how many vessels would be used to harvest the resource if the rights to the resource were controlled entirely by a single firm (this would be the equivalent of a "sole ownership" alternative which is not developed as an explicit alternative in this amendment.)

Effect of Free Entry on Efficiency. In general, the existence of economic profits tends to draw additional participants/investment into the fishery up to the point where the economic surplus to the last entrant is zero. In the long run, with a homogeneous fleet, this process would be expected to dissipate all of the potential economic profits in the fishery.

A simple example may help to clarify the rationale behind this depiction of the fishery. Suppose that a particular fishery consists of three identical vessels which take all of the allowable catch of a species over the course of a year. During that time, they each make $30,000 in economic profit, for a total of $90,000. Let's assume that an individual outside the fishery discovers this and realizes that a rate of return in excess of what can be made elsewhere in the economy can be earned by investing in a fishing vessel. After this individual enters the fishery, the same amount of fish is now being harvested, assuming a quota is in place, but now by four vessels instead of three. Because of the increase in capital expenses by industry participants, the same amount of fish produces a lower net return, perhaps $80,000 ($20,000 per vessel). Even though society has lost $10,000 in economic surplus ($10,000 which could have been used to produce other goods or services in the economy), as has each of the initial members of the fishery, the owner of the new vessel is now $20,000 richer than if the investment had been made elsewhere.

Furthermore, because there are still economic profits being earned by the new four member fleet, the same incentive may be expected to draw additional vessels into the fleet or to increase the harvesting capacity of existing vessels in the fleet until no economic profits remain. In this example, let's say this occurs at 12 vessels. Since it is assumed that the total amount of catch has remained unchanged, it now takes roughly a quarter of a year to harvest what the original fleet captured during an entire year. Consequently, these vessels will look for opportunities in other fisheries,[5/] and the vessels and crews that cannot find other fisheries or activities will sit idle for most of the year. Naturally, any other open access fisheries, which exist as alternatives, would also be subject to the same pressures and would eventually have more vessels participating than necessary. A more detailed example of the changes in profitability associated with changes in fleet size is presented in Section 7.2.2.

The presence of economic profits is a key motivation in continuing the buildup of fleet harvest capacity beyond that required for harvesting all the available fish resources. If consumer demand for seafood was uniform and much lower than it is now, such that all species in the West Coast groundfish fishery were now selling for $0.05 per pound at the exvessel level, holding all other prices constant, the amount of active harvest capacity in the fishery would be less. When the incentive of profits is present, and combined with the lack of assigned property rights, the "Olympic" open access fishery marches along the inexorable path from no restrictions to the necessity of management measures to prevent overfishing (e.g., quotas and closures, or gear regulations). It may also lead to use of measures such as trip restrictions or multiple season openings which may be used in an attempt to maintain product access to particular markets.

5/ See Section 7.8 on the effect on other fisheries.

Effects of Trip Limits on Efficiency. As identified in Chapter 5, several Council-managed species have been the subject of increasingly strict management measures since the FMP became effective in 1982. Additional discussion regarding the rationale for the use of trip restrictions is provided in Section 7.3.1. In general, trip limitations on landings serve to spread the fishery over a longer period, which can serve marketing and other management objectives. Their affects on vessel efficiency are discussed below.

On a trip basis, the use of trip limits will either reduce vessel efficiency, if the capacity of the vessel exceeds the limit, or it will leave efficiency unchanged, if the vessel's utilized capacity is less than the limit.[6/] For example, if no more than 50,000 pounds could legally be landed in any trip, then any vessel which could not land more than 50,000 pounds would be unconstrained by the restriction. Similarly, if only two landings per week are allowed, then any vessel which would never have reason to land fish more than twice a week would also be unconstrained.

When trip frequency limits are used in conjunction with poundage limits, vessels with capacities above and below the poundage limit can experience reductions in efficiency. For example, a limit of 1 trip per week of not more than 50,000 pounds would reduce the weekly harvest capacity of a vessel capable of delivering 80,000 pounds per week by 30,000 pounds. However, a vessel with a 10,000 pound hold, which is capable of making 5 trips per week, would have its weekly capacity reduced 40,000 pounds by the same restriction. As these examples suggest, only vessels which would take a full week to deliver some amount less than or equal to 50,000 pounds in a single trip would not be affected by this restriction.

When viewed on an annual basis, some vessels that have capacities close to that specified in the trip limit may experience increased overall efficiency if their idle time is reduced through extended season length. Thus, trip limits, which are set with the primary objective of spreading a given amount of catch over a longer time period, may inadvertently send signals to the fleet regarding the size of vessel that should be used in the fishery. It would only be coincidental, and rather unlikely, that a vessel which is optimally sized to produce the maximum fishery profits in a scenario free of trip limits is also optimal once trip limits have been imposed. Furthermore, if trip limits change from year to year or within years, in response to changes in fleet harvest capacity or resource availability, the fleet is sent confusing signals regarding the size of operation that is most efficient. A continual tightening of trip limits may move the fleet farther and farther in composition from that which would occur under the most efficient harvest scenario; i.e., the fleet composition that would be employed if a single agent controlled harvest of the resource.

A high degree of variability in trip limits or the presence of varying restrictions on several different species will generally increase the cost of harvesting the available groundfish and reduce fleet profits. Determining the extent to which the potential profits of individual vessels and those of the aggregate fleet are reduced through imposition of such restrictions in a multispecies fishery is a task whose complexity exceeds the bounds of this review. Nevertheless, with an increasing trend in the restrictiveness of these types of measures within the fishery, it is likely the costs that are imposed on the fishery will continue to increase, and the costs will be imposed on a growing number of participants.

6/ Often, physical hold capacity may be underutilized on a trip, due to the need to deliver fish to a processor. This may reflect concern for the quality of the fish, or it may result from a schedule set by the processor.

License Limitation. As discussed in Section 7.1, placing a limit on the number of vessels which are allowed to participate in the fishery, attempts to constrain the remaining channel through which increases in fleet harvesting capacity are currently unchecked; the number of vessels in the fleet. While trip limits are by no means completely effective, they do reduce some of the incentive for increasing vessel harvesting capacity by limiting the amount of a vessel's capacity which may be used. Fleet efficiency is not well-served by such a use of trip limits, but other objectives related to overcapitalization may be benefitted.

In this circumstance, placing a cap on the number of vessels may allow the growth in harvest capacity to be slowed until such time as the number of permits can be reduced or other measures implemented. In the long run, if the number of participating vessels is reduced, two of the primary sources of operational inefficiency in the existing fishery (trip restrictions and expenditures for unneeded vessels) may be diminished.

One of the shortcomings of several license limitation programs, with respect to controlling advancements in fleet harvest capacity, has been the lack of restrictions governing changes in vessel harvest capacity which can occur subsequent to the issuance of permits. In several Alaskan fisheries, which utilize license limitation, permits were issued to individuals and were not limited to the use of a particular vessel. These fisheries have characteristically experienced increases in the length and fishing power of participating vessels. The license limitation options presented in this document attempt to reduce this problem through incorporation of a length class endorsement for each permit.

It must be noted, however, that length is only one of several vessel characteristics affecting harvest capacity. Hold capacity and engine horsepower are also very important, and can be increased significantly in most cases without expanding the length of the vessel. Both of these factors were considered as alternatives or joint criteria for endorsing permits; however, because engine horsepower can be altered rather easily by installing or removing a supercharging device (commonly referred to as a blower), enforcement of an endorsement governing vessel horsepower was not expected to be effective. Gross tonnage and underdeck volume were also considered. One of the main problems encountered with these measures was that impending changes in U.S. Coast Guard safety rules may require many existing vessels in the fleet to be widened at their current length. A permit endorsement for vessel tonnage or hold size, in conjunction with one for length, would have required such vessels to be shortened or removed from the fishery.

In an effort to slow the rate at which the harvesting capacity of permitted vessels can be increased, vessel size endorsements are attached to the permit. Technological innovations will continue to exert an upward influence on fleet harvesting capacity. Modifications that would be available to increase the harvest capacity of fishing vessels include increasing horsepower, enlarging hold capacity, adding more sophisticated fish detection equipment and introducing more effective gear. If trip limits continue to be used for numerous species, some of the incentive to introduce greater vessel efficiency into the fishery will be dampened. It should be noted, in this situation of overcapitalization, higher vessel efficiency does not imply greater fleet efficiency. Additional technology will be used primarily to assist vessels that are not constrained by existing trip limit levels and that fish less regulated groundfish species or non-groundfish species.

With the length endorsement, it will be more difficult to increase the fishing power of a 60-foot vessel into a 90-foot vessel, than if the smaller vessel could simply be replaced with a larger vessel. Although permits from small vessels will be allowed to be combined for use on larger vessels, the

rate at which permits can be combined will be set to prevent expansion of fleet capacity. Finally, although the length endorsement may help restrict the growth in capacity, it may hinder the fishery from evolving into the most efficient configuration of vessels. This issue is addressed further in Section 7.2.4.2.

ITQs. Theoretically, efficient prosecution of the fishery would be best served by the use of ITQs. Regardless of the initial method of allocation, the right to harvest fish would gradually be transferred to those fishermen who could most efficiently make deliveries. The more efficient fisherman will generate a higher rate of profit per pound for the species caught, and thus, may be able to offer other fishermen more for their ITQs than the latter could earn by landing the fish themselves. As ITQs are assembled by the fishery's most efficient participants, the fleet is automatically transformed to a more optimal size and composition, reducing unnecessary capacity without the need for regulation from outside interests. Finally, those vessels remaining in the fleet would be able to schedule their activities more efficiently, due to the elimination of the "race for fish".

If the entire quota for a particular species were interchangeable among all potential users, the Council would be freed from the task of allocating portions of the catch to various user groups. The market could be allowed to allocate the resource rights to those who were willing to outbid their competitors for each unit of fish. The current process of Council allocation places demands for efficiency and equity analysis of possible allocations that exceed the information and time resources of staff. Additionally, if ITQ is initially allocated on the basis of past activity in the fishery, the process of transferring catch from less efficient to more efficient users of the resource is one that includes a built-in compensation mechanism, in the form of payment for their quota, for those individuals voluntarily choosing to lessen their involvement in the fishery.

From a resource utilization perspecitve, ITQs may still result in some inefficiencies because the assignment of property rights is not perfect. The costs of highgrading and mortality from discarding fish for which no ITQ is held would be shared among all members of the fleet, hence individuals would still have incentive for wastage (inefficiency) in the harvest of the resouce. The only way to effectively reduce discards would be through more expensive enforcement methods, such as an observer program.

7.2.2 Estimates of Actual Impact on Fleet Profitability

This section addresses two concerns: (1) the dimensions of the actual fleet which would receive permits under the three MLR options and (2) an examination of the ways in which profitability changes as the number of vessels in the fleet change, compared to the conditions which might occur under status quo. While research efforts aimed at modeling the profitability of West Coast fisheries are currently in progress, the schedule for completion of the modeling and this review did not allow for incorporation of these modeling activities into the analysis. Because the fleet is comprised of a wide variety of vessel types, gear usages and target species, it is extremely difficult to provide a baseline assessment of fleet profitability without the benefit of a complex, detailed model of the fishery. It is equally difficult to estimate the magnitude of change in profits that would accompany the adoption of a license or ITQ program. Because of the limited availability of time and data, a hypothetical example, created using data from the Oregon State University, Sea Grant Observer Project, is presented as a means of explaining how profitability could be increased under license limitation. At the end of this section, the reviewer should consider his or her expectation for changes

in the fishery under status quo, compared to the numbers of active vessels expected under the three license limitation MLR options, and qualitatively evaluate the probable impacts on fleet profitability.

7.2.2.1 Number of Vessels

Determining the number of vessels using a particular limited entry gear at present, relative to those discussed in the analysis of the proposed alternatives, is complicated by several factors. The PacFIN RDB was used as the source of information for the analysis. The data compiled for assessment of the window fleet was screened using many selection criteria that are discussed more fully in Chapter 15. For this reason, the number of vessels reflected in this data may differ somewhat from numbers of vessels obtained from other sources or using other screening criteria. Because the window period adopted by the Council for determining eligibility under the license alternative ended in August 1988, 1987 is the most recent complete fishing year falling within the bounds of the window. For this reason, the size of the fleet during the 1987 season was adopted by the Council as a major point of reference with regard to the fleet size anticipated under the various license options.

During 1987, 344 vessels fished for groundfish other than whiting with trawl gear. Seventy vessels, most of which are included in the 344 above, fished for whiting with trawl gear. The total number of trawl vessels active in 1987 was 348. A total of 98 vessels made landings of groundfish that had been caught with pot gear. Vessels which had clearly defined landings with longline gear numbered 355 (Table 4-1).

Determining the number of longline vessels in the fleet was complicated considerably by the lack of consistent, unique coding for longline catch in California. Comparatively, few landings in that state are coded as "longline". Instead, most longline landings have been coded as "pole," along with many other line gears that are not considered longline within the context of the limited entry proposal. In order to provide additional information regarding the potential range of longline vessels in the fleet, other line landings which exceeded a criteria of either 300 pounds of groundfish, or 225 pounds of sablefish or 100 pounds of rockfish, were placed in a "criteria-line" category, along with all of the certain longline trips. The total number of line vessels in this category during 1987 was 908. Based on a review of the average catch per trip of these vessels, a very rough guess would be that approximately 50 percent[7/] of the 552 vessels in this category, which are not identified with certainty as longliners, may also be vessels that actually used longline gear. With this assumption, the total number of vessels landing groundfish with longline gear would be 632.

Under the one pound landing requirement of Option 1, about twice as many vessels would receive "A" endorsements as were active during 1987. Over the 4-year window, the number of vessels making at least 1 trawl landing of groundfish other than whiting was 478 compared to 344 vessels in 1987. Vessels making whiting landings numbered 153. There were 295 vessels that recorded at least 1 groundfish landing with fishpot gear compared to 98 in 1987. There were 706 vessels with 1 or more clearly identified longline landings compared to 355 in 1987. The criteria-line group included a total of 1,929 vessels, with an assumed longline component of 1,318, compared to 629 in 1987. The total number line vessels, including longline in Washington and Oregon and all pole in California, was 2,735 for the window compared to 1,382 in 1987.

7/ This percentage is also assumed for the entire window fleet.

Once again, it is noted that the estimates of vessel numbers by gear type presented in Chapter 5 are based on different criteria for classifying a vessel than is used in this analysis. The estimates for trawl gear are substantially the same as in Chapter 5. In Chapter 5, estimates for the number of longline gear vessels include only vessels which have landings coded specifically as longline (primarily Oregon and Washington vessels) and California sablefish vessels. For fishpot gear, the estimates are based on vessels with landings coded as "fishpot" and a few other large vessels which the researchers cited had direct knowledge that fishpot gear was used. Since the effort in this analysis is aimed at estimating the number of individuals who may be able to demonstrate use of fishpot gear for the purpose of qualifying for an LE permit, a broader criteria was used to identify fishpot vessels. This criteria included vessels with "other pot" landings that had significant amounts of groundfish. Therefore, the number of fishpot vessels shown for a single year will not match. In considering the likely effectiveness of either of the MLR options under license limitation, it may be instructive to use the 1987 numbers of vessels as the base from which to apply the trends and likely scenarios for the future, which have been derived from Chapter 5.

It is apparent that the low MLR option would have little immediate beneficial affect in terms of capping the number of vessels that could participate in the fishery at a level that would reduce existing or future problems. Assuming ABCs for West Coast stocks do not increase by a factor of two or more, this alternative alone would not affect any reduction in fleet size relative to what might be expected under status quo management. Given the history of limited entry implementation in other areas, it may even be reasonable to expect the active harvest capacity in the fishery could increase for some time following institution of this option.

With the high MLR option, close to the same number of permits would be initially granted (given a one landing requirement for "B" endorsements[8/]), but those members of the window fleet not meeting prescribed qualifying criteria for their landings during the window period would receive nontransferable, "B" endorsements which would expire at the end of 1996. However, the adopted landing requirement for "B" endorsements (3 landings per vessel) would likely result in a reduction of the number of permits issued under the low MLR (2,735) by about 670 vessels.

The high MLR for receiving an "A" endorsement were set at levels designed to achieve a fleet size similar to the "active" fleet during 1987. Based on consideration of the dispersion of trip frequencies, the "active" 1987 fleet was defined according to the following minimum numbers of trips with a specific gear during 1987: non-whiting trawl = 1 trip; whiting trawl = 1 trip; fishpot = 3 trips; line gear = 3 trips (the rationale used in deriving the definition of active vessels is explained in Section 4.4.4.2). For fishpot and line gears, this resulted in smaller targets for the higher MLR options. The fishpot goal was reduced from 98 to 30, longline from 356 to 219, criteria-line from 908 to 493, with the total line vessels falling from 1,382 to 791.

Estimates of the number of vessels receiving "A" endorsements with the high MLR are 349 total trawl vessels, 41 fishpot vessels and 236 longline vessels. If all of the line landings for the window vessels were determined to be longline trips, a total of 1,944 vessels could satisfy the requirements for an "A" endorsement. "B" endorsements would be received by 96 trawl, 49 fishpot and 218 longline vessels,

8/ The number qualifying for "B" endorsements would be reduced by the number of vessels for which "B" endorsement might potentially be issued that had changed ownership since the last landing of groundfish prior to August 1, 1988.

with the potential for 899 total line "B" endorsements under the most liberal classification of the gear used (Table 4-2).

Under the adopted MLR, the number of "A" endorsements are estimated to be 388 for all trawl gear, 42 for fishpot and 229 for longline. If all line trips of the vessels examined are assumed to be longline, 410 longline "A" endorsements could be issued. The number of "B" endorsements issued would be 50 for trawl, 10 for fishpot, 85 for longline, with a total of 208 line "B" endorsements under the most liberal classification of the gear used.

Additionally, through 1996, neither the high MLR nor the adopted MLR will have significant affect in restricting numbers of active vessels, due to the abundance of limited duration permits. However, the adopted MLR in combination with the adopted "B" endorsemnt landing requirement will result in the issuance of fewer permits than vessels in the window period and significantly lower administrative costs.

Because many window vessels not qualifying for "A" endorsements under the high MLR option would qualify for "B" endorsements, the high MLR option would not be likely to have a significantly different impact from the low MLR option through the 1996 season. Differences between the MLR would primarily result from the nontransferability of the "B" endorsements and rights to those endorsements and the three trip requirement adopted for "B" endorsements. Beginning in 1997, however, the remaining "A" fleet would be roughly the same size as the active fleet in 1987, plus those vessels which may qualify under special circumstances through provisional "A" endorsements.

The adopted MLR is estimated to result in similar numbers of fishpot and clearly-identified longline vessels as the high MLR, with about 10 percent more trawl permits. There are two areas of significant improvement in the number of permits, however. First, all three gear groups would have significantly fewer permits than the low MLR option, and hence potentional participants through the 1996 season. Total permits available through 1996 are lower with the adopted MLR by 11 percent for trawl gear, 82 percent for fishpot gear and 56 percent for the clear longline category. Secondly, the potential for the much larger pool of all line gear participants to receive permits is much more restricted. The potential number of "A" endorsements from all line participants examined drops from 710 with the high MLR to 410 with the adopted MLR, with a reduction of similar proportion in the number of "B" endorsements.

It must be noted, however, that the adopted proposal allows for continued participation of vessels without permits using longline or pot gear in the open access portion of the fishery. It is impossible to say how many vessels which do not qualify for a permit will continue to fish under the very restrictive rules for this fishery. What is known is that the amount of the total quota which will be allocated to this portion of the fishery, which will encompass nonpermitted longline and fishpot as well as other excluded gears, will be fixed based on the historic landings of the vessels not receiving permits, and that trip limits of 500 pounds or less may likely apply to vessels using limited entry gear in the open access fishery. These two components should allow this segment of the fleet to continue fishing at the low levels to which they are accustomed, without providing incentive for new entry into the fishery. This would also be accomplished without the necessity of giving transferable permits, which might be sold to an individual who might fish more intensely. If the maintenance of this open access fishery promotes some additional inefficiency, the extent of the damage is at least restricted to a small portion of the allowable catch, while the bulk of the groundfish fishery is freed of a

substantial number of permitted vessels between implementation and expiration of "B" endorsements at the end of 1996.

These estimates of the number of permit qualifiers are, of course, subject to a fair amount of uncertainty. Their accuracy will be affected by the currently unknown number of vessels which (1) will qualify through a provisional "A" endorsement issued for vessels in special circumstances, (2) will qualify during the review/appeals process and (3) would have qualified, but the owner has not applied for a permit. The number of unanticipated vessels receiving permits in the two former manners will be determined by such factors as the number of vessels constructed during the window, the number of individuals who successfully upgrade provisional permits and the number that can demonstrate that trips not clearly identified as limited entry gear trips in the PacFIN RDB were, in fact, trips made with that gear.

Although little can be said, with the current data set, regarding the number of vessels that entered the fishery after the close of the window, some inference can be made regarding the potential for additional qualifiers from the group that was active during the window. The issuance of provisional permits, which must be fished at a given level of performance for three consecutive years, is the path that most vessels, which do not satisfy the high MLR but meet criteria for special circumstances (construction, conversion, new purchase, replacement, prohibited gear), would gain access to an "A" endorsement. A vessel's three-year period for upgrading a provisional endorsement would begin when the vessel with a new owner first entered the fishery (during the window), at the time construction or conversion was completed (having been initiated during the window), when a vessel is replaced (specific criteria for replacement must be met), or when an endorsement is issued for a vessel which uses a gear that has been prohibited. The Council adopted a standard of performance for annual landings during the upgrade period of three consecutive years equal to the annualized "A" endorsement MLR. With this in mind, it is most likely that a vessel which did not meet the window standard would also fail to satisfy the upgrade standard for any particular year within the window. Thus, nonqualifying vessels which were active in the fishery prior to July 1987 would not meet the upgrade criteria, unless they met the upgrade criteria prior to July 1987 or had changed ownership during the final year of the window.

Of the vessels with some activity during the window period, only those vessels with activity in the last year of the window period or activity over three years prior to the last year of the window period could possibly have the opportunity to upgrade an "A" endorsement.

Information regarding the beginning and ending periods of activity during the window is provided in Tables 7-1 through 7-5. In these tables, the four year window period is broken into eight segments of approximately six months each. Window period vessels which might possibly qualify for provisional "A" endorsements are those not qualifying for "A" endorsements which were active in periods seven or eight (last period of activity), or entering the fishery in period one and leaving in period five or six, or entering in period two and leaving in period six. In the trawl fleet, 102 window vessels (vessels with 1 landing in the window period) would not qualify under the high MLR. Of these, 69 might be able to meet the upgrade criteria. Similarly, 85 of 253 nonqualifying vessels with fishpot landings might be able to upgrade a provisional endorsement. For line vessels, 217 of 477 nonqualifying longline and 760 of 1,519 nonqualifying criteria-line vessels might be able to upgrade a provisional endorsement. Three points should be emphasized in interpreting these numbers. First, many of these vessels had rates of harvest during the window that would be below the upgrade criteria. Thus, their level of participation would have to have increased following the

Table 7-1. Matrices indicating, for qualifying and nonqualifying groups of trawl vessels, the number of vessels with specific pairs of beginning and ending periods of activity during the window.[a/]

VESSELS MEETING EITHER THE ADOPTED NON-WHITING OR WHITING TRAWL-GEAR MLR

First Period in Which Vessel Was Active	Last Period in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	6	13	11	6	10	8	24	227	305 78.6
2			3	3		3	3	23	35 9.0
3								7	7 1.8
4					1		1	10	12 3.1
5								3	3 0.8
6								8	8 2.1
7								7	7 1.8
8								11	11 2.8
COLUMN TOTAL	6 1.5	13 3.4	14 3.6	9 2.3	11 2.8	11 2.8	28 7.2	296 76.3	388 100.0

VESSELS NOT MEETING EITHER THE ADOPTED NON-WHITING OR WHITING TRAWL-GEAR MLR

First Period in Which Vessel Was Active	Last Period in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	14	3	4	3		1	1	4	30 29.4
2		2		1	2		2	3	10 9.8
3			4		1	1	1	3	10 9.8
4				1	2		1	1	5 4.9
5					2	1			3 2.9
6						5	1	3	9 8.8
7							9	3	12 11.8
8								23	23 22.5
COLUMN TOTAL	14 13.7	5 4.9	8 7.8	5 4.9	7 6.9	8 7.8	15 14.7	40 39.2	102 100.0

a/ The eight periods shown roughly divide the four-year window into approximately six-month intervals beginning in the last half of 1984 and ending in the first half of 1988. This table does not indicate the number of periods in which the vessels made landings. Vessels in the upper right hand corner, for example, were active in the first and last periods, but may not have been active in intervening years.

Table 7-2. Matrices indicating, for qualifying and nonqualifying groups of fishpot vessels, the number of vessels with specific pairs of beginning and ending periods of activity during the window.[a/]

VESSELS MEETING THE ADOPTED FISHPOT GEAR MLR

First Period in Which Vessel Was Active	Last Period in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	3	2	2	1	1		1	9	19 45.2
2			2	1	2	1	2	3	11 26.2
3			1	1					2 4.8
4								2	2 4.8
5								2	2 4.8
6						1		2	3 7.1
7								1	1 2.4
8								2	2 4.8
COLUMN TOTAL	3 7.1	2 4.8	5 11.9	3 7.1	3 7.1	2 4.8	3 7.1	21 50.0	42 100.0

VESSELS NOT MEETING THE ADOPTED FISHPOT GEAR MLR

First Period in Which Vessel Was Active	Last Period in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	23	5	5	1				2	36 14.2
2		21		5	1	1	1	2	31 12.3
3			33	2	3		1		39 15.4
4				12		1		4	17 6.7
5					25	3		2	30 11.9
6						28	2	6	36 14.2
7							27	3	30 11.9
8								34	34 13.4
COLUMN TOTAL	23 9.1	26 10.3	38 15.0	20 7.9	29 11.5	33 13.0	31 12.3	53 20.9	253 100.0

a/ The eight periods shown roughly divide the four-year window into approximately six-month intervals beginning in the last half of 1984 and ending in the first half of 1988. This table does not indicate the number of periods in which the vessels made landings. Vessels in the upper right hand corner, for example, were active in the first and last periods, but may not have been active in intervening years.

Table 7-3. Matrices indicating, for qualifying and nonqualifying groups of longline vessels, the number of vessels with specific pairs of beginning and ending periods of activity during the window.[a/]

VESSELS MEETING THE ADOPTED LONGLINE GEAR MLR

First Period in Which Vessel Was Active	Last Period in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	11	4	2	1	5		5	43	71 31.0
2		9	5	1	5	1	8	17	46 20.1
3			3		2		1	7	13 5.7
4				4	4	2	3	16	29 12.7
5					1	2	2	11	16 7.0
6						3	8	14	25 10.9
7							4	7	11 4.8
8								18	18 7.9
COLUMN TOTAL	11 4.8	13 5.7	10 4.4	6 2.6	17 7.4	8 3.5	31 13.5	133 58.1	229 100.0

VESSELS NOT MEETING THE ADOPTED LONGLINE GEAR MLR

First Period in Which Vessel Was Active	Last Period in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	42	9	8	4	8	3	7	5	86 18.0
2		31	5	1		1	4	10	52 10.9
3			22	2	4	1	2	1	32 6.7
4				39	9	2	4	9	63 13.2
5					44	3	6	1	54 11.3
6						34	10	12	56 11.7
7							51	13	64 13.4
8								70	70 14.7
COLUMN TOTAL	42 8.8	40 8.4	35 7.3	46 9.6	65 13.6	44 9.2	84 17.6	121 25.4	477 100.0

a/ The eight periods shown roughly divide the four-year window into approximately six-month intervals beginning in the last half of 1984 and ending in the first half of 1988. This table does not indicate the number of periods in which the vessels made landings. Vessels in the upper right hand corner, for example, were active in the first and last periods, but may not have been active in intervening years.

Table 7–4. Matrices indicating, for qualifying and nonqualifying groups of criteria-line vessels, the number of vessels with specific pairs of beginning and ending periods of activity during the window.[a]

VESSELS MEETING THE ADOPTED CRITERIA–LINE MLR

First Period in Which Vessel Was Active	Last Period in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	4	5	6	6	8	7	10	79	125 30.5
2		4	5	2	7	5	14	45	82 20.0
3			2		3	3	3	23	34 8.3
4				3	10	2	7	27	49 12.0
5					2	2	6	18	28 6.8
6						5	7	32	44 10.7
7							6	20	26 6.3
8								22	22 5.4
COLUMN TOTAL	4 1.0	9 2.2	13 3.2	11 2.7	30 7.3	24 5.9	53 12.9	266 64.9	410 100.0

VESSELS NOT MEETING THE ADOPTED CRITERIA–LINE MLR

First Period in Which Vessel Was Active	Last Period in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	76	18	24	10	20	5	21	27	201 13.2
2		90	22	10	10	6	11	28	177 11.7
3			95	13	15	4	17	17	161 10.6
4				88	22	10	13	18	151 9.9
5					148	19	38	20	225 14.8
6						85	36	39	160 10.5
7							170	55	225 14.8
8								219	219 14.4
COLUMN TOTAL	76 5.0	108 7.1	141 9.3	121 8.0	215 14.2	129 8.5	306 20.1	423 27.8	1,519 100.0

[a] The eight periods shown roughly divide the four-year window into approximately six-month intervals beginning in the last half of 1984 and ending in the first half of 1988. This table does not indicate the number of periods in which the vessels made landings. Vessels in the upper right hand corner, for example, were active in the first and last periods, but may not have been active in intervening years.

Table 7–5. Matrices indicating, for qualifying and nonqualifying groups of all line vessels, the number of vessels with specific pairs of beginning and ending periods of activity during the window.[a/]

VESSELS MEETING THE ADOPTED ALL LINE MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	4	4	6	3	10	6	16	81	130 31.7
2		3	5	1	5	4	15	49	82 20.0
3			2		2	2	5	32	43 10.5
4				3	9	2	7	25	46 11.2
5					1	2	6	17	26 6.3
6						4	6	32	42 10.2
7							5	17	22 5.4
8								19	19 4.6
COLUMN TOTAL	4 1.0	7 1.7	13 3.2	7 1.7	27 6.6	20 4.9	60 14.6	272 66.3	410 100.0

VESSELS NOT MEETING THE ADOPTED ALL LINE MLR

First Period in Which Vessel Was Active	Number of Periods in Which Vessel Was Active								Row Total
	1	2	3	4	5	6	7	8	
1	102	31	32	13	33	23	45	69	348 15.0
2		91	35	16	30	8	30	44	254 10.9
3			136	21	51	18	60	63	349 15.0
4				86	39	14	21	29	189 8.1
5					195	23	70	52	340 14.6
6						111	57	77	245 10.5
7							245	87	332 14.3
8								268	268 11.5
COLUMN TOTAL	102 4.4	122 5.2	203 8.7	136 5.8	348 15.0	197 8.5	528 22.7	689 29.6	2,325 100.0

a/ The eight periods shown roughly divide the four–year window into approximately six–month intervals beginning in the last half of 1984 and ending in the first half of 1988. This table does not indicate the number of periods in which the vessels made landings. Vessels in the upper right hand corner, for example, were active in the first and last periods, but may not have been active in intervening years.

window in order to meet the criteria. The second point is that for most of the nonqualifying vessels, this upgrade window has either already ended or will end shortly. Whether or not a particular vessel happens to meet the upgrade criteria is not likely to be influenced by vessel activity in the 1991 fishery and beyond. Finally, it seems unlikely that a large number of these vessels were purchased, constructed or converted during the window period. Figure 5-3 on vessel construction shows that 81 vessels with construction dates from 1984 to 1990 (as documented in U.S. Coast Guard files) and at least 1 landing of groundfish with limited entry gear prior to September 30, 1990 would not be expected to receive "A" endorsements and therefore might qualify for provisional "A" endorsements. There are an additional 97 vessels with unknown construction dates, some of which may qualify under construction criteria. However, the proportion of unknown construction date vessels qualifying for "A" endorsements as compared to those vessels with known construction dates for recent years would indicate that a much smaller percentage of vessels without contruction dates were constructed in the last few years.

Although the size of the permanent fleet arising from the adopted or high MLR options is unlikely to reduce the fishery's current problems significantly, it may provide some advantage relative to continuing status quo management through 1996 and beyond. Relative to the status quo or the one-pound qualifier, either of the higher options would significantly ease implementation, at a later time, of a buy-back program for permits in order to achieve a smaller long-run fleet size. Given a lack of federal funding for such a program, its major obstacle is the inability to tax or charge resource users in excess of the cost of actually issuing permits. If future changes in the MFCMA facilitated industry funding of a buy-back program or if funds are allocated to run a buy-back program, the door would be opened for reductions in fleet size that would effectively reduce overcapitalization from present levels. As the Council considers ITQ management for parts of the fishery, over the next several years, the adopted alternative is clearly superior to the others in providing more relief to the fishery, in the form of fewer permits through the 1996 season, while further proposals are developed.

7.2.2.2 Effect on Fleet Profits.

It was not possible to undertake a comprehensive examination of the change in fleet profitability which would accompany changes in the number of vessels participating in the fleet. However, data from the Oregon State University, Sea Grant Observer Project, was used to examine the impact of changes in fleet size under a particular set of circumstances.

In order to construct a sensible, yet simple example of how fleet profits may increase with a reduction in vessels (Table 7-6), average catch, revenues and operating costs were selected from a rather narrow set of vessels within the logbook program's data base. The vessels included in developing the example was restricted in order to define a set of vessels that had reasonably similar characteristics. The selection of vessels was restricted to those in the 60- to 80-foot vessel class, because this group accounted for the most window landings within the trawl gear group. Additionally, only vessels with engine ratings between 300 and 400 horsepower and those which fished for the deepwater complex species were selected.

Because the data is drawn from a very specific segment of the fleet, it is important to remember that the changes in profits predicted for these vessels may not correspond accurately to changes experienced by vessels which are of different sizes, fish for different species or use different gears. Also, the data reflect the activity of these vessels between February 1986 and November 1987. The

costs and revenues incorporated in the example have not been adjusted to reflect inflation since that time.

In all, 12 vessels met the selection criteria described above. Across this group of vessels, mean values were calculated on a per trip basis. These included the amount of catch, gross revenue, days fished and variable costs. The mean annual fixed cost per vessel were also identified. The base values for these variables are shown in Case 1 (Table 7-6) for a hypothetical fleet containing 10 homogeneous vessels.

Each vessel was assumed to make 24 trips per year with each trip lasting 4.5 days. The average landings for each trip was set at 12 mt (26,455 pounds). The gross revenue for this catch was $8,800 ($0.33 per pound). The variable costs (excluding the captain's share) per trip were set at $2,676 for this amount of catch. The captain's share was set at $1,496. Expenditures for payments to the crew ($1,760) and captain, fuel and oil ($335) and landing fees ($44) were varied proportionately with catch per trip in the other two cases. Remaining variable costs were held constant for all cases. Fixed costs for the entire year were set at $70,089 in all cases.[9/] The total fleet landings for the 10-vessel fleet of Case 1 are 2,880 mt. This amount was held constant throughout as if it were a quota or cap on the fleet's landings.

For Case 1, the total annual gross revenue per vessel is $211,200 with annual costs of $170,217. This leaves a remainder of $40,983, which represents the net returns to the vessel; i.e., the owner's profit. For the entire 10-vessel fleet, the total profit to owners is $409,830.

The second case shown in Table 7-6 employs the simple assumption that two vessels are removed from the fleet. All of the per trip characteristics of the remaining vessels are unchanged. In order to maintain the fleet's harvest of 2,880 mt, each vessel must increase its annual catch by 72 mt, which requires an additional 6 trips per vessel. The greater number of trips increases annual vessel gross revenue by $52,800 and variable costs by $25,032. Thus, each vessel experiences a increase in the returns of $27,768 (68 percent above Case 1). At the fleet level, revenue remains unchanged because total catch is unchanged. However, total cost is reduced by $140,178; the fixed cost of the 2 vessels removed from the fishery. This produces a 34 percent increase in the net returns to owners for the fleet as a whole.

In Case 3, in Table 7-6, an assumption of increased productivity per trip is incorporated into the analysis of an eight vessel fleet. A major factor which could lead to increases in the amount of landings per trip would be the relaxation of binding trip restrictions. An 11 percent increase is assumed, raising the landings per trip from 12 mt to 13.3 mt. Accordingly, the number of trips that are required to harvest the entire quota is 216, down from 240 in the previous two cases. Because the number of vessels and fleet revenue are the same as in Case 2, vessel gross revenue remains the same. However, the costs associated with landing the same amount of catch have changed. Initially 3 fewer trips are taken and the remaining 27 trips are assumed to have 11 percent higher costs for crew and captain payments, fuel and landing fees. The result is a net savings of $1,629 per year for

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9/ For simplicity, it has been assumed that all fixed costs of the vessels modelled are attributable to the groundfish fishery. In reality, vessels may participate in several fisheries during the year, particularly when they cannot fish full time for groundfish. Actual participation of groundfish vessels in other fisheries is discussed further in Section 7.2.3.

Table 7-6. Changes in profitability with fleet size for a hypothetical fleet of homogeneous trawl vessels.[a/] (Page 1 of 2)

	Per Trip Per Vessel	Annual Per Vessel	Annual for Fleet
CASE 1 - FLEET SIZE EQUALS 10 VESSELS			
Number of Trips	-	24 Trips	240 Trips
Catch	12 mt	288 mt	2,880 mt
Gross Revenue	$8,800	$211,200	$2,112,000
Total Cost		$170,217	$1,702,170
Average Variable Cost (Including Crew Share)	$2,676	$64,224	
Captain's Share	$1,496	$35,904	
Fixed Cost		$70,089	
Return to Vessel		$40,983	$409,830
Number of Days Fished	4.5 Days	108 Days	1,080 Days
Number of Days Fished Plus 2.5 Rest Days Between Trips	7 Days	168 Days	
CASE 2 - FLEET SIZE EQUALS 8 VESSELS, WITH NO CHANGE IN LANDINGS PER TRIP			
Number of Trips		30 Trips	240 Trips
Catch	12 mt	360 mt	2,880 mt
Gross Revenue	$8,800	$264,000	$2,112,000
Total Cost		$195,249	$1,561,992
Average Variable Cost (Including Crew Share)	$2,676	$80,280	
Captain's Share	$1,496	$44,880	
Fixed Cost		$70,089	
Return to Vessel		$68,751	$550,008
Percent Increase from Case 1		68 Percent	34 Percent
Number of Days Fished	4.5 Days	135 Days	1,080 Days
Number of Days Fished Plus 2.5 Rest Days Between Trips	7 Days	210 Days	

Table 7-6. Changes in profitability with fleet size for a hypothetical fleet of homogeneous trawl vessels.[a/] (Page 2 of 2)

	Per Trip Per Vessel	Annual Per Vessel	Annual for Fleet
CASE 3 - FLEET SIZE EQUALS 8 VESSELS, WITH AN 11 PERCENT INCREASE IN LANDINGS PER TRIP AND A PROPORTIONATE INCREASE IN THE FUEL, CREW PAYMENT AND LANDING FEES PER TRIP			
Number of Trips		27 Trips	216 Trips
Catch	13.3 mt	288 mt	2,880 mt
Gross Revenue	$9,778	$264,000	$2,112,000
Total Cost		$193,620	$1,548,960
Average Variable Cost (Including Crew Share)	$2,913	$78,651	
Captain's Share	$1,662	$44,880	
Fixed Cost		$70,089	
Return to Vessel		$70,380	$563,040
Percent Increase from Case 1		72 Percent	37 Percent
Number of Days Fished	4.5 Days	122 Days	972 Days
Number of Days Fished Plus 2.5 Rest Days Between Trips	7 Days	189 Days	

CAUTION: The change in profitability within the active, heterogeneous groundfish fleet from changes in fleet size may vary considerably from that reported in this table.

a/ Landings, revenues and cost data for this exercise were obtained from the Oregon State University, Sea Grant Observer Project records. The parameter values for the "fleet" in Case 1 represent vessel averages for 60- to 80-foot trawlers, with between 300 and 400 horsepower, fishing the deepwater complex from February 1986 to November 1987.

each vessel. Because of this savings, the increase in individual owner profits from Case 1 are an additional four percent higher than in Case 2 and three percent higher at the fleet level.

Again noting that the results from this hypothetical fleet may not translate well across the entire groundfish fleet if the fleet were comprised entirely of these vessels, one might anticipate generating an initial increase in fleet profits of roughly the same percentage as the reduction in the fleet's size. Additionally, if this program were to reduce the fleet size by two vessels with budgets similar to the average used in the example, the annual savings to the nation would be the same as Case 2 (a reduction in total costs of $140,128), and the increase in net returns would be the same, but distributed between more vessels. Thus, if the annual costs for the program are about $220,000 (see Section 7.9) and the program keeps three vessels of the average type used in the example from being constructed, the costs of administering the program would be balanced by increased benefits. Additional reduction in fleet size would be required to balance enforcement and compliance costs. If compliance costs run as high as $100 annually per vessel for the permited fleet and annual enforcement costs $500,000 dollars, total enforcement and compliance costs might be about $630,000 a year for the permitted fleet through 1996 and probably about $590,000 a year after "B" endorsements expire. In order to cover these administrative, enforcement and compliance costs, the limited entry program would have to prevent construction of the equivalent of only about 12 vessels of the average type used in the example. The estimated enforcement cost is a "comfortable" estimate made in the face of much uncertainty for the purpose of facilitating a net benefit demonstration (it is therefore likely to be on the high side). Additionally, the cost estimates provided here are absolute changes, not relative to status quo. Increasing costs under status quo would make the relative costs of the program lower. New officers are presently being added to cover additional status quo enforcement burdens. With these increases in status quo enforcement costs, the program could even be less effective than in this example and still result in net benefits. Lower variable costs are also not included in the above demonstration of net benefits. Examination of the the variable cost portion of Table 7–6 reveals a $13,000 saving from a 20 percent reduction in the number of vessels operating in the fleet (Case 3 compared to Case 1). Applying this result to the 156 trawl vessels in the 60–79 foot category, which are expected to receive permits, results in an estimated annual reduction in variable costs alone of over $200,000 dollars (compared to the effects of a 20 percent increase in fleet size), nearly covering the administrative costs of the program. If other sectors of the fleet have similar cost structures and this modest success were extended over the entire limited entry fleet, variable cost savings would clearly result in net benefits. Over the long term, if fixed costs were also saved through the prevention of construction, or if vessel fixed costs in alternative uses are lower, there would be additional cost savings and thus higher net benefits. Hence when one considers variable costs savings from increased efficiency of the vessels in the fleet, fixed costs savings from the prevention of new construction over the short and long run, and the increasing enforcement costs expected under status quo, it appears likely that a program that is modestly effective will result in the generation of net benefits.

The analysis provided in Table 7–6 can be used to assess the impact of increases in fleet size on fleet size and efficiency, by posing Case 3 as the starting point and Case 1 as the result of a 25 percent increase in the fleet and the imposition of more restrictive trip limits. Thus, the impact of such an increase would be a 33 percent reduction in the returns to vessels and skippers previously in the fleet, and a 17 percent drop in overall fleet profitability.

The 20 percent reduction in fleet size used in this example was chosen arbitrarily for purposes of demonstration and is not intended to reflect what would happen under any of the permit options

presented. As previously discussed, the higher MLR options would attempt to achieve a permanent fleet roughly the size of that in 1987. Although it is not clear whether this amount would be higher or lower than the size of the future status quo fleet, it is not likely that a reduction in overall fleet size compared to the future status quo would be more than 10 percent. The low MLR option could allow the active fleet to grow dramatically, relative to the higher MLR options.

As is readily apparent in this example, the major source of gain in the profitability of the fleet is the removal of unnecessary fixed costs (overcapitalization) from the fishery. While it may be argued from a national perspective that a loss may occur if the vessels removed from the fishery lay idle, this is a short-run effect. An important rationale for establishing limited duration permits is to allow owners not receiving "A" endorsements to fully depreciate their vessels before they must either leave the fishery or purchase an "A" endorsement for their vessel in the market. Following this period of adjustment, increases in fleet efficiency will translate directly into national benefits; a reduction in the resources required from the general economy in order to produce the same amount of fish.

A reduction in fleet size is likely to have some impact on season length. As shown for each case, if 2.5 days are added for rest and maintenance between each trip, making essentially a weekly cycle, the length of the fishing season would be 24 weeks, roughly 6 months. If catch per trip remained unchanged with the two vessel reduction, an additional six weeks would be added to the season to maintain total fleet landings. If per trip landings could be increased, as in Case 3, then the season length could fall anywhere within this range, or even below it, depending on the magnitude of the productivity increase.

It should be noted that as a result of the transferable nature of the proposed licenses, as well as ITQs, much of the present and expected future economic profits from the fishery will be captured by the permit sellers at the time of sale. To whatever extent profits actually increase in the fishery under the higher MLR options, much of the anticipated higher future returns will be amortized into the price of the permit when it is sold. An alternative to issuing transferable permits (or quota), which are issued on the basis of a vessel's history, would have been to issue nontransferable permits to individuals; utilize retirements from the fishery as a means of reducing the number of permits; and then employ a lottery, auction or other procedure for replacing the permits of retirees once the desired level of permits has been reached.

This sort of arrangement, however, relies on issuing permits to individuals rather than to vessels. This complicates the issuance of permits considerably when a vessel is owned by a corporation or partnership, as is often the case in the groundfish fishery. If one individual must be selected to receive the permit, then the other owners of the vessel are placed in a tenuous position if that individual for some reason leaves the fishery. If, instead, nontransferable permits are awarded to corporations, then as long as the corporation continues to fish, its permits cannot be expected to be retired when any or all of the individuals who currently own the corporation no longer have legal ownership. In this respect, corporations would be awarded a considerable multigenerational advantage in the fishery, relative to vessels owned by individual persons. Additionally, nontransferable permits may encourage inefficient members of the fleet to continue fishing, whereas transferability would provide them with an incentive to sell to more efficient fishermen.

ITQs. In general, it is anticipated that increases in fleet profitability with ITQs would be comparable to or larger than those obtained with a license limitation, even under a licensing scenario in which fewer vessels were permitted than with the higher MLR options. This likelihood derives from the

Table 7–7. Participation of vessels which made trawl landings during the window period in fisheries other than limited entry gear groundfish, summarized by vessel length class and whether the vessel met either the trawl non–whiting or trawl whiting high MLRs.

Vessel Length (Feet)	Number of Vessels	Number of Periods Using This Gear	Percentage of Total Revenue From This Gear and Groundfish	Number of Vessels (*With Percentage, By Class*) That Participated in Fisheries Other Than Limited Entry Gear Groundfish							
				Salmon	Crab	Shrimp	Tuna	Halibut	Other Non–groundfish	Other Groundfish[a/]	Fished Alaska
VESSELS MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING HIGH MLRS											
< 40	15	5.6	38.0	8	10	8	6	5	13	6	0
				53	*67*	*53*	*40*	*33*	*87*	*40*	*0*
40–59	183	6.4	56.9	62	90	100	55	51	178	54	19
				34	*49*	*55*	*30*	*28*	*97*	*30*	*10*
60–79	139	6.8	68.2	16	25	77	18	17	122	26	11
				12	*18*	*55*	*13*	*12*	*88*	*19*	*8*
> 79	12	3.5	77.4	0	0	1	0	0	3	0	3
				0	*0*	*8*	*0*	*0*	*25*	*0*	*25*
Total	349	6.4	61.5	86	125	186	79	73	317	86	33
				25	*36*	*53*	*23*	*21*	*91*	*25*	*9*
VESSELS NOT MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING HIGH MLRS											
< 40	18	2.0	10.0	12	12	9	7	9	14	13	0
				67	*67*	*50*	*39*	*50*	*78*	*72*	*0*
40–59	66	2.1	18.1	29	34	29	25	18	54	25	13
				44	*52*	*44*	*38*	*27*	*82*	*38*	*20*
60–79	48	1.9	37.9	6	10	16	4	8	22	9	15
				13	*21*	*33*	*8*	*17*	*46*	*19*	*31*
> 79	9	1.4	59.2	0	1	1	0	0	2	0	6
				0	*11*	*11*	*0*	*0*	*22*	*0*	*67*
Total	141	2.0	26.4	47	57	55	36	35	92	47	34
				33	*40*	*39*	*26*	*25*	*65*	*33*	*24*

a/ "Other Groundfish" refers to groundfish with gear that is clearly not one of the three types included in the limited entry proposal.

Table 7–8. Participation of vessels which made trawl landings during the window period in fisheries other than limited entry gear groundfish, summarized by vessel length class and whether the vessel met either the trawl non–whiting or trawl whiting adopted MLRs.

Vessel Length (Feet)	Number of Vessels	Number of Periods Using This Gear	Percentage of Total Revenue From This Gear and Groundfish	Number of Vessels (*With Percentage, By Class*) That Participated in Fisheries Other Than Limited Entry Gear Groundfish							
				Salmon	Crab	Shrimp	Tuna	Halibut	Other Non–groundfish	Other Groundfish[a/]	Fished Alaska
VESSELS MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING ADOPTED MLRS											
< 40	15	5.6	38.3	9	10	9	5	4	14	7	0
				60	*67*	*60*	*33*	*27*	*93*	*47*	*0*
40–59	201	6.0	54.8	69	98	106	56	53	194	57	24
				34	*49*	*53*	*28*	*26*	*97*	*28*	*12*
60–79	156	6.3	65.4	18	28	82	18	18	130	28	17
				12	*18*	*53*	*12*	*12*	*83*	*18*	*11*
> 79	16	3.1	79.1	0	0	2	0	0	4	0	4
				0	*0*	*13*	*0*	*0*	*25*	*0*	*25*
Total	388	6.0	59.7	96	136	199	79	75	342	92	45
				25	*35*	*51*	*20*	*19*	*88*	*24*	*12*
VESSELS NOT MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING ADOPTED MLRS											
< 40	18	2.1	9.0	11	12	8	8	10	14	12	0
				61	*67*	*44*	*44*	*56*	*78*	*67*	*0*
40–59	48	2.0	12.0	22	26	23	24	16	38	22	8
				46	*54*	*48*	*50*	*33*	*79*	*46*	*17*
60–79	31	1.4	35.2	4	70	11	4	7	14	7	9
				13	*23*	*35*	*13*	*23*	*45*	*23*	*29*
> 79	5	1.0	39.3	0	1	0	0	0	1	0	5
				0	*20*	*01*	*0*	*0*	*20*	*0*	*100*
Total	102	1.8	19.9	37	46	42	36	33	67	41	22
				36	*45*	*41*	*35*	*32*	*66*	*40*	*22*

a/ "Other Groundfish" refers to groundfish with gear that is clearly not one of the three types included in the limited entry proposal.

Table 7–9. Number of fisheries, in addition to limited entry gear groundfish, which were participated in by vessels which made trawl landings during the window period, summarized by vessel length class and whether the vessel met either the trawl non–whiting or trawl whiting high MLRs (***with percents***).

Vessel Length (Feet)	Number of Vessels	Mean Number of Other Fisheries	No Other	1 Other	2 Other	3 Other	4 Other	5 or More Other
VESSELS MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING HIGH MLRS								
<40	15	5	1	3	0	1	3	7
			7	*20*	*0*	*7*	*20*	*47*
40–59	183	3	1	29	31	38	40	44
			1	*16*	*17*	*21*	*22*	*24*
60–79	139	2	8	37	44	25	16	9
			6	*27*	*32*	*18*	*12*	*6*
> 79	12	1	5	7	0	0	0	0
			42	*58*	*0*	*0*	*0*	*0*
Total	349	3	15	76	75	64	59	60
			4	*22*	*21*	*18*	*17*	*17*
VESSELS NOT MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING HIGH MLRS								
< 40	18	4	2	2	1	1	0	12
			11	*11*	*6*	*6*	*0*	*67*
40–59	66	3	3	7	10	12	16	18
			5	*11*	*15*	*18*	*24*	*27*
60–79	48	2	9	16	6	8	7	2
			19	*33*	*13*	*17*	*15*	*4*
> 79	9	1	2	5	1	1	0	0
			22	*56*	*11*	*11*	*0*	*0*
Total	141	3	16	30	18	22	23	32
			11	*21*	*13*	*16*	*16*	*23*

Table 7–10. Number of fisheries, in addition to limited entry gear groundfish, which were participated in by vessels which made trawl landings during the window period, summarized by vessel length class and whether the vessel met either the trawl non–whiting or trawl whiting adopted MLRs (*with percents*).

Vessel Length (Feet)	Number of Vessels	Mean Number of Other Fisheries	No Other	1 Other	2 Other	3 Other	4 Other	5 or More Other
VESSELS MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING ADOPTED MLRS								
<40	15	5	1	3	0	1	2	8
			7	*20*	*0*	*7*	*13*	*53*
40–59	201	3	1	35	31	42	48	44
			0	*17*	*15*	*21*	*24*	*22*
60–79	156	2	11	45	46	27	17	10
			7	*29*	*29*	*17*	*11*	*6*
> 79	16	1	7	8	1	0	0	0
			44	*50*	*6*	*0*	*0*	*0*
Total	388	3	20	91	78	70	67	62
			5	*23*	*20*	*18*	*17*	*16*
VESSELS NOT MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING ADOPTED MLR								
< 40	18	4	2	2	1	1	1	11
			11	*11*	*6*	*6*	*6*	*61*
40–59	48	4	3	1	10	8	8	18
			6	*2*	*21*	*17*	*17*	*38*
60–79	31	2	6	8	4	6	6	1
			19	*26*	*13*	*19*	*19*	*3*
> 79	5	1	0	4	0	1	0	0
			0	*80*	*0*	*20*	*0*	*0*
Total	102	3	11	15	15	16	15	30
			11	*15*	*15*	*16*	*15*	*29*

Table 7-11. Participation of vessels which made fishpot landings during the window period in fisheries other than limited entry gear groundfish, summarized by vessel length class and whether the vessel met the high MLR for fishpot gear.

Vessel Length (Feet)	Number of Vessels	Number of Periods Using This Gear	Percentage of Total Revenue From This Gear and Groundfish	Number of Vessels (*With Percentage, By Class*) That Participated in Fisheries Other Than Limited Entry Gear Groundfish							
				Salmon	Crab	Shrimp	Tuna	Halibut	Other Non-groundfish	Other Groundfish[a/]	Fished Alaska
VESSELS MEETING THE HIGH FISHPOT GEAR MLRS											
< 40	13	3.5	26.7	10	9	1	5	5	11	8	0
				77	*69*	*8*	*38*	*38*	*85*	*62*	*0*
40-59	19	4.8	39.3	15	17	6	9	7	15	9	1
				79	*89*	*32*	*47*	*37*	*79*	*47*	*5*
60-79	3	4.7	79.1	0	2	1	0	1	2	0	1
				0	*67*	*33*	*0*	*33*	*67*	*0*	*33*
> 79	6	4.0	76.0	0	0	0	0	0	0	0	2
				0	*0*	*0*	*0*	*0*	*0*	*0*	*33*
Total	41	4.3	43.6	25	28	8	14	13	28	17	4
				61	*68*	*20*	*34*	*32*	*68*	*41*	*10*
VESSELS NOT MEETING HIGH FISHPOT GEAR MLRS											
< 40	175	1.2	2.1	68	112	33	74	53	150	80	1
				39	*64*	*19*	*42*	*30*	*86*	*46*	*1*
40-59	60	1.2	2.7	34	46	14	32	25	50	31	8
				57	*77*	*23*	*53*	*42*	*83*	*52*	*13*
60-79	13	1.2	7.3	1	5	8	5	3	11	5	1
				8	*38*	*62*	*38*	*23*	*85*	*38*	*8*
> 79	6	1.5	31.4	0	0	0	0	1	0	0	5
				0	*0*	*0*	*0*	*17*	*0*	*0*	*83*
Total	254	1.2	3.2	103	163	55	111	82	211	116	15
				41	*64*	*22*	*44*	*32*	*83*	*46*	*6*

a/ "Other Groundfish" refers to groundfish with gear that is clearly not one of the three types included in the limited entry proposal.

Table 7-12. Participation of vessels which made fishpot landings during the window period in fisheries other than limited entry gear groundfish, summarized by vessel length class and whether the vessel met the adopted MLR for fishpot gear.

Vessel Length (Feet)	Number of Vessels	Number of Periods Using This Gear	Percentage of Total Revenue From This Gear and Groundfish	Number of Vessels (*With Percentage, By Class*) That Participated in Fisheries Other Than Limited Entry Gear Groundfish							
				Salmon	Crab	Shrimp	Tuna	Halibut	Other Non-groundfish	Other Groundfish[a/]	Fished Alaska
VESSELS MEETING THE ADOPTED FISHPOT GEAR MLRS											
< 40	12	3.1	29.6	10	9	1	3	4	9	8	0
				83	*75*	*8*	*25*	*33*	*75*	*67*	*0*
40–59	19	4.6	39.4	14	16	6	9	7	15	8	1
				74	*84*	*32*	*47*	*37*	*79*	*42*	*5*
60–79	4	4.0	72.9	0	2	2	0	1	2	0	1
				0	*50*	*50*	*0*	*25*	*50*	*0*	*25*
> 79	7	3.7	77.1	0	0	0	0	0	0	0	3
				0	*0*	*0*	*0*	*0*	*0*	*0*	*43*
Total	42	4.0	46.1	24	27	9	12	12	26	16	5
				57	*64*	*21*	*29*	*29*	*62*	*38*	*12*
VESSELS NOT MEETING ADOPTED FISHPOT GEAR MLRS											
< 40	176	1.3	2.0	68	112	33	76	54	152	80	1
				39	*64*	*19*	*43*	*31*	*86*	*45*	*1*
40–59	60	1.3	2.7	35	47	14	32	25	50	32	8
				58	*78*	*23*	*53*	*42*	*83*	*53*	*13*
60–79	12	1.1	3.3	1	5	7	5	3	11	5	1
				8	*42*	*58*	*42*	*25*	*92*	*42*	*8*
> 79	5	1.4	21.1	0	0	0	0	1	0	0	4
				0	*0*	*0*	*0*	*20*	*0*	*0*	*80*
Total	253	1.3	2.6	104	164	54	113	83	213	117	14
				41	*65*	*21*	*45*	*33*	*84*	*46*	*6*

a/ "Other Groundfish" refers to groundfish with gear that is clearly not one of the three types included in the limited entry proposal.

Table 7-13. Number of fisheries, in addition to limited entry gear groundfish, which were participated in by vessels which made fishpot groundfish landings during the window period, summarized by vessel length class and whether the vessel met the high MLR for fishpot gear (*with percents*).

Vessel Length (Feet)	Number of Vessels	Mean Number of Other Fisheries	No Other	1 Other	2 Other	3 Other	4 Other	5 or More Other
VESSELS MEETING THE HIGH FISHPOT GEAR MLR								
< 40	13	4	0 *0*	1 *8*	2 *15*	2 *15*	3 *23*	5 *38*
40–59	19	4	0 *0*	1 *5*	3 *16*	0 *0*	7 *37*	8 *42*
60–79	3	2	1 *33*	0 *0*	0 *0*	1 *33*	1 *33*	0 *0*
> 79	6	0	4 *67*	2 *33*	0 *0*	0 *0*	0 *0*	0 *0*
Total	41	3	5 *12*	4 *10*	5 *12*	3 *7*	11 *27*	13 *32*
VESSELS NOT MEETING THE HIGH FISHPOT GEAR MLR								
< 40	175	3	5 *3*	30 *17*	23 *13*	36 *21*	37 *21*	44 *25*
40–59	60	4	1 *2*	2 *3*	6 *10*	11 *18*	18 *30*	22 *37*
60–79	13	3	0 *0*	2 *15*	4 *31*	1 *8*	4 *31*	2 *15*
> 79	6	1	1 *17*	4 *67*	1 *17*	0 *0*	0 *0*	0 *0*
Total	254	3	7 *3*	38 *15*	34 *13*	48 *19*	59 *23*	68 *27*

Table 7–14. Number of fisheries, in addition to limited entry gear groundfish, which were participated in by vessels which made fishpot groundfish landings during the window period, summarized by vessel length class and whether the vessel met the adopted MLR for fishpot gear (*with percents*).

Vessel Length (Feet)	Number of Vessels	Mean Number of Other Fisheries	No Other	1 Other	2 Other	3 Other	4 Other	5 or More Other
VESSELS MEETING THE ADOPTED FISHPOT GEAR MLR								
< 40	12	4	0	1	2	2	3	4
			0	*8*	*17*	*17*	*25*	*33*
40–59	19	4	0	1	3	1	7	7
			0	*5*	*16*	*5*	*37*	*37*
60–79	4	2	1	1	0	1	1	0
			25	*25*	*0*	*25*	*25*	*0*
> 79	7	0	4	3	0	0	0	0
			57	*43*	*0*	*0*	*0*	*0*
Total	42	3	5	6	5	4	11	11
			12	*14*	*12*	*10*	*26*	*26*
VESSELS NOT MEETING THE ADOPTED FISHPOT GEAR MLR								
< 40	176	3	5	30	23	36	37	45
			3	*17*	*13*	*20*	*21*	*26*
40–59	60	4	1	2	6	10	18	23
			2	*3*	*10*	*17*	*30*	*38*
60–79	12	3	0	1	4	1	4	2
			0	*8*	*33*	*8*	*33*	*17*
> 79	5	1	1	3	1	0	0	0
			20	*60*	*20*	*0*	*0*	*0*
Total	253	3	7	36	34	47	59	70
			3	*14*	*13*	*19*	*23*	*28*

Table 7–15. Participation of vessels which made longline landings during the window period in fisheries other than limited entry gear groundfish, summarized by vessel length class and whether the vessel met the high MLR for longline gear.

Vessel Length (Feet)	Number of Vessels	Number of Periods Using This Gear	Percentage of Total Revenue From This Gear and Groundfish	Number of Vessels (*With Percentage, By Class*) That Participated in Fisheries Other Than Limited Entry Gear Groundfish							
				Salmon	Crab	Shrimp	Tuna	Halibut	Other Non–groundfish	Other Groundfish[a/]	Fished Alaska
VESSELS MEETING THE HIGH LONGLINE GEAR MLRS											
< 40	154	4.5	38.7	92	52	3	27	84	120	77	20
				60	*34*	*2*	*18*	*55*	*78*	*50*	*13*
40–59	68	4.7	41.1	34	27	4	19	59	47	19	34
				50	*40*	*6*	*28*	*87*	*69*	*28*	*50*
> 59	14	4.4	23.9	0	1	0	4	12	6	0	12
				0	*7*	*0*	*29*	*86*	*43*	*0*	*86*
Total	236	4.6	38.5	126	80	7	50	155	173	96	66
				53	*34*	*3*	*21*	*66*	*73*	*41*	*28*
VESSELS NOT MEETING HIGH LONGLINE GEAR MLRS											
< 40	300	1.4	19.7	197	95	12	27	94	147	155	40
				66	*32*	*4*	*9*	*31*	*49*	*52*	*13*
40–59	129	1.8	12.7	60	38	8	26	85	45	33	77
				47	*29*	*6*	*20*	*66*	*35*	*26*	*60*
60–79	32	2.0	7.1	2	4	5	5	25	8	3	24
				6	*13*	*16*	*16*	*78*	*25*	*9*	*75*
> 79	9	1.1	36.9	0	0	0	0	1	1	0	6
				0	*0*	*0*	*0*	*11*	*11*	*0*	*67*
Total	470	1.5	17.3	259	137	25	58	205	201	191	147
				55	*29*	*5*	*12*	*44*	*43*	*41*	*31*

a/ "Other Groundfish" refers to groundfish with gear that is clearly not one of the three types included in the limited entry proposal.

Table 7-16. Participation of vessels which made longline landings during the window period in fisheries other than limited entry gear groundfish, summarized by vessel length class and whether the vessel met the adopted MLR for longline gear.

Vessel Length (Feet)	Number of Vessels	Number of Periods Using This Gear	Percentage of Total Revenue From This Gear and Groundfish	Number of Vessels (*With Percentage, By Class*) That Participated in Fisheries Other Than Limited Entry Gear Groundfish							
				Salmon	Crab	Shrimp	Tuna	Halibut	Other Non-groundfish	Other Groundfish[a/]	Fished Alaska
VESSELS MEETING THE ADOPTED LONGLINE GEAR MLRS											
< 40	131	4.2	41.1	80	45	4	18	80	100	67	26
				61	*34*	*3*	*14*	*61*	*76*	*51*	*20*
40–59	82	4.4	37.2	39	33	6	21	70	54	23	42
				48	*40*	*7*	*26*	*85*	*66*	*28*	*51*
> 59	16	4.2	21.7	0	1	0	5	14	7	0	14
				0	*6*	*0*	*31*	*88*	*44*	*0*	*88*
Total	229	4.3	38.3	119	79	10	44	164	161	90	82
				52	*34*	*4*	*19*	*72*	*70*	*39*	*36*
VESSELS NOT MEETING ADOPTED LONGLINE GEAR MLRS											
< 40	323	1.7	20.2	209	102	11	36	98	167	165	34
				65	*32*	*3*	*11*	*30*	*52*	*51*	*11*
40–59	115	1.6	12.0	55	32	6	24	74	38	29	69
				48	*28*	*5*	*21*	*64*	*33*	*25*	*60*
60–79	30	1.9	7.0	2	4	5	4	23	7	3	22
				7	*13*	*17*	*13*	*77*	*23*	*10*	*73*
> 79	9	1.1	36.9	0	0	0	0	1	1	0	6
				0	*0*	*0*	*0*	*11*	*11*	*0*	*67*
Total	477	1.7	17.7	266	138	22	64	196	213	197	131
				56	*29*	*5*	*13*	*41*	*45*	*41*	*27*

a/ "Other Groundfish" refers to groundfish with gear that is clearly not one of the three types included in the limited entry proposal.

Table 7–17. Number of fisheries, in addition to limited entry gear groundfish, which were participated in by vessels which made longline groundfish landings during the window period, summarized by vessel length class and whether the vessel met the high MLR for longline gear (*with percents*).

Vessel Length (Feet)	Number of Vessels	Mean Number of Other Fisheries	No Other	1 Other	2 Other	3 Other	4 Other	5 or More Other
			VESSELS MEETING THE HIGH LONGLINE GEAR MLR					
< 40	154	3	6	25	23	34	34	32
			4	*16*	*15*	*22*	*22*	*21*
40–59	68	4	0	3	17	15	14	19
			0	*4*	*25*	*22*	*21*	*28*
> 59	14	3	0	1	7	4	2	0
			0	*7*	*50*	*29*	*14*	*0*
Total	236	3	6	29	47	53	50	51
			3	*12*	*20*	*22*	*21*	*22*
			VESSELS NOT MEETING THE HIGH LONGLINE GEAR MLR					
< 40	300	3	41	49	60	55	50	45
			14	*16*	*20*	*18*	*17*	*15*
40–59	129	3	9	10	41	27	24	18
			7	*8*	*32*	*21*	*19*	*14*
60–79	32	2	1	4	16	7	2	2
			3	*13*	*50*	*22*	*6*	*6*
> 79	9	1	3	4	2	0	0	0
			33	*44*	*22*	*0*	*0*	*0*
Total	470	3	54	67	119	89	76	65
			11	*14*	*25*	*19*	*16*	*14*

Table 7–18. Number of fisheries, in addition to limited entry gear groundfish, which were participated in by vessels which made longline groundfish landings during the window period, summarized by vessel length class and whether the vessel met the adopted MLR for longline gear (***with percents***).

Vessel Length (Feet)	Number of Vessels	Mean Number of Other Fisheries	No Other	1 Other	2 Other	3 Other	4 Other	5 or More Other
VESSELS MEETING THE ADOPTED LONGLINE GEAR MLR								
< 40	131	3	2	20	20	29	32	28
			2	*15*	*15*	*22*	*24*	*21*
40–59	82	4	1	3	20	21	16	21
			1	*4*	*24*	*26*	*20*	*26*
> 59	16	3	0	1	7	6	2	0
			0	*6*	*44*	*38*	*13*	*0*
Total	229	3	3	24	47	56	50	49
			1	*10*	*21*	*24*	*22*	*21*
VESSELS NOT MEETING THE ADOPTED LONGLINE GEAR MLR								
< 40	323	3	45	54	63	60	52	49
			14	*17*	*20*	*19*	*16*	*15*
40–59	115	3	8	10	38	21	22	16
			7	*9*	*33*	*18*	*19*	*14*
60–79	30	2	1	4	16	5	2	2
			3	*13*	*53*	*17*	*7*	*7*
> 79	9	1	3	4	2	0	0	0
			33	*44*	*22*	*0*	*0*	*0*
Total	477	3	57	72	119	86	76	67
			12	*15*	*25*	*18*	*16*	*14*

Table 7-19. Participation of vessels which made line landings during the window period in fisheries other than limited entry gear groundfish, summarized by vessel length class and whether the vessel met the high MLR for all line gear.

Vessel Length (Feet)	Number of Vessels	Number of Periods Using This Gear	Percentage of Total Revenue From This Gear and Groundfish	Number of Vessels (*With Percentage, By Class*) That Participated in Fisheries Other Than Limited Entry Gear Groundfish							
				Salmon	Crab	Shrimp	Tuna	Halibut	Other Non-groundfish	Other Groundfish[a/]	Fished Alaska
VESSELS MEETING THE HIGH LONGLINE GEAR MLRS											
< 40	651	4.1	43.6	291	184	17	206	196	495	248	22
				45	*28*	*3*	*32*	*30*	*76*	*38*	*3*
40–59	117	4.4	39.1	58	45	6	53	64	86	41	34
				50	*38*	*5*	*45*	*55*	*74*	*35*	*29*
> 59	23	4.3	33.8	0	3	1	8	15	12	1	12
				0	*13*	*4*	*35*	*65*	*52*	*4*	*52*
Total	791	4.1	42.5	349	232	24	267	275	593	290	68
				44	*29*	*3*	*34*	*35*	*75*	*37*	*9*
VESSELS NOT MEETING HIGH LONGLINE GEAR MLRS											
< 40	1,447	1.5	24.6	768	426	56	346	280	752	620	45
				53	*29*	*4*	*24*	*19*	*52*	*43*	*3*
40–59	408	1.7	14.9	186	138	43	188	145	228	146	84
				46	*34*	*11*	*46*	*36*	*56*	*36*	*21*
60–79	68	1.8	20.6	3	11	13	22	32	32	12	25
				4	*16*	*19*	*32*	*47*	*47*	*18*	*37*
> 79	21	1.3	52.8	0	0	0	4	1	7	0	6
				0	*0*	*0*	*19*	*5*	*33*	*0*	*29*
Total	1,944	1.6	22.7	957	575	112	560	458	1,019	778	160
				49	*30*	*6*	*29*	*24*	*52*	*40*	*8*

a/ "Other Groundfish" refers to groundfish with gear that is clearly not one of the three types included in the limited entry proposal.

Table 7-20. Participation of vessels which made line landings during the window period in fisheries other than limited entry gear groundfish, summarized by vessel length class and whether the vessel met the adopted MLR for all line gear.

Vessel Length (Feet)	Number of Vessels	Number of Periods Using This Gear	Percentage of Total Revenue From This Gear and Groundfish	Number of Vessels (*With Percentage, By Class*) That Participated in Fisheries Other Than Limited Entry Gear Groundfish							
				Salmon	Crab	Shrimp	Tuna	Halibut	Other Non-groundfish	Other Groundfish[a/]	Fished Alaska
VESSELS MEETING THE ADOPTED LONGLINE GEAR MLRS											
< 40	266	4.4	46.0	142	95	7	73	105	210	126	29
				53	*36*	*3*	*27*	*39*	*79*	*47*	*11*
40–59	119	4.3	36.6	57	47	9	44	79	83	38	42
				48	*39*	*8*	*37*	*66*	*70*	*32*	*35*
> 59	25	4.1	36.2	0	3	1	9	15	12	1	14
				0	*12*	*4*	*36*	*60*	*48*	*4*	*56*
Total	410	4.4	42.7	199	145	17	126	199	305	165	85
				49	*35*	*4*	*31*	*49*	*74*	*40*	*21*
VESSELS NOT MEETING ADOPTED LONGLINE GEAR MLRS											
< 40	1,832	2.0	28.3	917	515	66	479	371	1,037	742	38
				50	*28*	*4*	*26*	*20*	*57*	*41*	*2*
40–59	406	1.7	15.5	187	136	40	197	130	231	149	76
				46	*33*	*10*	*49*	*32*	*57*	*37*	*19*
60–79	66	1.8	19.4	3	11	13	22	31	32	12	23
				5	*17*	*20*	*33*	*47*	*48*	*18*	*35*
> 79	21	1.2	49.5	0	0	0	3	2	7	0	6
				0	*0*	*0*	*14*	*10*	*33*	*0*	*29*
Total	2,325	1.9	25.9	1,107	662	119	701	534	1,307	903	143
				48	*28*	*5*	*30*	*23*	*56*	*39*	*6*

a/ "Other Groundfish" refers to groundfish with gear that is clearly not one of the three types included in the limited entry proposal.

Table 7–21. Number of fisheries, in addition to limited entry gear groundfish, which were participated in by vessels which made line groundfish landings during the window period, summarized by vessel length class and whether the vessel met the high MLR for all line gear (*with percents*).

Vessel Length (Feet)	Number of Vessels	Mean Number of Other Fisheries	No Other	1 Other	2 Other	3 Other	4 Other	5 or More Other
VESSELS MEETING THE HIGH LONGLINE GEAR MLR								
< 40	651	3	63 *10*	151 *23*	127 *20*	102 *16*	113 *17*	95 *15*
40–59	117	3	4 *3*	8 *7*	30 *26*	21 *18*	26 *22*	28 *24*
60–79	21	2	2 *10*	1 *5*	9 *43*	6 *29*	3 *14*	0 *0*
> 79	2	2	0 *0*	1 *50*	1 *50*	0 *0*	0 *0*	0 *0*
Total	791	3	69 *9*	161 *20*	167 *21*	129 *16*	142 *18*	123 *16*
VESSELS NOT MEETING THE HIGH LONGLINE GEAR MLR								
< 40	1,447	3	243 *17*	308 *21*	285 *20*	234 *16*	220 *15*	157 *11*
40–59	408	3	38 *9*	66 *16*	86 *21*	74 *18*	65 *16*	79 *19*
60–79	68	2	8 *12*	13 *19*	26 *38*	8 *12*	6 *9*	7 *10*
> 79	21	1	6 *29*	12 *57*	3 *14*	0 *0*	0 *0*	0 *0*
Total	1,944	2	295 *15*	399 *21*	400 *21*	316 *16*	291 *15*	243 *13*

Table 7-22. Number of fisheries, in addition to limited entry gear groundfish, which were participated in by vessels which made line groundfish landings during the window period, summarized by vessel length class and whether the vessel met the adopted MLR for all line gear (*with percents*).

Vessel Length (Feet)	Number of Vessels	Mean Number of Other Fisheries	No Other	1 Other	2 Other	3 Other	4 Other	5 or More Other
VESSELS MEETING THE ADOPTED LONGLINE GEAR MLR								
< 40	266	3	9	52	50	46	58	51
			3	*20*	*19*	*17*	*22*	*19*
40–59	119	3	4	9	28	25	23	30
			3	*8*	*24*	*21*	*19*	*25*
> 59	25	2	3	2	10	7	3	0
			12	*8*	*40*	*28*	*12*	*0*
Total	410	3	16	63	88	78	84	81
			4	*15*	*21*	*19*	*20*	*20*
VESSELS NOT MEETING THE ADOPTED LONGLINE GEAR MLR								
< 40	1,832	3	297	407	362	290	275	201
			16	*22*	*20*	*16*	*15*	*11*
40–59	406	3	38	65	88	70	68	77
			9	*16*	*22*	*17*	*17*	*19*
60–79	66	2	7	13	26	7	6	7
			11	*20*	*39*	*11*	*9*	*11*
> 79	21	1	6	12	3	0	0	0
			29	*57*	*14*	*0*	*0*	*0*
Total	2,325	2	348	497	479	367	349	285
			15	*21*	*21*	*16*	*15*	*12*

three sources noted in Section 7.2.1: removal of unnecessary fixed costs, transfer of fishing rights to more efficient operations and elimination of the costs associated with the "race for fish". Increases in fleet profitability would not be as great for a "sole ownership" because under an ITQ regime costs of highgrading and discard mortality are shared with all other vessels in the fishery (i.e., the emulation of a private property right is not complete). Because of the previously noted limitations of this analysis, a formal modeling of changes in profits with an ITQ scheme was not undertaken.

7.2.3 Effect of Each Alternative on Vessel Profitability and Operations

The proposed alternatives will have somewhat differing impacts on vessels depending on the extent that they have participated in and relied upon income from other fisheries. The following two sections discuss these differences. Background information on vessel participation in other fisheries by vessels also fishing for groundfish with limited entry gear during the window period is provided in Tables 7-7 through 7-22. Table 7-7 shows, for qualifying and nonqualifying trawl vessels under the high MLR, by vessel length class, the number of vessels having landings in one of eight other fisheries during the window, along with the mean percentage of revenue earned from groundfish caught with trawl gear during the window period. Table 7-9 summarizes the number of other fisheries that individual vessels were active in, along with the mean number of other fisheries in which the vessels of a particular length participated. Tables 7-8 and 7-10 show the same variables for the trawl fleet, but are grouped according to whether the vessels met or did not meet the adopted MLR. Tables 7-11 through 7-14 provide comparable information for fishpot vessels, Tables 7-15 through 7-18 for longline vessels and Tables 7-19 through 7-22 for all line vessels. Because the percentages of vessels participating in other fisheries does not generally vary much between comparable categories for the adopted and high MLRs, the discussion that follows will focus on the adopted MLR case. Information regarding the fishermen's dependence on groundfish for income is broken down by fishing income categories in Chapter 4.

Vessels in the trawl and fishpot categories exhibit several similarities in their participation in other fisheries. In both cases, the smaller vessels tend to be more diversified. Vessels under 40 feet in length, which met the adopted MLR for their particular gear, had less than 40 percent of their revenue come from fishing West Coast groundfish with a limited entry gear. Over 60 percent of the trawlers and 75 percent of the fishpot vessels in this class had landings of crab or salmon during the window. Additionally, 60 percent of the trawlers had some shrimp landings. Participation in these other fisheries was also substantial in the groups not meeting the adopted MLRs. Inspection of the larger vessel classes reveals a generally consistent pattern of decreased participation in the other available fisheries. For vessels at least 80 feet in length, in both gear groups, more than 80 percent of the average vessel's income was derived from West Coast groundfish caught with their particular gear. Not too surprising is the finding that the alternative fishery, which is most positively correlated with vessel size, is the Alaskan fishery (all species). In the 40 to 59 foot category, which contains the most qualifiers for both trawl and fishpot gear, each of the alternative fisheries examined has been participated in by more than 25 percent of the vessels.

The most notable difference between qualifiers and nonqualifiers for these gears was in the percentage of revenue earned from West Coast groundfish and in the number of six-month periods within the window in which the vessels participated. Trawl vessels meeting the adopted MLR averaged nearly 60 percent of their income from West Coast trawl-caught groundfish and 6 periods of activity, while nonqualifiers averaged only 20 percent of their income from groundfish and less than 2 periods of fishing during the window. Pot qualifiers earned 46 percent of the income from West Coast

groundfish, fishing during an average of 4 periods, while nonqualifiers received just 2 percent of their revenues from fishpot-caught groundfish, averaging just over 1 period of fishpot fishing during the window.

The difference in these variables between qualifiers and nonqualifiers is somewhat less pronounced for the longline and all line groups. Longline qualifiers averaged 38 percent of their revenue from West Coast longline-caught groundfish and just over 4 periods of activity, while nonqualifiers received 18 percent of their income from West Coast groundfish, averaging less than 2 periods of activity during the window. The numbers in each of these categories are somewhat higher for the entire set of line vessels. A greater difference between the longline vessels and the fishpot and trawl vessels lies in the inverse relationship between the vessel size and the percentage of income received from West Coast groundfish. For qualifying longline vessels, the percentage drops from 41 percent for those less than 40 feet to 22 percent for vessels greater than 59 feet. While many longliners, particularly smaller vessels, were active in a variety of West Coast alternatives, including halibut, salmon and crab, the higher rate of participation in lucrative halibut and sablefish fisheries off Alaska is the principal reason why larger vessels in this gear group are less dependent upon income from West Coast groundfish. The rate of participation in Alaskan fisheries is considerably lower for the line group as a whole, in part, because most of the additional vessels have home ports in California and would have to travel farther to reach these fisheries.

Generally, under status quo, one would expect to see current levels of cross-participation continue or even increase. As other fisheries experience declining stocks or overcapitalization, fishermen who were not active in the groundfish fishery during the window period may attempt to redirect some of their efforts toward this fishery. This entry would worsen existing problems in the groundfish fishery and could encourage many existing groundfish participants to seek opportunities in other fisheries.

7.2.3.1 Vessel Profitability and Operations While Participating in the Groundfish Fishery

As with many other U.S. fisheries, a commonly used approach for reducing the annual harvesting capacity of the fleet has been to mandate less efficient fishing practices. These restrictions may control the types of gear that can be used, or limit the amount and/or frequency of landings. Season closures have also been used to restrict the landings of some species; however, within the trawl fleet, emphasis has been placed on the use of measures that can preserve, to the greatest extent possible, year-round fishing opportunities.[10/] To this end, increasing reliance has been placed upon the use of trip frequency and landings limitations for many species in the trawl fishery. Although the use of trip limits has preserved longer seasons for these species than would have been the case with a reliance on closures alone, their use has not been entirely successful at maintaining year-round fisheries.

Reliance on trip limits as the principal means of limiting harvest capacity further reduces the efficiency of fishing operations through imposing de facto limits on the hold size of many vessels. Thus, for example, even though capital resources were expended to construct a 50,000 pound hold, the vessel may end up with no greater effective capacity than if a 30,000 pound hold had been constructed at a lower cost.

10/ Additional discussion of the rationale underlying this objective is provided in Section 7.4.1.

The impacts of the alternative on vessels fishing for groundfish with exempted gears were addressed in Section 4.2.1.

License Limitation. Particularly for vessels that participate to a very limited degree in other fisheries, effective license limitation could allow less restricted, more efficient operation through the lengthening of seasons and/or the reduction of trip limits. Because a permit does not specify an amount of fish that can be landed, greater profits are likely to accrue from holding a permit if it is employed a greater share of the time. For this reason, permits are likely to be purchased increasingly by those who plan to devote a higher percentage of their time to groundfish.

Although an effective permit system is likely to make movement into the fishery more difficult, it may be easier for fishermen who remain in the fishery to move between different groundfish species than either the status quo or ITQ management.

ITQs. Theoretically, design and implementation of an effective ITQ system would allow vessels primarily fishing groundfish to increase their efficiency more than they could under licenses. This could be completed in a manner that would also increase fleet efficiency.[11/] In addition to the rationale discussed elsewhere in this chapter, vessels which may be forced by trip limits to fish a wide variety of groundfish species could become much more focused and skilled in harvesting a smaller range of target species.

For business survival in the short and long run, an ITQ regime would require fishermen to spend more time anticipating the best mix of species for their operations. The cyclical decline of a particularly valuable species could create more problems for an operation that owned only ITQs for that species, than for a vessel in a permit or open access fishery which happened to historically fish exclusively for that species. If fishermen hedge reasonably well against such occurrences, the efficiency advantages of an ITQ system would probably outweigh the costs that imperfect information would impose on the participants in the fishery.

7.2.3.2 Vessel Efficiency and Operations Within a Strategy Which Combines Groundfish and Non-groundfish Fisheries

A majority of vessels in the window groundfish fleet participated in other fisheries during that period. In fact, a majority of the vessels meeting the adopted MLRs had landings in at least three of the eight categories of other fisheries presented in Tables 7-7 through 7-22. The extent to which these vessels fish elsewhere is primarily affected by the relative profitability of other fisheries and the crew's familiarity with these other fisheries. Other fisheries become more attractive as groundfish fisheries close, trip limits decline, or prices or catch per unit of effort decrease. Several other fisheries, such as those for salmon, are available only during specific times of the year. Thus, even when these fisheries are more lucrative while they are open, vessels cannot spend their entire year actively engaged in these fisheries. Depending on the number of alternative fisheries a vessel participates in, the vessel may generate very little or nearly all of its revenue from groundfish.

License Limitation. Because of the larger number of permanent permits available and consequent lower permit prices, the low MLR option would allow much more fluid entry and exit over the long

11/ Developing an effective multispecies ITQ system will require a long period of time, and success would be uncertain.

run, both between and within fishing seasons. In restricting the number of permits to the approximate size of the 1987 fleet, the higher MLR options would tend to reduce movement of vessels into and out of the fishery, at least after 1995. As indicated by the relative size of the window fleet, a greater number of different vessels would be likely to pass through the fishery during a four-year period under open access or the low MLR than would be the case with the higher MLR alternatives. Additionally, because of the smaller number of "B" endorsements under the adopted MLR, many former part-time groundfish fishermen will not be able to continue their previous pattern of participation without buying a permit. On the other hand, the adopted alternative will allow for very modest levels of fishing by participants from other fisheries under the open access allocation.

Because the license limitation alternative does not create any "part-time" endorsements, the price of permits will tend to reflect their value in relatively full-time use.[12/] This suggests that permits will be transferred to vessels that are expected to be used for fishing groundfish on a regular basis. Outside of those opportunities afforded by the remaining open access allocation under the adopted MLR, this will reduce the options for gaining occasional access to the groundfish fishery for those who would normally direct most of their efforts toward other West Coast or Alaskan fisheries.

As noted in the above discussion of Tables 7-7 through 7-22, larger trawl and fishpot vessels often tend to fish more exclusively in the groundfish fishery. Within these gear groups, there is likely to be additional incentive to purchase permits from owners of smaller part-time vessels and combine them into permits for large full-time vessels. In the longline fishery, this would seem less likely to happen since the largest longline vessels tend to be more active in highly profitable Alaskan fisheries.

ITQs. ITQs are much more flexible in allowing vessels to participate in groundfish and other fisheries to varying degrees and at different times of the year. Also, operations which would typically spend a quarter of their time fishing for groundfish might prefer to engage in a rather specialized fishing strategy when active in the groundfish fishery. ITQs would allow such participants to own a portfolio of harvest rights for the particular mix of groundfish species that is best suited to their operation. In years when operations would prefer to spend somewhat more or less of their time fishing groundfish, single-year transactions can be made to increase or decrease the holdings of individual quota for certain species without altering the vessel's long-term position in the fishery.[13/]

Because of the variability in opportunities available to West Coast fishermen, the importance of this flexibility can hardly be overstated. If groundfish and all of the alternative fisheries each required their own permit, fishermen would tend to be channeled into one or two specific fisheries. ITQs would facilitate a greater diversity of participation between other fisheries and groundfish, and would give fishermen a greater opportunity to hedge against stock declines in other non-groundfish fisheries.

In an open access setting, fishermen who depend primarily on income from salmon, for example, would compete for groundfish with all other vessels on the grounds for as long as the fishery is open. With ITQs, these fishermen would compete in the market for fishing rights against the vessels that tend to be the most efficient. While the competition may be stiffer in the latter case, there may be additional rewards in being able to schedule their groundfish harvest at a time that does not conflict with other fishing opportunities.

12/ It should be noted, however, that a vessel's profits, and hence the value of its permit, under conditions of "relatively full-time participation" will vary considerably depending on the size of the permitted fleet.

13/ Ability to make single-year transactions depends on the design of the ITQ program.

On the other side of this issue, fishermen would have to devote more attention to determining the best mix of groundfish species for their operation and securing appropriate amounts of ITQs in the market. Also, a permit or open access fishery would allow fishermen the opportunity to move more freely between groundfish species in the event of individual stock declines.

7.2.4 Effect on Input Prices

7.2.4.1 Cost of Labor

The cost of labor as an input to the fishing process will change along with any changes in the supply and demand for labor arising under alternative management regimes. None of the alternatives being considered are likely to alter the supply of labor significantly. In other words, the willingness of prospective crew members to work for a particular wage rate is not expected to differ dramatically with any of the alternatives. Demand for labor may change slightly with effective license limitation, though this change is more likely to affect the number of positions available than the total number of labor hours demanded during the year. Because the higher MLR options are designed to produce a fleet size similar to the fleet active in 1987, it is unlikely that even in these cases, which are the most restrictive licensing alternatives, the number of vessels and hence the number of crew positions would be reduced dramatically compared to present conditions. On the other hand, continuation of status quo could lead to more positions, but with the likelihood of greater seasonality for existing positions.

Before proceeding, it may be useful to consider the nature of fishing employment in greater detail. A "fishing job" may often be different from many types of occupation in the economy; in many cases it may consist of a mix of employment and unemployment scattered throughout any calendar year. During periods of fishing unemployment, income may be sought from other jobs or revenue sources. Reliance on unemployment compensation is an institutionalized part of this occupation for some participants. In California, for example, unemployment compensation can be obtained for any week in which income was not earned; i.e., in which a landing was not made, even if the individual was actively fishing onboard a vessel during the week. More importantly, as fishing seasons become shorter, due to increased harvest capacity and smaller stock sizes, a larger part of the year now contains fewer or no opportunities to fish for groundfish.

Effective License Limitation. If license limitation reduces the number of vessels actively fishing, fewer individuals would be needed as crew members at any one point in time. Because many current fishermen are without work in the groundfish fishery for part of the year, those who remain in the fishery could easily increase their hours worked, relative to the status quo. Naturally, some crew members may have developed schedules for other activities (e.g., other fisheries, businesses or pastimes) which they would prefer not to sacrifice in order to work more hours in the groundfish fishery. Under such conditions, longer seasons with fewer vessels might simply lead to more rotation of crew members throughout the year.

If fewer crewmen were needed at any point in time, it is possible the wage rate for workers might be lowered by vessel owners. This possibility focuses attention on another important difference of fishing jobs; the fact that wages are usually paid in the form of a crew share or percentage of vessel earnings. It is possible that if the presence of fewer vessels allowed trip limits to be relaxed, an individual could be paid at a lower percentage rate and still earn more per trip than before the decline in the number of vessels. Similarly, if the vessel were able to land more fish during the calendar

year, a lower percentage might still provide a crewman with more annual income than before. The bottom line is that with minimal changes expected in the number of vessels or the total number of labor hours required for the year, relative to recent years in the fishery, there are not likely to be significant changes in the total payments to labor or in the prevailing crew share percentage, compared to the present. There may be decreases in the number of postiions or the pay rate, but increasing fishing oppportunity may mean little net change in annual or per trip income.

Concern has been expressed by some vessel owners about the possibility that a restrictive permit system would reduce their ability to attract skilled labor since the crew members expectations of someday being able to enter the fishery as owners will be diminished. Because the number of permits issued under the higher MLR options do not represent actual reductions in the number of vessels, compared to the 1987 fleet, it appears unlikely that a major reduction in the supply of skilled workers is likely to occur since permit prices probably will not be particularly high (see following section). If such declines did occur, owners might attract additional labor by increasing the crew share percentage for some or all of their crew.

Ineffective License Limitation/Status Quo. Under a scenario which allows harvest capacity on the grounds to increase, it is likely that trip limits will become less effective in meeting overall Council objectives. In turn, the Council may have little choice but to abandon its goal of a year–round trawl fishery by relaxing trip limits and thus shortening seasons for many species. Although this alternative may preserve a larger number of jobs, it is important to recognize that the higher number of positions required while the fishery is active includes more unemployed time when the fishery is not active. Even though a slightly higher wage rate (crew share percentage) might be required to draw the peak number of workers into the fishery, annual earnings for crew members could easily fall. Perhaps more importantly, if access to some markets is lost (discussed further in Section 7.3), lower exvessel prices could result, and in turn lower payments to crew members. (The effects of greater seasonality and instability of jobs on coastal communities are addressed in Section 7.10.1). It should be noted that if a slightly higher crew share were needed, under this scenario, it would be at a time when vessel profits would be down. Therefore, vessel owners might encounter a "labor shortage" in terms of what they are willing and able to pay for labor.

ITQs. As discussed in Section 7.2.1, under an ITQ regime, the efficiency with which quotas are harvested would increase in three related ways.

- Elimination of unneeded capacity would reduce the number of vessels in the active fleet.

- Quota would tend to be redistributed through the market to the most efficient harvesters, further reducing the size of the fleet, since virtually all restriction affecting the productivity of a vessel's operation would be lifted.

- Reduction in fleet size would be expected to reduce the number of crew positions available in an ITQ fleet, compared to the status quo fleet when it is fully active.

Depending on the extent to which quotas are harvested by more efficient operations than with the status quo, and the degree of labor intensity characterizing these operations, the total amount of labor used annually in the fishery may also decline. Also, an ITQ program would tend to increase the importance of producing a high quality product, as opposed to the emphasis on speed, which occurs in an "Olympic" style fishery. Thus, crew members who are retained in the smaller ITQ fleet would

probably have greater skills for maintaining high product quality and might receive higher compensation for those skills. While total compensation to all crew members on the vessel may be reduced, an individual's earnings may increase. (Discussion of the advantages in providing crew members access to entering the fishery under ITQs is provided in Section 7.10.2.)

7.2.4.2 Cost of Vessels and Permits

A simple graphical depiction of a market for homogenous fishing vessels is provided in Figure 7-1. The figure shows hypothetical supply and demand curves for an annual lease of a fishing vessel. In this context, vessel owners who fish their own vessels can be thought of as leasing the vessel from themselves. The initial supply curve, S', is drawn as being horizontal to reflect the simplifying assumption that an effectively unlimited number of vessels could be obtained at the annualized price of construction, P'. If some vessels are, in fact, available at a lower cost, this would give the left-hand portion of the supply curve an upward slope beginning at a price lower than P', and turning horizontal at the construction price after a given number of existing cheaper vessels. The demand curve, D', is downward sloping, reflecting the differing abilities of potential skippers to generate economic profit from the use of the vessel. The intersection of D' and S' indicates that a number of vessels equal to Q' will be used in the fishery under open access.

With the imposition of a permit system, the new supply curve, S", follows the previous supply curve until it becomes vertical at the number of permits available for the fishery, Q". The vertical nature of the supply curve at this point indicates that regardless of price, additional vessels cannot be used in the groundfish fishery. In an effective license limitation system, this restriction of supply will occur somewhere to the left of the previous intersection of supply and demand at Q'. Because there is now more catch available per vessel remaining in the fishery, the average profit per vessel is expected to rise. This leads to an upward shift in the demand curve to D". If it is assumed that (1) lower vessel density does not improve profitability, (2) additional profits are not dissipated through unneeded expenditures for increasing capacity, and (3) expectations of increased profits are accurate, the shaded area A between the two demand curves, which represents additional profits for vessels remaining in the fleet, will approximate the shaded area B to the right of Q", which represents the open access profits of vessels which can no longer participate in the fishery. If crowding on the fishing grounds is currently a problem, D" will rise more, increasing area A, as vessels are removed from the fishery. If additional profits are available from reducing the size of the fleet (e.g., through continued capital stuffing), D" will rise less, decreasing area A. An effective license limitation system could also occur with a number of permits issued equal to Q', followed by an upward shift in the demand for vessels from D' to D". An upward shift in demand would result from increasing vessel profitability in the groundfish fishery relative to other vessels employment opportunities. This situation could arise from increasing prices for groundfish, increasing vessel efficiency or decreasing opportunity costs in other fisheries. The resulting gain would be the area bounded by D', D" and Q'less payment for the permit. This is the most likely scenario in which the adopted option would be effective, absent a buy-back program or ITQ system which might further rationalize the fleet.

The price of a vessel with a permit, in this example, is determined by the new intersection of D" and S" and is equal to P". Since the construction price of a vessel has not changed, the difference between P" and P' may be interpreted as the price of the permit. This diagram does not address the effect of limiting entry on the price of vessels which do not qualify for permits. The only anticipated loss in value for these vessels would occur when they cannot be used as profitably in other fisheries. Then the loss to the owner is the difference between the vessel's profitability in the groundfish fishery

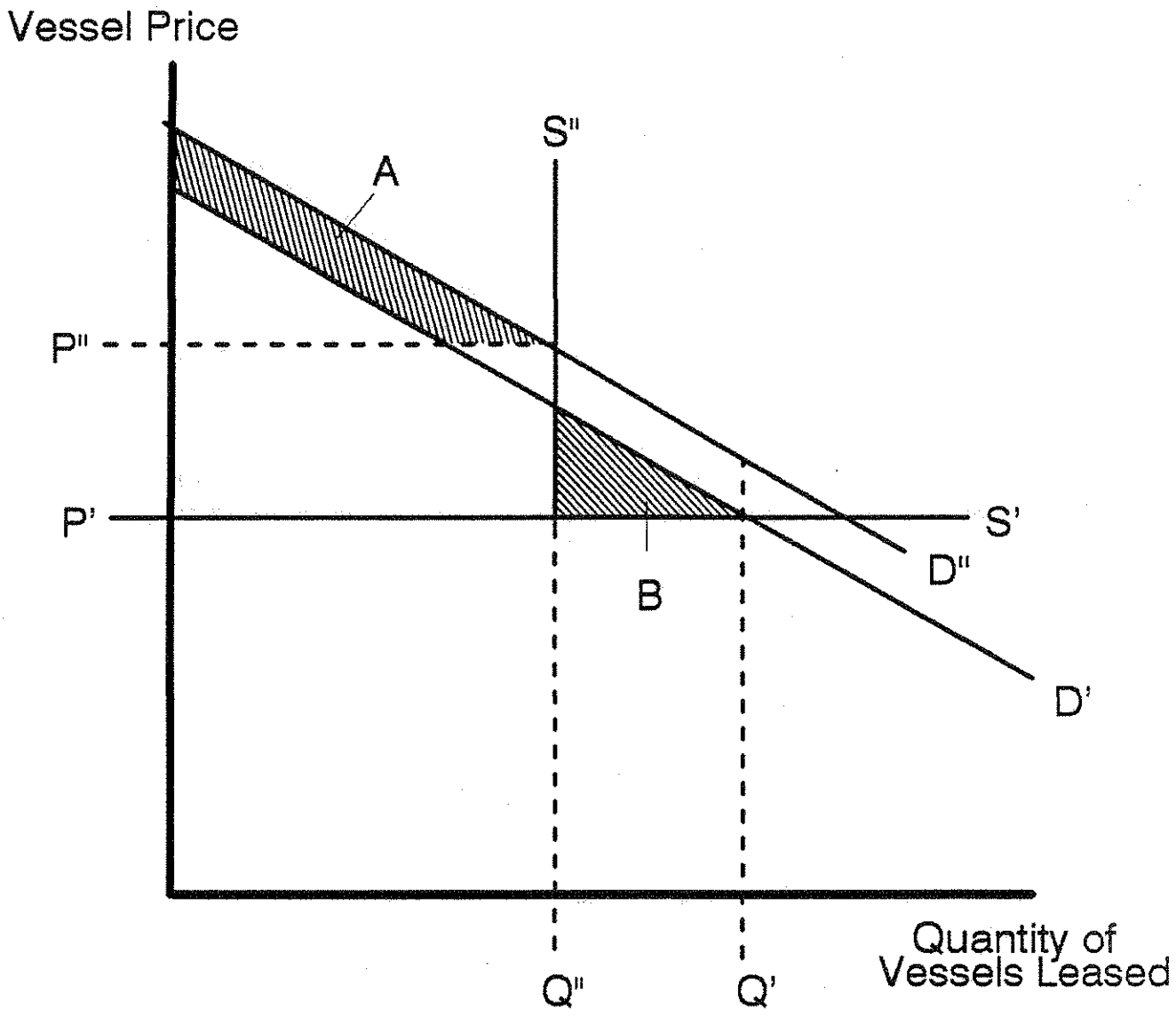

Figure 7-1. Hypothetical supply and demand curves for the annual lease of fishing vessels.

and its most profitable fishery. If the vessel can be employed to obtain at least as much profit in another use, then there is no loss in the vessel's value to the owner. Of course, the current owner may not wish to fish in Alaska, for example. But, as long as someone else recognizes the profitability of the vessel in this other use and is willing to pay the owner accordingly, the vessel has not experienced a loss in value. It is important not to confuse what the owner perceives to be a personal loss, in not being able to continue in the fishery without buying a permit, with the actual market value of the vessel.

It should also be noted that the purchase price of a permit is directly tied to increased average profits in the fishery, which is, in turn, a function of the size of the fleet reduction. As the size of the permitted fleet is reduced, the vertical portion of the supply curve is shifted to the left. This results in an intersection of the supply and demand curves at a higher price for the vessel lease, and thus a higher price for the permit. Since the higher MLR options are designed to roughly approximate the 1987 fleet, they would result in a value for Q", which is very close to Q', and a corresponding permit price, which is relatively low (assuming that the fishery is at an equilibrium at 1987 levels). If the fishery is not at an equilibrium, because of recent increases in profitability, then higher permit prices will be expected. High permit prices will be an indication of an effecitive license limitation program.

With smoothly operating competitive markets for permits and vessels, one would expect to see very little difference between the price of a vessel which has an appropriately endorsed permit and the cost of acquiring the vessel and permit separately. Because of the limited number of permits and the complexities involved with securing the appropriate size and gear endorsements for a vessel, real-world markets may not result in perfectly competitive, equilibrium prices for all vessels or permits of a given type. In general, however, the flexibility provided under the license alternative for downsizing permits or combining them for use with larger vessels is expected to improve the competitiveness of permit prices.

The combination of permits, and the cost thereof, raises an important issue which is not addressed in detail in this document, but is of considerable importance for the efficient operation of a permit system. This is the matter of the formula by which permits can be combined to facilitate use of a larger vessel. The determination of the appropriate rate of exchange is a very complex task which was deferred until the Council reached a determination that it desired to move ahead with the license limitation alternative. This task will require an analysis of the harvest capacities of different size vessels in the existing fleet, as well as capacities of larger vessels, than have been routinely used in this fishery.

The importance of properly identifying these values can be seen in a simple, hypothetical example. Suppose that a typical small vessel in the trawl fleet can land 100 mt during the year, producing a profit of $20,000 for the owner. If it is assumed there are 4 such vessels in the fleet, then their combined catch is 400 mt, generating profits of $80,000. Now, suppose the owner of a much larger vessel wishes to enter the fishery. This owner's single vessel is capable of landing 400 mt at a profit of $60,000. If the exchange rate is set so the individual combining permits must remove an equivalent capacity from the fishery, the permits from all four small vessels must be purchased in order to license the larger vessel. Because the 400 mt of capacity is worth $20,000 more to the small vessel owner, the prospective entrant will be unable to purchase all 4 permits at a price which will allow this new entrant to make a profit. In this situation, the large vessel would not enter the fishery. On the other hand, if the exchange rate is not properly identified so that only 2 permits from the small vessels need to be obtained, the large vessel owner retains $20,000 of his potential profits after

buying up the needed permits. Not only is the harvest capacity of the fleet increased because of the misspecified formula, but, in this case, the available quota is now harvested with less efficiency.

This example also illustrates that even when smaller vessels are more efficient it may prove difficult to buy a permit from a larger vessel and downsize it in order to enter the fishery. Consider a change in the previous example; instead of the fishery initially having four small vessels, it has one large vessel. In this case, even though the fishery would be more efficient with four smaller vessels, there is no method of arriving at that solution because the harvesting capacity of the large vessel cannot be apportioned into four permits for smaller vessels. Any individual small vessel can only afford to pay $20,000 for a permit, while the large vessel owner would be unwilling to sell for less than $60,000.

The quantity of permits that will be supplied to the market at a given price will be a function of the profits available to the existing owners from the use of their permits, and the amount of money they can make in the next best alternative fishery without a permit. In all but truly exceptional cases, an owner would not sell a permit for less than the difference between the net returns available from fishing and his or her next best source of return without the permit. This principle applies whether the permit owner happens to own a vessel or not.

If there is a competitive market with a single market-clearing price for all similar permits, many permit sellers are likely to receive more than the minimum amount they would be willing to accept for their permits. Naturally, if the market price is less than a person's minimum asking price, the permit will not be sold. If few permits are transacted, prices may tend to be established more through negotiations between a buyer and seller, than through mutual acceptance of a market value. In circumstances where permit owners perceive that prospective buyers are capable of earning considerably more with the permits than they can earn, the owners may attempt to capture some of that difference for themselves through negotiating a price above the minimum they would be willing to accept. Their ability to do so will depend largely upon the number of other potential sellers and interested buyers, and the level of their expected earnings.

As an example, consider Owner A, who has a 70-year old vessel of 60 feet in length. Let us say that Owner A, by hiring a skipper and crew, is able to clear $30,000 from the groundfish fishery during a typical year, after covering all of the related costs. For the sake of simplicity, let us assume the owner perceives no good alternatives for his or her vessel outside the groundfish fishery, but the vessel is paid off and fully depreciated. Owner B is buying a newer 60-foot vessel which will probably yield $40,000 per year (without the owner having to personally work on the vessel) after subtracting related costs, including fixed costs and returns to capital.

Owner A would generally be unwilling to sell his permit for an annualized value of less than $30,000 per year. This amount would allow Owner A to retain the same amount of earnings as if he or she were using the permit. Similarly, Owner B would generally be unwilling to buy a permit for an annualized value of more than $40,000 per year. In the absence of a strictly competitive market for permits, this circumstance affords this potential pair of buyers and sellers a $10,000 range in which agreement on a sale may be reached. Naturally, if Owner A is also the skipper of the vessel, drawing a share from that role, or if the crew consists of family or close friends, he or she will view the opportunity cost of not continuing to fish to be higher than the $30,000 if this rate of income cannot be earned through other sources. For instance, if Owner A believes that skippering the vessel provides him or her annually with $12,000 more than could be earned in the next highest job he or

she could find. In this case, the owner will be unwilling to sell for less than $42,000, and clearly a sale will not take place between Owners A and B. This example illustrates why, over time, permits will tend to be owned by those who also serve as skippers.

In the above example, it was assumed that Owner A perceives no alternative use for his or her vessel outside the West Coast groundfish fishery. If it is expected that the vessel would net $10,000 less by operating in Alaska, then the minimum which the owner would be willing to accept for the sale of his or her permit would fall by $10,000. Similarly, any other value the vessel might have without its permit; e.g., sale for salvage or use in another fishery, would also reduce the minimum amount which the permit owner would be willing to accept for its sale.

ITQs. An ITQ is a much more clearly defined right than a permit. A permit conveys general access to the resource, but not the right to catch any specific amount. An ITQ, on the other hand, entitles the holder to land a specified amount of fish (or proportion of a total allowable catch). ITQs would allow anyone to purchase or lease relatively small quantities of groundfish. Permits, on the other hand, tend to result in an all or nothing participation in the fishery. Crewmen wishing to invest in their future ability to captain their own vessel might be allowed to purchase and use their ITQ while continuing to serve in a crew capacity. ITQs could be exchanged throughout the year as market conditions and expectation of success changed. Thus, one would expect to see a much more active and diverse market for ITQs than for permits, which would generally only change hands as vessel owners entered or left the fleet.

Additionally, the establishment of price for ITQs would be less complex than for permits in one important respect. As with permits, the market price for ITQs would be based upon the net returns available from ownership. With ITQs, the amount of fish to which an owner is entitled is fixed at the beginning of each year for that season. With a single year ITQ lease, assuming that output prices are fairly stable, the chief component that must be evaluated by the fisherman is the cost associated with harvesting the specified amount of fish. The difference between price and cost (i.e., profit per pound) will form the individual's maximum offer for a one-year lease. In contrast, someone leasing a permit for one year must also estimate the amount of fish which he or she will be able to catch. Buying ITQs is more complex than leasing since it requires discounting future earnings, as well as formulating estimates of future ABCs and prices in input and product markets. However, this increased complexity is also present in moving from leasing to buying permits. When buying a permit, the buyer must anticipate changes in the fishing power of the fleet (one's "competition" in the race for fish).

The development of an ITQ program that included relatively few constraints on how the fish had to be harvested (e.g., with a particular gear or a particular size of vessel) would allow the market, over time, to allocate the right to catch the groundfish resource to the individuals who were most efficient. Moreover, the less efficient members of the fleet would be compensated in voluntarily leaving the fishery by having the more efficient members buy their quota. Thus, an ITQ system comes with its own implicit form of a buy-back program. This type of market allocation would also relieve the Council of the necessity to allocate catch between different types of gear.

Prices for ITQs would be based on the profit per pound of fish specified. It is expected that a very competitive, auction-style market (such as a stock market) would evolve for the sale and annual lease of ITQs. Consequently, buyers with highly efficient operations might not have to pay their predetermined maximum amount in order to acquire quota. On the other side of the market, some

sellers with inefficient operations might get more for their quota than the minimum they would be willing to accept.

7.3 Effect on Product (Output) Prices and Consumers

7.3.1 Maintaining Market Presence

For many species, a significant portion of consumer demand is predicated on the availability of fish throughout most of the year. This is particularly true of domestic markets, such as the restaurant trade where managers depend on having many menu items on a regular basis. If domestic markets can only obtain a particular species for three months of the year, many restauranteurs may look for other species which can be delivered more regularly. Even if a chef continues to use the less available species as a special menu item when it is available, he or she is likely to use less of the fish than if it were available throughout the year.

Several key issues in this regard are illustrated in the case of Pacific halibut, and in particular the Alaskan fishery for this species. Although halibut is relatively high-valued when frozen, it is significantly more valuable when fresh. Without limitations on entry, the fleet fishing for halibut off Alaska has grown from 2,500 vessels in 1980 to more than 3,500 in 1989. During 1990, the entire annual Alaskan quota of more than 50 million pounds for halibut was taken during 3, 1-day openings, even though biomass has been near all-time highs in recent years. As a result, the market is inundated with supply of fresh fish for very short periods. Despite the scheduling of these openings over a five-month period, much of the harvest must be frozen for later sale, at a lower price, because the market can only utilize so much fresh halibut over the short time it is available. Even people who would eat fresh halibut once a week, if it were available throughout the year, are unlikely to eat it for 10 days in a row, 3 or 4 times a year. The bottom line is that species whose highest value lies in fresh consumption in domestic markets are likely to end up in lower-valued uses when harvest becomes concentrated over a short period of time.

This rationale has been used as a principal justification for the implementation of trip limits in the trawl fishery for several fully utilized groundfish species. However, for some fisheries, such as that for sablefish, where the major market is for frozen product in Japan, the preservation of long fishing seasons is of less importance for maintaining market opportunities.

As fleet fishing power has increased or become more focused on, particular species trip limitations have become increasingly restrictive and complex. At some point, tightening these restrictions will raise the cost of participating in the fishery to a point that many vessels will be unable to continue and significant discard mortality will result. This is certainly one possible approach to limiting fleet size, but it is a solution which comes closer to providing the nation and the fleet with the minimum possible benefit from harvesting the resource than it does to providing them with the maximum benefit.

Ineffective license limitation would allow for a considerable increase in fleet capacity, and hence would not address this problem. Effective license limitation could act to limit harvest rates which could slow the rate of growth of the problem. Future implementation of a buy-back plan that would further reduce the number of permits from those initially issued under the effective or ineffective license limitation options could facilitate a less restricted year-round fishery for many species. With ITQs, there would be no incentive for a race for fish to occur. ITQ owners, holding the right to catch

a given amount of fish, could harvest them throughout the year in a manner aimed at attaining the highest value for their product. This assignment of rights would allow fishermen to develop sophisticated and reliable delivery arrangements with processors or restaurateurs for an entire year.

7.3.2 Timing of Harvest for Quality and Price

The Council has the ability to establish different seasons for various species if it determines that the interests of the fishery would be served by such actions. However, to make this type of determination, the Council might require more information than is available. Additionally, a combination of different seasonal patterns of harvest may provide the optimal supply of fish to different segments of the market, even for a single species. For example, sablefish that are exported to Japan are generally consumed between December and March. Harvesting a large percentage of these fish between March and August, which is the recent history of this fishery, means that additional storage costs are likely to result in prices available to U.S. fishermen that are lower than they could be in the absence of such storage costs. On the other hand, the highest value in the domestic market may be obtained from providing fresh product throughout the year to stores and restaurants. Under such circumstances, simply establishing a different starting date may ignore the needs of one market for the sake of another.

None of the alternatives, short of ITQs, relieves the Council of the burden of weighing a large number of factors, many of which are not be easily quantified, if it chooses to alter the current timing of certain fisheries. Reduction of the fleet size through effective license limitation might reduce some of the pressures on the Council to take such action. However, ITQs would offer the opportunity to allow market signals to guide fishermen toward the optimal schedule for harvesting fish, without requiring Council involvement in the process.

7.3.3 Quality Within a Time Period

The race for fish that characterizes the "Olympic" style fishery, even when access is limited, often leads to a reduction in the quality of individual fish in favor of increasing the rate at which fish are captured and unloaded. The imposition of trip limits may reduce this tendency under some circumstances, but not others. Additionally, trip limits impose other losses in efficiency that are addressed above.

In general, license limitation schemes do little to discourage this trade-off of quality for quantity. Even if fleet size were reduced through a voluntary permit buy-back program, so that vessel owners could count on being able to fish for the entire year, they might still find it more profitable to focus on harvesting large quantities of the resource with lower quality handling than they would under an efficient allocation mechanism. Under ITQs, the fishermen are encouraged to extract the highest net return from each round pound of fish they catch. Furthermore, as rights to the resource are reallocated through the market, they will be purchased by those who can pay the most for each unit of fish.

7.4 Potential for Oligopolies

Oligopoly, within the context of this analysis, refers to a market situation in which an agent is able to affect the market clearing exvessel price for some species of fish. In competitive markets, an equilibrium price is assumed to be unaffected by the actions of any single participant in the market.

This condition is one of several that facilitates the efficient allocation of resources through markets. When oligopolistic power is held by agents on either or both sides of a market, prices may be distorted from that which would prevail under competitive conditions. In addition to inefficiencies that may result, this power may allow one side to extract what is perceived to be an inequitably large share of the benefits from the fishery.

From a legal standpoint, the primary concern of the federal government regarding oligopoly involves the presence of monopoly control over a particular market. Naturally, how a particular market is defined is key to establishing whether there has been an antitrust violation. Is the appropriate definition the exvessel market for groundfish in Newport, or that for rockfish in Oregon, or that for all seafood coastwide? In addition to the legal concerns, the Council and fishery participants may have concerns regarding the equitable division of fishery benefits under the alternatives, regardless of whether participants' actions would constitute formal violations of antitrust statutes.

The existing fishery markets for groundfish caught off the West Coast of the U.S. are characterized by a considerable amount of oligopolistic influence. On the processing side of the market, the number of buyers along the coast is not large. Secondly, within the group of processors, there are a few processors that are considerably larger than the rest and may exert greater influence over price. Perhaps most importantly, processors are commonly separated by a fair amount of geographic distance, which suggests that a fisherman who lives and works in a particular coastal area may face additional costs in attempting to find an alternative buyer who is willing to pay a higher price, and in transporting the fish to this processor.

On the other side of the market, although there are a large number of harvesters, many harvesters have joined together to form organizations which wield considerable influence in establishing prices coastwide. This is particularly true for the trawlers. Furthermore, if an individual processor begins to cut prices unilaterally, fishermen in the area do have the ability to land in other ports, or have their fish trucked to other processors after landing, though these alternatives are not without cost. In the long run, fishermen may change their home port to an area with a processor that is willing to pay higher prices, or fishermen buying permits to enter the fishery will tend to buy from individuals in ports where prices are lower and then locate themselves in ports where higher prices are paid.

Because organizations on both sides of the market for trawl-caught fish exercise market power, the establishment of price is characterized by a high degree of bargaining before the season even begins. By contrast, the longline association, acts more as an auctioning agent in finding their members the highest available price. Despite the fact that these two organizations use differing approaches, they are both motivated by the perceived need of fishermen to compensate for the market power of processors.

License Limitation. Ineffective license limitation would have no significant impact on existing market conditions. Because of the smaller pool of available permits, effective license limitation carries a somewhat greater risk of providing one side with additional market power, but it is not certain which side would benefit. Since processors would be allowed to purchase permits, individual processors could attempt to purchase enough permits to keep their plants busy and then lease the use of the permits to local fishermen. This would allow the processors greater control over prices paid to fishermen. If every processor along the coast pursued this strategy, collectively they would exert considerably more power than they do at present.

It appears unlikely that a massive campaign of permit acquisition by processors would follow the imposition of the license alternative. Most individuals receiving permits would probably want to continue fishing. As discussed above in Section 7.2.4.2, permit holders who are also vessel operators are expected to include in the calculation their willingness to sell, the difference between their income as skipper of their own vessel and their next highest source of income. As a result, if permit prices are based on both the vessel profits and the skipper's share, processors buying permits from owner/operators would have to pay a permit price that reflects the vessel profits and the skipper's share, in addition to hiring a skipper; they would be paying the skipper's share twice. Processors would be taking a considerable risk that they could lower the crew shares on their vessels enough to compensate for double payment of the skipper's share. The success of such a strategy would require a higher degree of control over fishing alternatives than is likely to occur. Such strategic maneuvers could also fall under the provisions of existing antitrust statutes.

On the seller's side, even though the number of permits issued under effective license limitation might not reduce the fleet significantly below current levels, it is possible the limitation on entry could provide harvesters with additional market power. Fishermen's organizations could buy up permits from those leaving the fishery or discourage their sale to processors in order to secure greater control over market supply. These groups could then attempt to exert greater leverage over processors, knowing that vessels without permits could not be brought in to harvest fish for the processors at lower prices. This sort of cartel is typically unstable, even with a much smaller number of participants than would receive permits under this alternative.

It is expected that effective license limitation will not substantially alter the existing balance of power in West Coast exvessel markets for groundfish. Some processors may acquire a small number of permits/vessels, with which they might achieve a greater degree of control or security over deliveries. Given the current trip limit management regimes it would be difficult for a small number of processor controlled vessels to make up the harvest of the larger fleet normally delivering to the processer. But, in many instances, processors already exert a high degree of control over the quantities of species that are delivered. Fishermen may improve their bargaining position somewhat, but the large number of permits being issued suggests that coalitions intent on substantially raising prices to processors will be ineffective or unstable.

ITQs. If an ITQ program were instituted for all groundfish species, it would be subject to similar pressures on both sides as discussed above. Because ITQs would permit a certain amount of catch for particular species, this alternative probably carries a somewhat greater risk of altering the present balance of power in the fishery. However, it is not clear from the above discussion which side of the market would most likely gain power from the presence of ITQs.

7.5 Resource Utilization

7.5.1 Underutilized Species

License Limitation

The draft license limitation alternative contained provisions for designated species "A", provisional designated species "A", and designated species "B" endorsements. These endorsements were analyzed in the draft SEIS. The adopted alternative contains only a designated species "B" endorsement. The rationale and analysis of the deletion of the former two endorsements is discussed in Chapter 4.

Designated species "B" endorsements allow additional harvest capacity into the fishery in the event there is a reasonable possibility that the permitted fleet would leave certain species unharvested (defined in the adopted alternative as Pacific whiting [hake], shortbelly rockfish, and jack mackerel). Generally valid only for delivery to domestic harvesters, the endorsements may also be valid for delivery to foreign JV processors in the event that TALFF might otherwise be apportioned. When catcher-processors are issued these endorsements, they may deliver to themselves. The designated species "B" endorsements are intended to guarantee the opportunity for harvesters and the nation to receive full benefits from the fishery resource.

The first order of priority for issuance of designated species "B" endorsements is seniority. Therefore it is anticipated that many vessels not receiving "A" endorsements may apply for and use "B" endorsements for shortbelly rockfish and jack mackerel, as well as Pacific whiting, in order to establish priority for receipt of the endorsements in future years. Through this means the license limitation alternative provides an incentive for development of domestic fisheries for these species, although the vessel receiving "B" endorsements may eventually be displaced if the permitted fleet develops interest in the fishery.

Based on their activity in the West Coast groundfish fishery during the window period, 349 trawlers would receive "A" endorsements (under the adopted MLR), which would allow them to harvest whiting or other underutilized species under the license limitation alternative. However, many of these trawlers would not have sufficient size or power to participate in this high-volume mid-water fishery.

The following are estimates of the numbers of vessels which would be available to harvest underutilized species if a limited entry system were established such that no new participants could enter the groundfish underutilized species fishery after 1988. This summary is based on the vessels' demonstrated ability to engage in midwater trawling (participation in the Pacific whiting fishery, shortbelly and jack mackerel fisheries) or upon their size and history of participation in other groundfish fisheries. It is likely that most of the 65 JV whiting vessels (Table 7-23) that were active in 1989 would qualify for permits allowing them to harvest underutilized species. Even though a total of only 55 vessels made JV landings during the window period, many vessels which later joined the JV fleet had sufficient landings of non-whiting species to qualify for an "A" endorsement. In additiona to the JV fleet, 98 vessels had shoreside landings of whiting during the window, though many of these vessels landed very small quantities. The potential for participation in this fishery may also be assessed by examining vessel size composition in the JV fishery and the number of vessels that will receive trawl "A" endorsements within the size classes representing the most JV participants. Sixty-four percent of the midwater trawlers participating in the JV whiting fishery during the window period were between 60 and 79 feet in length, 32 percent were greater than 79 feet in length, and 4 percent were less than 60 feet in length. The total number of vessels of at least 60 feet in length that would receive "A" endorsements for trawl gear under the adopted MLR is 172, compared to 151 under the high MLR. These numbers represent estimated upper bounds for participation in the whiting fishery. Given current returns in the whiting and other groundfish fisheries, it is likely that a large number of the available trawlers would elect to focus on species other than whiting.

The current prevalence of trip limits for many highly valued and fully utilized species, along with the relative size of the whiting resource suggests that a fleet of large catcher-processors would not likely be constructed specifically for this fishery under status quo conditions. However, as harvesting capacity in the fleet fishing off Alaska has already risen well beyond allowable catch in those

Table 7–23. Landings, quotas and active vessels for Pacific whiting, 1984–1989.

Year	Foreign Fishing (Mt)	JV (Mt)	Shorebased (Mt)	Total Landings (Mt)[a/]	OY (Mt)	JV Vessels
1984	14,772	78,889	2,721	96,382	175,500	23
1985	49,853	31,692	3,894	85,439	175,000	18
1986	69,861	81,639	3,463	154,963	295,800	25
1987	49,656	105,997	4,795	160,448	195,000	31
1988	18,041	135,871	6,876	160,698	232,000	42[b/]
1989[c/]	0	204,038	7,000	211,038	225,000	65

[a/] Slight differences due to rounding.
[b/] Thirty-eight vessels were active through the close of the window period.
[c/] Preliminary.

fisheries, the potential exists that West Coast vessels may be displaced by vessels redirected from the northern fisheries because of catch limitations there. Allowing unchecked entry into the fishery under the status quo would lead to expansion of harvest capacity through unconditional entry of more catcher-processor vessels to the fishery, as evidenced by the dramatically increased share of the whiting quota handled by catcher-processors during the 1991 season. Limited access alternatives require that new harvest capacity displace existing harvest capacity as a condition for entry. This displacement would occur under status quo through the expansion of capacity and consequent pre-emption or direct government allocations; or, under license limitation or ITQs, through voluntary market transactions resulting in the traditional harvesters' voluntary surrender of access rights acquired on the basis of their historic participation and dependence on the fishery.

If the whiting resource is increasingly harvested by U.S. catcher-processors, a significant redistribution of fishery revenues and associated impacts is likely to occur within the fleet. Under status quo, former JV fishery catcher vessels, which would be dislocated by the transformation of the whiting fishery, will seek alternative fishing opportunities within the groundfish and other fully utilized fisheries. In 1989, 65 U.S. trawlers harvested 204,038 mt of Pacific whiting for JV processors, an average of 3,139 mt per vessel. At an exvessel price of $.06 per pound, each JV trawler earned an average of $414,354 in revenues from whiting. If all of the vessels were active for the entire 11 week season, the average weekly catch per vessel would be 285 mt. Alternatively, if the average participation rate were closer to 85 percent of the season, the average weekly catch per vessel would be roughly 335 mt. During the 1991 whiting fishery, the factory-trawler fleet, for the first time, harvested a substantial portion of the whiting quota, accounting for more than 121,000 mt of catch. At least 13 catcher-processors were active for 3 weeks or more in the whiting fishery. Their average catch per vessel per week was roughly 1,200 mt. However the average of the highest production weeks of these vessels was roughly 2,000 mt. It is difficult to say whether this degree of variance represents inexperience in the fishery (in which case some value closer to the higher end would be appropriate for assessing potential capacity) or whether this represents normal variation in productivity (in which case the average is appropriate). For the sake of this analysis, it is assumed that the true value lies between the 1991 average and high values, and probably somewhat closer to the mean. If the long-term average for these vessels is about 1,500 mt per week, then each factory trawler would displace about 4.5 catcher vessels, assuming a 335 mt weekly average for the latter. The displacement of 4.5 JV trawlers from the fishery represents a combined revenue loss of $1.9 million for these vessels from whiting. Offsetting this loss with harvests of other West Coast groundfish species, which averaged $.30 per pound exvessel in 1989, would require landings of approximately 2,800 mt. Making up the loss through pink shrimp, at $.37 per pound exvessel, would require 2,300 mt of landings. Of course, since these other fisheries are already fully exploited, for all but a few very minor groundfish species, the efforts of displaced catcher vessels from the JV fishery to recoup losses elsewhere will shift part of the burden to other vessels in these fisheries who will lose a share of their current harvest level. Under status quo, displaced vessels would be allowed to continue in the groundfish fishery. Under the license limitation or comprehensive ITQ options, some vessels would have to be displaced (whether they be former whiting catcher vessels or vessels participating in the harvest of other species).

The geographic distribution of income and related economic impacts from underutilized species fisheries will be affected by the particular combination of catcher-processor and midwater trawlers engaged in the fisheries. A limited entry program which initially allocates access rights to historic participants will ensure that the burden from new capacity targeting on Pacific whiting is not shifted to the remainder of the fleet and the coastal communities to which the impacts for activities of that

fleet flow. It is probably safe to say that a lower percentage of revenue from the whiting fishery would accrue to coastal communities if it were prosecuted primarily by catcher–processors.[14/] Under license limitation, shifts in the distribution of benefits will be partially controlled through the Council's onshore/offshore allocation. Under a comprehensive ITQ program the shifts might be controlled entirely through market transactions (Note: under an ITQ program which encompasses only Pacific whiting, vessels would be allowed to continue to fish groundfish and capacity would shift to other sectors of the fishery creating additional burdens).

While a catcher–processor fleet may evolve from a fleet of midwater trawlers, it would not be possible to reverse the process while maintaining the same level of fleet harvesting capacity. The current license limitation alternative does not allow owners to take permits for larger vessels and divide them into multiple permits for smaller vessels.[15/] A situation could arise in which a catcher–processor mode of fishing comes to dominate the fishery, but later becomes unprofitable. If these catcher–processors were to leave the fishery and the number of smaller midwater trawl vessels had been reduced, resulting in a shortage of midwater trawl capacity, the resource could go unharvested. The Council could remedy the situation by recommending issuance of more permits for harvesting potentially underutilized species with smaller trawl vessels. Given the large amount of overcapacity implicit in the size of the 1987 target fleet, it seems unlikely that a significant portion of the whiting quota would remain unharvested. Implications for fleet efficiency stemming from the irreversible combination of permits are addressed in more detail in Section 7.2.4.2.

Ineffective License Limitation. Ineffective license limitation would make it much easier for nonqualifying catcher–processors to enter the fishery through the combination of permits as permits would be less expensive. This, together with the additional number of non–whiting trawlers with midwater capability, would substantially boost the harvesting capacity that could be directed toward underutilized species along the West Coast.

ITQs. ITQs for underutilized species, as part of a comprehensive multi–species ITQ program, would presumably result in a more efficient allocation of the available resource as the most productive vessels would purchase quota from the least productive vessels. ITQs may result in a less disruptive balance of catcher–processors and conventional midwater trawlers in the underutilized species fisheries than under the license limitation alternative, since quota could be purchased on an as needed basis (compared to catcher–processors purchasing a number of permits and combining them to participate under license limitation). If catcher–processors happened to be more efficient harvesters of the whiting resource, one would expect to see these vessels acquire the rights to a significant portion of the harvestable resource. Unlike a permit system, ITQs would not imply any problems in the fleet's adjustment process to changing economic conditions. If catcher–processors acquired much of the ITQ early and later became less profitable than smaller vessels, the harvest rights could be easily transferred back to smaller craft through the ITQ market.

14/ Most of the JV trawlers have home ports in California, Oregon and Washington coastal communities: 52 percent in Oregon (Newport, Oregon is home port to 34 percent), 18 percent in Washington and the remainder in California. During 1989, 56 percent of the catcher–processors participating in the Alaskan fisheries were owned or managed by firms or individuals residing in Seattle, Washington, 38 percent were Alaskan owned or managed, and the rest were owned or managed by firms in other parts of Washington or Oregon.

15/ This provision was made because of the difficulty of controlling the capacity used with an individual permit. Thus more permits mean a geometric increase in the opportunity for increasing capacity with technological change.

It should be noted that an ITQ system covering a single underutilized species alone (such as Pacific whiting) would not resolve problems for the groundfish fishery as a whole and would allow vessels displaced from the underutilized species fishery to shift their effort to other groundfish species. This provides an example of how a permit system combined with ITQs may better address the needs of the fishery than either ITQs for one or two selected species, or a comprehensive ITQ system, without a coinciding permit system. A permit system complemented by ITQs for selected key species would require new capacity entering the fishery to completely displace previously existing capacity from the groundfish fishery, preventing its use on other key or minor groundfish species. Harvest rights for particular key species would then resolve allocation problems within the groundfish fishery and ensure that shifts in effort between those key species did not cause conservation and allocation problems. With full displacement of existing capacity on entry through license purchase, it may be possible that fewer key groundfish species need be placed under an ITQ program in order to rationalize the fishery. The fewer species necessary under the program, the lower the administrative, enforcement and compliance costs and the fewer the problems which will be created through the discard of bycatch for which not enough ITQ is held.

Conclusion. Pacific whiting (technically no longer an underutilized species) is becoming increasingly attractive to catcher-processors, in part because of increasing excess harvesting capacity in the North Pacific groundfish fisheries. It would take relatively few catcher-processors to create considerable excess harvesting capacity in West Coast fisheries (although the same may not be the case with respect to current whiting processing capacity). Similar circumstances might occur in the jack mackerel or shortbelly rockfish fishery since the quotas for these species are much lower than for whiting. The limited entry alternatives would require that vessels not receiving permits, or ITQs, purchase the equivalent harvesting capacity from existing fishery participants in order to gain entry. Under the license limitation alternative, the extent to which fleet capacity would not be affected by catcher-processors entering in this manner would depend on the formula which is derived for combining permits. An ITQ program automatically removes usable capacity as the ITQ is purchased, and would allow the fleet greater flexibility in harvesting underutilized species, as well as other species, with the size of vessel best suited to the task.

7.5.2 Discards Induced by Economic and Regulatory Factors

Discards of fish (i.e., unlanded catch) occur for two major reasons under the current management regime. The first is economic, or market related. Because of the multi-species, multi-generational nature of the fishery, some fish that are unintentionally caught may serve to lower vessel profits if they are landed. This may result from a processor's unwillingness to accept the species (or size of fish), so that landing them is equivalent to returning with that portion of the hold empty. Alternatively, it may mean the processor is willing to pay less for the species (or size of fish) than for other species (or sizes of fish) which could occupy that space in the vessel's hold.[16/]

The other principal cause of discards is fishery regulations. These include minimum size limits, but more importantly in the case of this fishery, trip landing or frequency restrictions and quotas placed on particular species, which do not preempt fishing for other species routinely caught concurrently. If species could be predictably caught in isolation from others, then the presence of an array of different trip limits or quotas for various species would add to the discard problem only insofar as

16/ This practice of discarding some marketable fish in favor of others with greater value is commonly referred to as "highgrading".

there were economic incentives to highgrade within the particular species. However, particular species are often caught in unpredictable proportions along with other species, especially in the trawl fishery.

The problem can be illustrated using the trawl trip restriction for sablefish adopted in January 1989: no more the 1,000 pounds or 45 percent of the deepwater species, whichever is greater. A vessel not fishing in the deepwater complex could be required to throw back a considerable amount of fish if it unexpectedly hauled in a very productive sablefish tow while fishing for species such as rockfish. But even under the 45 percent provision, a considerable amount of discarding may occur.

Consider a vessel with a 10 mt hold. The skipper knows that the most sablefish he can bring in is 4.5 mt, and that he must get 5.5 mt of the other deepwater species in order to facilitate landing 4.5 mt of sablefish. Let us assume in his first two tows he catches 5 mt, but 70 percent is sablefish. He now has 3.5 mt of sablefish and 1.5 mt of other deepwater species. In his next two tows, he endeavors to catch a lower percentage of sablefish and is successful, averaging 30 percent on each. Unfortunately, he now has 5 mt of sablefish and the same amount of the other species. Not only must he throw 0.5 mt of sablefish overboard, but he must decide whether he will fish for another 0.5 mt of other species (enabling him to land all 4.5 mt of sablefish) or throw away another 0.41 mt of sablefish (leaving him with the 4.09 mt of sablefish he is allowed combined with 5 mt of other species).

If he decides to return to port with what he has, he will have discarded nearly a ton of sablefish (or 18 percent of all sablefish caught), the species which is intended for protection. Additionally, he ends the trip with 10 percent of his hold empty. In many situations, the fisherman would prefer a full hold and may continue fishing. However, even if he is reasonably good at judging how full his codend is, he must determine how much catch he needs. This amount is dependent on the percentage of sablefish in the tow, which is variable. If he assumes he will get 50 percent sablefish, he must try to land about 1 mt in order to have a good chance of getting the entire 0.5 mt of the other species. This guarantees he will discard at least another 0.5 mt because of his hold capacity. Suppose he is successful at bringing in 1 mt and 30 percent is sablefish; his total discards for 10 mt of landings would be 0.8 mt of sablefish and 0.2 mt of other species.

If a skipper is successful at maintaining a bycatch rate consistently below the allowed amount, the discard problem is avoided. If an entire trip is spent fishing above the bycatch rate, the discards can be considerable. Since quotas are tied to landed catch, unmeasured or misestimated discards represent additional mortality which is likely to reduce the long-run production, and hence revenue, available from the resource. Additionally, fishermen are placed in the frustrating situation of throwing away the fish that managers are trying to protect.

This situation becomes more complex if trip limits have been imposed on two or more species caught concurrently. During recent years, the management regime has witnessed a gradual increase in the restrictiveness of trip limitations for several species. It is anticipated that without effective license limitation, the Council will either be forced to lower its priority for a year-round trawl fishery or this trend will continue.

Determining the appropriate fishing strategy becomes even more complicated if catch per unit of effort on the unrestricted species is highest in areas where bycatch rates for the restricted species also happen to be the highest. In such circumstances, a skipper is forced to weigh the cost savings made

possible by higher cost per unit of effort, versus the larger amount of discards which will be generated in the high cost per unit of effort area. Since the latter is a cost which is borne by the entire industry over a period of years, the economic incentive is generally for skippers to take the action that will lower their personal short-run costs, i.e. fish in the area where catch rates for unrestricted species is highest even if the bycatch mortality for restricted species will be higher.

When quotas are used to disallow further landings of a species and no regulations restrict fishing on other species that are caught coincidentally, the result becomes a special case of the trip limit argument developed above, where the amount of the trip limit is zero. Obviously, if fishing continues on an assemblage where 30 to 40 percent of the catch may consist of a species that has reached its quota, substantial discarding likely will occur. The only way to prevent these discards would be to close the entire fishery for the assemblage and forgo the benefits from other assemblage stocks, or plan to overfish certain species in the assemblage in order to gain economic benefits from the harvest of other species.

It is important to note that the Council has recently taken action to experiment during the 1992 fishing season with bycatch limits that are not binding on an individual trip basis. It is anticipated that the use of cumulative bycatch limits over a longer period of accounting than a trip will ease some of the previous discard problem caused by trip limits.

License Limitation. No improvement over status quo is anticipated for the ineffective license limitation option. Only the future implementation of a buy-back program for permits may achieve any reduction in the discard problem.

Effective license limitation might allow relaxation of some trip limits, relative to future conditions under status quo management. If a buy-back program were implemented, further relaxation of some trip limits could provide for substantial relief from this source of discards in the fishery.

Additionally, discards may be reduced by adoption of a management system that will tend to increase the experience level of owner/operators entering the fishery. If one accepts the premise that more experienced skippers are better able, on the average, to avoid bycatch rates in excess of specified trip limits, then the presence of a permit system may help reduce discards through restricting the entrance of unskilled fishery participants. The current management regime encourages the presence of a less skilled, often marginally profitable component that experiences a high degree of turnover from year to year, as existing participants leave the fishery, and new ones enter. Prospective owners/operators who were required to purchase a permit before entering the fishery would most likely have compiled more history of successful performance in the fishery over several years as crew members than individuals who, in order to enter the fishery, need only purchase a discounted vessel from someone who just went out of business.

To the extent that seasons may be longer, relative to continued status quo management for species currently subject to quotas, discards may also be reduced. Effective license limitation may not improve the discard situation significantly, relative to the 1990 fishery, but it may help to keep the problem from getting worse in the long term.

ITQs. The impact on discards resulting from an ITQ system with separate quotas for a large number of individual species, or narrowly defined groups, would depend primarily upon the following factors: (1) whether it is required that all catch of ITQ species be landed, (2) how the requirement was

enforced and (3) whether an individual was able to land in excess of his or her ITQ holdings and subsequently acquire the necessary quota to balance his account.

Without a requirement that quota fish be landed, a similar situation to that described above with trip limits could emerge. In such a case, a fisherman who owned an ITQ for only one species of an assemblage might be inclined to fish the assemblage for that species and discard all others, rather than buy the necessary quota to land them. Additionaly, highgrading might occur in which the less valuable portion of the catch of a particular species is discarded in order to land more of the catch of a size or quality which brings a higher per pound price. The extent to which this type of discarding would occur is certainly not clear.

A prohibition on discarding any species for which an ITQ exists would solve this problem in theory, but in practice would probably require the presence of observers in order to be entirely effective. Requiring observers on all sizes of vessels would be neither inexpensive nor popular with the industry, since most smaller vessels would have to displace a working crew member in order to facilitate the presence of an observer. Even without observers, it is not necessarily the case that the amount of discards in the fishery would be higher with a well designed ITQ system than under status quo or ineffective license limitation, with numerous individual species trip limits. If large penalties can be levied in enough cases where the discarding of quota species can be documented, a sufficient incentive may even exist for the reduction of discards, relative to status quo.

Because species mix and success rates are not perfectly predictable, mandatory landing provisions could not be effectively combined with provisions which prohibited the landing of any quota species without possessing a sufficient ITQ at the time. Imposing the latter provision would very likely lead to somewhat less severe versions of the sort of discard problems commonly induced by trip limits under status quo. Stiff penalties for exceeding one's ITQs at year's end might be as effective at reducing excess mortality as requiring that landings never exceed one's ITQ balance.

7.5.3 Maintaining Full Exploitation

A number of issues arise related to the level of flexibility which has characterized many operations participating in the West Coast groundfish fishery. Will sufficient numbers of permits be issued initially; will a single species or group of species be neglected following issuance of permits, either because of emerging market conditions or because no permits were issued to vessels suitable for fishing a particular species; will harvest capacity be adequate if conditions boom in other fisheries for several years in a row; could harvest levels of stocks in some geographic regions fall off because of the mix of initial qualifying vessels or a shift in the location of harvest activities?

Given that a major feature of the license limitation alternative is the transferability of permits, it is anticipated that should any of these problems arise, a market solution would be found. However, the possibility remains that transaction costs and imperfect information may combine to slow a market-initiated response to localized shortages of harvest capacity. The following situations serve to illustrate the problems.

One can imagine the possibility of shrimp prices rising sharply and harvesting capacity being drawn away from the groundfish trawl fishery. Price increases in Alaskan fisheries for halibut and sablefish relative to those on the West Coast could lure longliners from West Coast fisheries. A boom in crab catch per unit of effort or prices might divert many small near-shore vessels away from the

groundfish fishery. These conditions highlight the concerns over events that might threaten continued full exploitation of West Coast groundfish species or species complexes.

At the same time, it must also be recognized that currently there is much excess harvest capacity and management regulations and market limits generally prevent most vessels from operating at full capacity. Therefore, while some vessels may be drawn out of the fishery for a time by more lucrative opportunities elsewhere, this will create opportunity for increased landings and profits for vessels that remain, and will provide an inducement which is likely to prevent all vessels from discontinuing harvest of certain species or harvest in certain areas. Should the unlikely circumstances arise that capacity in an area for a species or species complex is insufficient, the Council would have an opportunity to rectify the situation by recommending issuance of additional temporary harvest rights that might include geographic or species restrictions.

With ineffective license limitation, permits would be available in sufficient abundance to harvest the resource. With ITQs a species probably will go unharvested only if it is not completely economical to harvest the species, or sufficient quota of other species likely to be caught cannot be acquired.

7.5.3.1 Full Species/Species Complex Exploitation

Concern has been expressed that licenses may not be held by a representative distribution of vessels from different strategies within the groundfish fishery so that some species or species complexes may go unharvested. Two causes, other than an insufficiently diverse fleet, may lead to less than full utilization of a particular species or assemblage, regardless of which management option is selected. The first of these is primarily economic in nature. Simply stated, given harvest costs and prevailing prices, it may not be profitable to harvest some species. The second cause is more regulatory in nature. When multiple species are caught jointly and one of the species has reached a quota, managers may determine that it is undesirable to allow continued fishing for any of the species. This may leave a substantial portion of the allowable catch for some species unused. Such has been the case in numerous U.S. fisheries off Alaska.

Effective License Limitation. In an attempt to apply a rather uniform qualifying criteria across all vessels of a particular type of gear, concern has been expressed that some components of the fleet may be represented by disproportionately small numbers of vessels receiving "A" endorsements, and consequently specific target fisheries may be left unharvested since they are associated with vessels of particular sizes. It is impossible to know what species will be targeted by vessels remaining in the fleet at some future time. Nevertheless, two types of information may be valuable for assessing the likelihood that the resource will continue to be fully utilized.

First, there is information regarding the vessel-size composition of the fleet under the limited entry options, relative to the base year of 1987. In particular, it is important to verify that the proposed options would not result in significant reductions in the number of vessels within various size classes. Four length classes were analyzed, and a summary of vessel numbers within each category for all of the alternatives considered is presented in Table 7-24. Also shown for each number in this table is the percentage it represents of the "active" 1987 fleet within the same size category. The second set of information contrasts the high and adopted MLR fleet versus the remainder of the window fleet for each length class and the value of landings over the window period within eight species groups, including sablefish, Dover sole, thornyheads and arrowtooth flounder, the Sebastes complex, widow rockfish, unspecified rockfish, English, petrale and rex sole, and other groundfish.

Table 7–24. Number of vessels in the window and 1987 fleets, and the number expected to qualify for "A" endorsements under the high and adopted MLRs, by gear and length class, with percentages for each category relative to the active 1987 fleet. (Page 1 of 2)

Gear/Fleet	Vessel Length Class				Total Number of Vessels
	1–39 Ft	40–59 Ft	60–79 Ft	>79 Ft	
		TRAWL[a/]			
Window (1 Pound)	33 183%	249 141%	187 130%	21 233%	490 141%
1987 (1987–Active)	18	177	144	9	348
High MLR	15 83%	183 103%	139 97%	12 133%	349 100%
Adopted MLR	15 83%	201 114%	156 108%	16 178%	388 111%
		POT			
Window (1 Pound)	188 1,446%	79 608%	16 1,600%	12 400%	295 983%
1987	58 446%	29 223%	6 600%	5 167%	98 327%
1987 – Active	13	13	1	3	30
High MLR	13 100%	19 146%	3 300%	6 200%	41 136%
Adopted MLR	12 92%	19 146%	4 400%	7 233%	42 140%
		LONGLINE			
Window (1 Pound)	454 313%	197 318%	45 409%	10 –	706 324%
1987	221 152%	108 174%	24 218%	2 –	355 141%
1987–Active	145	62	11	0	218
High MLR	154 106%	68 110%	13 118%	1 –	236 108%
Adopted MLR	131 90%	82 132%	15 136%	1 –	229 105%

Table 7-24. Number of vessels in the window and 1987 fleets, and the number expected to qualify for "A" endorsements under the high and adopted MLRs, by gear and length class, with percentages for each category relative to the active 1987 fleet. (Page 2 of 2)

Gear/Fleet	Vessel Length Class				Total Number of Vessels
	1-39 Ft	40-59 Ft	60-79 Ft	>79 Ft	
		ALL LINE			
Window (1 pound)	2,098	525	89	23	2,735
	322%	441%	468%	2,300%	346%
1987	1,082	250	45	5	1,382
	166%	210%	237%	500%	175%
1987-Active	652	119	19	1	791
High MLR	651	117	21	2	791
	100%	98%	111%	200%	100%
Adopted MLR	266	119	23	2	410
	41%	100%	121%	200%	52%

a/ Includes whiting and non-whiting vessels.

With regard to evaluating whether there is an acceptable mix of vessel sizes in the permitted fleet, the 1987 fleet was selected for use as a general reference, primarily because it was the most recent complete fishing year encompassed by the window period. For pot and longline gears, a high number of vessels had only one or two trips during 1987. For this reason, an additional subset of 1987 vessels was defined, and included only vessels having at least three trips with the particular gear (see Section 4.4.4). This "active" 1987 fleet for longline and pot gear, along with the entire 1987 trawl fleet, served as the reference for the number of permits to be issued under the high and adopted MLR scenarios. Both of the higher MLRs are anticipated to result in 3 fewer trawl vessels within the smallest vessel class (< 40 ft), representing a reduction of about 17 percent from the 1987 fleet. In the two most prevalent classes (40–59 ft and 60–79 ft), the adopted MLR leads to increases of 14 and 8 percent, repectively. These increases are each about 11 percent higher than with the high MLR. The adopted MLR also would initially permit 7 more vessels greater than 79 ft in length, which represents about an 80 percent increase over 1987. Overall, the predicted composition of the initial fleet under the adopted MLR does not indicate a serious shortage of any specific size of vessel. The low MLR would permit significant expansion of every length class relative to the 187 fleet.

In addition to the general similarity between the composition of the 1987 and higher MLR fleets, vessels meeting the high and adopted MLRs (Tables 7–25a and 7–25b, respectively), accounted for more than 95 percent of the total window earnings from each of the 8 species groups examined. This relationship also holds for nearly every length class of trawl vessel. Therefore, analysis of the initial allocation of trawl permits suggest that any of the alternatives will result in an adequate number of permitted trawl vessels within each size class to provide for comprehensive harvest of the groundfish resource.

The percentages of vessels by length class in the pot fleets differ considerably, depending on whether vessels that were marginally active during 1987 are included. This difference is largely an artifact of the decision to categorize any landing coded for fishpot or other pot which had more than 50 percent groundfish, as a pot trip in the analysis (even if crab was also present). This assumption represented a change from earlier versions of this analysis, where no trips with any crab were included. The rationale for this change was that many vessels fishing for groundfish may set pots for crab on the way to fish for groundfish, and subsequently land crab and groundfish at the same time. This change increased the size of the window pot fleet from 40 to nearly 300. Most of the added vessels had less than 3 landings, resulting in an "active" 1987 fleet under this new trip definition of 30 vessels, as opposed to 19 vessels when trips with crab present were not counted as fishpot trips. Because of the preponderance of small vessels in the less active group, over 60 percent of the vessels in the window and overall–1987 fleets were less than 40 feet in length. By contrast, 44 percent of the "active" 1987 fleet was less than 40 feet. For both of the higher MLRs, the number of vessels in the smallest vessel class is comparable to the "active" 1987 fleet. About 12 additional vessels, relative to 1987, would be distributed throughout the 3 larger classes. Once again, no shortage of vessels is observed in any size class. To an even greater degree than with trawl vessels, the low MLR would result in significantly more permits for every length class relative to the number of vessels in the 1987 fleet.

The pot gear fleet targets primarily on sablefish, which accounts for more than 90 percent of pot revenue. Vessels meeting the high and adopted MLRs accounted for about 85 percent of the sablefish earnings for vessels under 40 ft, and more than 90 percent of the earnings in each of the larger classes (Tables 7–26a and 7–26b).

Table 7–25a. Window period revenue (in thousands of dollars) from landings, by species groupings, for trawl vessels that fished for non–whiting species, by vessel groups, according to whether or not they qualified under either the trawl non–whiting or trawl whiting high MLRs.

Vessel Length (Feet)	Number of Vessels	Sablefish	Dover Sole	Idiots/ Arrowtooth	Sebastes Complex	Widow Rockfish	English/ Petrale/ Rex Sole	Unspecified Rockfish	Other Groundfish
VESSELS MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING HIGH MLRS									
< 40	14	9	82	8	4	30	250	42	81
40–59	183	4,359	13,544	2,985	1,587	979	6,499	7,370	2,336
60–79	138	4,640	11,450	3,239	3,427	9,739	5,347	15,893	4,779
> 79	9	69	389	161	12	748	25	118	9
Total	344	9,077	25,465	6,393	5,030	11,495	12,121	23,423	7,205
VESSELS NOT MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING HIGH MLRS									
< 40	18	2	8	1	5	1	14	2	11
40–59	65	71	119	41	21	52	104	37	67
60–79	47	135	155	64	5	316	112	325	120
> 79	4	14	1	11	0	0	43	89	101
Total	134	222	282	117	31	369	273	454	298

Table 7–25b. Window period revenue (in thousands of dollars) from landings, by species groupings, for trawl vessels that fished for non–whiting species, by vessel groups, according to whether or not they qualified under either the trawl non–whiting or trawl whiting adopted MLRs.

Vessel Length (Feet)	Number of Vessels	Sablefish	Dover Sole	Idiots/ Arrowtooth	Sebastes Complex	Widow Rockfish	English/ Petrale/ Rex Sole	Unspecified Rockfish	Other Groundfish
VESSELS MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING ADOPTED MLRS									
< 40	14	10	89	8	4	30	254	44	86
40–59	201	4,381	13,621	3,013	1,587	980	6,561	7,391	2,371
60–79	155	4,711	11,526	3,286	3,430	10,054	5,451	16,150	4,868
> 79	11	84	390	172	12	748	68	203	109
Total	381	9,186	25,626	6,480	5,034	11,810	12,334	23,787	7,434
VESSELS NOT MEETING EITHER THE TRAWL NON–WHITING OR TRAWL WHITING ADOPTED MLRS, BUT WITH AT LEAST 3 QUALIFYING TRIPS OF AT LEAST 500 POUNDS									
< 40	7	0	0	0	3	1	10	0	7
40–59	24	36	40	9	11	52	32	15	28
> 59	17	62	78	14	2	1	6	61	27
Total	48	99	118	23	16	53	47	76	62
VESSEL WITH FEWER THAN 3 QUALIFYING TRAWL TRIPS OF AT LEAST 500 POUNDS									
< 40	11	0	0	0	2	0	0	0	0
40–59	23	13	1	3	9	0	11	1	4
> 59	15	1	2	4	0	0	1	12	4
Total	49	14	3	7	11	0	13	13	8

Table 7–26a. Window period revenue (in thousands of dollars) from landings, by species groupings, for fishpot vessels that did or did not qualify under the high MLR.

Vessel Length (Feet)	Number of Vessels	Sablefish	Dover Sole	Idiots/ Arrowtooth	Sebastes Complex	Widow Rockfish	English/ Petrale/ Rex Sole	Unspecified Rockfish	Other Groundfish
VESSELS MEETING THE FISHPOT GEAR HIGH MLRS									
< 40	13	616	0	0	1	0	0	1	1
40–59	19	2,950	0	1	3	0	0	18	3
60–79	3	1,131	0	1	0	0	0	7	1
> 79	6	2,221	0	0	0	0	0	0	0
Total	41	6,919	0	1	4	0	0	26	4
VESSELS NOT MEETING FISHPOT GEAR HIGH MLR									
< 40	175	91	0	0	3	0	0	20	6
40–59	60	28	30	6	2	0	26	14	4
60–79	13	101	1	1	13	0	2	5	2
> 79	6	51	0	0	0	0	0	0	0
Total	254	271	31	7	17	1	28	38	12

Table 7-26b. Window period revenue (in thousands of dollars) from landings, by species groupings, for fishpot vessels that did or did not qualify under the adopted MLR.

Vessel Length (Feet)	Number of Vessels	Sablefish	Dover Sole	Idiots/ Arrowtooth	Sebastes Complex	Widow Rockfish	English/ Petrale/ Rex Sole	Unspecified Rockfish	Other Groundfish
VESSELS MEETING THE ADOPTED FISHPOT GEAR MLR									
< 40	12	610	0	0	0	0	0	12	1
40–59	19	2,950	0	1	3	0	0	17	3
60–79	4	1,229	0	1	0	0	0	7	1
> 79	7	2,227	0	0	0	0	0	0	0
Total	42	7,017	0	1	3	0	0	36	4
VESSELS NOT MEETING THE ADOPTED FISHPOT GEAR MLR, BUT WITH AT LEAST 3+ QUALIFYING TRIPS OF AT LEAST 500 POUNDS									
< 40	3	13	0	0	0	0	0	0	0
40–59	4	10	2	2	0	0	1	0	0
> 59	3	40	0	0	0	0	1	0	0
Total	10	63	2	2	0	0	2	0	1
VESSEL WITH FEWER THAN 3 QUALIFYING FISHPOT TRIPS OF AT LEAST 500 POUNDS									
< 40	173	84	0	0	4	0	0	10	6
40–59	56	18	28	4	2	0	25	14	4
60–79	11	2	1	1	13	0	1	5	2
> 79	3	7	0	0	0	0	0	0	0
Total	243	110	29	4	18	1	26	28	11

As defined, the "active" 1987 fleet of vessels that had clearly defined longline landings was about 30 percent smaller than the entire 1987 longline group. The high MLR would result in increases in each length class ranging from 1 to 9 vessels. The adopted MLR would lead to 14 (10 percent) fewer vessels in the smallest category, with increases ranging from 1 to 20 vessels in the remaining classes. No vessel class suffers a dramatically reduced number of qualifying vessels compared to active vessels under either of these options. Under the low MLR, every length class could be larger by more than a factor of 3.

The longline fleet targets primarily sablefish, with various species of rockfish contributing a significant amount of revenue to many operations. With only one major exception, vessels qualifying under the high or adopted MLRs earned at least 90 percent of the revenue from prominent species groups within each vessel class (shown in Tables 7-27a and 7-27b). For vessels larger than 59 ft, just over 80 percent of the longline revenue from sablefish was earned by qualifying vessels. Furthermore, when all of the line vessels which were part of the analysis are treated as if they were longliners, vessels meeting the higher MLRs continue to account for more than 80 percent of the revenue within each vessel length class for each of the major species groups.

Because of the problem of clearly identifying longline trips in the available data, results for the all line category are reported as well. The "active" 1987 fleet for this larger line group is more than 40 percent smaller than the entire 1987 group, but more than 3 times larger than the "active" fleet of clearly identified longline vessels. All of the vessels in the larger all line fleet are not likely to be able to substantiate having used longline gear. If they could, the high MLR would reproduce the "active" fleet to within 2 vessels for each length class. The adopted MLR reproduces the larger classes well, but the 500 lb screening criteria results in 60 percent fewer permits in the smallest category, relative to 1987. Although this may appear to be a significant flaw, two factors should be kept in mind. First, many of the nonqualifying vessels did not, in fact, use longline gear. Second, the open access fishery will allow these vessels to continue to harvest groundfish at the low level of the groups' historical participation.

The limited level of participation by nonqualifying small line vessels can be seen in Tables 7-28a and 7-28b. Even with the large number of nonpermitted vessels under the adopted MLR, the included group accounts for 97 percent of the sablefish earnings and 84 percent of the combined Sebastes/rockfish earnings of vessels in the length class. Over 90 and 80 percent of the revenue, respectively, earned from these major species groups by line vessels as a whole is attributable to vessels meeting the adopted MLR.

As discussed more fully in Section 7.5.2, the relative profitability of some segments of the fleet may also lead to fewer numbers of permits in some vessel size classes than in the present fleet configuration, regardless of how well the initial distribution of permits is "balanced". Permits from larger vessels may be moved to smaller vessels, and permits for smaller vessels can be combined into permits for larger vessels. To the extent that specific target fisheries are associated with vessels of particular sizes, fleet evolution under a transferable permit system may evolve to the point where inadequate numbers of vessels for one type remain in order to provide a sufficient economic incentive to harvest all components of the groundfish resource.

The nearshore trawl fishery serves as an example of what could happen. If the fleet evolves into one composed predominately of larger vessels, because greater profits can be realized in other assemblage fisheries, there may be insufficient small vessels to harvest all the nearshore species available, and

Table 7–27a. Window period revenue (in thousands of dollars) from landings, by species groupings, for longline vessels that did or did not qualify under the high MLRs.

	Number of Vessels	Sablefish	Dover Sole	Idiots/ Arrowtooth	Sebastes Complex	Widow Rockfish	English/ Petrale/ Rex Sole	Unspecified Rockfish	Other Groundfish
VESSELS MEETING THE LONGLINE GEAR HIGH MLR									
<40 Ft	154	1,931	1	3	511	1	2	878	417
40–59 Ft	68	8,220	6	21	120	1	3	940	228
>59 Ft	14	2,470	0	23	39	0	1	180	22
TOTAL	236	12,261	7	48	670	2	6	1,998	666
VESSELS NOT MEETING THE LONGLINE GEAR HIGH MLR									
<40 Ft	300	46	0	0	5	0	0	57	47
40–59 Ft	129	862	14	5	4	0	9	79	19
60–79 Ft	32	532	0	0	0	0	0	23	4
>79 Ft	9	542	0	0	0	0	0	1	0
TOTAL	470	1,493	14	5	9	0	9	160	71

Table 7–27b. Window period revenue (in thousands of dollars) from landings, by species groupings, for longline vessels that did or did not qualify under the adopted MLR.

Vessel Length (Feet)	Number of Vessels	Sablefish	Dover Sole	Idiots/ Arrowtooth	Sebastes Complex	Widow Rockfish	English/ Petrale/ Rex Sole	Unspecified Rockfish	Other Groundfish
VESSELS MEETING THE ADOPTED LONGLINE GEAR MLR									
< 40	131	1,942	1	3	455	1	2	869	422
40–59	82	8,606	19	25	122	1	13	978	236
> 59	16	2,586	0	23	39	0	1	187	22
Total	229	13,133	21	52	616	3	15	2,033	681
VESSELS NOT MEETING THE ADOPTED LONGLINE GEAR MLR, BUT WITH AT LEAST 3+ QUALIFYING TRIPS OF AT LEAST 500 POUNDS									
< 40	55	19	0	0	24	0	0	18	18
40–59	21	221	0	0	0	0	0	18	4
60–79	7	217	0	0	0	0	0	8	0
> 79	2	37	0	0	0	0	0	0	0
Total	85	495	0	0	24	0	0	44	22
VESSEL WITH FEWER THAN 3 QUALIFYING LONGLINE TRIPS OF AT LEAST 500 POUNDS									
< 40	268	15	0	0	38	0	0	47	24
40–59	94	254	0	0	2	0	0	23	7
60–79	23	200	0	0	0	0	0	8	4
> 79	7	17	0	0	0	0	0	1	0
Total	392	486	0	0	40	0	0	79	35

Table 7–28a. Window period revenue (in thousands of dollars) from landings, by species groupings, for all line vessels that did or did not qualify under the high MLR.

Vessel Length (Feet)	Number of Vessels	Sablefish	Dover Sole	Idiots/ Arrowtooth	Sebastes Complex	Widow Rockfish	English/ Petrale/ Rex Sole	Unspecified Rockfish	Other Groundfish
VESSELS MEETING THE LONGLINE GEAR HIGH MLR									
< 40	651	2,105	1	10	1,995	4	3	2,179	636
40–59	117	8,311	6	21	511	1	3	1,085	241
> 59	23	2,483	11	25	76	0	10	263	25
Total	791	12,899	18	56	2,582	5	17	3,526	903
VESSELS NOT MEETING LONGLINE GEAR HIGH MLR									
< 40	1,447	52	3	0	217	1	1	233	102
40–59	408	914	76	22	106	1	25	158	49
60–79	68	533	14	2	26	0	0	38	5
> 79	21	51	0	0	5	0	0	10	0
Total	1,944	1,553	93	24	354	1	26	438	156

Table 7–28b. Window period revenue (in thousands of dollars) from landings, by species groupings, for all line vessels that did or did not qualify under the adopted MLR.

Vessel Length (Feet)	Number of Vessels	Sablefish	Dover Sole	Idiots/ Arrowtooth	Sebastes Complex	Widow Rockfish	English/ Petrale/ Rex Sole	Unspecified Rockfish	Other Groundfish
VESSELS MEETING THE ADOPTED LONGLINE GEAR MLR									
< 40	266	2,101	1	10	1,705	3	2	1,973	524
40–59	119	8,716	68	41	519	1	17	1,106	251
> 59	25	2,598	11	25	78	0	10	280	25
Total	410	13,416	80	76	2,302	5	30	3,359	800
VESSELS NOT MEETING THE ADOPTED LONGLINE GEAR MLR, BUT WITH AT LEAST 3+ QUALIFYING TRIPS OF AT LEAST 500 POUNDS									
< 40	146	23	0	0	135	1	1	110	93
40–59	48	245	3	0	38	0	3	65	9
> 59	14	255	0	0	18	0	0	14	0
Total	208	524	3	0	190	1	4	190	102
VESSELS WITH FEWER THAN 3 QUALIFYING LONGLINE TRIPS OF AT LEAST 500 POUNDS									
< 40	1,686	33	3	0	372	1	1	328	122
40–59	358	263	10	2	60	0	7	72	30
60–79	54	201	14	2	6	0	0	13	5
> 79	19	17	0	0	5	0	0	2	0
Total	2,117	513	27	4	444	1	9	415	157

it may not be profitable for larger vessels to target on these species. In such a case, the Council would have the option of recommending issuance of designated species "B" endorsements to facilitate full utilization of the available resource or possibly amending the plan to issue additional permits for small trawlers.

The likelihood that species which have been harvested predominantly by small non-trawl vessels, may be underharvested in the future, is probably less under the adopted alternative than with the high-MLR package. The open access provisions of the former ensure continued opportunity for small nonpermitted vessels to target on species for which they have traditionally fished. However, it is noted that catch history belonging to vessels receiving "A" endorsements will remain in the limited entry fishery, regardless of whether the combination of permits creates inadequate capacity for some species. Since trawl gear will not be allowed in the open access fishery, it cannot serve to protect the fishing activity of small trawlers, either.

Ineffective License Limitation. Since the number of vessels under ineffective license limitation would be greater across all size categories and gear types than the number active in any year, the likelihood of a species or species complex being unharvested is less.

ITQs. Under an ITQ system, the resource is allocated through the market to those vessels that are able to harvest it most efficiently. In the case of the nearshore fishery, the rights to harvest various nearshore species would end up with the vessels that were best suited to harvest that portion of the resource. The effective license limitation alternative bears the disadvantage of connecting the right to continue fishing (the permit) to the vessel's overall performance in the entire groundfish fishery. Where isolated species are most accessible to vessels that are not best-suited for harvesting most of the groundfish resource, there is a chance that insufficient harvesting capacity will be directed towards those species in the long run. Thus ITQs are a superior alternative from the standpoint of assuring that relatively small, specialized assemblage niches have sufficient harvesting capacity directed towards them.

7.5.3.2 Full Geographic Exploitation

Effective License Limitation. Two areas of concern pertain to the regional distribution of permits: effects on overall harvest levels, and distributional implications of various permit issuing alternatives. Because few of the groundfish species managed by the Council have regional quotas, the geographic distribution of the harvesting activity is not likely to have much effect on total catch. For those species that do have regional quotas, or those that have very distinct boundaries of abundance, there is some concern that insufficient harvesting capacity may exist in some areas under a license limitation system which significantly reduces capacity. Such a problem could arise from the initial mix of qualifying vessels, or could evolve through the transferance of permits between areas once the system is in place.

Arrowtooth flounder provides an example of a species that has a limited range, being found primarily off northern Oregon and Washington. If most trawl permits, particularly for larger deepwater vessels, were issued to vessels from California or southern Oregon, it is conceivable that less of the allowable catch of arrowtooth flounder would be taken than under open access. However, if the price of the species were sufficiently high, and opportunities for year-round fishing limited in areas farther south, one would expect to see some vessels redirect their effort to the species.

Rather than the problem of a species not being harvested, it may be more likely that the issuance or transfer of permits could shift the share of landings from one port or region to another, affecting the distribution of economic activity along the coast. From a national perspective, altering the geographic focus of fishing activity along the coast may not be undesirable, as long as the results improve the well-being of the country as a whole. Obviously, from the viewpoint of individual communities, or even states, a loss of activity probably will not be viewed favorably, even if the nation as a whole gains.

Because the Council management system is inherently one comprised of regional and community interests, it is worthwhile noting some options for restricting such geographic shifts from taking place. Although not included formally as an alternative, the Council could have elected to tie permits to specific geographic areas. However, this approach would probably produce more problems than it solves. While a community may experience some economic hardships if a large portion of its fleet sells out to purchasers from outside its area, the nation and consumers may lose even more over the long run if an artificial distribution of fishing effort prevents the resource from being harvested in the most efficient manner. Additionally, a geographic endorsement would compound the problems involved in trying to secure a permit for a vessel entering the fleet and could reduce the flexibility of vessels to participate in several coastal regions. Particularly in areas near the boundaries established for a permit's use, the normal fishing patterns of vessels could be altered significantly. Area endorsements could also undermine the fleet's ability to adjust to changes in the geographic abundance of key species.

Under the license limitation alternative, a result similar to a geographic restriction on permit transferability could be achieved through the purchase of permits by government or economic interests at the local or state levels. States, communities or processors which purchased permits could then lease them to fishermen under the stipulation that their fish be landed within a given area.

As one indicator of the extent to which regional participation is preserved under the high and adopted MLR options, Tables 7-29a through 7-32b indicate the number of vessels meeting the particular MLR, within each gear group and vessel length class, that had landings during the qualifying window in any of six regions. Washington and Oregon comprise two of the regions, along with California ports falling within the Eureka and Conception INPFC areas, with the 2 remaining regions obtained by dividing the Monterey INPFC area in half at Pt. Reyes.

For the three classes of largest trawl vessels, in every region and length class but one, at least 75 percent of the vessels active within the region during the window qualified under the high MLR (Tables 7-29a and 7-29b). The single exception was for vessels longer than 79 feet in the Washington area. Qualification under the high MLR option of the less common vessels under 40 feet ranged from 54 percent in Oregon to 14 percent in the Conception area off California. The 47 additional vessels receiving trawl permits under the adopted MLR were generally active off Oregon or Washington.

For reasons discussed in the previous section, a large number of pot vessels included in the window fleet were not particularly active with pot gear. Because of this, and the fact that the target value was much lower than the window fleet, the percentages of pot vessels in each area that would qualify under the high or adopted MLRs are usually lower than observed for the trawl fleet (Tables 7-30a and 7-30b). It is important to recognize, however, that of 9,440 mt of pot groundfish landings during the window, only about 6 percent were accounted for by nonqualifying vessels (Table 7-33). Since

Table 7-29a. Number of vessels with non-whiting trawl landings, by region, vessel length class, and permit qualification status under the high MLR.

Vessel Length (Feet)	Number of Vessels That Were Active in Each Region[a/]						
	Number of Vessels	Washington	Oregon	California			
				North		South	
				Eureka	Monterey	Monterey	Conception
Area Totals	478	158	202	112	112	85	67
VESSELS MEETING ONE OF THE HIGH MLRS FOR TRAWL VESSELS							
< 40	14	2	8	1	1	3	1
40-59	183	57	69	54	58	37	22
60-79	138	52	86	32	37	21	18
> 79	9	2	5	3	2	2	2
Total	344	113	168	90	98	63	43
VESSELS NOT MEETING ONE OF THE HIGH MLRS FOR TRAWL VESSELS							
< 40	18	1	5	0	4	6	6
40-59	65	22	16	15	6	11	13
60-79	47	19	12	6	4	5	5
> 79	4	3	1	1	0	0	0
Total	134	45	34	22	14	22	24

NOTE: Values in the "number of vessels" column are less than the sum of the region values in the same row whenever some vessels were active in more than one region.

a/ Region boundaries in California conform to INPFC areas, with an additional division of the Monterey area at Point Reyes.

Table 7-29b. Number of vessels with non-whiting trawl landings, by region, vessel length class, and permit qualification status under the adopted MLR.

Vessel Length (Feet)	Number of Vessels That Were Active in Each Region[a/]						
	Number of Vessels	Washington	Oregon	California			
				North		South	
				Eureka	Monterey	Monterey	Conception
Area Totals	478	158	202	112	112	85	67
VESSELS MEETING ONE OF THE ADOPTED MLRS FOR TRAWL VESSELS							
< 40	14	2	9	1	1	2	1
40-59	201	65	75	60	58	37	23
60-79	155	63	93	34	37	21	18
> 79	11	3	6	4	2	2	2
Total	381	133	183	99	98	62	44
VESSELS NOT MEETING ONE OF THE ADOPTED MLRS FOR TRAWL VESSELS, BUT WITH AT LEAST 3 TRAWL LANDINGS OVER 500 POUNDS							
< 40	7	1	2	0	3	1	0
40-59	24	7	7	4	4	4	3
60-79	16	6	4	2	3	1	1
> 79	1	1	0	0	0	0	0
Total	48	15	13	6	10	6	4
TRAWL VESSELS WITH FEWER THAN 3 TRAWL LANDINGS OVER 500 POUNDS							
< 40	11	0	2	0	1	6	6
40-59	23	7	3	5	2	7	9
60-79	14	2	1	2	1	4	4
> 79	1	1	0	0	0	0	0
Total	49	10	6	7	4	17	19

NOTE: Values in the "number of vessels" column are less than the sum of the region values in the same row whenever some vessels were active in more than one region.

a/ Region boundaries in California conform to INPFC areas, with an additional division of the Monterey area at Point Reyes.

Table 7–30a. Number of vessels with fishpot landings, by region, vessel length class, and permit qualification status under the high MLR.

Vessel Length (Feet)	Number of Vessels That Were Active in Each Region[a/]						
	Number of Vessels	Washington	Oregon	California			
				North		South	
				Eureka	Monterey	Monterey	Conception
Area Totals	295	20	41	44	70	118	112
VESSELS MEETING THE HIGH MLR FOR FISHPOT GEAR							
< 40	13	0	6	1	0	6	4
40–59	19	2	11	5	4	4	0
60–79	3	2	2	0	0	0	0
> 79	6	2	4	0	4	4	1
Total	41	6	23	6	8	14	5
VESSELS NOT MEETING THE HIGH MLR FOR FISHPOT GEAR							
< 40	175	6	7	19	39	87	91
40–59	60	4	9	17	16	12	12
60–79	13	1	0	2	6	4	4
> 79	6	3	2	0	1	1	0
Total	254	14	18	38	62	104	107

NOTE: Values in the "number of vessels" column are less than the sum of the region values in the same row whenever some vessels were active in more than one region.

a/ Region boundaries in California conform to INPFC areas, with an additional division of the Monterey area at Point Reyes.

Table 7-30b. Number of vessels with fishpot landings, by region, vessel length class, and permit qualification status under the adopted MLR.

Vessel Length (Feet)	Number of Vessels	Number of Vessels That Were Active in Each Region[a/]					
				California			
				North		South	
		Washington	Oregon	Eureka	Monterey	Monterey	Conception
Area Totals	295	20	41	44	70	118	112
VESSELS MEETING THE ADOPTED MLR FOR FISHPOT GEAR							
< 40	12	0	7	1	1	3	1
40-59	19	2	11	5	3	3	1
60-79	4	3	2	0	0	0	0
> 79	7	3	4	0	4	4	1
Total	42	8	24	6	8	10	3
VESSELS NOT MEETING THE ADOPTED MLR FOR FISHPOT GEAR, BUT WITH AT LEAST 3 POT LANDINGS OVER 500 POUNDS							
< 40	3	1	0	0	1	2	1
40-59	4	0	1	1	1	1	0
60-79	1	0	0	0	1	0	0
> 79	2	1	0	0	1	1	0
Total	10	2	1	1	4	4	1
POT VESSELS WITH FEWER THAN 3 FISHPOT LANDINGS OVER 500 POUNDS							
< 40	173	5	6	19	37	88	93
40-59	56	4	8	16	16	12	11
60-79	11	0	0	2	5	4	4
> 79	3	1	2	0	0	0	0
Total	243	10	16	37	58	104	108

NOTE: Values in the "number of vessels" column are less than the sum of the region values in the same row whenever some vessels were active in more than one region.

a/ Region boundaries in California conform to INPFC areas, with an additional division of the Monterey area at Point Reyes.

Table 7-31a. Number of vessels with longline landings, by region, vessel length class, and permit qualification status under the high MLR.

Vessel Length (Feet)	Number of Vessels That Were Active in Each Region[a/]						
	Number of Vessels	Washington	Oregon	California			
				North		South	
				Eureka	Monterey	Monterey	Conception
Area Totals	706	425	186	18	81	49	32
VESSELS MEETING THE HIGH MLR FOR LONGLINE GEAR							
< 40	154	79	29	6	34	32	18
40-59	68	41	38	9	13	3	1
60-79	13	12	3	1	1	2	1
> 79	1	1	0	0	0	0	0
Total	236	133	70	16	48	37	20
VESSELS NOT MEETING THE HIGH MLR FOR LONGLINE GEAR							
< 40	300	177	77	0	27	11	11
40-59	129	87	29	2	6	0	1
60-79	32	21	9	0	0	1	0
> 79	9	7	1	0	0	0	0
Total	470	292	116	2	33	12	12

NOTE: Values in the "number of vessels" column are less than the sum of the region values in the same row whenever some vessels were active in more than one region.

a/ Region boundaries in California conform to INPFC areas, with an additional division of the Monterey area at Point Reyes.

Table 7-31b. Number of vessels with longline landings, by region, vessel length class, and permit qualification status under the adopted MLR.

Vessel Length (Feet)	Number of Vessels That Were Active in Each Region[a/]						
	Number of Vessels	Washington	Oregon	California			
				North		South	
				Eureka	Monterey	Monterey	Conception
Area Totals	706	425	186	18	81	49	32
VESSELS MEETING THE ADOPTED MLR FOR LONGLINE GEAR							
< 40	131	88	24	5	14	18	13
40–59	82	51	41	10	15	3	1
60–79	15	14	3	1	1	2	1
> 79	1	1	0	0	0	0	0
Total	229	154	68	16	30	23	15
VESSELS NOT MEETING THE ADOPTED MLR FOR LONGLINE GEAR, BUT WITH AT LEAST 3 LONGLINE LANDINGS OVER 500 POUNDS							
< 40	55	31	196	0	6	5	4
40–59	21	16	6	0	1	0	0
60–79	7	5	2	0	0	0	0
> 79	2	2	0	0	0	0	0
Total	85	54	24	0	7	5	4
LONGLINE VESSELS WITH FEWER THAN 3 LONGLINE LANDINGS OVER 500 POUNDS							
< 40	268	137	66	1	41	20	12
40–59	94	61	20	1	3	0	1
60–79	23	14	7	0	0	1	0
> 79	7	5	1	0	0	0	0
Total	392	217	94	2	44	21	13

NOTE: Values in the "number of vessels" column are less than the sum of the region values in the same row whenever some vessels were active in more than one region.

a/ Region boundaries in California conform to INPFC areas, with an additional division of the Monterey area at Point Reyes.

Table 7-32a. Number of vessels with all line landings, by region, vessel length class, and permit qualification status under the high MLR.

Vessel Length (Feet)	Number of Vessels That Were Active in Each Region[a/]						
	Number of Vessels	Washington	Oregon	California			
				North		South	
				Eureka	Monterey	Monterey	Conception
Area Totals	2,735	425	191	312	768	958	799
VESSELS MEETING THE HIGH MLR FOR LONGLINE GEAR							
< 40	651	79	29	104	195	331	233
40-59	117	41	38	15	32	39	22
60-79	21	12	3	1	5	8	5
> 79	2	1	0	0	0	1	1
Total	791	133	70	120	232	379	271
VESSELS NOT MEETING THE HIGH MLR FOR LONGLINE GEAR							
< 40	1,447	177	80	161	440	440	390
40-59	408	87	30	28	88	107	106
60-79	68	21	9	2	8	23	23
> 79	21	7	2	1	0	9	9
Total	1,944	292	121	192	536	579	528

NOTE: Values in the "number of vessels" column are less than the sum of the region values in the same row whenever some vessels were active in more than one region.

a/ Region boundaries in California conform to INPFC areas, with an additional division of the Monterey area at Point Reyes.

Table 7-32b. Number of vessels with all line landings, by region, vessel length class, and permit qualification status under the adopted MLR.

Vessel Length (Feet)	Number of Vessels That Were Active in Each Region[a/]						
	Number of Vessels	Washington	Oregon	California			
				North		South	
				Eureka	Monterey	Monterey	Conception
Area Totals	2,735	425	191	312	768	958	799
VESSELS MEETING THE ADOPTED MLR FOR LONGLINE GEAR							
< 40	266	88	24	38	67	102	68
40-59	119	51	41	16	31	29	23
60-79	23	14	3	1	6	7	5
> 79	2	1	1	0	0	1	1
Total	410	154	69	55	104	139	94
VESSELS NOT MEETING THE ADOPTED MLR FOR LONGLINE GEAR, BUT WITH AT LEAST 3 ALL LINE LANDINGS OVER 500 POUNDS							
< 40	146	31	16	24	42	45	37
40-59	48	16	6	3	13	12	10
60-79	12	5	2	0	0	5	4
> 79	2	2	0	0	0	0	0
Total	208	54	24	27	55	62	51
ALL LINE VESSELS WITH FEWER THAN 3 LONGLINE LANDINGS OVER 500 POUNDS							
< 40	1,685	137	69	203	526	624	518
40-59	358	61	21	24	76	105	105
60-79	54	14	7	2	7	19	19
> 79	19	5	1	1	0	9	9
Total	2,117	217	98	230	609	757	651

NOTE: Values in the "number of vessels" column are less than the sum of the region values in the same row whenever some vessels were active in more than one region.

a/ Region boundaries in California conform to INPFC areas, with an additional division of the Monterey area at Point Reyes.

Table 7–33. Total catch (mt) of groundfish during the window period by gear for vessels with at least one landing during the window period which would be included and excluded under the high MLR.

	Vancouver	Columbia	Eureka	Monterey	Conception
TRAWL					
Included	49,255	87,690	26,603	34,543	14,751
Excluded	3,198	2,145	390	140	46
LONGLINE					
Included	7,665	3,858	233	1,036	416
Excluded	1,250	167	9	119	19
FISHPOT					
Included	1,190	6,608	69	937	91
Excluded	109	121	81	207	27

roughly 85 percent of the window tonnage caught with pot gear was landed in Oregon and Washington, it is unlikely that California ports rely very heavily on the contributions of nonqualifying pot vessels.

The longline fleet has also been characterized by a high degree of turnover, as evidenced by the fact that the window fleet is twice as large as the total 1987 fleet, and more than three times as large as the target, "active" 1987 fleet. In Oregon and Washington the percentage of the window fleet that would remain under the high MLR is less than for trawl in California the proportions are comparable (Tables 7-31a and 7-31b). As with pot, longline tonnage landed in the two northern regions accounted for about 87 percent of the window total (Table 7-33). In the 3 smallest length classes, which accounted for most of the landings in these areas, the percentage of vessels qualifying under the high MLR ranged from 25 to 57 percent. In the California regions, these 3 classes contained fewer vessels, but had percentages of window vessels retained in excess of 50 percent. Under the adopted MLR, somewhat fewer vessels qualified which had landings in the Monterey INPFC area or in Washington.

Virtually all of the vessels included in the all line category, but not clearly identified as longline are vessels that fished off California (Tables 7-32a and 7-32b). Even if all of these vessels could verify the use of longline gear, the majority of them would not meet either the high or adopted MLRs. The number of qualified vessels within each of the California regions examined would be perhaps 60 percent lower under the adopted MLR than under the high MLR. However, under the adopted alternative, the catch histories of vessels not qualifying would revert to the open access fishery, allowing continued small-scale activity by nonqualifying vessels in all areas. Additionally, significantly fewer vessels would qualify for "B" endorsements in all regions under the adopted MLR.

The fact that more vessels, or a higher percentage of them, would qualify within a particular region does not, by itself, imply a lack of equity. It may simply represent that a larger number of vessels in the area happened to be more active in the fishery. The bottom line on this issue is that for each gear group, higher MLRs would appear to provide each region with an adequate number of vessels to maintain regional shares of landings at levels close to those observed in recent years. It is noted, however, that this analysis was conducted using fairly large areas of analysis. No effort was made to conduct a port-level analysis of qualifiers, in order to ascertain whether specific landing sites would be left without qualifying vessels. It was generally felt that the open access fishery provisions of the adopted alternative would allow continued fishery participation at the current low levels in order to support some California ports that might be at such risk.

Ineffective License Limitation. With an ineffective license limitation program, the number of vessels qualified to participate in the fishery would be greater across all geographic areas. Therefore, it is less likely that a species or species complex, which has rather distinct geographic boundaries, will be less than fully exploited. Permits issued in each area would exceed the number of active vessels in any recent year.

ITQs. The problem of partial geographic exploitation is less likely to occur under an ITQ system in which various geographically distinct subfisheries have independent quotas assigned to them. However, there might be exceptions. Referring again to the arrowtooth flounder example, even with ITQs, the ability to catch arrowtooth flounder might depend on having an ITQ for other species that possibly could be caught at the same time. If sablefish, for instance, was more valuable being caught

in conjunction with thornyheads and Dover sole, then some of the arrowtooth flounder quota might remain uncaught.

ITQs, rather than permits with geographical endorsements, provide a more flexible instrument for assuring continued fishing income in a particular area. ITQs would allow for a greater degree of predictability in the quantity of landings to be processed and would not be tied to use on a vessel of a particular size or gear type. As with permits, governments or other entities with an interest in a particular area could purchase ITQs and then lease them to fishermen who would land their fish in the desired area.

Conclusions. Several points can be made regarding full exploitation of the Pacific coast groundfish resource. The first, and most important, is that the higher MLR options would not reduce the size of the fleet on the grounds relative to recent years. Beyond attaining a total number of vessels within a gear group that approximates the 1987 active fleet, analysis of the fleet which would qualify under the higher MLRs indicates that: (1) an appropriate balance is maintained among vessel size classes, (2) all of the major species groupings reviewed are well-represented in the window landings history of the qualifying fleet, and (3) each of the five geographic regions examined would retain a fleet capable of harvesting that region's historical share of landings, even where there are differences in the percentages of the window fleet which is retained.

It is certainly possible that movement of vessels or transfers of permits after initial allocation could alter the balance originally obtained. However, several factors suggest that large gaps will not occur in the coverage of the fleet. First, given the vessels in the higher MLR fleets would retain considerably greater harvesting capacity than is needed, even if many of the vessels fishing for a particular species decide to alter their target, remaining vessels are likely to be able to take up the slack. This point is underscored by the fact that harvest capacity of permitted vessels may continue to grow through increased use of capital and labor within the vessel-length constraint of the permit. Additionally, as vessels move out of an area or target species, the benefits to those vessels that remain would increase. Therefore, increased product prices or reduced competition within an area will provide advantages for fishermen that continue in the fishery. Additionally, states, communities or processors, concerned about the distribution of fisheries income and related economic impacts under such circumstances, could purchase permits themselves and lease them to vessels to harvest specifically for their areas. Finally, the greatest threat to the preservation of some market niches would appear to stem from the ability to combine permits from small vessels into permits for larger vessels. If some species were not fully utilized at some future time, the Council could recommend issuance of additional temporary permits for these species.

7.6 Responsiveness to Changes in the Fishery

7.6.1 Effect on Innovation

Effective License Limitation. The proposed license options would allow continued innovation through three major avenues. First, a permit holder may upgrade the vessel to which the permit is attached introducing new technology or combining his existing vessel with larger amounts of capital or labor. In lieu of improving his existing vessel, the owner may opt for replacing the craft with a different one of no greater length. Alternatively, he or she might acquire one or more additional permits and use them to replace the existing vessel with a larger one. Because permits cannot be split to allow fishing of multiple smaller vessels of equal capacity, the licensing options do inhibit movement

towards a more efficient fishery in the case where a fleet of smaller vessels is optimal. This is discussed in Section 7.2.4.2.

To the extent that some of the risk and uncertainty associated with a status quo open access fishery are reduced, the proposed program will likely result in some additional investment. Since the higher MLR options would not allow the fleet to grow much above 1987 levels, it appears likely that some uncertainty about future numbers of vessels participating in the fishery will be reduced. Additionally, at the 1987 fleet size, management of the fishery may continue to rely upon trip limitations and other measure that limit the returns of investing in innovation.

Some members of the current groundfish fishery would not initially receive permits and would be unwilling to buy them. The presence of this group is likely to encourage the development of new gears that fall outside the limited entry gear definitions. Nevertheless, the catch by these exempted gears would be controlled through the allocation process and could also be subject to existing management tools, such as trip limits. On the other hand, if exempted gears are less efficient methods of harvesting than limited entry gears, their use may be preserved, nonetheless, because of the limited availability of permits and their cost.

Ineffective License Limitation. Under an ineffective program of license limitation, permits would be readily available for the existing distribution of gear/vessel combinations. The incentive for innovation under this option would be essentially the same as status quo.

ITQs. Because the harvest of a particular species or species assemblage by any vessel is limited under an ITQ system, innovation is likely to focus on increasing delivery price, through the landing of higher quality fish[17/], or reducing the unit cost of production. While these motives often underlie investment in an "Olympic" style fishery, in an "Olympic" fishery there is also the incentive to adopt technologies that will simply allow fish to be caught more quickly, even if it means increasing the cost of landing each pound of fish. This occurs because a vessel that acquires a larger share of the quota through a faster vessel harvest rate may earn greater total profits even though its profit per pound is lower. This latter form of innovation is undesirable because it produces a greater waste of resources within the fishery.

Conclusions.

Innovative behavior could be encouraged within the limited entry gears if the number of vessels in the fishery were being reduced significantly. However, fleet size under the higher MLR options would be held near levels in recent years. While uncertainty may be reduced somewhat, trip limits as well as other efficiency limiting measures are likely to continue, so that incentives for innovation are not expected to be much greater than during the late 1980s. If the fishery is managed under an "Olympic" system, an effective license limitation program may stimulate the development of new gear configurations outside the definition of limited entry gear for purposes of fishing the open access (exempted gear) quota. However, allocation and trip limits in this fishery will also limit the incentive for development of significantly more powerful gears.

Relative to effective license limitation, innovation may occur more slowly under ineffective license limitation or status quo. The benefits from innovation for an individual vessel would probably be less

17/ This factor is intended to include the landing of larger fish where price is dependent upon size.

in terms of gaining a greater portion of the available harvest when the resource is shared among a larger number of vessels initially. Additionally, vessel owners not receiving permits would find it less expensive to buy a permit than under an effective license limitation system and would therefore be less likely to attempt to inovate a new more powerful exempt gear.

An ITQ program probably would favor innovation that would increase the value of landed product through improvements in quality or size of fish, or reduce the unit cost of production. ITQs would not encourage innovation which increases total profits through increasing the rate of harvest at the expense of higher unit cost of production.

7.6.2 Effect on Size Configuration of the Fleet

Effective License Limitation. As discussed in Section 7.5.3, the size configuration of the fleet that is initially assigned permits under the high MLR would not be substantially different from the composition of the "active" fleet in 1987 (shown in Table 7-24). Pot gear was the only fleet of vessels in which any of the four length classes differed by more than three percent. For that gear, 84 percent of the "active" 1987 fleet was less than 60 feet in length, as opposed to 71 percent in the high MLR qualifying group.

Under the adopted MLR, similar results are obtained, although a major difference is observed in the all line fleet. Because such a large percentage of the small vessels in this group had trips of less than 500 lb, the number of "A" endorsements in the under-40 ft class drops from 82 percent to 65 percent. However, it is important to remember that many of the vessels in the all line group did not really use longline gear. If most of the nonqualifying vessels could not have established the use of longline gear anyway, then it is not a problem that such a high percentage of small line vessels did not qualify. Even if use of longline gear could be established, opporutnity for continued participation is provided in the open access fishery.

Despite the generally similar composition of the limited entry and open access fleets, initially, it is possible the size composition of the limited entry fleet will change. Permits may be combined to facilitate the entry of larger vessels into the fishery, or permits endorsed for trawl gear might be permanently downsized to accommodate use with a smaller craft. It is not clear whether size composition might change more under the licensing options than under status quo. For example, status quo open access management would allow new large vessels to enter the fishery more easily, but it would not require that comparable harvest capacity be removed from the fishery before entry. If the permits from numerous small vessels are retired in order to allow the large vessel to enter, then the change in composition would be more dramatic than with open access. It should also be noted that this option possesses considerably less flexibility than status quo in accommodating the conversion to a small-vessel fleet, should that prove to be the most efficient arrangement in the future (see Section 7.2.4.2). And, the size configuration will be affected by provisional "A" endorsements being converted into "A" endorsements.

The vessels that would qualify under the high MLR had groundfish revenues of $195.6 million over the window period ($317,200 per vessel), while those that would not qualify had groundfish revenues of $6.4 million ($7,600 per vessel), or 5 percent of total revenues (Table 7-34). In all cases, larger vessel classes averaged greater gross earnings than small vessel classes. Trawlers and longliners in the 60 to 79 foot range had the highest earnings per vessel among the different size categories of the respective fleets, while pot vessels in the 80 plus foot range have the highest earnings per vessel

Table 7–34. Number of vessels, revenues and revenues per vessel for vessels qualifying and not qualifying under the high MLR (those not qualifying under the high MLR would qualify under the low MLR), by gear type for the window period.[a/]

Length Category	Qualifying Under High MLR			Qualifying Only Under Low MLR			Total Vessels in the Window Fleet	Percent Decline Under the High MLR Compared to Total Vessels in the Window Fleet	
	Number of Vessels	Total Revenue	Revenue Per Vessel	Number of Vessels	Total Revenue	Revenue Per Vessel		Vessels	Revenue
				TRAWLERS					
<40 Ft	15	506	33.7	18	44	2.4	33	54.5	8.0
40–59 Ft	183	39,659	216.7	66	512	7.8	249	26.5	1.3
60–79 Ft	139	58,514	421.0	48	1,232	25.7	187	25.7	2.1
>79 Ft	12	1,531	127.6	9	259	28.8	21	42.9	14.5
TOTAL	349	100,210	287.1	141	2,047	14.5	490	28.8	2.0
				FISHPOT VESSELS					
<40 Ft	13	619	47.6	175	120	0.7	188	93.1	16.2
40–59 Ft	19	2,975	156.6	60	110	1.8	79	75.9	3.6
60–79 Ft	3	1,140	380.0	13	125	9.6	16	81.3	9.9
>79 Ft	6	2,221	370.2	6	51	8.5	12	50.0	2.2
TOTAL	41	6,955	169.6	254	406	1.6	295	86.1	5.5
				LONGLINERS					
<40 Ft	154	3,744	24.3	300	155	0.5	454	66.1	4.0
40–59 Ft	68	9,539	140.3	129	992	7.7	197	65.5	9.4
>59 Ft	14	2,735	195.4	41	614	15.0	55	74.5	18.3
TOTAL	236	16,018	67.9	470	1,761	3.7	706	66.6	9.9
GRAND TOTAL	617	195,731	317.2	846	6,418	7.6	1,463	57.8	3.2

[a/] Revenues and revenues per vessel in thousands of dollars.

among all sizes of pot vessels. Although this information may suggest that the fleet would evolve into having only vessels over 60 feet in length, it is important to remember the value of permits will be determined on the basis of profits and not gross returns. Additionally, while a large vessel may have greater profits than a single small vessel, its profits may not be greater than the combined profits of all the small vessels whose permits would have to be acquired in order to remove an equivalent amount of harvest capacity from the fishery. Insufficient data is available at this time to determine whether a particular vessel class would produce the highest net earnings across the various fishing strategies pursued by members of each gear group.

Ineffective License Limitation. As noted in Table 7-24, there would be a higher initial percentage of small vessels in the pot fleet under a one pound qualifier than with the higher MLRs. The vessel length composition of the trawl and longline fleets would be quite similar under either option. Because this option would result in a greater availability of less expensive permits, it would be much easier for very large vessels to acquire the necessary permits to enter the fishery.

ITQs. Initially, an ITQ system would assign harvesting rights, largely on the basis of landings history, to a group similar in size and composition to the window fleet. Subsequently, a period of ITQ accumulation would be expected, in which more productive vessels would secure additional fishing rights from those less efficient. This would be expected to concentrate fishing activity among the most efficient sizes of vessels for fishing a particular species or assemblage. Because there would be fewer restrictions on vessel size and a greater emphasis placed on obtaining the least cost method of harvesting the resource, this option for limiting entry could result in an eventual fleet composition that is dramatically different than any of the other options.

Conclusions.

Under license limitation, the available resource would continue to be harvested under conditions where no vessel has claim to particular amounts of fish. This would continue to provide an incentive to use vessels of a size that are able to harvest the resource as quickly as possible, then harvest nonlimited groundfish or turn to nongroundfish fisheries. However, since none of the MLR options is likely to eliminate the use of trip limits, incentive to increase investment will probably be inhibited. Because equivalent harvest capacity cannot be maintained in downsizing permits, the fleet is more likely to evolve into a large vessel fleet than a small-vessel fleet under the licensing options, unless large vessels become less profitable than small vessels. With the large degree of overcapitalization currently in the fishery, even if the proportion of large vessels in the fleet increase, it seems unlikely the number of small vessels will become insufficient. It is likely to be much easier to acquire the permit(s) necessary to bring a large vessel into the fishery under the one pound option than the higher MLR options.

An ITQ program would probably be less constrained with respect to vessel size than the licensing options. Additionally, since there would be less emphasis on the speed of harvest, different sizes of vessels could emerge as being more profitable under ITQs than under continued open access fishery conditions.

7.6.3 Effect on Gear Configuration of the Fleet

License Limitation. Under status quo, the gear configuration of the fleet would fluctuate freely in response to efficiency considerations and Council allocations. A license limitation system will not

keep vessels using a gear which would otherwise go unused. If a gear is unprofitable under status quo, it will not suddenly become profitable under license limitation. The possession of a license allowing use of a gear will not generate additional profits or keep vessels in business which would otherwise go bankrupt.

The gear composition of the initial fleet under the high MLR and one pound options is shown in Table 7-35. As intended, the high MLR fleet maintains the same balance of vessels as were used actively during 1987. There would be 349 trawl, 41 pot and 236 longline permits initially issued; 56 percent, 7 percent, and 37 percent, respectively. Under the adopted MLR there would be a slightly larger percentage of trawl vessels. Under the adopted MLR fleet there would be 388 trawl, 42 pot and 229 longline permits initially issued; 59 percent, 6 percent, and 35 percent, respectively. As previously discussed, if it is profitable to combine permits from two or more small vessels into a single permit for a larger craft, the numbers of vessels using a gear would change, changing the gear composition of the fleet. The capacity of vessels using a gear should remain unchanged if appropriate combinations are allowed. Gear composition may also be affected if a disproportionate number of vessels for a particular gear group qualify through the appeals or provisional permit processes.

Under the one pound MLR, the initial fleet would be comprised of 490 trawlers, 295 pot vessels and 706 longliners; 33 percent, 20 percent and 47 percent respectively by gear (Table 7-35). This option would result not only in higher numbers of vessels being permitted, but in a much larger percentage of the permits being issued to pot and longline vessels. The fact that pot and longline components of the window fleet are proportionately larger than trawl indicates that greater entry and exit of vessels occurred within the former categories during the window period.

ITQs. Assuming that under an ITQ system individual quotas do not include a gear endorsement, the gear configuration of the active fleet will depend upon the relative efficiency of the limited entry gears. If one gear becomes more profitable than another, given economic conditions at the time, quota will likely be purchased by vessels with the more profitable gear from vessels with the less profitable gear. Thus, the gear configuration of the active fleet under ITQs may differ considerably from that which emerges under status quo or either of the licensing options.

Conclusions.

The initial gear configuration under the higher MLR options provides for a mix of gear usage similar to that observed during the 1987 fishery, while the one pound option would issue permits to a larger percentage of longline and pot vessels. The adopted option will allow a slightly larger proportion of trawlers than were present in the 1987 fishery. With any option, the initial gear composition of the fleet will change from the composition at initial issuance only to the extent that permits are combined to accommodate larger vessels, and additional vessels qualify through the appeals, or provisional permit procedures.

With ITQs, the particular combination of gears active in the fishery would be much more responsive to short-term economic conditions. That is, quotas would be transferred to the vessels with the most efficient gear given the economic circumstances in the fishery. Since the sellers of quotas in this situation would benefit without needing to invest in new gear, relatively fewer vessels with multigear capability might be expected under an ITQ system than under the license limitation alternative.

Table 7-35. Number and percentage of vessels by gear in the window fleet, the 1987 "active"[a/] fleet, the high MLR fleet and the adopted MLR fleet.

	Trawl	Fishpot	Longline
Window Fleet (1 Pound)	490	295	706
Percentage	(32.9)	(27.3)	(47.4)
1987 Active Fleet	348	30	218
Percentage	(58.4)	(5.0)	(36.6)
High MLR Fleet	349	41	236
	(55.8)	(6.6)	(37.7)
Adopted MLR Fleet	388	42	229
Percentage	(58.9)	(6.4)	(34.8)

[a/] As described in Section 4.4.4, the active fleet during 1987 for fishpot and longline gears was determined to be those vessels having at least three landings during the year, with the particular limited entry gear.

Under status quo, the gear configuration of the fleet would fluctuate partly in response to Council allocation decisions and the future regulatory environment. License limitation restricts the degree to which any gear group might grow, but would not limit declines in usage of a particular gear if that gear became unprofitable.

7.7 Effects on Groundfish Firm Stability

Effective License Limitation. Groundfish firm stability under license limitation will be affected by the: (1) effect of license limitation on average profits and variability of profits and (2) price paid for the permit relative to the profits available.

Effective license limitation, may maintain average profits by limiting increases in the number of vessels among which allowable catch is divided and the need for restrictive regulations which reduce vessel efficiency. Under status quo, the number of vessels in the fishery increases in response to the availability of above normal profits. At some point, there is a lag between the time adequate profits are no longer available in the fishery and when owners have knowledge of the change and so stop making new plans to bring vessels into the fishery. This lag results in below normal profits and an increase in the number of bankruptcies. When a fishing enterprise goes bankrupt, the vessel does not necessarily disappear from the fishery. After being tied up for a short period it will often be sold back into the fishery at some fraction of original cost. The purchaser of the discounted vessel may then be able to operate at a normal profit. Vessels may continue to enter the fishery even with owner knowledge of the presence of below normal profits if: individuals accept lower than normal profits in order to take part in the fishing lifestyle; the subsidized construction cost is less than the price of an equivalent pre-existing vessel (see Chapter 9 on loan guarantee and tax deferral programs); there are inflated expectations about future profitability; or discounted vessels are available from other depressed fisheries or new limited access fisheries. Vessels entering on these bases may drive profits farther below normal levels destabilizing the financial conditions of vessels already in the fleet. Again, as bankruptcies occur, vessels will not leave the fishery, unless there are other more profitable fisheries to which the vessel may be converted. Otherwise, vessels remain in the fishery, refinanced by new operators who are able to continue fishing because of lower nominal capital costs. It is because of these factors, combined with lack of property rights over one of the primary inputs to the business (the fish), that economic processes do not adequately control the number of vessels in the fishery.

Even with control over number of vessels, profits will still vary with stock conditions, exvessel price, changing vessel efficiency, and the amount of total vessel capacity used by participants. By preventing expansion of number of vessels, license limitation reduces the downside and increases the upside variability of profits, i.e. when profits are at normal levels vessels are unable to continue entering to drive profits lower and when profits are above normal vessels will be prevented from entering and dissipating the higher profits.

Prices paid for a permit should reflect both the expected above normal profits and the variability of those profits. The purchase price paid for a permit should reduce the buyer's expected fishery profits to normal levels. Once a permit system is in place, above normal profits will be received mainly by initial permit recipients, those who own permits which appreciated because of improved profit expectations, and those who purchase permits at prices lower than would they would be willing, given the above normal profits available they may be able to earn. Under the typical supply and demand

situation, it is only the marginal producers who will completely dissipate their above normal profits in the purchase of a permit.

If the permit price were to completely capture above normal profits for a particular individual, any time the above normal profits anticipated by the market fail to materialize, there will be a greater chance of bankruptcy than if potential above normal rents had not been extracted through permit purchase. However, if the permit price only captures the difference between above normal profits available under status quo and those expected under license limitation, then it is not likely the price paid for a permit will act to increase the potential for bankruptcy. When profits increase, becoming higher than expected, vessels already in the fishery will be better off under license limitation because there will not be new entrants to dissipate profits (though profits may be dissipated to some extent by increased activity among current permit holders).

Cyclical increases in stock size and availability along with temporary increases in exvessel prices may inflate expectations about future profits. During times of temporary upswings and inflated expectations, permit market prices may be inflated and individuals entering the fishery through the purchase of a permit may pay too much, putting themselves at risk for future bankruptcy. Also, a permit price above that reflecting available above normal profits may be paid by individuals who value being a fisherman beyond the financial profits the profession may provide. These individuals receive "psychic income" from fishing and may be willing to pay more than would be warranted on the basis of anticipated above normal profits. This may place them in a situation of greater financial risk. However, if the market is functioning properly and there is a generally known market price, there will be no reason for anyone willing to pay more than the market price to do so. If markets are not functioning effectively and permits prices are determined more through a negotiation process, there may tend to be more instances of individuals paying more than would be warranted on the basis of expected monetary returns.

Overall, under effective license limitation there will be two counteracting forces affecting groundfish firm stability. First, the number of vessels in the fishery should be more stable reducing the chances that profits will decline and preventing the dissipation of profits during periods of high returns. Second, to the degree that the expected above normal profit on which a permit price is based fails to materialize, the permit owners who purchased at the margin of their ability to be profitable will experience below normal profits. For vessels which are able to pay less than the difference between expected above normal profits under status quo and limited entry, the limit on vessel entry will put the vessel owners in a stronger position. For vessels purchasing closer to the margin of their profitability, failure to realize anticipated profits will be more of a concern, particularly if bad years occur before these vessel owners have had a chance to receive the benefits of several good years of returns.

Ineffective License Limitation. Vessel owners receiving permits are not likely to experience increased profitability if fleet levels are not different from status quo levels. Permits for new entrants will be plentiful and profits should tend toward normal or lower levels, resulting in low permit prices. There will be much room for expansion of the active fleet, therefore, the stability of fishing operations is not likely to be improved.

ITQs. Over time, the need to purchase ITQs will result in a the level of profits available from the fishery near normal levels and decrease profit variability. The profitability under an ITQ system would vary primarily with expectations about exvessel price and status of the stock. With greater

certainty of share of harvest afforded by ITQs, the payments necessary to extract above normal profits out of the fishery will be higher. Since ITQs provide greater certainty, normal profit levels will be lower, more rents would be extracted from the fishery and net benefits to the nation would increase.

Conclusion. Both ITQs and permits can be expected to reduce the bankruptcies which are promoted under status quo when numbers of vessels in the fishery continue to expand despite the presence of normal or below normal profits. Both permits and ITQs will tend to extract above normal profits from the fishery when they are purchased by the new entrant and may lead to increased instability for the marginal participant. Some individuals may put themselves in a poor financial situation by paying more for a permit than would be warranted because of the desire to participate in a lifestyle or inflated profit expectations. To the degree that there are effectively functioning markets for access rights, the chances of this occurring will be reduced. With the decrease in risk entailed by the certainty of harvest provided by ITQs, profits of businesses will be more stable, normal profits will be lower, and the amount of above normal profit extracted from the fishery higher as compared to the status quo or license limitation options. In general, more stability than under status quo is expected under either effective license limitation or ITQs.

7.8 Effects on Other Fisheries

As discussed in Section 7.2.3.2, the window fleet of groundfish vessels participated extensively in other fisheries during the four-year window period. The one pound qualifying option would have very little impact on the movement of vessels in and out of a variety of fisheries. With smaller numbers of permits, those holding permits are more likely to participate to a greater extent within the groundfish fishery, while those without permits (and unwilling to buy them) are likely to fish other available fisheries more heavily, perhaps in combination with fishing for groundfish with exempted gear or in the open access portion of the fishery. The higher MLR options are not expected to inhibit the abilities of the permitted fleet to participate in other fisheries. However, it may direct somewhat greater amounts of effort to other fisheries from nonpermitted vessels. Many of the alternative fisheries in the Pacific are either already under limited entry systems (e.g. salmon and Oregon shrimp) or are under consideration for limitation (e.g. West Coast crab and Alaska sablefish) Compared with a very restrictive permit system, ITQs would provide a greater potential for allowing fishing operations to participate in numerous other fisheries, while maintaining a part-time presence in the groundfish fishery.

The value of groundfish landings coded for groundfish trawl, pot or longline gears amounted to $202 million during the window period (not including line and criteria-line landings; Tables 7-25a and b to 7-27a and b). Of this value, three percent was landed by vessels which are not expected to meet MLRs. This means vessels which are not anticipated to qualify may be looking to makeup $6 million worth of window-period landings in other fisheries (an average of about $1.5 million a year), though some of this effort may be absorbed by the open access portion of the groundfish fishery.

Additional information on past participation of salmon and shrimp trawling vessels in the groungfish fishery is provided in Tables 7-36 and 7-37, respectively. More than 7,000 vessels landed salmon from 1984 through 1990, of which roughly 1,400 had landings of groundfish using limited entry gear. An estimated 924 had groundfish landings within the window period, with just over 200 qualifying for "A" endorsements under the adopted MLR. Closer to 300 would receive "A" endorsements under the high MLR.

Table 7-36. Qualification status and activity of 1988 salmon troll vessels using limited entry gear in the groundfish fishery.[a/]

Gear	Endorsement and Landing Requirement Option Met					Vessels Entering After the Qualifying Window (through 9/30/90) and Amount of Landings		
	"A" Endorsement		"B" Endorsement[b/]					
	High MLR	Mid-MLR (with 500 lb landing day requirement)	Three Landing Days Over 500 Pounds	One Landing Day of Over 500 Pounds	One Landing Day of One or More Pounds	At Least Three Landing Days of More Than 500 Pounds	At Least One Day of Landing With More Than 500 Pounds	At Least One Landing Day of One or More Pounds
Trawl	47	54	10	21	24	4	11	14
Pot	20	19	2	18	75	6	21	52
Longline	79	74	35	110	158	27	50	96
Longline & Pole	237	136	75	229	561	45	114	405
Total	299	206	86	263	625	67	135	475
Number of Vessels =	7,061				Vessels With No Limited Entry Gear Landings of Groundfish = 5,641			

a/ Salmon troll vessels were identified as those vessels with landings of salmon with troll or pole gear in the PacFIN Research Data Base.

b/ "B" endorsement landing requirements are matched with the complementary mid-MLR, i.e. if the "B" endorsement landing requirement only counts days over 500 pounds then, in order to estimate the number of "B" endorsements which might be issued, this requirement is matched with the mid-MLR which only counts days over 500 pounds.

Table 7–37. Qualification status and activity of 1988 shrimp trawl vessels using limited entry gear in the groundfish fisheries[a/] (Source: PacFIN Research Database). (Page 1 of 2)

INPFC Area/Gear	Endorsement and Landing Requirement Option Met					Vessels Entering After the Qualifying Window (through 9/30/90) and Amount of Landings		
	"A" Endorsement		"B" Endorsement[b/]					
	High MLR	Mid MLR (with 500 lb landing day requirement)	Three Landing Days Over 500 Lbs	One Landing Day Over 500 Lbs	At Least One Landing Day	At Least Three Landing Days Over 500 Lbs	At Least One Landing Day Over 500 LBS	At Least One Landing Day
VANCOUVER AREA								
Trawl	–	–	–	–	–	–	–	–
Fishpot	–	–	–	–	1	–	–	–
Longline	–	–	–	–	2	–	–	–
Longline & Pole	–	–	–	–	2	–	–	–
Total	–	–	–	–	2	–	–	–
Number of Vessels = 15	Vessels With No Limited Entry Gear Groundfish Landings = 13							
COLUMBIA AREA								
Trawl	79	85	7	12	13	12	14	14
Fishpot	5	5	–	2	4	1	1	2
Longline	3	4	1	4	7	–	–	2
Longline & Pole	3	4	1	4	10	1	1	3
Total	83	90	8	17	25	14	16	18
Number of Vessels = 170	Vessels With No Limited Entry Gear Groundfish Landings = 48							
EUREKA AREA								
Trawl	31	35	2	6	6	2	4	4
Fishpot	1	2	–	2	4	–	1	1
Longline	–	–	–	1	1	2	2	2
Longline & Pole	–	–	2	3	14	1	3	6
Total	32	36	3	11	18	4	7	12
Number of Vessels = 63	Vessels With No Limited Entry Gear Groundfish Landings = 13							

Table 7-37. Qualification status and activity of 1988 shrimp trawl vessels using limited entry gear in the groundfish fisheries[a/] (Source: PacFIN Research Database). (Page 2 of 2)

INPFC Area/Gear	Endorsement and Landing Requirement Option Met					Vessels Entering After the Qualifying Window (through 9/30/90) and Amount of Landings		
	"A" Endorsement		"B" Endorsement[b/]					
	High MLR	Mid MLR (with 500 lb landing day requirement)	Three Landing Days Over 500 Lbs	One Landing Day Over 500 Lbs	At Least One Landing Day	At Least Three Landing Days Over 500 Lbs	At Least One Landing Day Over 500 LBS	At Least One Landing Day
MONTEREY AREA								
Trawl	7	6	1	1	–	–	–	–
Fishpot	1	–	2	5	6	–	–	–
Longline	–	1	–	–	–	–	–	–
Longline & Pole	2	4	–	2	4	–	–	1
Total	8	7	3	7	8	–	–	1
Number of Vessels = 19	Vessels With No Limited Entry Gear Groundfish Landings = 9							
CONCEPTION AREA								
Trawl	9	9	1	6	9	1	1	2
Fishpot	–	–	–	2	5	–	1	4
Longline	–	–	–	–	–	–	–	–
Longline & Pole	1	–	–	4	10	–	1	3
Total	9	9	1	12	18	1	2	9
Number of Vessels = 26	Vessels With No Limited Entry Gear Groundfish Landings = 1							
WEST COAST TOTALS								
Trawl	126	135	11	25	28	15	19	20
Fishpot	7	7	2	11	20	1	3	7
Longline	3	5	1	5	10	2	2	4
Longline & Pole	6	8	3	13	40	2	5	13
Total	132	142	15	47	71	19	25	40
Number of Vessels = 293	Vessels With No Limited Entry Gear Groundfish Landings = 84							

a/ Shrimp trawl vessels were identified as those vessels with landings of shrimp with trawl gear as recorded in the PacFIN Research Data Base.

b/ "B" endorsement landing requirements are matched with the complementary mid-MLR, i.e. if the "B" endorsement landing requirement only counts days over 500 pounds then, in order to estimate the number of "B" endorsements which might be issued, this requirement is matched with the mid-MLR which only counts days over 500 pounds.

It is certainly important to note that more than 700 of these vessels, which had some groundfish landings during the window, will not receive "A" endorsements. This number is compounded by the additional 475 vessels which have entered the fishery since the close of the window period, as conditions in the salmon fisheries have worsened. But it is equally important to recognize that roughly 40 percent of these vessels active during the window landed groundfish with gear that was not clearly identified as longline. Also, far fewer than half of the nonqualifying vessels using line or pot gear had a single landing of more than 500 lb. Thus, while many salmon fishermen may have to buy limited entry permits to accomodate their desired level of groundfish participation, many others may be able to operate productively within the bounds of the remaining open access fishery for groundfish. Finally, at least 80 percent of those vessels fishing salmon during the 6 years summarized in Table 7-36 harvested no groundfish with limited entry gears.

Vessels which trawled for shrimp during the four and six year periods shown in Table 7-37 had a much higher rate of groundfish participation with limited entry gear. Of 293 vessels with shrimp landings during the window period, 209 had some limited entry groundfish landings during the same period. About two-thirds of those with window landings would qualify for an "A" endorsement. As with the salmon vessels, nearly all shrimpers who had trawl groundfish landings had at least one trip of 500 pounds or more, while less than half of those using line or pot gears had one trip above that threshold. With initial allocation of permits, it is expected that at least half of the vessels fishing for shrimp will have an "A" endorsement allowing them to fish for groundfish, as well. Shrimp vessels not receiving permits may be disadvantaged somewhat more than salmon fishermen because trawl gear is usually the groundfish gear used by them, which they would not be allowed to use in the open access groundfish fishery. With the size of most of these vessels, however, it would generally not be profitable for them to operate under the restrictive trip limits of the open access fishery, in any event. These vessels might elect to use an excluded gear, such as nets, if higher landing limits are used in that portion of the open access fishery.

7.9 Administrative, Enforcement, and Management Costs

Administrative Costs.

License Limitation. The directly measurable administrative costs under license limitation can be expected to be higher than those under status quo management. This section will first cover administrative costs for license limitation in general, and then discuss how costs may vary under effective and ineffective license limitation.

The following cost estimates for the license limitation alternative are based on the assumption that administration of the license limitation alternative and coordination of the issuance review board's activities will be a new (currently unfunded) function of NMFS regional offices.

For the purpose of this assessment, administrative costs will be broken down into the general categories of: (1) personnel (does not include overtime), (2) overhead (including office supplies, furniture, and computer equipment) and (3) travel/per diem.

The functional categories to which costs are assigned are: (1) the issuance and transfer of federal permits and (2) operation of the review board relative to matters of issuance of federal permits. Most of the issuance review board responsibilities would come during the initial issuance of permits. After initial issuance and expiration of "B" and provisional "A" endorsements, the review board's only

responsibilities would be to advise the issuing authority on matters of reissuance involving determinations of whether the: (1) size endorsement on a proposed combination of LE permits will result in an increase in capacity potential and (2) holder of an endorsement which expires on transfer of an LE permit would be allowed to replace a lost vessel and maintain the endorsement on a reissued permit.

The following estimates represent basic start-up costs in the first year of operation as well as the continuing cost of the program after start-up. Estimated costs for legal counsel are unknown, however, the costs of defending the limited entry program would not be included among the costs of issuing permits. If fees are only charged when permits are issued, the fee for issuance would likely be $400 to $600, the renewal fee through 1996 would be between $150 and $300, and the renewal fee after "B" endorsements expire would be between $200 and $350. If a fee for applications is charged, the initial fee would be lower. If it was anticipated that 25 percent more might apply than would receive permits, the fees might run between $50 and $150 less. Both the NMFS and Council administrative costs are included in the estimates of these fees. The number of applicants and permits is difficult to estimate because of the large number of California line vessels which may or may not have used longline gear.

State costs of administering the limited entry program are likely to be relatively low. Programming and computer resources would be necessary for one time development of a database of landings records covering the qualifying period. When the state receives a request for landings records, it would then be relatively easy to extract the records for the particular vessel for which a request is received. It may be within the state authority to charge moderate amounts for providing these services. While state administrative costs may be low, enforcement costs may be higher, as discussed below.

	First Year	Subsequent Years[18/]
A. Personnel		
Administrative Staff (Salaries and Benefits)		
1. Branch Chief (GS-13)	$ 54,389	$ 54,389
2. Administrative/Hearings Officer (GS-11)	$ 38,162	$ 38,162
3. Clerical Technicians (GS-05)		
Permanent - 2	$ 41,633	$ 41,633
Temporary - 4	$ 83,266	0
4. Secretary (GS-04)	$ 18,606	$ 18,606
B. Overhead	$236,056	$152,790
1. Rents(Inhouse-NWR)/Communication/Utilities	$ 10,000	$ 10,000
2. Supplies/Materials	$ 10,000	$ 10,000
3. Equipment (Computers, Furniture, etc.)	$120,000	$ 10,000
4. Contracts	$ 40,000	$ 10,000
C. Travel/Per Diem	$ 5,000	$ 3,000
SUBTOTAL	$185,000	$ 43,000

18/ All values based on Calendar year 1992 rates and prices.

D. Operations of the Issuance Review/Appeals Board

1.	Appeals Staff Salaries and Benefits		
	Administrative Assistants (GS-05)		
	Permanent - 1	$ 18,606	$ 18,606
	Temporary - 2	$ 37,212	$ 0
2.	Communication/Utilities/Supplies	$ 3,000	$ 3,000
3.	Travel (Per Diem, Air Fare, Meeting Room)	$ 40,000	$ 5,000

(Assumes Seven Board Members, Administrative Staff, Hearings Officer, and at Least Ten Meetings the first Year and Two Meetings Per Year in Subsequent Years at Different Locations Throughout Washington, Oregon, and California.)[19/]

SUBTOTAL	$ 98,818	$ 26,606
GRAND TOTAL	$519,874	$222,396

ITQs. The initial expenses of implementing an ITQ system might be similar to that for a license limitation system, however, ongoing administration and enforcement costs can be expected to be much higher for two reasons. First, fishing rights in the form of ITQs are transferable in fractions compared to permits which are transferred in total. In a multispecies fishery, frequent transfer of quota to acquire sufficient target and bycatch quota, or transfer of excesses to vessels in need of ITQs would be anticipated under an ITQ system. This means increased administrative costs in carrying out transfers, and increased monitoring and enforcement costs to determine whether the vessel owner held sufficient ITQ to cover a particular landing when the landing occurred. Second, ITQs create greater incentives for underreporting and not reporting landings or misreporting species. This would be expected to increase enforcement and monitoring costs.

Compared to a permit system, it is likely that more of the ITQ costs would not be recoverable as part of the issuance costs.

Enforcement Costs

The Council's Enforcement Consultants have indicated the additional time required to monitor the limited access portion of the fishery would not be significant and may actually decline, though significant additional time may be involved when possible violations are detected. The additional enforcement effort would involve: (1) checking for an LE permit if a limited entry gear is found on board during a routine boarding, (2) checking that fish tickets have the correct gear coding and (3) personnel and computer time involved in listing all vessels making landings with limited entry gear and matching that list against the list of permitted vessels.

The need for additional enforcement will depend on the problems which develop in the open access fishery. If increased entry in the open access fishery occurs, enforcement costs could escalate. However, increased entry into the open access fishery would be an indicator of the availability of profits in the groundfish fishery, and the likelihood that the limited access program had been

19/ Council would be responsible for covering the portion of these expenses related to travel and per diem for members of the review committee.

successful in preventing additional capital investment in the sector of the fishery which takes close to 95 percent of the harvest. This would indicate that benefits would easily outweigh costs, including enforcement costs[20/]. The potential enforcement costs for the open access fishery are difficult to estimate, but an estimate of $500,000 was provided as a high end cost to aid in the demonstration of net economic benefits. The $500,000 estimate is an absolute figure, not relative to status quo. In assessment of net benefits, enforcement costs must be compared to expected enforcement costs under status quo, and, in this case, under an alternative which would not provide for an open access fishery. Under status quo, the Council is moving toward regulations which are more difficult to enforce. Trip limits have been steadily declining (Chapter 5) and in early 1991 were resulting in estimated compliance rates of only 60 percent for some species. Heavy discarding was also reported. Several enforcement officers are currently being added to cover the status quo management regime. In response to problems with the traditional trip limits, the Council attempted an innovative approach to begin 1992 by using a cumulative trip limit. This most recent version of vessel trip limits may approach ITQs in the difficulty of monitoring and enforcement, e.g. it is impossible to verify that any amount of fish on board, which is less than the limit, is in excess of the vessels' cumulative limit without checking past landings records for the period over which the cumulative limit applies. Enforcement effort under status quo is already increasing, and if the current direction of status quo management is maintained, significant increases in enforcement effort can be anticipated. This would significantly decrease the amount of benefits which must be shown to demonstrate net national benefits from the license limitation program. Similarly enforcement costs under an ITQ program would also be high and reduce the net effect of the greater benefits which may be anticipated under that program.

Enforcement costs of the open access portion of the adopted limited entry program must also be balanced against a program which does not include open access opportunity. Such a program might have up to four times as many permits if most vessels were to be granted a permit. Compliance costs of such a program (based on the qualification of an additional 3,000 vessels at $100 per vessel per year[21/]) would be about $300,000; administrative expenses would increase significantly with the addition of new employees and a large increase in the number of appeals to be processes; and program effectiveness would decline with the creation of a large number of permits for smaller producers which could later be moved to larger producers.

While there might be greater benefits from an ITQ program, enforcement costs would be even higher than under the adopted license limitation program.

The Council's Enforcement Consultants do not foresee more money being made available to cover enforcement of limited entry. The additional costs of enforcement would not be covered under the current enforcement budgets. Enforcement of license limited entry would be made a priority at the expense of other areas of marine enforcement.

20/ Section 7.2.2.2 indicates the amount of savings which might occur through the elimination of vessels in a hypothetical fleet. These results are extended to demonstrate how program costs may be outweighed by benefits. Conclusions in Chapter 8 indicate that the program is likely to result in net benefits to the nation.

21/ The $100 a year estimate is based on one hour a year of work in renewing the permit and other permit related activity and a legal consultation regarding permit transference every ten years. The compliance costs for making initial application may be higher, particularly for owners of vessels for which gear codes have not been properly recorded.

Management Costs.

License Limitation. Under license limitation, an allocation would have to be made between included and exempted groundfish gear groups. Monitoring the harvest of open and closed access quota could be easily achieved through the current record keeping system, though more effort would have to go toward making sure gear is specified when fish tickets are filled out.

Generally, the more quota there is per vessel the less controversial the allocation issue. Effective license limitation implies more quota per vessel, and therefore less controversy and cost in resolving allocation issues. Allocation decisions within the limited access group would probably become more stable and require fewer management resources. Limited access and open access allocations are resolved within the amendment, but may be the subject of future plan amendments.

While under effective license limitation, trip limits may be less restrictive for the limited entry gear, controls may be required for the open access gears. To date, the open access gears generally have not been significantly affected by Council trip limit management. With a separate allocation to these gear groups, harvest controls may become necessary to keep harvest within the quotas. An increase in the number of positions on the GAP would be required to allow the body to advise the Council on appropriate open access effort control measures. If two positions were added to the GAP, additional costs to the Council would be about $4,000 per year. If entry to the open access fishery increases, and controls became more restrictive, issues of allocation and the type of controls to be imposed would become more contentious, similar to what has been observed with the gears primarily affected under the current management system. As an example of amounts that might be spent on contentious management and allocation issues, it is estimated that the Council spent $10,000 a year in 1988 and 1989 on meetings, the primary focus of which was resolution of the trawl/nontrawl sablefish allocation issue. Additionally, numerous Council and GMT meetings dealt with this issue as one item on a larger agenda. Under an ineffective license limitation system, the same new management costs would be expected, however, there would be no gain from reducing the controversy over allocation between users of limited entry gear.

ITQs. Under ITQs, the market could be used to resolve all but the initial allocation issue. Costs affiliated with the Council's system of trip limits and inseason adjustments would be eliminated. The primary management task of the Council would be to set the annual quota levels for ITQ species. The significant costs are expenses related to administration, monitoring and enforcement.

Conclusion. Under effective and ineffective license limitation systems:

- total administrative costs would be close to $520,000 in the first year declining to about $222,000 annually in subsequent years.
- increases in administration, monitoring and enforcement costs would probably be small relative to an ITQ system (it may be possible to cover most of the administration costs through permit fees), and
- the amount by which legal expenses may increase because of lawsuits or investigation and prosecution of limited entry violations is uncertain.

- Council costs would increase because of the need to GAP members to represent the open access fishery.

Under an effective license limitation system:

- administrative costs would likely be higher than under status quo, and monitoring and enforcement costs may or may not be higher depending on the direction which status quo regulations take.

- there may be some increase in the Council's ability to anticipate response to management actions, and

- there may be fewer management costs associated with controlling the rate of harvest and allocation among limited entry gears.

Under ITQs, the costs of management decisions would decline significantly; administration, monitoring and enforcement costs would increase significantly.

7.10 Socio-Economic and Social Impacts

The Council has acquired baseline socio-economic profiles of all coastal counties from the Minerals Management Service. These documents provide a variety of social and economic data including community racial and ethnic composition, population and employment trends, information on public services and utilities, industry characteristics, housing profiles, and characteristics of marine activities. The documents are available for review at the Council office. The Council does not expect the license limitation program to have a significant effect on the socio-economic structure of the communtiy except as noted in this chapter.

7.10.1 Effects on Income and Employment

7.10.1.1 Level of Income and Employment

The effects on income and employment would be three-fold: (1) direct effects from changes in the number of individuals employed in fishing operations, (2) indirect effects from changes in the number of individuals employed in sectors supporting fishing operations and (3) induced effects from changes in personal expenditures by those employed directly and indirectly in the fishing industry. This discussion focuses on coastwide rather than geographically localized or nationwide effects. As was shown in Table 7-33, the amount of total landings by vessels using limited entry gears, but not meeting the high MLRs, is relatively small compared to the total landings by vessels which would qualify. Table 7-38 compares total employment, unemployment rates, total personal income, total fishing income and groundfish income by gear for INPFC areas. Significant modifications in the geographic distribution of fishing activity are not anticipated but possibilities for such changes are discussed in Section 7.5.3.2. Nationally, any increase in efficiency would be expected to raise personal income. Efficiency is discussed in terms of cost and profitability in Section 7.2.

Effective License Limitation. The primary effect on direct employment in the industry will be a decrease in the number of onboard positions with a lower number of vessels operating. Total number of labor hours demanded in a year would decline only if fewer vessels are more labor efficient, i.e.

Table 7-38. Estimated contribution of the fishing industry to coastal economies in 1989 by INPFC statistical areas (dollar values and total employment in thousands).[a/]

INPFC Area	Personal Income and Civilian Employment for Adjacent Coastal Counties In 1988[b/]			Total 1989 Local Personal Income		Groundfish Portion of the Total Income (Percent)
	Total Personal Income (Dollars)	Total Employment	Unemployment Rate (Percent)	All Fisheries (Dollars)	Groundfish (Dollars)	
VANCOUVER	40,201,000[c/]	1,083	5.1	145,000	18,263	13.0
Trawl					14,900	10.0
Pot					0	0.0
Hook-and-Line					3,363	2.0
COLUMBIA	8,473,000[d/]	281	6.9	217,000	75,503	35.0
Trawl					70,800	33.0
Pot					2,300	1.0
Hook-and-Line					2,403	1.0
EUREKA	2,153,000[e/]	63	7.9	98,000	41,690	43.0
Trawl					39,900	41.0
Pot					115	<0.5
Hook-and-Line					1,675	2.0
MONTEREY	60,343,000[f/]	1,337	4.7	113,000	46,216	41.0
Trawl					39,700	35.0
Pot					2,396	2.0
Hook-and-Line					4,120	4.0
CONCEPTION	276,768,000[g/]	6,958	4.4	246,000	4,570	2.0
Trawl					553	<0.5
Pot					45	<0.5
Hook-and-Line					3,972	2.0

a/ Estimates are calculated using the Fisheries Economic Assessment Model prepared by Jensen, Radtke, Broonsflower. For an explanation of the general concept of the model, please review earlier publications of the Council, specifically the "Review of the 1987 Ocean Salmon Fisheries".

b/ Data for 1989 is not yet available for the entire West Coast.

c/ The estimate of total personal income for coastal areas adjacent to the Vancouver INPFC area includes all of the Clallam, Whatcom, King, Snohomish and Skagit counties.

d/ The estimate of total personal income for coastal areas adjacent to the Columbia INPFC area includes coastal counties from Jefferson County, Washington to Coos County, California.

e/ The estimate of total personal income for coastal areas adjacent to the Eureka INPFC area includes coastal counties from Curry County, Oregon to Humboldt County, California.

f/ The estimate of personal income for coastal areas adjacent to the Montery INPFC area includes costal counties from Mendocino County, California to Montery County, California.

g/ The estimate of total personal income for coastal areas adjacent to the Conception INPFC area includes coastal counties from San Luis Obispo County, California to San Diego County, California.

produce more fish per unit of labor. This result would only be expected with less restrictive regulations or increases in vessel efficiency. There would be an indirect employment effect which would result in a lower number of individuals employed in industries that serve and supply the vessels; e.g., fuel docks, ship yards, gear manufacturers, etc. The lower indirect employment would not be proportional to the smaller fleet size as remaining vessels use more inputs such as gear and fuel. There should be little indirect effect on jobs which are dependent only on the amount of groundfish which crosses the dock (e.g., processors, wholesalers, etc.) as total harvest is not likely to change. Table 7-39 shows the amount of personal income generated per pound of fish landed attributable to harvesting and processing activities. The total and per pound impact of processing activities is not expected to change.[22/] Table 7-40 shows the total state impacts from the harvesting and processing sectors. The impacts are divided into direct, indirect and induced impacts. The direct and induced portions of impacts from harvesting are expected to be higher, and the indirect portion of the impacts from harvesting is expected to be lower. Income impacts attributable to processing are not expected to change.

Table 7-39. The dollars of per pound coastal community income impacts (personal income generated) attributable to harvesting activities and processing activities (1989 estimates for Newport, Oregon).

Species	Total Impacts	Vessel Impacts	Processor Impacts
Cod/Rockfish	.64	.33	.31
Sole/Flounder	.69	.33	.31
Sablefish (Regular Fillet)	.55	.32	.23
Sablefish (Export)	1.19	.58	.61

Table 7-40. Typical distribution of one dollar of local personal income generated from the harvesting or processing sectors between direct, indirect and induced income.

	Distribution of One Dollar of Income Impacts			
Sector	Direct	Indirect	Induced	Total
Harvesting Sector	.42	.31	.27	$1.00
Processing Sector (Impacts in Addition to Harvesting Impacts)	.60	.09	.31	$1.00

While the number of jobs may be lower, to the extent that profits in the fishery are higher and not reinvested by further capitalization, the amount of personal income generated by the fishery should

22/ However, an increase in impacts attributed to vessels may occur. If limited entry makes it easier for vessel owners to organize, they may be able to better negotiate higher ex-vessel prices.

be significantly higher. Higher personal income should occur through significant increases in direct income to vessel owners and possibly crew, and consequently, higher induced income when these individuals spend their money. In essence, money which would have been spent on materials and services, instead goes to direct income for those remaining in the fishery and induced income for those who benefit from the personal expenditures of these individuals.

The possibility exists that substantial portions of the available profits may go to reinvestment rather than to income. If this occurs, there may be fewer indirect jobs lost. Anderson (1986) demonstrates that under license limitation some increase in profits should be expected in constant cost fisheries.

If higher profits go to vessel owners or crew not living in coastal communities, more leakages of income from the coastal community may occur. Additionally, if higher profits are captured in the sale of a license, the sectors which would benefit would be those where the individual departing the fishery chooses to spend profits captured through the sale of the permit.

The effect of license limitation on crew income is discussed in Section 7.2.4.1 in the context of the cost of labor as an input. In general, under effective license limitation, the wage rate (crew share) could be lower, compared to a future status quo, while total wages received by a crew member may remain stable or be higher as catch per vessels would be increased. The number of positions in the fishery may decrease. Vessel owner income and entrepreneurial profits would be affected by vessel profits discussed in Section 7.2.

Ineffective License Limitation. In an ineffective license limitation program, the primary change in income impacts would occur through the transfer of some profits (likely a small amount because of the large number of permits issued) from individuals purchasing permits to enter the fishery and to individuals selling permits and departing the fishery. Different industries and locations would lose and gain income depending on the differences in the personal expenditure and investment pattern of the departing individual who takes some profits from the sale of the permit as compared to the entering individual who has fewer profits as a result of the purchase. Dollars will also be transferred from vessel profits and taxpayer expenditures to expenditures on administration and enforcement of the limited entry program. There is no reason to expect a change in the number of individuals and income of others working in the direct, indirect and induced sectors.

ITQs. The expected effects of an ITQ system would be similar to the effective license limitation system with the following differences:

- A greater portion of the revenue would go directly to personal income as efficiency of an ITQ system would be greater than the efficiency of a license limitation system.

- The profits may be more evenly distributed among participants in the fishery as crew and non-owner/operators could accrue ITQs and lease them to vessel owners. Thus, the personal income of "entrepreneurial" crew and non-owner/operators could increase.

- To the degree that crew and non-owner/operators tend to be members of the local community more than vessel owners, more personal income may remain in the local communities.

Conclusion.

- A limited entry system (license limited entry or ITQs) effective in controlling the number of vessels employed in the fishery would be expected to have the following effects in the communities where fishermen and vessel owners live, vessels are serviced, fish processed and marketed, etc:

  - Fewer individuals directly employed in harvesting.

  - Fewer individuals employed in industries supporting fishing vessels (indirectly employed gear manufacturers, boat yard workers, etc.).

  - A stable number of individuals employed in support of other parts of the fish supply chain (indirectly employed processor workers, wholesalers, etc.).

  - A stable or increasing number of individuals supported by the personal expenditures of those directly and indirectly employed (induced employment in grocery stores, service stations, entertainment services, etc.).

- Overall, under an effective limited entry system, as long as the number of owners or individuals selling permits and moving out of the community is relatively low, local income impacts from the fishery would be expected to increase as an increased portion of revenues would go to profits and possibly wages.

- An ineffective license limitation system would not be expected to significantly change income impacts.

- Under a workable ITQ system compared to an effective license limitation, more of the fishing revenue would go directly to income and less to reinvestment.

- An ITQ system may result in higher personal income for crew and non-owner/operators who take the opportunity to purchase ITQs.

- To the degree that crew and non-owner/operators who purchase ITQs tend to be members of the local community more than vessel owners, this may keep more personal income in the local communities.

7.10.1.2 Stability of Employment

The Council currently tries to maintain a year-round season for trawl vessels and small production nontrawl vessels (a stable employment policy), while allowing season closures for large production nontrawl vessels (primarily sablefish longline vessels).[23/] Trip limits have generally been the means used by the Council to slow the trawl harvest rate and maintain a year-round fishery. However, as trip limits become more restrictive, they eventually become ineffective in reducing mortality. While landings are reduced, mortality continues from the unavoidable bycatch. When this happens, limits on an entire complex may be necessary. In 1989, a limit on the deepwater complex was implemented

23/ See Section 5.3.2 for a list of major management actions taken under the groundfish FMP.

for the first time to control sablefish mortality, and the 1991 season began with a limit on this complex. As complex limits become necessary, the constant flow of product is maintained, but levels of employment are reduced. If harvest rates continue to increase, eventually there may be no choice but to begin shortening the season.

Employment stability within the groundfish fishery decreases as the fishing season becomes shorter and annual vessel output falls. This would be a problem primarily for segments of the groundfish fishery which are managed on a seasonal basis (nontrawl sablefish and trawl Pacific whiting) or when trip limits fail to attain the objective of a year-round fishery. The extent to which this destabilization occurs depends upon the magnitude of per vessel revenue reductions, the availability of timely alternative fisheries, and to a lesser extent, the short-term availability of alternative, nonfishing employment within the affected communities.

The evolution of intermittent fishing opportunities leads to periods of underemployment for fisheries workers that may persist for much of the year. In addition to supporting fewer jobs for some periods during the fishing year, the compression of the fishing season necessitates a larger work force during that portion of the year in which fishing continues. This follows from the presence of more vessels (and crew) and the need for processors to handle higher volumes of fish. The ill effects of such boom/bust variability in local economic activity are well-documented in the sociological literature. Since more employees are required at peak times than can be sustained within the fishery communities throughout the year, many workers must either find jobs in other fisheries, temporary jobs in other sectors of the economy, or rely on transfer payments for support. Social services may experience large swings in demand. Families are subjected to increased strain due to relocation, reliance transfer payments, or uncertainty about income. The fluctuations in employment can be anticipated to result in fluctuations in consumer spending, which can decrease the stability of retail and consumer service businesses. When product flow is sufficiently intermittent, product must be shipped in to keep processing open. An advantage is then created for processors at transportation hubs who maintain their marketing channels with year-round processing and wholesaling activities. Processors in some small communities may find it more difficult to remain in business. Trawlers catch about 80 percent of the groundfish. Processors have testified to the Council that they use trawl-caught groundfish to retain their employees between seasons for other fisheries such as crab, salmon and halibut. These are a few of the reasons the Council has chosen to pursue maintenance of a year-round fishery for the trawl industry.

The large production nontrawl sablefish vessel catch is limited through season closures and provides one example of how seasons may shorten in the absence of trip limits. The nontrawl sablefish season for large production vessels has gone from 366 days in 1984 to 144 days in 1990 and 53 days in 1991. In 1985, the unrestricted season ran with no trip limit from a January 1 opening to December 6 closing, and in 1991, from an April 1 opening to a May 24, 500 pound trip limit[24/]. The small trip limit was intended to allow incidental and low level targeted harvest by nontrawl vessels through the end of the year.[25/] As seasons become shorter, vessels may increase harvest during the open period in order to maintain annual revenues. The halibut fishery gives an extreme example. Halibut seasons have shortened while biomass has increased. In 1975, 492 vessels landed about 29,000

24/ The season started with a 1,500 pound trip limit on January 1, became unrestricted April 1, went to a 500 pound trip limit May 24, closed July 1, and reopened with a 300 pound trip limit September 30.

25/ This limit was reduced to a 200 pound trip limit on July 25 and increased to a 2,000 pound trip limit on October 3.

pounds each during a 128-day season. In 1986, 1,844 vessels landed about 26,000 pounds each during a 5-day season. In 1977, during a 47-day season, the average vessel made 3.2 trips and landed 19,000 pounds. During the 5-day 1986 season, an average of 2.4 trips were taken to land the 26,000 pound vessel average.

If the maintenance of year-round fishing opportunities is deemed infeasible, shortening seasons would contribute to greater seasonal fluctuation in the fishing revenue benefiting coastal communities. If fishing activity is concentrated during the best weather months and in the spring, the downturn in this sector of the economy would occur throughout a prolonged period during the fall and winter when income from tourism is also diminishing. Given stable stocks and prices, the share of fishing revenue available to communities is relatively constant. Longer seasons mean lower employment peaks, but more stable employment and demographic profile, and less burden on community social resources.

Effective License Limitation. An effective license limitation program would result in lower harvest rates, allow less restrictive trip limits than would have occurred under status quo, and result in less need for seasonal closures, thereby maintaining more stable community employment than would have occurred under status quo management.

Ineffective License Limitation. Under ineffective license limitation, status quo management measures would prevail. An ineffective license limitation plan would be expected to have no significant positive or negative impact on stability of community employment. On one hand, if vessel numbers and fleet harvest rates increase, trip limits become less effective in reducing mortality and fisheries must be closed earlier. On the other hand, if vessel numbers and stocks remain close to stable under status quo, seasons would remain at their current level of stability.

ITQs. Under an ITQ system, timing of harvest would be driven by the seasonality of prices and costs of harvest.

On the price side, a flood of product to the processor in any given period would tend to reduce the price. Additionally, processors would probably be less willing to pay for large amounts of groundfish when their plants are able to run at close to capacity on products from other fisheries; e.g., salmon or crab. And, multi-fishery vessels would probably take part openings of non-ITQ fisheries deferring harvest of ITQs to periods when other fisheries are closed. This would tend to enhance the role of groundfish as a "filler" between other short-season fisheries. These three factors may tend to stabilize shoreside employment. On the other hand, more fluctuation in employment might be expected if several species are of particularly good quality or in high consumer (U.S. or foreign) demand at certain times of the year.

On the supply side, if average costs can be reduced by harvesting at certain times of the year, or harvesting similar quantities over a shorter period of time, fluctuation in employment might be expected to increase. However, this would only be true to the extent that net profit is not reduced due to lower prices. Unless prices are particularly high at a certain time of year, even if costs are lowered by concentrated harvest, it is unlikely that all harvesters would catch their ITQs at the same time due to the effect a glut of production would have on prices.

If there is undesirable timing of harvest under an ITQ system, more desirable timing might be established through allocation of quota on a quarterly or monthly basis.

Conclusion.

- An effective license limitation programs may lessen any need for seasonal closures and therefore have a positive effect on stability of community employment and reduce transfer payments (unemployment payments).

- An ineffective license limitation program is not expected to impact stability of employment.

- An ITQ program would probably increase stability unless product prices are particularly high and/or cost of harvest low at certain times of the year.

7.10.2 Equity in the Distribution Access Rights

The MFCMA dictates that allocation be made in a fair and equitable manner. Because of the wide-ranging views in our society on what constitutes equitable allocation, there are not widely accepted standards against which an objective analysis can conclude that one allocation decision is more fair and equitable than another. There are no measuring sticks for equity similar to those for evaluating such factors as efficiency. Therefore, analysis is limited to pointing out the major decisions which would affect the perceived fairness and equity of a limited entry system and the rationale for those decisions. It will be up to each individual involved in the process to evaluate for him or herself whether the alternative adopted is, or would be evaluated by the general public to be, on the whole, fair and equitable.

License Limitation

For the license limitation program, key decisions in designing the program which affect its fairness and equity are explained in Chapter 4. Because the license limitation program has been fully developed, a great number of decisions have been tentatively made which would have an impact on the equity of such a program. The ITQ system is presented here only as a conceptual alternative. If an ITQ alternative were fully developed, many equity decisions would still have to be resolved.

ITQs. More latitude is available in the initial distribution of ITQs as compared to permits because of the increased divisibility of the access right. The steps the Council has taken in drafting some example provisions, which might be included in an ITQ system, illustrate this point. One of these provisions would provide ITQs for leaseholders. Another would provide ITQs for a vessel owner who fished a vessel even if that vessel has been subsequently sold.

Subsequent to initial issuance, ITQs provide less difficulty for those trying to gain access to the fishery. Again, the increased divisibility of the access right would allow crew members or non-owner/operators to purchase ITQs and use them on the vessel they fish, or, if it is allowed, lease them to other vessels. This provides means for aspiring owners to acquire gradual ownership participation and possibly increase the rate at which they are able to accumulate the necessary wealth in order to purchase their own vessel.

While ITQs have these advantages, there are many problems involved in using ITQs in a multispecies fishery, which makes it an impractical alternative at this time.

7.10.3 Effect on Market Power and Control of Fishery Profits

Effect on market power and control of profits between vessel owners and processors is discussed in Section 7.4 on the potential for oligopolies. The concern is a social concern to the extent that it affects the distribution of wealth. Section 7.4 discusses vessel owner/processor relations and concludes that while license limitation may make it possible for either side to increase their market power, overall the existing balance would not likely be altered. With ITQs, there would be an increase in the ability of one group to increase their market power but it is not certain which side would most likely gain.

Section 7.2.4 discusses the effect on input prices including labor. The share of revenue paid to labor may decrease under license limitation, while the income earned by the individual may remain stable or increase, but there is not an anticipated shift in relative market power of labor.

7.10.4 Effect on Demographics of the Fishery Participants

There is little demographic information currently available about those who participate in the fishery. A study on the adoption of technical innovation in the trawl industry provides some limited information on vessel owner characteristics (Dewees, 1988). Dewees reported that the average age of trawl vessel owners ranged from 24 to 74 with an average age of 46 years of experience ranged from 0 to 46 with a mean of 18, and years of education ranged from 3 to 21 with a mean of 12. Fifty-nine percent of the vessel owners reported kinship ties with other fishermen and 39 percent had fathers who fished.

Information about the dominant forms of vessel ownership and the ways individuals acquire entry into the fishery (sources of financing, fishing and mariner knowledge) would be necessary to do a better job assessing the effects of limited entry on fishery demographics. In general, limited entry is expected to have no differential impact on any particular group of individuals based on race, sex, age or other personal characteristics, except to the degree that one group may have greater difficulty in obtaining financing for the purchase of access rights than another. A primary concern expressed by members of the public has been the effect of limited entry on the opportunity for young fishermen to enter the fishery, continuation of family traditions and effects on owner/operators.

Effective License Limitation. The demographics of future vessel owners will depend in part on differing abilities to acquire financing for the purchase of a permit. Skills and knowledge of the fishery are one of the primary factors evaluated by some lending institutions in determining whether to issue a loan. To the degree members of fishing families are individuals in a better position than other entrants to acquire special skills and knowledge, they may be in a better position than other entrants to acquire financing to enter the fishery. It is uncertain whether or not the need to purchase a permit will give them any greater a differential advantage than is already possessed.

The degree to which purchase of a permit raises a barrier to participation is discussed in Section 4.4.4. The primary conclusion is that a permit is a barrier in as much as the purchase of a vessel is a barrier. Both are assets for which financial institutions would generally be willing to lend money. The purchase prices for existing vessels may decrease with a portion of the vessel value attributable to its use in the groundfish fishery reflected in the cost of a permit. The purchase price of new vessels should not change much as the vessel builder must compete with other industries in competitive input markets. The cost of a permit should reflect the amount of profit to be earned in

the groundfish fishery above normal profit levels available elsewhere in the economy, and possibly some portion of the owner/operators earnings attributable to his or her skills of value solely in the groundfish fishery.

There may be some impacts on the proportion of owner/operators and those who own their vessels but do not operate them. The ability to lease permits may encourage those who currently participate in the fishery as owner non-operators to sell their vessels and instead lease permits. On the other hand, as was discussed in Section 7.2.4.2, the owner/operator would probably be willing to pay a higher price to purchase a permit than the owner non-operator, because of his willingness to invest some of the returns to his or her specialized skills in the price of the permit. Thus, it may be difficult for individuals to purchase and lease a permit at a profit, when, in so doing, they cannot also earn some of the income which goes to the operator of the vessel.

The number of part-time participants in the fishery would probably be reduced by license limitation. The market value of permits would be influenced by the maximum offer of potential buyers. Buyers who plan to spend a greater percentage of their time in the fishery can afford to make higher bids. These offers are likely to be considerably higher than the minimum amounts that many part-timers would be willing to accept to leave the fishery.

Ineffective License Limitation. Under ineffective license limitation, the price of the permit is not expected to be significant, therefore, the effects on demographics in the fishery would probably be minimal.

ITQs. ITQs would be similar to permits in that the owner/operator would probably be more likely to acquire ITQs than the owner non-operator. As discussed in Section 7.10.2, the divisibility of ITQs as compared to permits makes gradual acquisition of access rights possible, and may speed the accumulation of wealth by those wishing to enter the fishery. This may allow new entrants to begin in a more well-capitalized position, thus increasing the likelihood of their success even through temporary downturns in their economic situations.

Conclusions.

- Those with family ties in the industry may be in a better position to acquire the skills which will aid them in obtaining financing for the purchase of a vessel. It is uncertain whether the need to also purchase a permit gives those with family ties any greater or lesser advantage than might have existed prior to the implementation of a license limitation program.

- The impact of effective license limitation on proportions of owner/operators as opposed to owner non-operators is uncertain. However, an owner/operator would be more likely to acquire permits through purchase than owner non-operators; thus, the number of owner/operators entering the fishery is likely to be greater than owner non-operators.

- Under ineffective license limitation permit prices are not expected to be significant so little impact on demographics is expected.

- Because of the divisibility of access rights, ITQs could make the accumulations of wealth and entry to the fishery easier than either the status quo or license limitation.

7.10.5 Safety Issues License Limitation.

Two major points have been raised with regard to safety under license limitation systems: (1) the possibility of increased safety as a result of longer seasons and (2) the possibility of increased risk taking by individuals under pressure to pay larger bank loans.

Currently there is a trend for shorter seasons, especially in the non-trawl sablefish fishery. Since 1984, when there was a full year of fishing, the nontrawl sablefish season has been shortened to 53 days in the 1991 season. If the trend toward a shortened season were to continue, some small and medium-sized vessels may be compelled to attempt to fish during marginal conditions, increasing the risk to vessels and fishers. Under an effective license limitation system, opportunity for managers to allow longer seasons would occur as compared to whatever situation would have existed under status quo management. Under an ineffective license limitation system, no effect on season length would be expected. Under more restrictive trip limits, vessels must also spend more time on the water to generate the same revenue. When trip limits are weekly in nature, vessels may lose harvest opportunity if they remain in port for an entire week due to weather conditions and be unable to make up the trip in another week. Thus, more restrictive trip limits also create situations where vessels owners may be tempted to go out under more marginal weather conditions.

While under an ineffective license limitation system, the price paid for permits would not be expected to be significant, under an effective system, a more substantial sum may be paid for permits resulting in higher payments on bank loans. Assuming a loan term of 5 years and interest rate of 11 percent, every $1,000 paid for a permit would require a bank payment of $22 per month. If groundfish prices are $.20 to $.30 a pound and vessel profits about 20 percent, 360 to 400 additional pounds would have to be landed per month to pay for every $1,000 paid for the permit.

Assuming an equilibrium number and size of vessels prior to imposition of a limited entry system (i.e., there were no excess profits attracting new entrants), any amount paid for a permit should reflect the increased profits anticipated with limited entry in place. If the anticipated profits are realized, the need to catch additional fish may be accommodated through more liberal management measures than would be present under status quo management and the necessity for increased risk would not be likely, otherwise vessels profits will be reduced. Prior to limited entry, if profits were higher than an equilibrium level (i.e., more entrants were being attracted), the higher price of permits would cause fishermen to increase effort more than would be accommodated through more liberal management measures, or take a reduction in profits to normal profit level. Maintaining higher than normal profits would not be anticipated as a motive for risking dangerous weather. If prior to limited entry profits are lower than equilibrium, participants would be exiting the fishery and permit prices should be sufficiently low so as to not create significant burdens.

A key assumption in the above paragraph is "perfect information" about the future profits an individual might expect from a fishery and about permits available for sale at equilibrium prices. To the extent that permit buyers overestimate their ability to generate profits or receive non-pecuniary benefits ("psychic" income), too much may be paid for permits (see Section 7.7) and individuals may feel it is necessary to make trips under poor weather conditions in order to meet payments. If such conditions occur, while the cost of the permit may be blamed for the financial conditions leading to the incentives for such a trip, the situation would not be that much different from what is present under the status quo fishery. Currently, individuals entering the fishery who have a tendency to over

estimate their eventual profitability would be likely to invest too much in a vessel and gear, and find themselves in circumstances similar to what may be seen under a permit system.

The effect of over optimistic profit projections under status quo may be somewhat different under license limitation, because the number of sellers in the vessel market would be far greater than the number of sellers in the permit market. Under status quo, the chances would be greater that equilibrium market prices would be paid, and therefore the price may be closer to what would be realistic for the buyer. For example, under the high MLR license limitation option, the individual who wishes to purchase a permit for a pot vessel in the 40 to 59 foot range would have 9 potential permit sellers from which to buy. If there is not an effectively functioning market, an individual might be tempted to pay more than he or she otherwise would. Under open access, not only might there be the 76 vessels of this size range which participated between 1984 and 1988, but there would also be the option to purchase a vessel currently configured for other gears or used in other fisheries. Thus, while a particular individual may generally pay more for an "operable" vessel[26/] than would be wise, given realistic profit projections, reduced purchase options under limited entry (i.e, non-competitively functioning markets) may result in more incidents of this type. If this does occur, there could be some increase in the number of vessels going out under poor weather conditions because too much was paid for a permit.

ITQs. Because under an ITQ system a vessel would be generally unrestricted as to the timing of harvest, the safety problems discussed for license limitation systems would not be present.

Conclusion.

- Under effective license limitations, for fisheries managed with season closures (primarily nontrawl sablefish), there may be some increase in safety through longer seasons.

- Under effective license limitation there may be an increase in the tendency of some individuals to pay too much for a permit/vessel as a result of a more restricted number of sellers (i.e,. an insufficient number of participants for a competitively functioning market) and the buyer's own overestimate potential profits. This could result in trips taken in marginally safe weather conditions in order to make bank payments. It should be emphasized that the cause of the increased financial burden would not be the need to purchase a permit in addition to the vessel, but rather the increased possibility of paying too much for an "operable" vessel (i.e., a vessel and permit).

- ITQs would be anticipated to alleviate safety problems by increasing the number of options for harvesting quota.

7.10.6 Other Issues of Public Concern.

Windfall Profits. When one group of citizens acquires unanticipated profits at the expense of others as a result of shifts in the economy, there is often a general feeling of unfairness. Such feelings led to a "windfall profits" tax on U.S. oil company profits, resulting from increased oil prices following formation of a cartel among OPEC countries. When transferable LE permits or ITQs are issued on

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26/ Under status quo, any vessel capable of participating in the fishery; under license limitation a vessel and permit.

the basis of such factors as historical participation, and the initial recipients do not pay to receive limited access rights, initial recipients may experience profits (the present value of future net economic benefits) from the sale of these rights when they leave the fishery. Some industry members have expressed objection to these profits. One way to reduce these profits would be to charge for the issuance of the LE permit. However, any charges beyond the administrative costs of issuing the permits are prohibited by the MFCMA. The possibility of taxing the sale of permits was discussed but discarded because such a tax would require a federal statute since it is not presently authorized by law. Additionally, there would be a large numbers of ways to circumvent the tax by hiding the true sale price of the permit.

Government Interference in Fishermen Independence. Letters and comments received at public workshops expressed the concern that limited entry represented another interference in the independent and entrepreneurial life style pursued by fishermen. Effective license limitation may reduce the number or restrictiveness of regulations which interfere with the day to day operations of fishing vessels (e.g. trip limits). The additional interference would occur in the form of the requirement for possession of a permit with the appropriate gear and size endorsements. Under an ineffective license limitation system, there would be no relief from effort control measures which affect the day to day vessel operations and individuals would still have to acquire a permit for a vessel; however, the cost of such permits would be expected to be low. If the number of active vessels increases, regulations affecting day to day operations of a vessel would increase as they would under status quo management. An ITQ system, while not limiting acquisition of vessels, would place greater constraints on the activity of a given vessel but not interfere with the organization of that activity. Sufficient quota would have to be acquired for whatever target species or species complex a fisherman decided to pursue.

Risk of Foreign Control. Concern has been expressed that transferable rights under a limited entry system might be subject to foreign purchase and control. Some foreign interests which were displaced from fisheries within 200 miles of the U.S. coast by the MFCMA may be looking for other means to access U.S. fisheries.

In response to this concern, the Council has done two things: (1) expressed its intent that anyone not eligible to purchase a U.S. fishing vessel (as per the Anti-reflagging Act) would not be allowed to acquire a groundfish LE permit and (2) instructed that, if a license limited entry system is adopted, the regulations developed to implement the system limit foreign ownership to the maximum extent allowable under the law. It appears that restrictions on ownership of permits cannot go beyond the restrictions on foreign ownership of U.S. vessels specified in the Anti-reflagging Act.

Because ITQs are not linked to the vessel in the same way a permit is, restriction of foreign ownership of ITQs may be more difficult than for permits.

Free Enterprise and Privatization of a Public Resource. A number of comments have been made that limited entry goes against the "free enterprise system" and represents the privatization of a public resource. The "free enterprise system" is based on private ownership of resources. The basis for the strength of this system is that individuals who own resources will husband them to achieve the greatest good for themselves, and in pursuit of that personal benefit would be guided to use the resources to produce the greatest value for society.

Failings of this private property free enterprise system generally occur when property rights systems are not in place, so that the individual does not bear the full cost and benefit from his or her use of a resource. For example, wastes are disposed of into the air and water, in part, because the individual creating the waste does not have to bear the disposal costs.

Fisheries is another area where property rights to a resource are not assigned. The fishery is a public resource held as common property by the people of the United States. License limitation and ITQs are attempts to rectify the economic failures which occur as a result of the lack of property rights (e.g., overinvestment) by assigning access rights which behave in some ways like property rights. License limitation attempts to establish a smaller pool of users with access to harvest in the common property fishery. ITQs establish an amount of fish which the individual may harvest from the common property fishery. Neither are "property" rights in that neither license limitation nor ITQs entitle any particular person with rights to specific individual fish. As a result, certain economic problems remain unsolved.

Under license limitation, vessels would continue to compete with one another to get to the fish first. To the degree that the license limitation program is effective and other effort limitation methods are not constraining (e.g., trip limits), there would be a tendency for effort and investment in harvest capital to increase beyond optimal levels. More of society's resources would be used in the harvest of fish than would be optimal. Under an ITQ system, capital investment, timing and method of harvest may be closer to optimal; however, there is still a lack of incentive to consider characteristics of the fishery and harvest which might result in greater value to society from a deferred harvest. For example, if during a certain time of year the price for a species is high and fish are concentrated so that harvest costs are low, the holder of ITQs may choose to harvest at that time, even if a deferred harvest would result in a larger more valuable stock in a later period,[27/] i.e., any benefit which would be received from deferring harvest would be shared by all participants in the fishery as well as the public in general. Therefore, incentive to defer is not as great as it would be if it were possible to grant property rights over specific individual fish. Another example is the benefit fishermen receive from highgrading, discarding less valuable individual fish from the catch of a species for which ITQs are held. The costs of the mortality from such activity are borne by all participants in the fishery together, rather than the individual benefiting from the highgrading activity. Thus, neither license limitation nor ITQs perfectly emulate private property rights.

A property right has been termed a "bundle" of specific rights which pertain to a particular physical thing. Examples of the rights within that bundle might be considered the privilege to move, alter, pass over, sell, or destroy the thing for which the property right is held. By creating access rights, license limitation and ITQs take steps toward creating systems which more closely emulate the functioning of a private property system. Creation of full property rights in the fishery is impossible because the "fugitive" nature of the resource makes it impossible to identify the right to a "particular physical thing." Limited entry may be criticized as privatization of the resource because it creates access rights shared in common with a smaller pool of users, however, at the same time, it should be recognized that to the degree it emulates privatization it emulates the form of ownership on which the free enterprise system is based.

27/ In these situations, it is likely that harvest managers would restrict harvest to achieve a more optimal utilization.

Constitutionality. There are four provisions in the Federal Constitution which are potentially applicable to limited entry. They are (1) the Due Process Clause, (2) the Equal Protection Clause, (3) the Privileges and Immunities Clause and (4) the Commerce Clause. This section will review discussion of the constitutionality of limited entry systems from Cameron (1973).

The Due Process Clause of the Federal Constitution reads, ". . . nor shall any state deprive any person of life, liberty, or property without due process of law . . . " Freedom of economic enterprise is within the protection of this clause. Two requirements must be met to avoid conflict with this clause. First, legislation must be directed at correcting some problem or promoting some interest of the state, and second, the statutory method to accomplish the objective must bear a reasonable relationship to that purpose.

The two most important purposes generally cited for limited entry are conservation and economic management. "Conservation of the resource has been solidly established as a legitimate object for . . . regulation" (Cameron 1973). With regard to economic management, in Nebbia v. New York the Supreme Court said:

> "So far as the requirement of due process is concerned . . . a state is free to adopt whatever economic policy may reasonably be deemed to promote the public welfare . . . . If the laws passed are seen to have a reasonable relation to a proper legislative purpose, and are neither arbitrary nor discriminatory, the requirements of due process are satisfied."

Given that the purpose of limited entry is legitimate, it must be shown that the statutory method has a reasonable relationship to the purpose; i.e., that limiting the number of fishermen in a fishery is a rational method to conserve the fishery or to achieve sound economic management. Again, citing the Supreme Court in Nebbia v. New York:

> . . . certain kinds of business may be prohibited, and the right to conduct a business, or to pursue a calling may be conditioned. Regulation of a business to prevent a waste of the state's resources may be justified . . . . If the law making body within its sphere of government concludes that the conditions or practices in an industry make unrestrained competition an inadequate safeguard of consumer interests, . . . threaten ultimately to cut off the supply of a commodity needed by the public, or portend destruction of the industry itself, appropriate statutes passed in an honest effort to correct the threatened consequences may not be set aside . . . .

Cameron concludes that:

> There is no doubt that the [U.S. Supreme] Court would find limited entry to be a rational method for conserving the resource and for sound economic management of the resource. Thus, the Due Process Clause of the Federal Constitution would provide no obstacle to limited entry legislation.

The Equal Protection clause of the Federal Constitution reads: ". . . nor shall any state deny to any person within its jurisdiction the equal protection of the laws." Equal protection does not mean that

laws must apply universally to all persons. Individuals may be classified if the statutory classifications have some relevance to the purpose of the statute.

> In the area of economic and social welfare, a State does not violate the Equal Protection Clause merely because the classification made by its laws are imperfect. If the classification has some reasonable basis it does not offend the Constitution simply because the classification is not made with mathematical nicety or because in practice it results in some inequality. The problems of government are practical ones and may justify, if they do not require, rough accommodations--illogical it may be and unscientific. A statutory discrimination will not be set aside if any state of facts reasonably may be conceived to justify it. (Dandredge v. Williams)

Cameron states that:

> . . . unless a statute is grossly arbitrary (for example, if the only people allowed to fish were those with red hair), a classification is likely to be upheld, and if any state of facts which would sustain the classification's rationality can be reasonably conceived it's existence must be assumed.[28/]

Thus, the two tests for limited entry under Equal Protection are legitimate public purpose and reasonable relationship between the classification made and the purpose to the statute.

The Privileges and Immunities Clause bans discrimination against citizens of other states solely on the basis of their citizenship in that state. It does not prevent such discrimination when there are reasons for that discrimination other than state of citizenship. The Commerce Clause prevents the placing of an undue burden on interstate commerce. Any limited entry system which excludes residents of one state or places a more stringent qualifying burden on residents of certain states might be found to be in violation of the Commerce Clause.

Nether the license limitation system nor the ITQ system discussed in this document would be anticipated to violate the Federal Constitution. While systems such as that proposed have been found to be constitutional, public statements questioning constitutionality generally arise in situations where an action is being viewed by some as unfair.

Public Opinion. In the winter and spring of 1989, the Council sponsored an industry survey on the topic of limited entry for the groundfish fisheries. Asked about support and opposition to license limited entry, a statistically significant ($P<.05$) majority of all vessel owners opposed limited entry, 49 percent, as compared to 43 percent in favor. While 50 percent of those vessel owners earning more than 50 percent of their income from groundfish favored limited entry, this was not statistically different from the 44 percent who opposed it in this group. For those vessel owners earning less than 50 percent of their income from groundfish, the difference of 51 percent opposed to 41 percent in favor was statistically significant. While more of the responding California and Oregon crew members supported limited entry than opposed it (50 percent in support and 44 percent in opposition), the result was not statistically significant and was heavily weighted by the 61 percent to 33 percent

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28/ Cameron cites as examples Metropolis Theatre Company v. Chicago and Lindsley v. Natural Carbonic Gas Company.

majority of crew members not participating in the groundfish fishery who supported limited entry for the groundfish fishery. More of the crew respondents who fish groundfish opposed limited entry than supported it (50 percent and 42 percent, respectively) but the difference was not statistically significant. It was not possible to sample Washington crew members, however, responding non-owner/operators in Washington were 40 percent in favor and 54 percent opposed to limited entry (not a statistically significant difference). The 69 responding processors were nearly evenly split, 48 percent in favor and 49 percent opposed. Members of the support industries from Washington, Oregon and northern California (as compiled in lists supplied by Sea Grant agents) were 45 percent in opposition and 50 percent in favor. Of those attending the Council's 1989 limited entry workshops, 67 percent were opposed and 27 percent in favor of limited entry. All groups were generally opposed to ITQ systems at statistically significant levels with only about 20 percent of vessel owner, processors, and support industries and 25 percent of the crew groups supporting ITQs.

In addition to questions of support or opposition, respondents were asked about their beliefs concerning limited entry and which of the beliefs were the most important reasons for their opinions. Among vessel owners, crew, processors and support industry firms in favor of limited entry as a general concept, the reason most often mentioned as important to formulating their opinion was that it would be a biological benefit to the health of the resource (over 60 percent of the respondents). That "limited entry would create an unfair advantage for those initially receiving permits" was given as an important reason for their opposition by 46 percent of vessel owners, 61 percent of California and Oregon crew members, 54 percent of Washington non-owner/operators, 35 percent of processors, and 49 percent of support industry firms.

After reviewing the results from the survey, the SSC comments to the Council were in part as follows:

> It is important to note that, while this survey was a useful sampling of public sentiment regarding limited entry, it did not fully evaluate limited entry versus alternative management approaches. We do not know the extent to which the fishing industry would approve of, for example, trip limits on rockfish, sablefish minimum size restrictions, or other commonly used regulations. The Council should not discontinue consideration of limited entry proposals simply because a majority of the sampled industry currently disapproves of limited entry. A majority of the industry might also disapprove of other management measures.

8.0 SUMMARY AND CONCLUSION OF SEIS, RIR AND RELATED LAWS AND POLICIES

The fleet fishing West Coast groundfish species possesses considerably more harvesting capacity than is required to harvest the allowable catch of these species. This excess capacity has developed because of the lack of clearly defined harvesting rights and the general profitability of the fishery. In order to limit fishing mortality and prevent overharvest, the Council has implemented several measures aimed at limiting the effort of individual vessels, thereby limiting the utilization of harvesting capacity. These include the use of mesh size restrictions, quotas, and trip landing and frequency limits for certain species. These regulations have many adverse impacts in such areas as fleet costs, resource utilization, safety, and enforcement costs and effectiveness. The presence of excess harvesting capacity also reduces the net economic benefit to the nation from the fishery resource.

Because the Council has had no control over the number of vessels participating in the fishery, the fleet's harvesting capacity and total effort have remained unchecked. As other fisheries grow increasingly overcrowded relative to available harvest, it becomes more likely that capacity will be redirected to the West Coast groundfish fishery when downturns occur in other fisheries. Shifts in other factors, such as relative groundfish prices and harvest costs (increasing relative profits) may also attract new entrants. With most species in the West Coast groundfish fishery already fully utilized, and excess capacity already present, the possibility for entrance of more vessels into the fishery threatens to exacerbate current conservation problems. Regulations designed to meet conservation goals generally interfere with day to day vessel operations and reduce vessel efficiency. These regulations have become increasingly restrictive, to the point where, in 1991, the difficulty of fishing and meeting the trip limits resulted in a compliance rate of only about 60 percent (Section 5.3.2). For 1992, the Council adopted a cumulative trip limit for most species which may reduce discards but will further increase enforcement costs. Additionally, rockfish trip frequency limits will be in place for the first time in southern areas, and mesh size for roller gear will be increased to 4.5 inches coastwide. There is a point beyond which additional regulations of this kind will not improve the Council's ability to accomplish its goals. The Council's SSC noted in November 1990 that: "Management tools traditionally used by the Council (landing limits, trip frequency limits, ratios, and quotas) have reached the limits of their usefulness in achieving the Council's conservation goals."

8.1 Limited Entry Goals and Objectives

The goals for the West Coast groundfish fishery limited entry program are to improve stability and economic viability of the industry while recognizing historic participation, meet groundfish management objectives and provide for enforceable laws (see Section 1.2.3). Recognition of historical participation involves evaluation of past and present participation as well as consideration of dependence as an aspect of participation. Cultural and social factors are also taken into consideration. The limited entry goal is to be accomplished through the primary objective of limiting or reducing harvest capacity in the West Coast groundfish fishery. In order for the limited entry plan to meet the objectives of the groundfish plan it must achieve the primary limited entry objective in a manner which results in the generation of net benefits to the nation.

8.2 Alternatives Considered

The two new capacity control alternatives that are reviewed in this document are license limitation and ITQs. These limited entry alternatives are contrasted with the status quo, no limited entry. The license limitation alternative has been fully developed after more than four years of public comment, committee review and revision by the Council. The ITQ alternative remains in a relatively undeveloped state and is provided as a conceptual contrast to license limitation.

8.2.1 Development of an ITQ Program

An ITQ alternative has not been fully developed for this amendment, but is under consideration and may be proposed as a later FMP amendment. A control date of November 13, 1991 has been published in the Federal Register to put new entrants, and current participants anticipating the receipt of a permit, on notice that they should not increase their effort levels in anticipation that it will qualify them for additional individual quota. An individual quota system may be developed for one or more species or for the whole management unit.

The design of an ITQ system which would result in smoothly functioning markets, generate minimum opportunity for cheating and incentive for discards, and address social and cultural concerns will take a great deal of careful planning. Incentives for cheating and the possibilities for inadvertent creation of incentive for significant discards (possibly equal to or greater than that which occurs under restrictive trip limits) creates a high probability for regulatory failure.[1/] Monitoring programs to cover the entire West Coast could be costly, and stable and adequate monitoring and enforcement funding from the federal government is uncertain. Adequate enforcement from the inception of an ITQ program is essential to establish credibility and compliance by fishermen.[2/] Numerous approaches have been suggested to reduce the incentives for discards, however, given the lack of experience with an ITQ system, there is a significant amount of uncertainty about the degree of discards which could result from such a program. Considering the potential problems which may be encountered in a comprehensive ITQ system, and the Council's lack of experience with ITQs, immediate development of a complex ITQ system covering the entire fishery would be time and resource consuming, have a low probability of success, and likely have higher than necessary costs. Experience with ITQ systems for one or two species would greatly aid the development of an effective multispecies system. While an ITQ system is being designed and considered, the Council expects the proposed permit system will result in net economic benefits by controlling additional investment in the fishery. Administrative structure established for the license limitation program may serve for the ITQ program as well. Additionally, the license limitation program will most likely play an integral role in allowing the Council to develop an effective ITQ program.

Whether the Council moves next to an ITQ program for a single species and gradually develops a comprehensive system, or whether the Council moves directly to development of a comprehensive system, the existence of a license limitation program will enhance ITQ effectiveness and decrease the

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1/ Regulatory impact analysis guidelines published by the Office of Management and Budget and included in operational guidelines for the fishery management process developed by NMFS state "Imperfectly functioning markets should not be compared with idealized, perfectly functioning regulatory programs."

2/ Lack of credibility leads to increased cheating as individuals believe that many other fishermen are benefiting from deception while they are penalized for their honesty. Once social compliance breaks down it can only be re-established through an exceptional enforcement effort.

difficulty of implementing an ITQ program. If the Council chooses to implement ITQs for a single species or phase in a comprehensive ITQ system one species at a time, significant problems may be encountered as effort shifts from ITQ species to other groundfish species. For example, if under a program for Pacific whiting, ITQ is initially issued on the basis of historical participation, new entrants into the fishery could purchase ITQs from the initial recipients and the displaced initial recipients may shift effort to other groundfish species, with the result being the creation of severe conservation and economic problems in other sectors of the groundfish fishery. On the other hand, if a license limitation program is in place to complement the ITQ program, a newly entering vessel may be required to purchase a permit along with the ITQs, completely displacing a vessel from the fishery. Without a license limitation program, any single species ITQ program would just shift capacity and exacerbate management and allocation problems in other sectors of the fishery. The role of a license limitation program as a complement to ITQs would diminish over time, with the rationalization of the groundfish fishery and other fisheries which may be a source of displaced capital.

If the Council chooses to implement a comprehensive ITQ program[3/] as the next step (as opposed to ITQs for a single species), fewer species may need to be included if a complementary license limitation is in place. The problems in a comprehensive system will be similar to that of a single species program: vessels entering the fishery through the purchase of ITQs may simply displace to non-ITQ species the capacity of vessels selling their ITQ. Therefore, a comprehensive program will have to include ITQs for a number of species (or species group) in order to achieve effective control for conservation and rationalize the fleet.[4/] With more species covered, more problems are created for fishermen trying to make sure the right combinations of ITQs are held to cover the catch, greater potential will exist for discarding of unplanned incidental catch for which no ITQ is held, as well as increased compliance, enforcement and administration costs. With a complementary license limitation program, new entrants must completely displace an existing participant from the groundfish fishery, reducing, but not eliminating,[5/] the problem with capacity shifting to non-ITQ species. With a reduction of the capacity shifting problem, it may be possible to develop a comprehensive ITQ program which covers fewer species and hence reduces compliance, enforcement, and administration costs as well as the discarding problem.

The presence of a license limitation program will also aid in the design and implementation of an ITQ program by helping the Council identify groups to be considered in a future ITQ program. In particular, uncertainties about gear codes and vessel categorization problems will be resolved through the permit issuance process. The completion of this process will enable the Council to better identify and differentiate between groups to whom ITQ is to be distributed, improving the Council's ability to anticipate ITQ implementation impacts and problems, and hence, allow the Council to design a better ITQ system. In contrast, if the current program is not implemented, the Council will face a number of difficulties as it tries to develop an ITQ program.

3/ A comprehensive ITQ system need not issue ITQs for all groundfish species to effectively rationalize the fleet.

4/ ITQs will likely be species specific. An ITQ covering a complex of species may allow greater than biologically acceptable removals of a single species within the complex.

5/ A problem would still exist with owners of licensed vessels which sell all their ITQ to other licensed vessels. These permitted vessels may then attempt to find non-ITQ species on which to target. However, this problem would be considerably reduced if only permitted vessels are able to shift, and not any vessel from any fishery which is able to cover its variable costs on non-ITQ groundfish species.

8.2.3 Summary of the License Limitation Alternative

Under the license limitation program, Federal permits would be required for the use of groundfish trawl, longline and fishpot gear (limited entry gears) in the limited access fishery. All other gears (exempted gears) and longline and fishpot vessels without permits would be allowed to continue fishing in the open access fishery. An allocation based on the historic harvest of vessels receiving and not receiving permits would result in 90 to 95 percent of the allowable groundfish harvest being allocated to the limited access fishery. Vessels meeting qualifying requirements would receive transferable access rights ("A" endorsements). Vessels would only be able to take part in the limited access fishery with the limited entry gear with which they met qualifying requirements. An adjustment period is provided for many of those not meeting the requirements for "A" endorsements (through the issuance of "B" endorsements, which expire at the end of 1996). Also, those with vessels under construction, conversion or recent purchase are provided an opportunity to demonstrate intent to participate and eventually receive "A" endorsements (through provisional "A" endorsements). One year access rights (designated species "B" endorsements) may be provided to vessels wishing to harvest potentially underutilized species. A size endorsement on a permit prevents an owner from increasing the length of vessel used with a permit by more than five feet. Under the license limitation alternative, the Council would continue to rely on its routine management measures to control harvest rates in the fishery (e.g. trip limits). The license limitation program contains capacity through four means: (1) control over the number of vessels in the fisheries, (2) control over the gear used by the vessels, (3) control over the size of vessel and (4) control over the amount of the vessel capacity which can be used in a given trip (trip limits). More detailed descriptions of the license limitation alternative are provided in Chapter 2 and in the Appendix to this document.

There are two main areas of the license limitation alternative which were resolved during the public comment period on the draft SEIS: (1) MLRs to qualify for "A" endorsements[6/] and (2) criteria for determining whether a vessel should be considered under conversion. With respect to the first issue, the following is the MLR adopted for "A" endorsements:

Trawl — At least 9 days in which over 500 pounds of any groundfish species caught with groundfish trawl gear except Pacific whiting are landed or delivered, or 450 mt of landings or deliveries of any groundfish species caught with groundfish trawl gear except Pacific whiting, or 17 days in which over 500 pounds of Pacific whiting caught with groundfish trawl gear are landed or delivered, or 3,750 mt of landings or deliveries of Pacific whiting caught with groundfish trawl gear.

Longline — At least 6 days in which over 500 pounds of any groundfish species caught with longline gear are landed or delivered, or 37.5 mt of landings or deliveries of any groundfish species caught with longline gear.

Fishpot — At least 5 days in which over 500 pounds of any groundfish species caught with fishpot gear are landed or delivered, or 150 mt of landings or deliveries of any groundfish species caught with fishpot gear.

6/ The current owner of a vessel which met the MLRs between **July 11, 1984 and August 1, 1988 (the window)** may qualify for an "A" endorsement.

On the second issue, the Council set $10,000 or 20 percent of the value of the vessel as the minimum dollar amount which must be invested for a vessel to qualify under the conversion criteria. Additionally, it was decided that a schedule or formula, as opposed to case by case consideration, would be used to govern the size endorsements which will result when two or more permits are combined. The schedule or formula will be developed by NMFS in consultation with the Council during implementation of the plan and general guidance on its development is provided in the amendment. Other changes made to the license limitation alternative during the public comment period are discussed in Chapter 4 which provides a full rationale and analysis of the major provisions of the license limitation program. Chapters 5, 6, and 7 analyze the license limitation program relative to other amendment alternatives (status quo and ITQs).

8.3 Effectiveness of the License Limitation Alternative

Analysis of the license limitation alternative was framed in terms of effective and ineffective license limitation programs. Information was presented to aid the reviewer in making an independent determination of trends in the fishery and the likelihood that the proposed license limitation alternative will be effective. In order for a license limitation program to be effective it must (1) control the number of vessels in the fishery and (2) provide an effective control over the capacity of the individual vessels. To meet the Council's objectives for the groundfish fishery the limited entry program must be effective in a manner that generates net benefits to the nation. To the degree the program is deemed effective by these standards, it will have achieved its goal and primary objective for limited entry. After reviewing the draft of this analysis and taking public comment the Council members were unanimous in their judgement that the effectiveness and potential benefits of the limited entry program warranted its implementation.

8.3.1 Control Over Number of Vessels

There are two factors to be considered in determining whether the Council will establish control over the number of vessels in the fishery: (1) the number of vessels which would have been active under status quo and (2) the number of permits initially issued.

The Fleet Under Status Quo

A program that limits the number of vessels to about that currently in the fishery will be effective in controlling number of vessels only if there would have been an expansion in the number of vessels in the fishery under status quo.

The history of this fishery and others is that it expands in cycles. There have been two notable expansion periods in the construction of vessels which were eventually used in the 1984–1990 groundfish fishery. One occurred in the 1940s when close to 400 vessels were constructed and the second occurred in the 1970s when over 700 vessels were constructed (Figure 5–3). Since about 1983 the construction rate for vessels currently active in the West Coast fishery have been low (similar to that in the early 1960s). However, construction rates of vessels for other fisheries which may eventually end up in the West Coast groundfish fishery have been high, e.g. factory trawlers. Additionally, there has been a large expansion in the number of vessels participating in the Alaska Pacific halibut fishery (Table 5–36). Just as not all the vessels constructed in the 1940s were originally destined for the groundfish fishery, factory trawlers, halibut vessels and vessels constructed

for other fisheries may end up in the West Coast groundfish fishery with changing conditions in the other fisheries.

The following factors could result in expansion in the West Coast groundfish fishery. All relate to increasing profits whether the increase occurs because of increasing exvessel prices, decreasing nominal costs per unit, decreasing profits in other fisheries relative to the groundfish fishery, or decreasing opportunity costs.

Exvessel Price Increase. An increase in exvessel prices could occur as a result of increases in local or world demand, increases in access to markets or changes in the timing of harvest to result in higher quality product. In addition to the number, tastes, and preferences of consumers, which drive demand here and abroad, foreign demand is also heavily influenced by the exchange rate between countries. With the current focus on the U.S. trade deficit, the prospect of devaluing the dollar, relative to the yen, has been raised. Such a development could lead to considerably higher prices for species such as sablefish and thornyheads, that are popular in the Japanese market. The effects of increasing prices are dramatically illustrated by the expansion of the U.S. factory trawler and shoreside processor interest in whiting with the surimi price increases which have occurred over the last year. The dramatic expansion of effort in the Alaska Pacific halibut fishery has also been attributed to price changes (as well as increasing harvestable biomass).

Fishing Cost Decrease. In addition to changes in input prices, such as fuel costs, other factors may cause indirect changes in fishing costs. Changing technologies which allow vessels to consume fuel more efficiently, or find fish more quickly, decrease costs. Reallocation also increases allowable harvest for a particular gear group which leads to increased efficiency (decreased per unit costs) and, hence, increased profits. Any increase in profits encourages the presence of more vessels and returns the fishery to the same state which existed prior to the action which resulted in the generation of the profits. Thus, absent a limited entry system, any action the Council takes to allocate and increase national benefits will partially fail due to the increased capacity that will be induced by the allocation. The Council anticipates that these situations will occur and that limited entry will be effective in helping accomplish any allocation objectives.

Nominal costs may decrease through the availability of discounted gear. One way this may occur is through bankruptcy and refinancing. Vessels in the groundfish fishery and other fisheries which go bankrupt may be refinanced under a new owner and brought into the groundfish fishery with lower nominal costs. Discounted gear is also likely to become available as limited entry programs are implemented in other fisheries eliminating the opportunity for some vessels to remain in those fisheries. Between 1979 and 1986 the total number of commercial fishing vessels active in the U.S. increased over 60 percent (from 87,000 in 1970 to 141,000 in 1986) (National Fish and Wildlife Foundation 1990). With the implementation of license limitation and ITQ programs nationwide it is likely that a large number of those vessels will become surplus. Under the jurisdiction of the regional councils, four regional limited entry programs have been implemented, five programs have been recently adopted by councils (including this plan), eleven programs are being developed, eleven programs are being considered and there are three fisheries which have potential for being placed under a limited entry program. There is a history in this fishery of vessels being brought to the West Coast from other regions (such as Gulf Coast shrimp trawlers) and there is at least one organization which is setting itself up as a nationwide clearing house for surplus gear. In addition to these programs, the states may be considering other

programs. For example, there is currently an effort under the auspices of the Pacific States Marine Fisheries Commission to develop an interstate limited entry program for the West Coast Dungeness crab fishery.

Relative Profitability. Profitability in other fisheries may worsen relative to the groundfish fishery. For example, declining profits in the salmon fishery have encouraged fishermen to turn to the groundfish fishery as an alternative source of income.

Changing Opportunity Costs. If currently conflicting seasons are altered so they no longer conflict, vessels may choose to participate in the groundfish fishery in addition to their traditional fishery. Changes in season opening dates or the implementation of ITQs in Alaskan fisheries may reduce the opportunity cost of participating in the West Coast groundfish fishery.

Thus, it appears that for one reason or another increases in the profitability of the groundfish fishery, relative to other fisheries and many other sectors of the economy, will likely encourage additional entry into the fishery in the absence of an effective limited entry program. The factors which have actually occurred to date are increased allocations, increased profitability of whiting, and decreased profitability of salmon fisheries and Gulf Coast shrimp fisheries. In the near future the Council anticipates decreased opportunity costs in the Alaskan sablefish and halibut fisheries and increased availability of discounted surplus gear from other fisheries undergoing transition to limited entry. The possibility also exists for increased exvessel prices due to increased world demand and factors which are difficult to anticipate, such as a devaluing of the U.S. dollar and increasing population. From all these factors it is apparent that there is a great deal of potential for an increase in the number of vessels and capacity in the West Coast groundfish fishery, and hence it is likely that a cap in the number of participants will be effective.

The history of limited entry programs has been that they are not implemented until a crisis is present making achievement of adequate control over vessel numbers difficult. This Council, cognizant of the cyclic nature of fisheries expansion, began its development of the adopted program back in 1987, during years of a booming salmon fishery, directed foreign harvest of Pacific whiting, and little activity in the development of limited entry programs for other fisheries.[7/] Now changes in all these areas threaten a major shift of capacity which may adversely impact the West Coast groundfish fishery; and, while it has taken longer than anticipated, the Council is ready with a program which will stabilize the current fishery and enhance other capacity control measures which may be developed over a longer period (ITQs or a buy-back program).

Number of Permits to be Issued

Faced with the probability that at some point in the future the number of participants in the fishery will increase, the Council has developed a limited entry program which will result in a number of vessels qualifying which will likely be slightly above that active in the 1987 fishery. Latent effort is always a problem in a permit system. The landing requirements established by this Council take major steps toward reducing the latent effort which may be created when permits are issued to relatively inactive vessels. MLRs are established on the basis of a target number of vessels which

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7/ Failure to enact the Alaska Pacific halibut fishery moratorium and the subsequent expansion of participation provided the Council with a good example of the need to evaluate the cyclic nature of expansion of the fishery and anticipate the necessity for limited entry in advance of expansion.

is well below that which participated in the 1987 fishery for all gears except trawl. The target level is based on "active"[8/] 1987 vessels. The target for longline vessels is about 60 percent of all those vessels with at least one landing in 1987, and for pot vessels is about 30 percent of those with one landing in 1987[9/](Table 8-1). The target number for nonwhiting trawl vessels was not reduced below the number of vessels with one landing in 1987, because there was not a clear break in the distribution of trawl vessels by number of days of landings (see Figure 4-1). The target for whiting trawl vessels was not reduced from the number of vessels with one landing in 1987 because in 1987 there was still a foreign directed fishery for Pacific whiting. While the Council set targets below the number of vessels with one landing in 1987, the potential 1987 fleet size is larger than indicated by the number of vessels with one landing in the year. In any given year a number of potential limited entry gear vessels may be inactive due to such things as major repair, bankruptcy or better opportunities in another fishery. Many of these vessels may be made available to move into the fishery if there were to be a significant increase in profitability. The number of vessels with at least one landing during the four year qualifying window period provides an estimate of the amount of potential capacity which might readily move into the groundfish fishery (Table 8-1). The adopted MLR would result in 20 percent fewer trawl vessels, 85 percent fewer fishpot vessels,[10/] and 68 percent fewer longline vessels than the number active over the entire window. In evaluating the proportionally large number of trawlers relative to other gears, it should be noted that while only about 20 percent of the longline and fishpot vessels participated in the first and last calendar year of the window period, close to 60 percent of the trawlers fished in those two periods. Trawler participation tends to be more stable than for other gears (Tables 7-1 through 7-3).

Table 8-1. Number of vessels participating by gear under different standards and periods, compared to the number of vessels expected to qualify on the basis of meeting the adopted MLR. (summary data from Table 7-16).

	Number of Vessels			
	1987		Window Period	
Gear	1 Landing	"Active"[1/]	1 Landing	Adopted MLR
Groundfish Trawl	348	348	490	388
Fishpot	98	30	295	42
Longline	355	218	706	229
All line[2/]	1,382	791	2,735	410

1/ For longline and pot vessels, "active" vessels are those with at least 3 landings, as discussed in Section 4.4.4.

2/ Vessels which may have made longline landings that were coded as pole landings are included. (Note: A large portion of the vessels eliminated by the adopted MLR are those making landings less than 500 pounds.)

8/ For longline and pot vessels, "active" vessels are those with at least three landings, as discussed in Section 4.4.4.

9/ For fishpot vessels, a screen in which "other pot" landings are counted as fishpot if more than 50 percent of the landing was groundfish may have resulted in an inflated estimate of the actual 1987 fleet size.

10/ Of 253 non-qualifying fishpot vessels, 209 earned an average of less than 5,000 dollars per six month period from groundfish and made less than 10 percent of their total fishing income for the use of fishpot gear to catch groundfish.

The anticipated number of permits that will be issued on the basis of the MLRs will be exceeded by some portion of the number of vessels which were under construction, conversion, or purchase during the qualifying window. These vessels must have entered the fishery and been active with at least two landings a year since their date of construction conversion or purchase. Among vessels with U.S. Coast Guard documented construction dates, 14 trawl, 5 fishpot and 36 longline vessels (including the "all line" vessels[11/]) have construction dates of 1984 through 1990 and have at least one landing prior to the construction cutoff date (September 30, 1990). Additionally, 24 trawlers, 5 fishpot vessels, and 33 longline vessels have no construction date recorded, but have at least one landing over 500 pounds in the between July 11, 1984 and September 30, 1990 and so could potentially qualify under construction provisions. It is likely, however, that a very small portion of this latter group of vessels had construction dates that would allow them to qualify under the construction provisions. The requirements for qualifying as a vessel under conversion are very rigorous and will likely be met only by those vessels with a significant dependence on their conversion. Public comment was received from six individuals with vessels under construction and two with vessels under conversion, that one-half of the individuals in each group may be able to qualify for a permit. Even though the 1987 fleet targets may be exceeded, for pot and longline vessels, there will likely be fewer permits issued than there were vessels with at least one landing in 1987. Vessels qualifying on the basis of purchase part way through the window period must have at least one landing in the window period in order to qualify under the purchase provisions. Therefore qualifiers on the basis of purchase could not be greater than the total number of vessels with one landing in the window period. Moreover, the new purchaser would have to change the pattern of activity of the vessel in order to qualify it under the purchase provisions. The standards of performance for vessels qualifying under these exceptions is similar to that set for the MLRs except that the performance must be steadier in the fact that landings must be made in each year of the upgrade period. It is likely that for longline and fishpot vessels the number of vessels receiving permits will be well below the potential fleet based on the number of vessels estimated to have made some landings during the window period. For trawl gear it would also be surprising if more than 100 vessels might qualify on the basis of construction, conversion, or purchase. If this were the case it may indicate an upward trend in potential participants which would further warrant implementation of the license limitation program. Given that the number of participants is held below the number of vessels with at least one landing during the window period, if the same degree of movement of vessels into and out of the fishery is maintained under a permit system, it will require that permits be transferred, most likely either through sale or lease, and these transfers will result in the extraction of rents from the fishery.

The effective number of permits in the fishery will be reduced to the degree that individuals purchase multiple permits to maintain or acquire flexibility to move between gears, and to the degree that permits are combined. It is expected that some factory trawlers will enter the fishery through the purchase and combination of permits, reducing the number of permits in the fishery. Fishery capacity may also be reduced as factory trawlers are likely to participate in the fishery only part-time.

As discussed above, permits issued to small producing vessels represent latent effort in the form of permits which may later be purchased and used by larger producers. Much of this potential latent effort was eliminated from the limited access fishery through the use of a 500 pound per day screen in the MLR. Small producing longline and fishpot vessels, like those screened out by the 500 pound requirement, will be allowed to continue to operate in the open access fishery under restrictive trip

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11/ Vessels with landings coded as longline as well as vessels with landings coded as "pole" which may turn out to be longline landings.

limits. If any of the owners of these vessels desire to make a significant increase in their capital investment and become large producers, they will have to displace a vessel in the limited access fishery through the purchase of a permit. Additional capitalization may occur in the open access sector because of the opportunity to use these two limited entry gears, as well as exempted gears. However, since this sector is relatively small compared to the limited access sector (about 5 percent of total groundfish landings) the gains made through a large reduction in limited entry permits created by the 500 pound per day screen more than offset the additional capitalization which may occur in the open access sector. Additionally, increased capital investment in the open access sector is likely to be very limited as many of the exempted gears are under state run limited entry systems (salmon troll, gill net, and Oregon shrimp).

8.3.2 Control Over Vessel Capacity

Under the adopted program, vessel capacity is controlled through (1) control over gears used, (2) control over size of vessel and (3) control over the usable capacity.

The limited entry program prevents vessels from using a limited entry gear without a permit. Additional control over capacity is achieved by prohibiting vessels with permits from switching between gears unless a permit endorsed for the gear is held. In this way, if it became desirable, owners of permits valid for one gear cannot switch to another limited entry gear which would provide their vessel with greater capacity than that currently used (unless a permit for the gear is acquired). Capacity is also controlled through control of the length overall of the vessel. The correlation of length to capacity is similar to that of volumetric measures considered. Length is a simple measure which is relatively easy to determine compared to measures of volume. Absent a restriction on length, an increase in size of vessel might be expected as was seen in the Alaskan halibut fishery (Table 5-37). Control over length is not expected to halt growth in vessel capacity, but will place an upward limit on it. "Square" vessels are not expected because of the lack of incentive for vessels operating under trip limits. Trip size and frequency limits combined with a limit on the number of vessels will effectively simulate an individual vessel quota. The cumulative limits approved by the Council for 1992 will act even more like individual quotas in that multiple trips may be taken over a period of time until the limit is reach. The only thing missing is the ability to divide and transfer the individual quota. There is probably better control of the capacity by trawlers than longline or pot vessels, in that trawlers generally have larger capacity and are more constrained by existing trip limits.

8.3.3 Net Efficiency Benefits and Opportunity for Continued Rationalization of the Fishery

Benefits will be achieved through:

- Decreased fixed costs resulting from fewer vessels.
- Increased vessel efficiency resulting from a larger amount of catch available to each vessel.

After taking into account uncertainty about gear codes, there may be about 700 or more vessels which have a limited entry gear landing in the window period that will not receive permits (Table 8-1, comparison of number of trawl, fishpot and longline vessels with one landing in the window period to those qualifying under the adopted MLR). When some of these vessels are not replaced because of the absence of an option in the groundfish fishery, fixed cost savings will result. Fixed cost savings will also result if additionally vessels would have been constructed for the fishery, in the absence of a license limitation program. Construction rates in the 1980s for vessels destined for the

groundfish fishery appear to be over 10 vessels a year (Figure 5–3). Annual program benefits will outweigh annual administrative costs ($220,000, see Section 7.9), if the program prevents the construction/entry[12/] of as few as three 60 to 80 foot trawlers of the average type used in the example in Section 7.2.2.2 (or the expenditure in equivalent annual fixed costs investments in vessels of other sizes and using other limited entry gears). Alternatively, savings in variable costs may balance program administrative costs. If all 60 to 80 foot trawlers have cost structures similar to those used in the Section 7.2.2.2 example, prevention of a 20 percent expansion in this vessel group alone would balance administrative costs with over $200,000 of benefits from reduced variable costs.[13/]

If compliance costs average around $100 a year per permitted vessel and enforcement costs run as high as $500,000 a year[14/] (a pessimistic estimate), total additional compliance and enforcement costs might run about $590,000 a year (less after increased enforcement and compliance costs under status quo are taken into account or if worse case scenarios don't materialize). Elimination of the annual fixed costs for about eight or nine additional trawlers of the example type (or the equivalent in other vessel types) would result in annual benefits which outweigh annual enforcement and compliance costs. If the increased enforcement costs which would have occurred under status quo or reduced variable costs from a smaller fleet are taken into account, even fewer vessels need be eliminated from the status quo result in order to demonstrate net benefits.[15/]

Benefits may also be expanded to the degree that rents extracted from the fishery divert additional capital investment. A comparison of the window period fleet size to the size participating in a single year (Table 8–1) illustrates that there has historically been a flux of vessels into and out of the fishery. Additionally, Table 4–2 shows that there were 89 trawl vessels, 150 possible fishpot vessels, and 224 longline vessels with landings after the window period but no landings during the window period. If the flux of vessels into and out of the fishery is to continue, permits will have to be sold or leased and rents extracted. The payment of these rents may deter some individuals from making additional capital investment. On the other hand, to the degree these transactions do not occur, fewer vessels will participate in a given year than the number for which permits are issued as vessels become temporarily idle or take part in other fisheries. This will increase the efficiency of remaining vessels.

12/ If only entry is prevented, some fixed costs may continue to be incurred as the vessel participates in other fisheries. Full fixed cost savings will begin to accrue if the vessel is not replaced when it ends its useful life. This is not different from the result that is anticipated under an ITQ program.

13/ The example was constructed using cost information from a very restricted segment of the fleet, and actual efficiency savings are likely to vary from that presented, however some increase in fleet efficiency may be expected.

14/ The need for additional enforcement will depend on the problems which develop in the open access fishery. The enforcement costs for the limited entry fishery would be negligible and may even decline. The dollar value for enforcement of the open access quota must be judged against the enforcement costs under status quo. Trip limits in 1990 were resulting in estimated compliance rates of 60 percent. Thus, it is likely that an expansion in the fishery would also increase enforcement as well as other management and administration costs. While there might be greater benefits from an ITQ program, enforcement costs would be even higher than under the adopted license limitation program. (See Section 7.9 for additional detail.)

15/ Vessel owners expenditures to purchase a permit are not a cost of the program but rather a transfer of wealth.

The benefits demonstrated here will be offset, and somewhat greater effectiveness required, to the degree that additional investment in the open access fishery occurs. Possible enforcement costs for the open access fishery are already accounted for above. Additional investment is expected to be relatively small because of the small portion of the harvest which the fleet will be available for harvest by the open access sector (about 5 percent).

Only very modest assumptions need be made in order to demonstrate net benefits to the nation. If the program keeps a few vessels from being constructed, results in some increase in vessel efficiency (again, relative to a status quo fleet expansion), and diverts some investment through the extraction of rents, net benefits are likely to result (especially when enforcement costs are balanced against expanding costs under status quo).

While the license limitation program itself is expected to generate net benefits to the nation, it will also create circumstances in which those net benefits may be extended either through ITQ or an industry funded permit buy-back programs. As discussed in Section 8.2, the presence of a license limitation program which complements an ITQ program is expected to increase the effectiveness and decrease the costs of such an ITQ system.

In the following sections the impacts of an effective license limitation system will be discussed.

8.4 Achievement of Goals and Objectives

8.4.1 Limited Entry Goals and Objectives

In the previous section it is demonstrated that the license limitation program will begin to achieve the primary objective for limited entry. In this section achievement of secondary objectives is evaluated. It is through these secondary objectives that a determination can be made as to whether the overall goal of the limited entry program has been met.

Promote Long-term Economic Stability

The license limitation program will promote long-term stability both through its effect in preventing expansion in the number of vessels and its future effects in either complementing an ITQ system or making a buy-back program possible. In the short run, marginal entrants who dissipate expected above normal profits through the purchase of a permit, may be somewhat more unstable, should the expected profits not materialize. However, absent the permit system, the anticipated above normal profits would have resulted in an increase in entry to the fishery, reducing the profits and stability of all vessels whether or not the expected opportunity for increased fleet profits materialize. On the whole, an ITQ system would likely result in additional stability as vessels are able to optimize their response to different market opportunities.

Increase Net Returns from the Fishery

Net benefits will be increased as discussed above. Fleet and individual vessel efficiency may be increased as demonstrated by the example in Section 7.2.2.2. As profitability increases to above normal levels, new entrants will not receive above normal profits at the time of their entry as those profits will be collected as the price of the permit. After entry, however, they will benefit from any increase in expected profits, along with all those already in the fishery. ITQs would increase net

returns to a greater degree than a permit system. Returns under a combined ITQ and permit system may be even greater than for either alternative alone.

Allow Flexibility for Combination Vessels

Flexibility for combination vessels is provided through the ability to acquire a permit through purchase. The window period is long enough (four years) and the qualification requirements low enough (between four and nine days of landings over the four year period) that combination vessels active during that period would have a good chance to qualify. Those whose historic fishing pattern was such that they were not dependent on the fishery for significant income during the four year window period may be able to gain temporary access to the fishery, as needed, through the lease of a permit. ITQs would provide more flexibility for combination vessels attempting to acquire access rights. In purchasing a permit combination vessels will likely have to pay an amount equivalent to the value of the permit to the full time participant while an ITQ transaction will be based on marginal values to each potential participant.

Reduce the Cost of Management

Under status quo, any management action that improves conditions in the fishery as a whole, or for a particular user group, only encourages more entry, returning the problems to a state similar to that prior to the action. Thus without a limited entry program, there is little hope for progress in management of the fishery and the Council would anticipate the need to continually readdress issues and increase the intensity of management. Management of the limited access portion of the fishery would be expected to stabilize; however, some additional management costs would be expected for the open access fishery. A large increase in open access management costs is expected only if profitability in the groundfish fishery attracts new entrants to the open access fishery. In this case, there may be additional management costs anticipated for that sector. However, this profitability would indicate that, under status quo, expansion of participation in the much larger limited access portion of the fishery would be likely, and, hence, considerable offsetting benefits would be derived from the presence of the limited access system. The benefits of a program with an open access fishery are fairly balanced against the costs. Enforcement, monitoring, administrative and business compliance costs would likely increase under ITQs. The costs of establishing management measures and setting annual allocations would be reduced.

Reduce Bycatch and Waste

Control over expansion in the number of active fishing vessels will prevent the increase in bycatch or waste which occurs with more restrictive trip limits and closures. An ITQ system may result in an amount of waste equivalent to that under status quo, or greater, if not properly designed.

Encourage Effort in Underutilized Species Fisheries

The limited entry program is intended to control harvest capacity. The whiting fishery has now been fully harvested domestically since 1989. There remains some undeveloped potential in the shortbelly rockfish and jack mackerel fisheries[16/], however, existing capacity is more than sufficient to harvest these species once adequate economic incentive is established. Some additional harvesting capacity

16/ It is anticipated that jack mackerel will be moved from the groundfish to the coastal pelagics plan.

may access underutilized species through designated species "B" endorsements (valid for one year). These endorsements would be issued on the basis of seniority in the fishery for the underutilized species or in use of the endorsements, and would therefore encourage effort by vessels wishing to gain access in this manner. If necessary, an ITQ system might also be structured to encourage harvest of underutilized species.

Stabilize Management Regimes by Reducing Need for Frequent Inseason Changes; Promote Cost-Effective Enforcement by Reducing Need for Frequent Changes and Tight Trip Limits

To the degree that fleet size is stabilized, managers will be better able to anticipate the management regulations needed to accomplish the desired objectives, creating less need for inseason changes. Trip limits may be less restrictive in the limited entry fisheries (compared to those which may have been imposed under status quo management), but may constrain some exempted gears previously not impacted by trip limits. These constraints and costs are fairly balanced by the savings in administrative costs, enforcement costs, and small business burdens which would be involved in their incorporation under the license limitation program. ITQs would stabilize management regimes but increase enforcement and monitoring costs.

Promote Logistically Viable Enforcement by Minimizing Need to Use Regulations Such as Trip Limits or Subarea Closures Which Are More Difficult to Enforce

A stable fleet size will slow the increasing restrictiveness of regulations which, at the start of 1991, had led to only a 60 percent compliance rate for some trip limits. As the Council searches for alternative management approaches, there will be a greater variety of viable, enforceable solutions which will remain effective over the long term, if controls over fleet size are in place. ITQs are included among alternatives which may be more viable with a permit system in place.

Recognize and Accommodate Historical Participation of Those Investing Their Life and Resources in the Fishery

In developing a limited entry system, the MFCMA requires that the Council consider historic fishing patterns and present participation, as well as another aspect of participation (dependence). The Council considered these factors in detail in establishing qualification requirements and determining the type of access rights which would be granted to different categories of those qualifying. Vessel owners were targeted for initial issuance of permits because of their investment in the fishery and the potential decrease in value of their assets which might occur if an owner dependent on the fishery did not receive a permit. Historical participation was used to set the level of landings required to qualify and to measure dependence on the fishery. Dependence of those present participants with recent investment in the fishery was considered through the establishment of provisional access rights under which these individuals are given the opportunity to demonstrate their intent to participate in the fishery. Other provisions in which historical fishing patterns, present participation and dependence are considered are discussed in Chapter 4. An ITQ system allows for finer division in the initial allocation of access rights and therefore the possibility for greater equity.

Maintain a Mechanism for Fishery Entrance/Exit and Flexibility for Change in the Fleet

Permit transferability provides the mechanism for entry and exit. Flexibility for change in the vessel size configuration of the fleet is provided by allowing permits endorsed for a given size to be used with vessels smaller than indicated on the permit, allowing the entry of larger vessels through the combination of small vessel permits, and the lack of area restrictions on the permits. Maximum flexibility would be maintained through an ITQ system which would allow vessels to take part in the fishery with varying degrees of involvement.

Reduce Conflicts Between User Groups by Limiting or Reducing Effort Competition for the Same Resource

To the degree that the program is effective in controlling capacity it will resolve or prevent the exacerbation of user group allocational conflicts. Absent a limited entry system, it would be possible to make little progress on allocation issues as any increased allocation to one group would simply encourage more entrants to that group with the result of renewed pressures for more allocation. Allocational conflicts between limited entry and open access gears have already been resolved by the establishment of a formula in the amendment to guide the allocation. License limitation will help to partially resolve allocation problems, while an eventual ITQ system may lead to more effective resolution.

Provide a Stable Supply of Groundfish to the Public at a Reasonable Price

An important Council objective has been the preservation of fishing opportunities throughout a large part of the year, particularly for the trawl fishery. Meeting this objective has been seen as important for maintaining the availability and market presence of West Coast groundfish products. By alleviating pressure for increasingly restrictive trip limits on vessels taking close to 95 percent of the harvest, the limited entry program may enable the Council to pursue policies which will result in the presence of product on the market for a greater portion of the year. Trip limits slow the rate of harvest allowing markets to absorb a greater portion of the fish in a higher value fresh form. To the degree that prices are determined in broader national and world markets, prices would not change. However, the value of a product might change with changes in quality. ITQs would also provide an even more effective means of supplying given amounts of fish to these markets throughout the year, by eliminating the "race for fish" and by allowing harvesters and processors the opportunity to develop long-term arrangements for delivering product.

Conclusion

The goal for the limited entry program is to improve stability and economic viability of the industry while recognizing historic participation, meet groundfish management objectives, and provide for enforceable laws. In Section 8.3 it was shown that the program is likely to be both effective in limiting effort and generating net benefits to the nation. A review of the secondary objectives shows that other aspects of the goal are also achieved. Long-term stability for the industry as a whole is improved while some marginal vessels may find themselves more subject to bankruptcy if profits do not meet the expectations on which the permit price is based. Economic viability of those remaining in the fishery will be improved by a reduction of the probability that increased entrants will cause

increasingly restrictive regulations and restricted per vessel harvest which eventually destabilize firms in the industry. Historic fishing patterns as well as present participation and dependence were all recognized in determination of the qualifying requirements and the types of rights conveyed to qualifiers meeting different standards. Enforcement in the portion of the fishery making 95 percent of the groundfish landings is anticipated to be about the same, and possibly somewhat easier. For the open access fishery, some enforcement problems may develop if it becomes necessary to implement increasingly restrictive trip limits. The need for these limits will be related to amount of new entry. New entry into the open access fishery is expected to be controlled to some degree through state limited entry systems already in place (e.g. , Oregon shrimp, salmon, gill net). If significant expansion occurs in the open access fishery, this would be a sign of the effectiveness of the portion of the program under which close to 95 percent of the harvest is taken (the limited access fishery). Additional enforcement costs in the open access sector must be weighed against the cost of administering a permit system with a much larger number of participants anticipated under the adopted program, or the costs of allowing the fishery to continue under status quo management. The ability of the adopted program to meet the Council's groundfish goals and objectives are discussed in the following section. The Council anticipates that the overall program will result in net benefits to the nation, and will create the opportunity to extend those benefits.

8.4.2 Groundfish Goals and Objectives

Section 1.2.2 discusses difficulties the Council faces in meeting each of the following objectives. Discussion in this section identifies the way in which the adopted license limitation program is expected to help accomplish each objective. It is established in Section 8.3 that the license limitation program will be effective. This section focuses on how an effective license limitation program will help the Council meet its overall objectives for the groundfish fishery.

Conservation

Objective 2. Adopt harvest specifications and management measures consistent with resource stewardship responsibilities for each groundfish species or species group.

The proposed limited entry system will prevent major increases in the number of active participants. To the degree it does this, it will reduce the unreported discard mortality which occurs from restrictive trip limits and closures. Like trip limits, ITQs also create incentive for unreported discards.

Economic

Objective 4. Attempt to achieve the greatest possible net economic benefit to the nation from the managed fisheries.

The license limitation program is expected to result in net benefits to the nation and will reduce the need for increased restrictiveness in regulations which induce inefficiency in vessel operations. Some increased regulation may be required for exempted gear, however, any national costs are expected to be outweighed by net benefits in the groundfish sector which harvests 95 percent of the resource. A properly designed ITQ system may increase the benefits to levels above those achieved through license limitation. An ITQ system combined with a license limitation system will likely have greater benefits than ITQs alone.

Objective 5. Identify those sectors of the groundfish fishery for which it is beneficial to promote year-round marketing opportunities and establish management policies that extend those sectors' fishing and marketing opportunities as long as practicable during the fishing year.

Controlling increases in participation and maintaining the viability of trip limits in the limited access fishery will allow the Council to continue to work toward meeting this objective. An ITQ program would likely result in an optimum distribution of harvest throughout the year.

Utilization

Objective 9. Strive to reduce the economic incentives and regulatory measures that lead to wastage of fish.

The reduced need for restrictive trip limits resulting from effective limited entry is expected to result in lower discards in the limited access fishery. Lower limited access fishery discards are expected to outweigh any increase in discards which result from trip limit regulations in the remaining open access fishery, which will only harvest about five percent of the resource. Increasing regulation in the open access fishery will be required primarily in the presence of above normal profits in the groundfish fishery. The presence of these profits will be an indicator of the effectiveness and benefits derived from the limited access program. An ITQ system may perform similarly, or if not properly designed and enforced, worse, in terms of the amount of induced wastage.

Social Factors

Objective 11. When conservation actions are necessary to protect a stock or stock assemblage, attempts are made to develop management measures that will affect users equitably.

Every allocation and means of allocating (whether they be direct or indirect allocations resulting from efforts to control harvest rates) have different social and economic consequences. Allocation through a limited entry program places the most burden on those who wish to become new entrants to the fishery, requiring that they displace, through purchase of a permit, those who have historic dependence on it. An open access system spreads the costs of increasing numbers of vessels across all participants. Under limited access a portion of the allocation task is then accomplished through markets rather than government control. ITQs would be similar to license limitation in the placement of a major portion of the burden on new entrants, but would accomplish more of the allocation task. Because of the greater divisibility of ITQs, it may be possible to make a more equitable initial allocation of ITQs than permits.

Objective 13. When considering alternative management measures to resolve an issue, choose the measure that best accomplishes the change with least disruption of current domestic fishing practices, marketing procedures and environment.

Both license limitation and ITQs may be viewed as disruptive to current domestic fishing practices, however, they are the only alternatives which begin to adequately address the problem of overcapacity and stabilization of the industry. License limitation is probably less disruptive than ITQs, however, the problems presented cannot be resolved without disruption. The adopted alternative minimized disruption by taking into account historic dependence on the fishery.

8.5 Other Impacts of the Program

8.5.1 Conservation (Biological and Physical Impacts)

The primary biological effect of the alternatives (status quo, license limitation and ITQs) is their impact on discarding. In addition to the economic loss which may occur when dead fish are thrown away, unmonitored discards present a problem in terms of proper specification of ABCs and control over fishing mortality. Under status quo management, discarding would be due to the trip limits and closures used to limit total annual landings. Except for short-term studies of segments of the fishery, there is no adequate comprehensive onboard observer program that could provide estimates of amounts of discards for this analysis. The rate of discarding could be documented and incorporated into stock assessments if an observer program were to be implemented. Increases in discarding over current levels would be expected if the number of participating vessels increases. An example given in Chapter 6 shows that under certain assumptions, a 10 percent larger fleet size might have moved up by 1 month the imposition of a 3,000 pound widow rockfish trip limit (Table 6-1). While license limitation will control vessel numbers in the portion of the fleet harvesting 95 percent of the resource, some additional discarding may occur if new entry or increased effort in the open access fishery creates the need for more restrictive regulations. However, the lowest rates of discarding would still be expected to occur under an effective license limitation or ITQ system that reduces fishing capacity substantially below future status quo levels.

8.5.2 Dependence On and Interaction with Other Fisheries

Vessels participating in the groundfish fishery with limited entry gears also participate in the salmon, crab, shrimp, tuna and halibut fisheries, as well as Alaskan fisheries and in the groundfish fishery with non-limited entry gears. Table 8-2 shows the percent of qualifying and nonqualifying vessels taking part in these other fisheries. Table 8-3 shows the percentage of their total income from groundfish and average total revenues from groundfish for qualifying and nonqualifying vessels. Presumably, many vessels not qualifying under the adopted MLR option would attempt to make up at least part of their vessel revenue in other fisheries, though the amount to be made up is small relative to the qualifying vessels. Some vessels not qualifying under the adopted MLR may eventually qualify on the basis of the upgrade of a provisional "A" endorsement.

Table 8-2. The percent of vessels taking part in the groundfish fishery with non-limited entry gears (gears other than groundfish trawl, pot or longline) or in the non-groundfish fisheries during the window period by limited entry gear and whether or not the vessel would qualify under the adopted MLR (summary data from Tables 7-8, 7-12 and 7-16).

Gear/Qualifying Under the Adopted MLR Option	Percent of Vessels Participating in Fisheries Other Than Groundfish with Limited Entry Gear							
	Salmon	Crab	Shrimp	Tuna	Halibut	Other	Other Groundfish	Alaska
Trawl								
Qualifying	25	35	51	20	19	88	24	12
Nonqualifying	36	45	41	35	32	66	40	22
Pot								
Qualifying	57	64	21	29	29	62	38	12
Nonqualifying	41	65	21	45	33	84	46	6
Longline[1/]								
Qualifying	52	34	4	19	72	70	39	36
Nonqualifying	56	29	5	13	41	45	41	27

1/ Vessels which may have made longline landings that were coded as pole landings are not included.

Table 8-3. The percent of total vessel revenue from groundfish with the limited entry gear, and total groundfish revenue with the limited entry gear during the window period, by gear and whether or not the vessels would qualify under the adopted MLR option (summary data from Tables 4-24a, 4-25a, 4-26a, and 7-34).

Gear/Qualifying Under the Adopted MLR	Average Percent of Total Revenue from Groundfish with the Limited Entry Gear	Average Total Revenue from Groundfish
Groundfish Trawl		
Qualifying	59.7	287,100
Nonqualifying	19.9	14,500
Pot		
Qualifying	46.1	169,600
Nonqualifying	2.6	1,600
Longline[1/]		
Qualifying	38.3	67,900
Nonqualifying	17.7	3,700

1/ Vessels which may have made longline landings that were coded as pole landings are not included.

Not included in the above tables is information about participants in the groundfish fishery which used exempted gears. In 1987, there were about 3,900 vessels potentially using exempted gear and 3,500 in 1990 (including vessels making landings in California coded as "pole", excluding "pole" landings of salmon). Some groundfish "pole" landings (counted here as exempted gear) may, in fact, turn out to be longline landings. In 1987 and 1990 there were 1,000 and 700 vessels, respectively, with groundfish landings coded as pole (with no salmon). As illustrated by Table 8-2 (other groundfish) there is some overlap between the limited access and exempted gear groups. The overlap

shown by Table 8-2 does not include overlap with vessels making "pole" landings. In 1988, there were 7,729 commercial fishing vessels and 6,252 fishing boats (craft of less than 5 net registered tons) documented in California, Oregon and Washington including those in the groundfish fishery (NMFS, Fisheries Statistics Division). Vessels owners seeking to use limited entry gear who do not hold groundfish LE permits would need to buy a permit from someone in the fishery. The need to acquire a permit to enter the groundfish fishery is similar to that which the groundfish fisherman faces in seeking to enter other non-groundfish fisheries managed under limited entry (e.g., gill net, salmon, and shrimp).

Because a transferable permit system would convey the right to fish under conditions where no vessel has claim to particular amounts of fish, one would generally expect permits to gravitate, through market exchange, to those individuals who expected to earn the most profit from participation in the groundfish fishery. Naturally, the degree to which cross-participation in other fisheries is reduced would depend on the size of the permitted fleet, relative to status quo. With the adopted MLR, cross-participation may be reduced somewhat, but since the target 1987 fleet size includes many vessels that took part in several different fisheries, it is unlikely that significant changes would result.

ITQs would, in general, provide diversified fishermen with a greater opportunity to participate at low levels in the groundfish fishery, while maintaining activities in other fisheries. Within the groundfish fishery, ITQs for individual species could place fishermen at greater financial risk due to changes in the relative abundance of various groundfish species. Permits would allow fishermen greater flexibility in adjusting to changing stock conditions within the groundfish fishery.

8.5.3 Effects on Crew and Wages

The total annual demand for hours of crew labor is not expected to change significantly under license limitation. To the extent that the adopted MLR option reduces fleet size below projected status quo levels, the number of labor positions may be reduced, although the average number of hours and annual payments to individual crew members remaining in the fishery could increase. Little change in the total payments to labor is expected, relative to recent years. Further expansion of the fleet, under continued status quo management (open access), could increase the number of positions available. However, these jobs would carry lower annual salaries and longer periods of underemployment during the year. Implementation of ITQs would likely lead to a more substantial reduction in fleet size, and hence numbers of crew positions, but would generally increase opportunities for crew members to work throughout more of the year. As quota is transferred to more efficient operations, fewer total fleet labor hours might be required with ITQs, although it is not necessarily the case that more efficient operations would be less labor intensive.

8.5.4 Cost of Access Rights

The cost of acquiring a suitable permit to a prospective fishery entrant will vary with the profits that can be earned with the permit. The greater the reduction of the fleet, the larger the increase in average profits for the remaining vessels. As profits within the limited-access fishery rise, relative to other alternatives, the price of permits will also rise, to reflect the difference in profitability between available alternatives. Because future returns from the fishery will be affected by the investment decisions and competitiveness of other participants, the cost of inputs and the abundance of the fish resource, a fair amount of uncertainty will be incorporated into permit prices. Prices for

ITQs would include similar uncertainties regarding costs and abundance, but would remove the uncertainty regarding one's harvest share that is associated with the "race for fish".

8.5.5 Value of a Vessel

The value for vessels which do not qualify for a permit would be anticipated to decline only when they cannot be used as profitably in some other fishery. Then, the loss to the owner is the difference between the vessel's profitability in the groundfish fishery and the next most profitable mix of fisheries in which it might participate. If the boat can be employed to obtain at least as much profit in another use, then there is no loss in the boat's value to the owner. Similar considerations (the value of the vessel in the next most profitable fishery) would determine the price a permit holder might receive or pay for a vessel if it was sold or purchased without a permit.

8.5.6 Effect on Consumers and Exvessel Prices

The effect of the program on prices and consumers is discussed at the end of Section 8.4.1 on limited entry objectives.

8.5.7 Potential for Oligopolies and Effects on Market Power

Through limiting access rights to the fishery and making these rights transferable, implementation of permits or ITQs would increase, in some measure, the potential for individuals or groups to acquire an unfair market advantage. However, the fish harvesting and processing industry is one which is already characterized by influential interests in both sectors. Given the relatively large number of permits issued under the licensing alternative, it does not appear likely that any particular component of the industry will be given an advantage. Furthermore, any industry participant who would attempt to monopolize a geographic or other segment of the industry may be subject to penalties under federal antitrust statutes.

8.5.8 Underutilized Species

As excess harvesting capacity is introduced into the North Pacific groundfish fisheries, Pacific whiting (an underutilized species during the qualifying period for the license limitation proposal) is becoming increasingly attractive to factory trawlers. It would take only a few factory trawlers to create a severe excess capacity situation in West Coast fisheries. Similar circumstances might occur in the Council's other underutilized species fisheries (the jack mackerel and shortbelly rockfish fisheries). For vessels not receiving "A," provisional "A" or "B" endorsements, temporary access to the underutilized species and possibly Pacific whiting will be provided through designated species "B" endorsements. The limited entry alternatives would require that vessels not receiving permits, or ITQs, purchase rights to use equivalent harvesting capacity from existing fishery participants in order to gain permanent entry.

8.5.9 Maintaining Full Species/Species Complex and Geographic Exploitation

Several points can be made regarding maintaining full exploitation of the Pacific coast groundfish resource. The first and most important is that the adopted MLR option would not reduce the size of the fleet on the grounds in any one year, relative to recent years. Beyond attaining a total number of vessels within a gear group that approximates the 1987 active fleet, analysis of the fleet which

would qualify under the adopted MLRs indicates that: (1) an appropriate balance is maintained among vessel size classes, (2) all of the major species groupings reviewed are well–represented in the window landings history of the qualifying fleet and (3) each of the geographic regions examined would retain a fleet capable of harvesting that region's historical share of landings, even where there are differences in the percentages of the window fleet which is retained. It is possible that movement of vessels or transfers of permits after initial allocation could alter the balance originally obtained. However, several factors involving economic incentive suggest that large gaps will not occur in the coverage of the fleet.

8.5.10 Effect on Fleet Responsiveness to Changes in the Fishery

Effect on Innovation

Innovative behavior could be encouraged within the limited entry gears if the number of vessels in the fishery were being reduced significantly. However, fleet size under the adopted MLR option would be held near levels in recent years. Because uncertainty will not be dramatically reduced and trip limits, as well as other efficiency limiting measures, are likely to continue, incentives for innovation are not expected to be much greater than during the late 1980s. An effective license limitation program may stimulate the development of new gear configurations outside the definition of limited entry gear, for purposes of fishing the open access (exempted gear) quota. However, incentive for these innovations will be limited by management regulations in the open access sector.

An ITQ program would likely favor innovation that would increase the value of landed product, through improvements in quality or size of fish, or reduce the unit cost of production.

Effect on Size Configuration of the Fleet

The relative numbers of vessels by size is not expected to be substantially altered by the initial distribution of permits. After initial issuance, there may be some change in the relative numbers. Under license limitation, the available resource would continue to be harvested under conditions where no vessel has claim to particular amounts of fish. This would continue to provide an incentive to use vessels of a size that are able to harvest the resource as quickly as possible (as constrained by weekly trip limits). However, the license limitation program is not likely to eliminate the use of trip limits, hence incentive to increase the size of vessels is likely to be inhibited. Because equivalent harvest capacity cannot be maintained in downsizing permits (permits cannot be split), the fleet may be more likely to evolve into a large boat fleet than a small boat fleet under the licensing options. If this occurs, with the large degree of overcapitalization currently in the fishery, it seems unlikely that the number of small vessels will become insufficient.

An ITQ program would likely be less constrained with respect to vessel size than the licensing options. Additionally, since there would be less emphasis on the speed of harvest, different sizes of vessels could emerge as being more profitable under ITQs than under continued "Olympic" fishery conditions, where no vessel has claim to particular amounts of fish.

Effect on Gear Configuration of the Fleet

Under status quo, the gear configuration of the fleet would fluctuate partly in response to Council allocation decisions and the future regulatory environment. License limitation would limit the degree

to which any gear group might grow, but would not limit declines in usage of a particular gear if that gear became unprofitable.

The initial gear configuration under the adopted MLR option provides for a mix of gear usage similar to that observed during the 1987 fishery (with a slightly larger proportion of trawl vessels). With either option, the gear composition of the fleet will change from the composition at initial issuance only to the extent that permits are combined to accommodate larger vessels, additional vessels qualify through the appeals or provisional permit procedures, or permits for a particular gear go unused.

Depending on the specifics of the ITQ program, the particular combination of gears active in the fishery may be much more responsive to short-term economic conditions. That is, quota might be transferred to the vessels with the most efficient gear given the economic circumstances in the fishery.

8.5.11 Effect on Firm Stability

Both ITQs and permits can be expected to reduce the bankruptcies which are promoted under status quo when numbers of vessels in the fishery continue to expand despite the presence of normal or below normal profits. The increased profits which might be expected in a hypothetical example are displayed in Section 7.2.2.2. It is shown in this example that a 20 percent increase in fleet size might decrease vessel profits by 42 percent. Both permits and ITQs will tend to extract above normal profits from the fishery when they are purchased by the new entrant and may lead to increased instability for the marginal participant. Some individuals may put themselves in a poor financial situation by paying more for a permit than would be warranted because of the desire to participate in a lifestyle or inflated profit expectations. To the degree that there are effectively functioning markets for access rights, the chances of this occurring will be reduced. With the decrease in risk entailed by the certainty of harvest provided by ITQs, profits of businesses will be more stable and the amount of above normal profit extracted from the fishery higher as compared to the status quo or license limitation options. In general, more stability than under status quo is expected under either the license limitation alternative or ITQs.

8.5.12 Socio-economic and Social Impacts

The Council has acquired baseline socio-economic profiles of coastal counties from the Minerals Management Service. These documents provide a variety of social and economic data including community racial and ethnic composition, population and employment trends, information on public services and utilities, industry characteristics, housing profiles, and characteristics of marine activities. These documents are available for review at the Council office. The Council does not expect the license limitation program to have a significant effect on the socio-economic and social structure of the community except as noted.

8.5.12.1 Effects on Community Income and Employment

Level of Income and Employment

An effective limited entry system (license limited entry or ITQs) would be expected to have the following effects in the communities where fishermen and vessel owners live, vessels are serviced, fish processed and marketed, etc:

- fewer individuals directly employed in harvesting, and fewer individuals employed in industries supporting fishing vessels (indirectly employed gear manufacturers, boat yard workers, etc.);

- a stable number of individuals employed in support of other parts of the fish supply chain (indirectly employed processor workers, wholesalers, etc.);

- a stable or increasing number of individuals supported by the personal expenditures of those directly and indirectly employed (induced employment in grocery stores, service stations, entertainment services, etc.).

Overall, under an effective limited entry system, as long as the number of owners or individuals selling permits and moving out of the community is relatively low, local income impacts from the fishery would be expected to increase as an increased portion of revenues would go to profits and possibly wages.

More money would go directly to income under a workable ITQ system than under effective license limitation. An ITQ system may result in higher personal income for crew and non-owner/operators who take the opportunity to purchase ITQs. To the degree that crew and non-owner/operators who purchase ITQ tend to be members of the local community more than vessel owner/non-operators, this may keep more personal income in the local communities.

Stability of Employment

An important Council objective has been the preservation of fishing opportunities throughout a large part of the year, particularly for the trawl fishery. Meeting this objective has been seen as important for promoting greater economic stability in coastal communities as well as maintaining the market presence of West Coast groundfish products. An effective license limitation program may lessen any need for seasonal closures and therefore have a positive effect on stability of community employment and reduce transfer payments (unemployment payments). An ITQ program would likely increase stability unless product prices are particularly high and/or cost of harvest low at certain times of the year.

8.5.12.2 Social and Cultural Impacts

Treaty-Indian and Recreational Fisheries

Treaty-Indian fisheries and the recreational fisheries were considered and placed outside the scope of the alternatives considered under the amendment. These fisheries will not be affected, except that appropriate management of the commercial fishery is necessary if resource availability for these other fisheries is to be assured. (See Sections 5.1, 5.14, and 5.15.)

Historically Significant Fleets

The cultural significance of the Newport Beach dory fleet (a historic landmark) was considered in determining that special provisions should be made to ensure that such fleets are able to continue to operate under the license limitation program (See Section 4.4.4.1.)

Equity in the Distribution of Access Rights

There is no objective way to analyze the fairness and equity of a policy. The best that can be done is to identify key decisions affecting fairness and equity and explain the rationale for those decisions. In the design of the limited entry system, the Council took into consideration the social priorities identified in the MFCMA: present participation, historic practices and dependence, economics of the fishery, vessel participation in other fisheries, and cultural and social considerations. These are addressed in detail in the rationale for design of the proposal discussed in Chapter 4, as well as by information provided in Chapters 5 and 7, and were considered by the Council.

Effect on Demographics of the Fishery Participants

No impact is expected on any particular group of individuals based on race, sex, age or other personal characteristics, except to the degree that one group may have greater difficulty in obtaining financing for the purchase of a permit than another group.

Though there is some uncertainty about the result, the number of owner/operators entering the fishery is likely to increase relative to the number of owner/non-operators because an owner/operator would be more likely to acquire permits through purchase than owner/non-operators. The same would be true for ITQs. Because of the divisibility of access rights, ITQs could make the accumulation of wealth and entry to the fishery easier than either the status quo or license limitation.

Safety Issues

Under effective license limitations, there may be some increase in safety through reduced economic stress and incentive for participation in marginally safe fishery conditions. There may also be some increase in the tendency of some individuals to pay too much for a permit and vessel as a result of a more restricted number of sellers (i.e., an insufficient number of participants for a competitively functioning market) and the buyer's own overestimate of future above normal profits. This could result in trips taken in marginally safe weather conditions in order to make loan payments. For the bulk of the fleet more stability in number of vessels would prevent an expansion from deteriorating vessel profitability and creating incentive for riskier harvest strategies. ITQs would be anticipated to alleviate safety problems by increasing the number of options for harvesting quota.

Other Issues of Public Concern

Windfall Profits

Public sentiment against the creation of windfall profits has been expressed. Windfall profits would arise for those qualifying by meeting MLRs and selling their permit when leaving the fishery. These profits are an extraction of rents and reflect expected future above normal profits. ITQs may also result in the creation of windfall profits. Systems based on issuance and re-issuance of permits through a lottery may avoid windfall profits but would result in other inefficiencies. There is no means under current law to extract economic rent for the benefit of the public which owns the resource.

Government Interference in Fishermen Independence

Concern has been expressed that limited entry represents another interference in the independent and entrepreneurial life style pursued by fishermen. Effective license limitation may reduce the number or restrictiveness of regulations which interfere with the day to day operations of fishing vessels with a particular mode of fishing (e.g., trip limits). At the same time, entering the fishery or acquisition of an additional or larger vessel would also increase regulations by requiring acquisition of a permit with the appropriate gear and size endorsements. The purchase of a permit is a fixed cost which does not interfere with marginal production decisions, while other effort control regulations tend to interfere more with these decisions. Thus, the license limitation system involves a different "kind" of interference. An ITQ system, while not limiting acquisition of vessels, would place greater constraints on the activity of a given vessel and require planning to ensure the proper amount of quota for each species is held, but would not interfere with the organization of the harvest activity.

Risk of Foreign Control

Concern has been expressed that transferable rights under a limited entry system might be subject to foreign purchase and control. In response to this concern, the Council has done two things: (1) expressed its intent that anyone not eligible to purchase a U.S. fishing vessel (as per the Anti-reflagging Act) would not be allowed to acquire a groundfish LE permit and (2) instructed that, if a license limited entry system is adopted, the regulations developed to implement the system limit foreign ownership to the maximum extent allowable under the law. It appears that restrictions on ownership of permits cannot go beyond the restrictions on foreign ownership of U.S. vessels specified in the Anti-reflagging Act. Because ITQs are not linked to the vessel in the same way a permit is, restriction of foreign ownership of ITQs may be more difficult than for permits.

Free Enterprise and Privatization of a Public Resource

A number of comments have been made that limited entry goes against the "free enterprise system" and represents the privatization of a public resource. Failings of the private-property/free-enterprise system generally occur when property rights systems are not in place, so that the individual does not bear the full cost and benefit from his or her use of a resource. Fisheries is an area where property rights to a resource are not assigned. License limitation and ITQs are attempts to rectify the economic failures which occur as a result of the lack of property rights (e.g., overinvestment) through the creation of a system which emulates some aspects of private property rights. It is by this means that limited entry supports the "free enterprise system."

Constitutionality

There is a perception on the part of some that limited entry would not be constitutional. While systems such as that proposed have been found to be constitutional, public statements questioning constitutionality generally arise in situations where an action is being viewed by some as unfair.

Public Opinion

In the winter and spring of 1989, the Council sponsored an industry survey on the topic of limited entry for the groundfish fisheries. Asked about support and opposition to license limited entry, a statistically significant ($P<.05$) majority of all vessel owners opposed limited entry, 49 percent, as

compared to 43 percent in favor. While 50 percent of those vessel owners earning more than 50 percent of their income from groundfish favored limited entry, this was not statistically different from the 44 percent who opposed it in this group. For those vessel owners earning less than 50 percent of their income from groundfish, the difference of 51 percent opposed, to 41 percent in favor, was statistically significant. While more of the responding California and Oregon crew members supported limited entry than opposed it (50 percent in support and 44 percent in opposition), the result was not statistically significant. It was not possible to sample Washington crew members, however, responding non-owner/operators in Washington were 40 percent in favor and 54 percent opposed to limited entry (not a statistically significant difference). The 69 responding processors were almost evenly split, 48 percent in favor and 49 percent opposed. Members of the support industries from Washington, Oregon, and northern California were 45 percent in opposition and 50 percent in favor. Of those attending the Council's 1989 limited entry workshops, 67 percent were opposed and 27 percent in favor of limited entry. All groups were generally opposed to ITQ systems at statistically significant levels with only about 20 percent of vessel owner, processors, and support industries and 25 percent of the crew groups supporting ITQs.

After reviewing the results from the survey, the SSC comments to the Council were in part as follows:

> It is important to note that, while this survey was a useful sampling of public sentiment regarding limited entry, it did not fully evaluate limited entry versus alternative management approaches. We do not know the extent to which the fishing industry would approve of, for example, trip limits on rockfish, sablefish minimum size restrictions, or other commonly used regulations . . . . A majority of the industry might also disapprove of other management measures.

Current public opinion has not been sampled, but conditions in the groundfish and in other fisheries in other regions appear to have generated more support for Council action to limit access.

8.6 Regulatory Flexibility Act

Number of Small Entities Affected

All harvesting activities on the West Coast are conducted by small business entities, except perhaps the catcher-processors which entered the fishery for the first time in December of 1990, after the cut-off date which defines current and historic participation. There were 7,729 commercial fishing vessels and 6,252 fishing boats documented in California, Oregon and Washington in 1988. Each vessel potentially represents a different firm; however, it is known that some individuals or firms own more than one vessel. The segment of this industry directly impacted by this amendment are those vessels fishing groundfish. The number of vessels in this group is estimated at between four and five thousand.

Significance of Impacts

Since all affected businesses in the industry during the period of analysis are considered small entities, no stratification of the analysis is required to identify the impacts on small businesses distinct from other entities in the industry, and the information provided in Chapters 4, 5, and 7 suffice to meet

requirements for analysis of impacts on small businesses. Particular consideration was given to minimizing the impact on smaller fishing entities in the specification of the open access fishery and provisions for small limited entry fleets under local jurisdictions (see Chapter 4). No overlapping regulations have been identified, however, the Fishing Vessel Obligation Guarantee Program and Capital Construction Fund have effects which are counter to the objectives of the license limitation program (see Chapter 9).

The major burden imposed on small businesses by license limitation would be the cost of acquiring a permit incurred by those who do not initially receive them. While the cost for a permit may vary between permits for vessels of different sizes, for a permit endorsed for a particular size the same burden is applied regardless of the size of the firm (amount of annual landings). The cost of permits should reflect anticipated above normal earnings in the fishery. Therefore, acquisition of a permit should reduce profits to levels similar to that in other sectors of the economy which bear similar risks. The requirement that new entrants purchase a permit might be considered to have a significant impact on capital availability for small entities, except that the value of the permit as collateral would expand the vessel owner's financing capabilities.

Those owners most directly impacted will be owners of vessels which do not qualify but have fished with a limited entry gear (see Table 8–1). For some of those not receiving a permit, the limited entry gear groundfish fishery supplied greater than five percent of their gross revenues (see Table 8–3), however a permit may be purchased in order to maintain access to their groundfish revenues or other adjustments may be made by increasing their activity in other fisheries (see Table 8–2). Relative to all groundfish vessels and those vessels with some use of the limited entry gear, the proportion of vessels which have a greater than five percent reduction in gross revenues is expected to be relatively small. Considering only those vessels which may have used limited entry gear during the window period (including California line vessels), and prior to taking into account any compensating adjustment, less than 25 percent of the vessels received more than 10 percent of their income from groundfish during the window period and are not expected to receive limited entry permits on the basis of meeting the MLR. When compared against all groundfish vessels the percent of vessels is less than 20 percent. If it is assumed that most vessels can make adjustments to regain up to 5 percent of any lost revenue, then vessels which received between 5 and 10 percent of their income from limited entry gear caught groundfish during the window period should be impacted at the less than 5 percent level. Therefore, fewer than 20 percent of groundfish vessels will be initially denied access to the source of more than 5 percent of their fishing income. Less impacted will be owners of the three to four thousand vessels which took part in the groundfish fishery with exempted gears. These owners would be required to purchase permits if they desire to begin using one of the groundfish limited entry gears, and will be impacted to the degree that trip limits are necessary to prevent exempted gears from exceeding their quota. The impacts on small businesses also include benefits expected to accrue to the limited entry gear vessels which acquire permits, through higher vessel revenue and increased stability in the industry (see Sections 7.2.3 and 7.7).

The proposed action is not considered to have a significant impact on small businesses because: (1) Most vessel owners not initially qualifying relied on groundfish caught with limited entry gear for only a small portion of their revenue. Those which may have had some reliance on limited entry gear caught groundfish and do not initially receive permits will have the opportunity to regain access to the groundfish resource through the purchase of permits or may recover fishing income through increased activity in other fisheries. With respect to exempted gears, relatively few vessels in the exempted gear fishery would likely be impacted by the level of trip limits necessary to maintain

appropriate harvest rates in that fishery (see Section 4.2). After the opportunity to make adjustments is taken into account, the number of vessels which have their gross revenue reduced by more than 5 percent is likely to be less than 20 percent of the total number of vessels in the groundfish fishery. (2) Annual compliance costs for permit holders are expected to run less than $500 annually, which is less than five percent of the total production costs for most vessels producing at a level at which a permit would be required. The number which may be affected at greater than the 5 percent level is expected to be relatively small (less than 20 percent) compared to all small entities in the groundfish fishery. (3) All entities in the fishery are small entities, thus small entities do not have a greater compliance cost burden than large entities. (4) The value of the permit as collateral would expand the vessel owner's financing capabilities, thus, the requirement that new entrants purchase a permit is not expected to have a significant impact on capital availability for small entities. Relatively high permit prices will be present only if profits in the fishery are high and therefore internal cash flow should be available for most businesses to make payments on financed permit purchases. (5) A large number of small entities will not be forced to cease business operations because those not qualifying generally have a low reliance on groundfish caught with limited entry gear. For those with greater reliance there will be an opportunity to purchase a permit from other fisherman.

8.7 Executive Order 12291 Requirements

This amendment will not have an annual effect of over $100 million, since the total value of the domestic catch of all groundfish species is generally under $100 million. Effects on costs, prices, competition, employment, investment, productivity, innovation, and ability to compete with foreign enterprises are considered in the analysis.

8.8 Council Selection of the Preferred Alternative

The Council unanimously selected the license limitation program as its preferred alternative. This program is expected to generate net benefits to the nation, help the Council meet its groundfish FMP management objectives and meet limited entry objectives (Section 8.3 and 8.4). The net benefits achieved under a license limitation program may be enhanced through an ITQ system. While a comprehensive multispecies ITQ program may perform better on a number of criteria, higher enforcement costs will partially offset the greater benefits and regulatory failure could occur if the program is not properly designed and implemented. The ITQ program has the ability to complement the license limitation program. The combination of the two programs may result in a greater likelihood of success for ITQs and greater national net benefits than either alternative alone.

9.0 RELATIONSHIP OF THIS FMP TO EXISTING LAWS AND POLICIES

9.1 Other FMPs

Salmon. The "Fishery Management Plan for Commercial and Recreational Salmon Fisheries Off the Coast of Washington, Oregon, and California Commencing in 1978" was approved by the Secretary of Commerce on March 2, 1978 and subsequently has been amended several times. The FMP, as well as implementing regulations, prohibits net fishing for salmon in the EEZ. Current federal fishery policies discourage salmon fishing using nets as do state regulations in California, Oregon and Washington. Consistent with these laws and policies, retention of trawl caught salmon is not allowed by the groundfish FMP (see Sections 6.3.2.2, 6.3.5.4 and 6.3.6.4). Some salmon are taken incidentally by normal groundfish fishing operations. The amount of incidental catch by domestic groundfish fishing vessels is unknown. This amendment is not expected to change total catch for the fishery as a whole or cause a significant shift in the catch by net gear, therefore no increase in salmon mortalities resulting from the groundfish fishery is expected.

Anchovy. Regulations implementing the "Northern Anchovy Fishery Management Plan" were published in the Federal Register on September 13, 1978. The FMP has been amended six times. A coastal pelagic species FMP currently under development would incorporate anchovy along with other coastal pelagic stocks. While there is no direct interaction between groundfish fishing operations and either the anchovy resource or fishery, many groundfish species are predators on anchovy. This amendment is not expected to change the groundfish biomass levels.

9.2 Corps of Engineers (COE) Port Waterway Dredging Projects

COE dredging projects are federally authorized navigation projects. The purpose of individually authorized projects vary. Some projects maintain deep draft navigation and others maintain specific port functions, such as the support of commercial fishing activity.

While congressional authorization exists for dredging of many ports along the coast, funding is not sufficient for the COE to meet all of its mandated obligations. Therefore, the COE has been forced to prioritize its dredging activities. For a while, these priorities were based primarily on total commercial tonnage. Ports with less than 25,000 mt of commercial tonnage were put on a low priority for dredging. Subsequently, more consideration has been given to the number and type of vessels active in a port. A higher priority is given to commercial activities than recreational activities.

Total tonnage of groundfish landings under a license limitation system is not expected to change. A license limitation system will reduce the number of vessels able to participate in the groundfish fishery. The vessels which have some record of activity in the groundfish fishery, but do not receive permits, have been shown to have only marginal dependence on the fishery and are likely to remain active in other fisheries or in the groundfish fishery using other gears. Therefore, relative to current numbers there is not likely to be a significant reduction in the total number of fishing vessels active along the coast in all fisheries, and priorities for dredging based on numbers of commercial fishing vessels are not likely to be affected relative to current priority levels. However, an effective license limitation system will prevent future increases in numbers of groundfish vessels. This will limit one source the ports have for increasing their activity (in terms of numbers of vessels) and increasing their priority for dredging.

While the coastwide total number of vessels active in all fisheries may not be significantly reduced from present levels, there is concern that vessels in one port may be disproportionately affected. Two factors need to be considered in addressing this concern: (1) the amount of groundfish fishing activity by excluded vessels (those with some landings of groundfish but not meeting the MLRs) is expected to be very low, therefore it is likely that these vessels will continue to be active in other fisheries; and (2) the permits issued will be transferable and vessels are mobile up and down the coast. Therefore, evenness or lack of evenness in the initial distribution of permits along the coast is not an indicator of how permits will be distributed in the future. Section 7.5.3.2 addresses the geographic distribution of harvest.

Conclusion. The affect of the license limitation system on port dredging priorities, relative to current priorities, is expected to be minor, but there may be some effect relative to future dredging priorities due to reduced opportunities for expansion of the fleet. Initial geographic effects are expected to be minor and any geographic redistribution of permits after initial issuance cannot be predicted.

9.3 Capital Construction Fund Program and Fishing Vessel Obligation Guarantee Program

The Capital Construction Fund Program is authorized under Section 607 of the Merchant Marine Act of 1936 as amended, Public Law 91–469 (46 U.S. Code Section 1177). The purpose of the program is to improve the U.S. fishing fleet, particularly in terms of safety and efficiency. The program allows vessel owners and lease holders to defer taxes on income set aside for the purpose of construction, reconstruction and/or acquisition of a used vessel. The deferred taxes are paid through a reduction in the cost basis used for calculating depreciation expenses after construction. Over the past 20 years close to $1 billion have been deposited into the fund and between $650 and $700 million withdrawn. Over the past 5 years, 75 to 76 percent of the agreements between participants and the program have been with fishermen in Oregon, Washington and Alaska. Before that time, the proportion was 53 to 55 percent, however, downturns on the East Coast and Gulf of Mexico fisheries have reduced the portion of participation from these regions. In order to be financed through the capital construction fund, an item must be depreciable. Since permits do not depreciate they would not be subject to purchase through the program. (Personal Communication: Dorothy Bostic, Office of Trade and Industry Service, NMFS, Washington, DC., 1990)

The Fishing Vessel Obligation Guarantee Program is authorized under Title 11 of the Merchant Marine Act of 1936 (46 Appendix U.S. Code Section 1271 et. seq.) The program provides vessel owners access to private investment markets (municipal funds, retirement funds, etc.). Of a borrower's claim qualifies for a title eleven guarantee, then an auction is then held for the federally guaranteed note. A separate collateralized note between the borrower and the federal government is executed which remains inactive unless the borrower defaults on the federally guaranteed note. Through the access provided to private investment markets, fishermen gain access to long–term fixed interest rate financing generally at an interest rate slightly below that which might be available from banks. Currently, the program is primarily involved in refinancing vessels and rarely finances new construction. Permits which are transferable and may be used as collateral. (Personal Communication: Shawn Barry, Office of Trade and Industry Service, NMFS, Washington, DC.)

These two programs increase the access of vessel owners and lease holders to capital, either through increasing the speed at which financial resources may be accumulated or by providing access to financial markets which would otherwise be unaccessible. Some capital investment may be related to safety or increasing the cost effectiveness of vessel operations, other capital investment may

increase the capacity of the vessel or add new vessels to the fleet. License limitation is an attempt to slow and limit the increase in fleet capacity. To the degree that the capital accessed through these programs is used for creation of new capacity in the fishery, they are at odds with the license limitation program.

Fleet capacity is increased either by increases in the number of vessels or capacity of existing vessels. License limitation directly limits the number of vessels in the fishery. With this limitation on vessel numbers, it would be impossible for either program to result in an increase in the number of vessels permitted into the limited access fishery. In addition to the number of vessels, the license limitation program also attempts to limit the capacity of each vessel through controls on length; however, it is expected that restrictions on length will only be partially effective in limiting individual vessel capacity. It is in this area that the Capital Construction Fund and Fishing Vessel Obligation Guarantee program may have a particular adverse impact on license limitation in that they support fishermen's efforts to increase vessel capacity and so further decrease the effectiveness of the attempted limit.

The license limitation program may have an adverse impact on the Fishing Vessel Owner Guarantee Program mortgages by reducing the value of collateral for currently existing mortgages. It is conceivable that a vessel owner receiving a permit might sell it thereby reducing the value of the vessel as collateral for the loan (see Section 7.2.4.2 on cost of a vessel).

9.4 Marine Mammal Protection Act of 1972

The status of groundfish fishing under the MMPA is discussed in Section 11.7.6 of the FMP. While implementation of a limited entry system may result in fewer active vessels in the fishery, a significant change in total effort (total catch) or relative amounts of different gear used to take the harvest is not expected. Therefore, it is unlikely there will be any significant change in the interactions with marine mammals under this amendment.

9.5 Indian Treaty Rights

Treaties with a number of Pacific Northwest Indian tribes secure to certain treaty tribes certain rights to take fish at their usual and accustomed fishing grounds, which have been defined for salmon to include:

Makah Tribe. Marine waters extending from the Strait of Juan de Fuca "out into the ocean to an area known as Swiftsure and then south along the Pacific Coast to an area intermediate to Ozette Village and the Quileute Reservation." [384 F. Supp. at 312, 364 (W.D. Wash., 1974)]

Quileute and Hoh Tribes. Tidewater and saltwater areas adjacent to the coastal area that includes the Hoh, Quillayute, Queets, and Quinault rivers and Lake Ozette. [384 F. Supp. at 359, 372].

Quinault Tribe. "Ocean fisheries . . . in waters adjacent to their territory" which for fishing purposes includes the area from the Clearwater/Queets River system to Grays Harbor. [384 F. Supp. at 374].

The only active tribal fisheries by the above tribes for species covered by the groundfish FMP of which the Council is aware are the sablefish and rockfish fisheries. At some time in the future, the

Council may have to consider amending the regulations or the FMP to better address these and other tribal fisheries that might develop.

This amendment will not affect rights between treaty and nontreaty fishermen. Certain amounts of groundfish used by tribal fishermen are set aside annually for tribal fisheries, which are regulated by the tribes. Those tribal fisheries are outside the scope of the limited entry plan.

10.0 COASTAL ZONE MANAGEMENT ACT OF 1972 AND ENDANGERED SPECIES ACT

Coastal Zone Management Act Of 1972. The relationship of the FMP to the CZMA of 1972 is discussed in Section 11.6.1 of the FMP. The alternatives in Amendment 6 are consistent, to the maximum extent practicable, with the coastal zone management programs of Washington, Oregon and California within the meaning of Section 307(c)(1) of the CZMA and its implementing regulations.

Endangered Species Act Of 1973 And Marine Mammal Protection Act. The purposes of the ESA are to provide a means whereby the ecosystems upon which threatened and endangered species depend may be conserved, to provide a program for the conservation of such threatened and endangered species, and to take such steps as may be appropriate to achieve the objectives of the treaties and conventions created for these purposes. Section 7 of the ESA requires all federal agencies to ensure that any action authorized, funded or carried out by such an agency is not likely to jeopardize the continued existence of any threatened or endangered species. Consideration of the MMPA, as other applicable law, is included here since some of the marine species are listed as threatened or endangered under the ESA.

Incidental mortality of all marine mammals, including those listed under the ESA, is a rare occurrence in groundfish fisheries according to information collected by NMFS (NMFS 1989 and 1991). Incidental mortality of marine mammal species is authorized under Section 114 of the MMPA. For Steller sea lions, which are listed as threatened under the ESA, incidental taking is authorized in the regulations at 50 CFR 227.12. With regard to the impacts of the groundfish harvests on marine mammal prey species, there is no evidence that the operation of groundfish fisheries off the coasts of Washington, Oregon and California is displacing marine mammals from essential habitat or depleting populations of forage species. Groundfish stock assessments do take predator removals into account as natural mortality and therefore the determination of allowable harvests should not adversely affect marine mammal food needs. Further, the coastal populations of marine mammals that prey on groundfish are either increasing (e.g., California sea lions, harbor seals, elephant seals) or have remained stable (e.g., Steller sea lions) for many years according to NMFS (1991), thereby indicating harvests are not adversely affecting these species. This information has been included in several Section 7 consultations (described below) that concluded the groundfish fisheries are not likely to jeopardize the continued existence of any threatened or endangered species.

A July 5, 1989 biological opinion prepared by NMFS on its Marine Mammal Exemption Program, concluded that incidental mortality of threatened or endangered marine mammals and marine turtles in association with all West Coast fisheries, including groundfish fisheries, is unlikely to jeopardize their continued existence. The U.S. Fish and Wildlife Service also prepared a biological opinion, dated July 3, 1989, which concluded that the exemption program and related fishing activities, including the groundfish fishery, were not likely to jeopardize the continued existence of any endangered or threatened species under the jurisdiction of U.S. Fish and Wildlife Service (e.g., seabirds). Since these biological opinions directly addressed the potential impacts of groundfish fisheries, the findings apply to the Pacific coast groundfish FMP and this action.

Subsequent to the aforementioned biological opinions, NMFS published emergency interim rules listing the Sacramento River winter-run chinook salmon (August 4, 1989, 54 FR 149) and the Steller sea lion (April 5, 1990, 55 FR 66) as threatened under the ESA. A Section 7 consultation was therefore re-initiated on Amendment 4 to the FMP. On August 10, 1990, NMFS issued a biological opinion that considered the effects Amendment 4 to the FMP may have on the threatened and

endangered populations off of the Washington, Oregon and California coasts. The opinion reviewed impacts on marine mammals, sea turtles and Sacramento River winter-run chinook salmon and concluded that the FMP, as amended, would not jeopardize the continued existence of any of the species considered. Final rules listing the Sacramento River winter-run chinook salmon and the Steller sea lion as threatened under the ESA were published on November 5, 1990 (55 FR 46515) and November 26, 1990 (55 FR 49204), respectively.

On November 26, 1991, NMFS issued a biological opinion that considered the effects of the domestic whiting fishery on Sacramento River winter-run chinook and concluded that the whiting fishery would not jeopardize the continued existence of Sacramento River winter-run chinook. An incidental take statement for Sacramento River winter-run chinook was included with the opinion. The opinion also stated that Snake River sockeye salmon, which was listed as endangered under the ESA on November 20, 1991 (56 FR 58619), would not be adversely affected.

This amendment is within the realm of activities considered in the aforementioned opinions that apply to the groundfish fishery. Implementation of a license limitation system is not anticipated to significantly modify the groundfish fishing activities nor change the total catch or effort in the fishery that was considered and analyzed in the past opinions. Therefore, re-initiation of consultation is not necessary for this amendment because it is unlikely to adversely affect any threatened or endangered species and is within the scope of past biological opinion conclusions that the groundfish fishery is unlikely to jeopardize the continued existence of species listed as threatened or endangered under the ESA.

11.0 PAPER WORK REDUCTION ACT (PRA)

The major purposes of the PRA of 1980 are to: (1) minimize the federal paperwork burden for individuals, small businesses, state and local governments; (2) minimize the cost to the federal government of collecting, maintaining, using and disseminating information and (3) ensure the collection, maintenance, use and dissemination of information by the federal government is consistent with applicable laws relating to confidentiality. If this amendment is approved, collection of the information described in this chapter would require completion of a PRA analysis and an Office of Management and Budget authorization. During implementation, it may be determined that information in addition to that described here is needed to properly implement the amendment. At that point, information requirements will be modified and appropriate analysis done under the PRA.

This amendment would require three primary information collection activities:

1. During the initial issuance process, vessel owners would be required to submit proof of their landings and evidence relevant to other considerations for establishing their qualifications. This would be a one time submission.

2. After initial issuance, whenever a permit is transferred to a different vessel or a different vessel owner, the permit owner would be required to submit notice of the transfer to NMFS.

3. Each year, permits would be renewed. Included in the renewal form would be a mail survey on the intent of holders of LE permits to harvest potentially underutilized species for domestic processors.

The following is a partial list of the information which would be collected in each of these three collection activities.

11.1 Initial Permit Issuance

The amount of time required to provide information on an owner's and vessel's qualifications for a permit is the most difficult to estimate. This would however be a one time collection of information (except for individuals upgrading provisional permits, in which case two separate applications would be required).

Vessel owners applying for "A" endorsements would be required to submit the following:

1. Applicants name and address;
2. Vessel name and identification numbers;
3. Evidence of current ownership of the vessel;
4. Evidence of sufficient landings by the vessel
   (a) with the limited entry gear during the qualification period, or
   (b) meeting the provisional "A" endorsement upgrade criteria.

Vessel owners applying for provisional "A" endorsement under the construction or conversion criteria would be required to submit the following:

1. Applicants name and address;

2. Vessel name and identification numbers;
3. Evidence of current ownership of the vessel;
4. Evidence of ownership as of August 1, 1988;
5. Evidence that construction or conversion began prior to August 1, 1988;
6. Evidence that construction or conversion was not completed prior to July 11, 1984;
7. Evidence of sufficient landings to meet the upgrade criteria since the date of completion.

Vessel owners applying for provisional "A" endorsement under the replacement vessel criteria would be required to submit the following:

1. Applicants name and address;
2. Replacement vessel name and identification numbers;
3. Evidence of current ownership of the replacement vessel;
4. Replaced vessel name and identification numbers;
5. Evidence of past ownership of the replaced vessel;
6. Name and address of the current owner of the replaced vessel;
7. Evidence that the replaced vessel would have qualified for a permit;
8. Evidence that the rights to the permit from the replaced vessel were transferred to the owner of the replacement vessel;
9. Evidence that the replaced vessel was "in place" prior to September 30, 1990;
10. Evidence of sufficient landings to meet the upgrade criteria since the date of replacement.

Vessel owners applying for provisional "A" endorsement under the prohibited gear criteria would be required to submit the following:

1. Applicants name and address;
2. Vessel name and identification numbers;
3. Evidence of current ownership of the vessel;
4. Evidence that the vessel made the landings necessary to meet the MLRs specified for the window period.

Vessel owners applying for "B" endorsements would be required to submit the following:

1. Applicants name and address;
2. Vessel name and identification numbers;
3. Evidence of current ownership of the vessel;
4. Evidence of continuous ownership during and since the last three landings of groundfish with the limited entry gear prior to August 1, 1988.

Vessel owners applying for designated species "B" endorsements would be required to submit the following:

1. Applicants name and address;
2. Vessel name and identification numbers;
3. Evidence of current ownership of the vessel;
4. Evidence of commitments to deliver the designated species to domestic processors (or, in the event of the possibility of an apportionment of TALFF, commitment to foreign processors).

The amount of time vessel owners spend collecting and submitting information would depend on how well they have maintained records. Some vessel owners may have to make requests to a state for evidence of landings, if they have not kept copies of their landing tickets.

11.2 Permit Transfer

Information on permit transfer might be anticipated to require the permit owner 5 to 10 minutes of work to fill out and mail notice of the change in ownership or of vessel registration. Information to be provided would be the:

1. previous owners name and address and new owner's name and address (same in the case of transfer to a vessel owned by the same individual),
2. the previous vessel identification number and identification number for the new vessel, and
3. the date of transfer (notarization of the statement might also be required).

This paper work would only be required on transfer of the permit. If vessel owners keep their vessels for the length of the minimum depreciation period (seven years) the amount of work required might be an average of about one minute a year. This information is used to track permit ownership, verify compliance and address notice of annual fees to the proper individuals.

11.3 Permit Renewal and Survey of Harvest Intent

Permit renewal would require the collection of little if any additional information. Forms would be supplied with the information currently contained in NMFS records and the individual renewing the permit would be asked to update any information if necessary. The survey of harvest intent would require vessel owners to fill out and return a form on their potentially underutilized species harvest intent once a year. There are currently three potentially underutilized species of concern (Pacific whiting, shortbelly rockfish and jack mackerel). The time involved in filling out and returning this form for all three species might be 20 minutes once a year. The information to be provided for each species would likely be comprised of a statement of the:

1. amount of the potentially underutilized species which they have firmly committed to delivering for domestic processors (or, in the event of the possibility of an apportionment of TALFF, commitment to foreign processors),
2. processor to whom they have made this commitment,
3. time of year during which deliveries would be made, and
4. nature of the arrangements (contingent on price, any amount up to a certain number of pounds, a certain number of pounds per week, etc.).

This information would be used to determine whether harvesting intent of the permitted fleet is sufficient to meet processor needs for potentially underutilized species, or whether additional temporary LE permits should be issued. It would also serve as a cross check on the processor statements about the amount they intend to process. Vessel owners not intending to harvest underutilized species would not need to return the form.

Permit owners would also be required to keep NMFS apprised of their current address so NMFS may notify them of annual permit fees.

12.0 COORDINATION WITH OTHERS

The preparers of the supplemental EIS consulted with members of the GMT and an Ad Hoc Technical Review Committee composed of university economists, private economists and a sociologist from NMFS. The GMT includes members of the California Department of Fish and Game, Oregon Department of Fish and Wildlife, Washington Department of Fisheries and NMFS. In addition, a limited entry committee and technical advisory committee composed of representatives from industry, representatives from the state fisheries agencies and the Council enforcement consultants, together with NOAA General Counsel and NMFS, Northwest Region personnel, developed the limited entry proposals which served as the basis for this amendment. A similarly composed oversight committee, which also had representation from the NMFS, Southwest Region office, provided guidance in the development of the draft amendment and also reviewed elements of the analysis. The specific individuals consulted are listed in the acknowledgements at the front of the adopted license limitation alternative (appendix).

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14.0 LIST OF AGENCIES, ORGANIZATIONS AND PERSONS RECEIVING STATEMENT

North Pacific Fishery Management Council
U.S. Army Corps of Engineers
U.S. Coast Gaurd
Environmental Protection Agency
U.S. Department of the Interior
U.S. Fish and Wildlife Service
Department of State
Washington Department of Fisheries
Oregon Department of Fish and Wildlife
California Department of Fish and Game
Pacific States Marine Fisheries Commission
Northwest Indian Fisheries Commission
Conservation Organizations
Fishermen's Organizations
Seafood Industry
State Clearinghouses
Other Organizations and Individuals

15.0 DATA METHODS

The Council has decided that only owners of vessels using the following groundfish gears would participate in the proposed limited entry program: groundfish trawls (bottom, roller and midwater trawls), fishpots and longline. These gears are defined under Section 663.2 of the regulations implementing the groundfish FMP. Under the current proposals, owners of vessels using all other gear types would be exempted from the groundfish limited entry program. Additionally, owners of vessels using longline or fishpot gear would be allowed to make small landings without a permit.

15.1 Limited Entry Gear Analysis

At the time permits are initially issued, vessel owners which meet MLRs with a limited entry gear would receive a LE permit endorsed for that gear. To evaluate the effects of alternative landings criteria, the set of vessels which landed Council-managed groundfish species with limited entry gears during the qualifying window (July 11, 1984 through August 1, 1988) was identified.[1/]

The data used to determine whether a vessel landed at least one pound of groundfish with limited entry gear originated from the PacFIN RDB, currently maintained at the NMFS, Southwest Region office and Southwest Fisheries Science Center. The RDB is a three-state integrated landings receipt (fish ticket) file which is used primarily by West Coast researchers to monitor the fishing activity of vessels making marine fish landings into Washington, Oregon and California. Because of its comprehensive design, scope and structure, the RDB aggregates all marine fish landing receipts by unique vessel identification number to facilitate analyses of each West Coast fishing vessel's species, gear and port landing combinations during a year. Fish tickets for vessels which used limited entry gear to land groundfish during the window were selected based upon the species, gear and port codes currently stored in the RDB. However, in many instances, it should be recognized that the RDB does not retain many of the species, gear and port codes that are stored in the original state agency fish ticket data files. Rather, the RDB was designed to map unique state codes into broader, more generalized market, gear and port categories; resulting in some loss of detailed landing information in the RDB. Moreover, a full accounting of the market categories landed and/or types of gear a vessel actually uses is not always possible because many fish tickets have "unspecified" or "other" codes associated with them, or simply may be miscoded with incorrectly specified gear and market categories. For these reasons, and because landing receipts which cannot be linked to a valid vessel identification number are eventually discarded from the "final" landings data file, the RDB should not be considered the definitive data base for establishing whether a vessel meets the minimum qualification criteria.

The universe of vessels potentially eligible to participate in a limited entry program were identified for each of the respective limited entry gear fleets (trawl, fishpot and longline). Fish tickets for each vessel were subsequently reformatted into a data file structure that researchers on the LEADOC agreed would facilitate analysis of alternative MLRs. For this purpose, each vessel's fish tickets were first organized and screened by date of delivery. A summary trip data file was created by aggregating the following trip variables over six month time periods: landing date; delivery port; gear types used; landed weight and exvessel value of groundfish landings by gear; and landed weight and value of

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[1/] Those groundfish species currently managed by regulations governing the Council's groundfish FMP are shown in Table 5-3.

non-groundfish market categories. These aggregated summary trip data files were created to facilitate analyses of a vessel's semiannual trip and landings activity in order to evaluate alternative MLRs.

The task from initially selecting the limited entry gear window fleet (all vessels with at least one landing during the qualifying period with limited entry gear) to developing the semiannual summary trip files (Table 15-1) involved several steps. The summarization procedure was particularly complex since it involved screening all fish tickets on a per trip basis and then checking for possible coding errors and anomalies based upon conditional tests of different market category/gear combinations. When it was determined that market or gear category codes were clearly incorrect, the trip was reclassified and assigned to the appropriate mode in the trip summary file. These reclassification decisions were based upon known linkages between gear types and market category compositions, knowledge of West Coast fishery interactions and landings criteria recommended by the LEADOC. The specific steps executed to develop the final summary trip files analyzed for this limited entry study are discussed for each of the respective limited entry gear fleets.

Two data sets were produced using different sets of gear classification criteria; the results from the first run were presented to the Council at its April 1990 meeting. After reviewing the results of this first data run and receiving comments on the results and methodology from the LEADOC, the classification method was revised for generation of the final data set. The philosophy which guided the development of the final data set was: (1) any vessel that has a fish ticket which shows a code for a limited entry gear should be included in the window fleet unless the landing would be illegal or physically very difficult; e.g., landing of salmon with longline gear, or shrimp caught with groundfish trawl and (2) the objective of the analysis is not to identify vessels which will qualify, but to estimate the number of vessel that have different likelihoods of qualifying. This second data set was used for a July 1990 presentation to the Council and to produce this document. The following is a description of the classification method used for the final data set.

Gear Identification Criteria for Final Data Set.

Limited Entry Trawl Fleet. For the past several years, NMFS, Southwest Region, has maintained an inventory of fishing vessels that made one or more landings of groundfish with legal groundfish trawl gear (i.e., bottom, roller, midwater, but not shrimp trawls). This inventory list of groundfish trawl vessels has been supplied to NMFS by the state fishery agencies in Washington, Oregon and California. It was decided to use this inventory set of groundfish trawlers as the best estimate of the limited entry groundfish trawl fleet, since each state relies on its own landing records and adjustment procedures to compile these annual vessel lists. The accuracy of this state supplied trawl inventory list was then cross-checked with these vessels' annual landing records in the RDB. As expected, most of the state inventory list of vessels had verified landings of groundfish (one or more pounds) associated with limited entry trawl gear codes during the window period; this set of vessels comprised the limited entry groundfish trawl fleet for the analytical phase.

The window limited entry groundfish trawl fleet was identified by selecting all vessels on the state trawl lists which had valid landings of any legal groundfish species with the following trawl gear codes: groundfish trawls ('GFT'), bottom trawls ('BTT'), roller trawls ('RLT'), flatfish trawls ('FLT'), otter trawls ('OTW') and midwater trawls ('MDT'). This selection procedure defined the universe of trawl vessels potentially eligible to participate in the proposed limited entry program, based on RDB gear and market category codes. Some inconsistencies between state agency reported landings and verifiable landing receipts in the RDB were revealed. For example, some state inventory trawlers did

Table 15-1. Limited entry summary file data elements.

Record 1

Vessel ID

Six Month Period

Vessel Length Type

Vessel Length

Vessel Weight Type

Vessel Weight

Principal Port

Dependence on Principal Port

Principal Groundfish Gear

Gear Dummies (11 Variables)

1. Trawl
2. Trawl Whiting Shoreside
3. Trawl Whiting JV
4. Fishpot
5. Longline
6. Criteria-line (Pole Landings Meeting Criteria)
7. Other Line (Pole and Oregon Setline Landings Not Meeting Criteria)
8. Unspecified Gear
9. Other Groundfish Gear
10. Non-groundfish Gear
11. Puget Sound Gear Catch

Trip Modes (Frequency by Gear - 15 Variables)

1. Trawl
2. Trawl Whiting
3. Fishpot
4. Longline
5. Criteria-line (Pole Landings Meeting Criteria)
6. Other Line
7. Unspecified Gear
8. Other Groundfish Gear
9. Salmon
10. Crab
11. Shrimp
12. Tuna
13. Halibut
14. Other Species
15. Puget Sound Groundfish

Table 15-1. Limited entry summary file data elements (continued).

Record 2

Landings (By 9 Species by 8 Gear Groups - 72 Variables)

Species Groups

1. All Other Groundfish
2. Pacific Whiting
3. Sablefish
4. Thornyhead/Arrowtooth
5. Sebastes Complex
6. Widow Rockfish
7. Unspecified Rockfish
8. English, Petrale, Rex and Sand Soles
9. Dover Sole

Gear Groups

1. Trawl
2. Trawl Whiting
3. Fishpot
4. Longline
5. Criteria-line (Pole Landings Meeting Criteria)
6. Other Line
7. Unspecified Gear
8. Other Groundfish Gear

Record 3

Exvessel Revenue (By 9 Species by 8 Gear Groups - 72 Variables)

Record 4

Landings (By 8 Non-groundfish and Groundfish not Managed by the Council Species)

1. Salmon
2. Crab
3. Shrimp
4. Tuna
5. Halibut
6. Other Non-groundfish
7. Groundfish not Caught with Limited Entry Gear
8. Puget Sound Groundfish

Table 15-1. Limited entry summary file data elements (continued).

Record 5

Exvessel Value (By 8 Non-groundfish and Groundfish not Managed by the Council Species)

Record 6

Landings by Regions (By 6 Regions and 8 Gears - 48 Variables)

Regions

1. Washington
2. Oregon
3. California (Eureka INPFC area)
4. North Monterey INPFC area
5. South Monterey INPFC area
6. Conception INPFC area

Gear Groups

1. Trawl
2. Trawl Whiting
3. Fishpot
4. Longline
5. Criteria-line (Pole Landings Meeting Criteria)
6. Other Line
7. Unspecified Gear
8. Other Groundfish Gear

Record 7

Value by Regions (By 6 Regions and 8 Gears - 48 Variables)

not have "valid" landing records in the RDB, or had RDB landing records but registered no groundfish landings in association with legal trawl gear codes. Moreover, because the State of California's current practice is to code trawl as well as other kinds of net gear landings under the pneumonic 'OTW' (otter trawl), the RDB yields a considerably larger number of vessels that "appear" to have landed groundfish with legal trawl gear when compared to the state supplied inventory. In those instances, where it is unclear exactly what the vessel is doing because of coding problems inherent in the RDB, vessels not on the state lists or vessels on the state trawl lists not landing groundfish with trawl gear were not included as part of the limited entry groundfish trawl fleet.

The groundfish trawl gear codes (particularly 'OTW') posed difficult coding problems because it is known they may include other kinds of fishing nets (i.e., shrimp trawls, gill nets, seines) on California fish tickets. For example, pink shrimp landings often appear in conjunction with groundfish under the gear code 'OTW'. It is clear these are actually shrimp trawl landings with groundfish occurring as a by-catch while target fishing for pink shrimp; it would be incorrect to call this trip a groundfish trawl delivery. Thus, these (and related) cases were reclassified as non-groundfish trips when (1) certain non-groundfish (i.e., pink shrimp) and groundfish species were landed jointly and the gear code is groundfish trawl and (2) any non-groundfish species were landed with groundfish trawls when groundfish was not present on the same trip. More troublesome, however, is the possibility that a trip occurs when groundfish is landed exclusively and the gear is **incorrectly** coded as groundfish trawl. These trips would, of course, be classified as trawl deliveries without further a priori information about the type of vessel involved. Thus, the size of the eligible limited entry groundfish fleet could be over or underestimated to some degree due to the uncertainty of existing gear and market category codes in the RDB.

Limited Entry Fishpot Fleet. The window limited entry fishpot fleet was identified by selecting all vessels from the RDB that landed any legal groundfish with fishpot ('FPT') or other pot ('OPT') gear. Moreover, it was discovered that in the 1986 RDB, three California fishpot vessels had large sablefish landings linked with the unspecified ('USP') gear code; therefore, these vessels were subsequently added to the 1986 limited entry fishpot fleet after they were confirmed to be sablefish fishpot vessels.

Those trips which showed groundfish associated with the 'OPT' gear code required testing to distinguish true groundfish trips from those in which groundfish are caught incidentally to Dungeness crab. In these cases, when Dungeness crab and groundfish were landed jointly and more than 50 percent of the total trip poundage was groundfish, the trip was classified as a fishpot delivery. Apparently, vessels occasionally set crab pots and then fish for groundfish with fishpots on the same trip (Robert Demory, personal communication, Oregon Department of Fish and Wildlife).

Limited Entry Longline Fleet. The window limited entry longline fleet was selected by isolating all vessels which recorded groundfish landings with the following longline/setline/pole gear codes: longlines ('LGL'), setlines ('STL') and commercial poles ('POL'). The 'POL' gear code was required to identify the California longline fleet, which are generally coded as landing groundfish with 'POL' gear in that states' fish ticket file.

Because of variability in capability for identifying trips made with longline gear, three classes of longline trips were established:

1. Longline Trips — Any PacFIN 'LGL' coded trip (or in Washington and California 'STL' coded trip) excluding those in which salmon were landed.

2. Criteria–line Trips — Any PacFIN 'POL' coded or Oregon 'STL' coded trips in which more than 300 pounds of the catch is groundfish, or more than 225 pounds are sablefish, or more than 100 pounds are rockfish, excluding those trips in which salmon were landed.

3. Other Line Trips — Any PacFIN 'POL' coded or Oregon 'STL' coded trips in which 300 pounds or less of the catch is groundfish, and 225 pounds or less is sablefish, and 100 pounds or less is rockfish, excluding those trips in which salmon were landed.

Individual trips needed to be tested and reclassified when it was clear that longline gear was miscoded on fish tickets. First, when a trip showed salmon and groundfish landed together, regardless of the gear type, it was classified as a non–groundfish delivery. Second, those 'STL' trips which were landed in California and Washington were classified as longline. In Oregon, a 'STL' trip was classified as probable longline trips (criteria–line) when any one of the following "species criteria" conditions were satisfied: total groundfish exceeded 300 pounds, total sablefish exceeded 225 pounds, total rockfish exceeded 100 pounds; if none of the trip landing conditions were met, the trip was classified as other hook–and–line. Third, in the case of a 'POL' landing, the same species criteria test was applied. 'POL' trips were coded as criteria–line if they met the criteria and were otherwise coded as other line.

The species criteria test was developed by examining 1985–1987 trip records for vessels generally considered to be longline vessels; vessels with more than 1,000 pounds of sablefish or 1,000 pounds of rockfish during any 1 of the 3 years. Frequency distributions of numbers of trips by pounds per landing (where the species of interest was a major component of the catch––the catch was comprised of more than 50 percent of the species of interest) were examined for break points. A clear break was found only for sablefish. Since the break point for rockfish was not as clear, a less stringent criteria was used. For groundfish, the only meaningful break point would be above that set for rockfish or sablefish; therefore, a break point was sought in a lower part of the frequency distribution. The results showed that about:

- 95 percent of the trips where sablefish comprised more than half of the groundfish onboard, the amount of sablefish landed was greater than the 225 pound criterion;

- 75 percent of the trips where rockfish comprised more than half of the groundfish on board, the amount of rockfish landed exceeded the 100 pound criterion; and

- 85 percent of the trips where groundfish comprised more than half of the total catch, the amount of groundfish landed was greater than the 300 pound criterion.

Later analysis showed that the methodology for developing the numbers of days of landing requirement for the high and adopted MLR was not sensitive to the different groupings of line vessels (i.e., the same number of days requirement for longline vessels resulted regardless of whether the data included other line and criteria–line trips).

The gear and species criteria classification procedures used for all gears were arrived at after several LEADOC meetings. They were developed to allow for maximum flexibility in estimating who might qualify for a proposed limited entry program. The summarized trip data files reflect these decisions as accurately as possible.

Two extracts of the database were run. The first was carried out in the spring of 1990 and was the basis for development of the high MLR. After a change in personnel providing PacFIN database services, a second extract was carried out in the spring of 1991, reconstructing the procedures followed for the first extract. There were some differences between the two extracts. While the reasons for the differences between the two extracts are not clear, the differences do not result in significant changes in the analysis of impacts or the conclusions reached. Only Tables 4–17 through 4–19 in the final SEIS use the results from the first extract. The most important result of the differences between the extracts is in the MLR which would be derived if the MLR were based only on the second extract; and these differences are small. If the high MLR had been developed using the second extract, the high MLRs for whiting trawl and fishpot gear would have been somewhat higher, and hence fewer vessels would have qualified. The net effect of continuing to rely on the initial extract as the basis for the high MLRs is that it is expected that two more vessels may qualify on the basis of the whiting trawl MLR and eight vessels may qualify on the basis of the fishpot MLR than would be the case if the MLR were redeveloped on the basis of the second extract. Moreover, it is possible that the two trawl vessels which qualified on the basis of the whiting MLR may have already qualified on the basis of the non–whiting trawl MLR, so there may be no net difference in the number of trawl vessels qualifying.

15.2 Exempted Gear Analysis

An analysis of the effects of various trip limits on exempted gear vessels was carried out. Exempted gears were divided into four groups for analysis: shrimp trawl, salmon troll, all other net (other than groundfish trawl, shrimp trawl and dip net), and all other hook–and–line (other than longline and salmon troll). It is likely that many vessels making landings with a gear code of pole ('POL') will turn out to be exempted gear. Therefore, while these vessels were included under the limited entry analysis in the criteria–line and all line categories, they were also analyzed under the open access analysis under the other hook–and–line category.

Shrimp trawl was identified as all landings coded as shrimp trawl ('SHT', 'SST', 'DST'). Additionally, in California, many pink shrimp landings were coded as other trawl ('OTW'). Therefore, when there was pink shrimp landed on a day coded as 'OTW', it was assumed that all other species landed under the 'OTW' code on that day were landed with shrimp gear. A similar situation arose with California salmon landings, which are generally coded as 'POL', so a similar assumption was made; i.e., that all species landed under the 'POL' code on a day in which there was a salmon landing would count as being landed with troll ('TRL') gear. The following is a summary of the PacFIN gear codes used to identify exempted gear vessels.

Shrimp Trawl:	SHT, SST, and DST together with OTW on a day in which shrimp are landed.
Salmon Troll:	TRL together with POL on a day in which salmon are landed.
Other Net:	GLN (gillnet), TML (trammel net), ONT (other net) and SEN (seine)

Other Hook-and-Line: HDL (handline), DRL (drop line), JIG (jig), and OHL (other hook-and-line) together with POL (except POL on a day in which salmon are landed).

All records for every vessel with landings from the codes indicated above were extracted to form the dataset for the analysis of the exempted gear fishery.

In analyzing the effects of hypothetical trip limits on the income of exempted gear trips, it was assumed that all of a vessel's records for a given day were generated from a single trip and the per pound value of any amount of fish discarded as a result of the hypothesized trip limit would be equal to the average per pound value of the vessel's catch for that day. In reality, if a vessel were to accidently go over a trip limit, it is likely that the average price of those fish discarded would be somewhat lower than the average price of those landed (i.e., faced with discarding dead fish to meet a trip limit, a fisherman would likely discard the less valuable individual fish). Thus, the reduction in trip income from a trip limit would be somewhat less than indicated by the analysis.

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17.0 SUMMARY AND RESPONSE TO WRITTEN PUBLIC COMMENT

This chapter summarizes comments received during the official comment period on Amendment 6 and the draft SEIS. There are four sections. The first section summarizes recommendations for changes to the license limitation alternative of Amendment 6. The second section summarizes comments from fishermen about their specific circumstances. A third section summarizes comments about expected impacts of the alternatives and which alternative in Amendment 6 should be adopted or pursued by the Council (status quo, license limitation, or individual transferable quotas [ITQs]) and the fourth section lists comments on the content of the draft SEIS and the process the Council followed in its consideration of limited entry. Responses are provided in italics.

Recommendations on Changing the License Limitation Alternative

Area Specific Issues

1. For gears other than trawl, do not restrict harvest of fish below the 39th parallel. (Nungaray)

Absent a limited entry program, any loosening of regulations or increase in allowable harvest for a particular gear will only result in an influx of capacity and no net gain for the current participants. If trawl gear were restricted and other gears remained unrestricted, effort and capacity of the fleet using other gears may increase, presenting the Council again with the choice of further restricting trawl gear or restricting the other gears.

2. Use a management structure in California different from that in Washington and Oregon. (Merlo)

The limited entry program contains some degree of sensitivity to the differing state of the fishery between areas. One of the main reasons for limiting only groundfish trawl, longline, and fishpot gear was that these were the gears which dominate the fishery, particularly in the north. Other gears such as gill net and various line gears, which are used more in the south, were exempted from the requirements of obtaining a permit. This was done, in part, at the request of representatives from California areas. Additionally, where an ABC is not fully taken in the INPFC area, initially there may not be an allocation which restricts the exempted gears. Even under the limited entry program, if trip limits or other effort controls are necessary, the Council may choose to manage the areas differently by imposing restrictions of differing type or severity on open access gears in different areas.

3. Develop the plan on an area by area basis. (PCFFA)

Area by area development of a limited entry plan would complicate the plan and enforcement, restrict vessel movement along the coast, and likely require increased complexity in the Council's other management measures such as trip limits and season opening dates.

4. Allow groundfish taken on shrimp landing tickets to qualify shrimp trawlers south of Point Conception (or all shrimp trawlers) for limited entry. Fishermen in southern California did not catch a lot of groundfish during the qualifying window because of the effects of 25 years of seismic surveys, an oil spill off Santa Barbara in 1969 and an El Nino right before the window period (the commenter provided maps of the seismic surveys and a summary statement from a Mineral Management Service study on environmental effects of the surveys). Fishermen were primarily shrimp trawling during the window period because of the availability of prawns and lack of groundfish to target, however, groundfish are now starting to come back. Two thirds of the 20 boats in the association will not be able to qualify. These vessels have a negligible impact on the resource and require flexibility for economic there were not enough survival. (Southern California Trawlers Association--multiple letters)

Vessels did not participate in the West Coast groundfish fishery during the four year qualifying window for a large variety of reasons. The Council was presented with these arguments but was not swayed that the case was significantly different from that which could be made by north coast shrimp trawlers or halibut longline vessels. Owners of these vessels might also point to better opportunities in other fisheries for the reason they did not participate in the groundfish fishery during the window period. Seismic survey studies indicated that fish moved lower in the water column during tests, but that no disaggregation of stocks occurred. Thus, the evidence did not indicate that the effectiveness of trawl gear would be changed. The El Nino effects cited occurred in 1982 and 1983. The primary biological effect has been understood as a temporary dislocation of stocks out of the area, not mass mortality. In other areas impacted by El Nino, there has not appeared to be any significant change in recruitment. Therefore, the reduction in landings in post El Nino years appears to be more from the discovery of new markets for other species than from a change in the availability of stocks. The adopted MLR for trawl gear is the highest of the gear specific requirements and is only nine landings for an average of two to three landings per year over the window period. Vessels active during the four year window period but not participating in the trawl fishery at this minimal level were clearly involved in other fisheries and not dependent on the groundfish fishery. There are 44 vessels in the southern California area which will qualify, demonstrating the feasibility of the trawl groundfish fishery (23 out of 67 vessels with at least one trawl landing during the four year qualifying period will not qualify, Table 7-29b).[1/] *To provide an exception for what appears to be primarily a case of better economic opportunity in other fisheries would appear to be unwarranted and would open the door for vessel owners in many other fisheries to argue their qualification on the same basis. Since permits are not area specific, nonqualifying vessel owners who wish to enter the fishery will have opportunity to purchase permits if they desire to enter the fishery at a later date.*

Gear Specific Issues

5. Eliminate the need to include fixed gear in the limited entry plan by undertaking sablefish management measures which would provide regional quotas and year round fishing opportunity (the specifics of this approach are outlined in the letter). A number of arguments were presented in support of the proposal. The arguments related to safety, enforcement, utilization, marketing gluts and allowing a larger number of vessels to participate. (Half Moon Bay Fishermen's Marketing Association)

1/ Due to a dataprocessing error, Table A-8 of an analysis mailed to the public in July 1991, incorrectly identified the number of nonqualifying trawlers as 24 out of 49.

While there may be other management measures which improve fishery conditions for a particular group, without a limited entry program efforts to implement these measures will be frustrated by an influx of new entrants encouraged by the improved fishery conditions. Thus such measures as suggested may be complementary but cannot substitute for a limited entry program.

6. Rather than having permits, restrict vessels using net gear. (Ashwin)

For most species (sablefish being the primary exception) status quo management restrictions generally affect net gear, i.e. trip limits and quotas primarily affect the trawl fishery. The only net gear which is generally not restricted by current measures may be gill net.

7. Drop the "no salmon" provision. Some vessels set longline on the way out to salmon troll and retrieve the set on returning. The groundfish catch from these vessels may be legitimate longline catch, but salmon were also landed. (Citizens Against Limited Entry)

   Drop the "no salmon" provision which prevents delivery tickets with salmon on them from counting toward fulfillment of the MLR. Salmon fishermen in northern California and southern Oregon have been hit hard by recent years of low abundance and decreased allocation. As a response, many salmon vessels have become dependent on bottomfish bycatch when fishing for salmon. The "no salmon" provision prevents vessels from diversifying into longline gear. (Del Norte Fishermen's Marketing Association)

Several difficulties have arisen with regard to the identification of trips made with longline gear as opposed to other hook-and-line gears. It is illegal to catch salmon with longline gear. Therefore, a trip which is coded as longline or identified as a possible longline trip but has salmon is either miscoded, misidentified, or an illegal landing. Such trips should not be counted toward the MLR. This is not intended to discriminate against salmon fishermen, but to distinguish trips made with longline gear from trips made with other hook-and-line gear. Because troll gear is exempted gear, salmon trollers would continue to be able to land bottomfish bycatch. Any properly coded longline landings over 500 pounds made by vessels that also fished for salmon would be counted toward meeting the MLR. Salmon fishermen not qualifying for permits may purchase permits to enter the fishery like any other new entrant.

8. Provide a specific exception or another gear endorsement to allow those who met the MLR with rod and reel gear to participate in the limited access fishery. (Small Boat Commercial Salmon Fishermen's Association)

While the most powerful gears on the coast would be limited, there may be vessels using other gears which have landings equal to that of vessels using the gears included under the program. However, vessels using nonlimited entry gear have been exempted from having a permit and are allowed to continue to participate in the open access fishery. If representatives from these gear groups come forward and request the gear group as a whole be included under the limited entry program, this may be considered by the Council as part of a future amendment. Also, see the response to comment 38.

9. Ban gill nets as part of the program. (Koblick)

The goals and objectives for limited entry are not to ban a particular gear but reduce investment in additional fishing capital.

10. Consider a gear prohibition inside three miles sufficiently extensive to warrant the granting of permits to vessels using the prohibited gear. In the current program, it is unclear as to how extensive the prohibition on a gear must be in order to qualify vessels using a prohibited gear for provisional "A" endorsements. For many, grounds inside three miles are the traditional fishing grounds. (McCeney)

Require a gear prohibition be effective in the exclusive economic zone (EEZ) in order to trigger provisions for prohibited gears. Require a vessel be documented in order to qualify under the prohibited gear provision. (Schock)

Once the extent of the California gill net ban is established, the NMFS issuing authority will have to make a determination as to whether or not the ban is sufficiently extensive to warrant the application of provisions for banned gears. The requirements for documentation will be the same as applies to any vessel that qualifies with groundfish trawl, longline, or fishpot gear.

Small Vessel/Large Vessel Issues

11. Allow fishermen using longline gear to fish without a permit with a 1,000 pound daily maximum and a twice a week allowance of 2,000 pounds. All fish caught over the limits should be landed and profits put into a special fund for research and regulation. This would allow small fishermen without a major impact on the resource to stay in the fishery. (Plourd)

Exempt vessels landing under 300 pounds of groundfish per trip. (Reeves)

Allow vessels a limited catch per day using ground tackle or allow use of an established number of hooks without needing to have a permit. (Stagnaro)

Exempt those using less than 5,000 hooks. (Patana)

Create a separate classification with lower landing requirements for vessels under 26 feet in length which do not use power equipment to retrieve longline, use fewer than 400 hooks or 10 traps, and make only one day trips. These vessels deal in quality and unique markets. Live fish caught in traps bring them $6.00 per pound. (Tavasieff)

These comments reflect a general interest in special consideration and exemptions for small vessels. An exemption for vessels using under a certain number of hooks was considered but rejected as this type of an exemption would be too difficult to enforce. However, in response to these requests the Council established an open access opportunity for small producers using fishpot and longline gear. The open access fishery for these small producers will be managed with the goal of providing year round fishing opportunity while maintaining the landings of these vessels in line with historic landings levels. This goal will likely mean fairly restrictive trip limits. At the time the open access fishery was created, the MLRs were altered to make it more difficult for small producers to qualify for "A" endorsements, i.e. a condition was added to the MLRs requiring that a landing be greater than 500 pounds in order to count as a day of landing in determining whether a vessel met the MLR.

12. Limit the gear on large longliners. (Patana, Tarr)

Because of difficult enforcement, measures which would limit amount of line gear on board have been rejected as a means of restricting capacity.

Alternative Qualifying Requirements

13. Grant exemptions to those who fished 20,000 pounds per year for 5 of the last 8 years (January 1, 1983 through December 31, 1990) and are longline vessels less than 45 feet in length or trawl vessels less than 50 feet in length. Annual landings of 20,000 pounds should be required to retain the exemption. Either a lease holder or the vessel owner can be exempted, but not both, from the same vessel (some individuals have had their vessels held under the names of others to satisfy lending institution requirements). The exemption would be for the person, but could be sold with the vessel. The gill net ban may result in the availability of a large biomass of rockfish for exploitation. Provisions should be made so that gears such as longline and trawl gear can exploit this biomass. Longline gear can be very selective and neither of these gears has significant bird or marine mammal bycatch. (New)

The type of exemption suggested would essentially be another type of permit, i.e. a vessel's qualification for the exemption would be established based on its fishing history and qualified vessels would be permitted to fish. Since the MLRs would have to be increased so that the program would still meet targets for numbers of permits to be issued, the result of the exemption would be that different groups of persons would qualify and not qualify. It is not apparent that the suggested set of requirements necessarily has more merit than the set selected by the Council. Annual landing requirements are not part of the Council's plan (except with respect to provisional "A" endorsements) because they encourage effort and thus run counter to the objectives of the plan. The Council chose to issue permits to vessel owners rather than lease holders because these are the individuals whose capital would be diminished in value if they did not hold a permit for their vessel. If the gill net ban is sufficiently extensive to result in the creation of a large unexploited biomass, then it would be likely that provisions allowing the issuance of endorsements to prohibited gears would come into effect. These vessel may then be able to exploit the surplus biomass with limited entry gear. If at some time there is insufficient capacity to exploit a population in a given area, the Council may amend the plan to issue additional permits (these permits could be restricted to a specific area).

14. Create qualifying requirements which take into consideration years of working in the fishery as an owner. (Merlo)

In determining the qualifying criteria, the Council chose to consider current vessel ownership rather than past ownership because current owners are the individuals whose capital would be diminished in value if they did not hold a permit for their vessel. Historic involvement and dependence on the fishery is taken into account through the record of the vessel owned.

15. Extend the qualification window to the day of enactment. (Half Moon Bay Fisherman's Marketing Association)

Notice of the August 1, 1988 qualification cutoff date was published in the Council newsletter, major trade magazines, fishery association newsletters, and the Federal Register. Moreover, the original cutoff date was July 11, 1987. This date was publicized in all the above listed media except the

Federal Register (it was because of notice was not published in the Federal Register that the Council moved the cutoff date back one year). The Council believes movement of the cutoff date to day of enactment is not warranted given the widespread publication of both the original cutoff date and the later date which was finally adopted, and particularly in consideration of the one year lag between the two dates. During that one year lag there were ample sources of information, including other fishermen, from which groundfish fishermen monitoring their industry could have received information about the cutoff date. The purpose of the cutoff date is to prevent persons from entering the fishery only on the speculation that they might qualify for a valuable permit which might later be sold at a profit. Such actions would frustrate the purpose of the program and damage those who have a history of real dependence on the fishery.

16. Issue permits to anyone with one delivery in the last five years but make the permits nontransferable. After attrition takes its toll, permits would become transferable. (K. Bornstein)

Different qualifying periods and landing requirements create different sets of gainers and losers. A plan which relies on attrition due to the nontransferability of permits would result in hidden transfers or place the greatest burden on those active groundfish fishermen retiring from the fishery who would have to sell their vessels for much less than their value. A plan such as the Council's, which uses higher MLRs to issue fewer permits at the start of the program, burdens those who will lose the least relative to their prior activity. Since these individuals were relatively inactive, their burden is relatively small.

17. Allow anyone who met the MLR with a vessel during the window period to qualify for a permit with their present boat. (Weikal)

Such a provision would allow one vessel to cause the generation of several permits. This could significantly decrease the effectiveness of the limited entry system. The notice on the August 1, 1988 cutoff date indicated that qualification would be based on the vessel's history.

18. Allow vessels to qualify which made over 50 percent of their total income from groundfish during the window period. (Miller)

This would generally be a more restrictive landing requirement than that adopted by the Council. After considering a range of possible MLRs the Council adopted an MLR which, in general, requires less dependence on the fishery in terms of proportion of income, but will allow more combination vessels to qualify. These combination vessels may rely on groundfish for a relatively small but important segment of their income. The adopted MLRs also result in placement of small producing longline and fishpot vessels in a restrictive segment of the open access fishery, forcing their owners to displace a larger producing vessel if they wish to increase the production of their operation. The Council's action represents a different balancing of equity considerations.

19. Factor a veterans preference into the program. (Koblick)

Landing requirements were based on vessel activity irrespective of the person(s) owning the vessel, i.e. no personal attribute of any owner was considered. The government has set up other programs which may benefit veterans in the acquisition of wealth and capital. This program only considers the activities undertaken with the capital once it is owned.

Open Access Allocation and Management

20. Take account of the fact that while the fleet is to be divided into limited and open access fisheries according to type of gear used, data to accurately distinguish historical use between limited longline gears and open access hook-and-line gears is not available. (Malone)

After permits are issued and issues regarding gear used resolved through an appeals board, vessel identification numbers can be used to distinguish the catch history of permit vs. non-permit recipients.

21. Fully exclude exempted gears from any allocation restrictions or provide a guaranteed baseline allocation level for exempted gear. This baseline level should not be affected by stock reduction imposed allocations. Small boat commercial fishermen occupy a minor segment of the groundfish fishery but are sensitive to changes reducing their landings. Gear code problems on fish tickets make it improbable that a reliable historical landing value can be established for the commercial rod and reel fishery. As an exempted fishery with a minor impact on the overall fishery, any consideration of allocation within the fishery should be moot. However, it appears that catch restrictions could be imposed upon small boat fishermen as the result of stock reductions caused by the efficiency of large harvesters. (Small Boat Commercial Salmon Fishermen's Association)

A guaranteed baseline level will be provided on the basis of window period landings by the exempted gears. However, this guaranteed allocation is established as a portion of the ABC and thus will be subject to reduction if stocks are fished to below MSY levels. Effective Council management should prevent stocks from being reduced below MSY biomass levels, thus the efficiency of large harvesters should not result in reductions of ABC. As mentioned in response to comment 20, once permits are issued, it should be possible to sort out a majority of the gear code problems. Catch restrictions for the open access fishery will likely be necessary and will become more restrictive if the open access fleet size increases or effort increases.

22. Do not create quotas for exempted gears as they are the least wasteful and command the highest market prices. If annual quotas are imposed on rockfish it will generate the usual greed resulting in increased effort, quota attainment and lack of availability of the product on markets. (McMaster)

Regardless of the virtues of a particular gear, management measures such as quotas are required to conserve the resource. Quotas result in increased intensity of effort only when the fishery is managed as an "Olympic system" i.e. fishing is allowed relatively unrestricted until the full quota is taken and then the fishery is shut down or cutback to minimal levels. It is the Council's intent to manage the open access fishery as a year round fishery.

23. In addition to the consideration of historic catch, consider prioritizing gear types for purposes of allocation based on gear wastefulness and future ability of gears to harvest the resource. This would better achieve the Council's stated goals of increasing net returns from the fishery and reducing bycatch and waste. Why is historic catch the only criteria used to determine allocations between limited and open access gears? Has historic catch been achieved in a desirable manner, or has it resulted in lost opportunity due to the predominance of nonselective and wasteful trawl gear? The Council's goals of reducing waste and promoting

long-term stability would be better served by limiting entry to trawl gears and to fisheries where serious gear conflicts are occurring. (Malone)

Consider the negative impacts of trawl gear on fish stocks and habitat and favor those gears that are more size and species selective. (Tarr)

The proposed license limitation system covers trawl gear and two other major gears with which there are allocation conflicts (longline and pot). Permit issuance based on catch, i.e. historic participation, is least disruptive to the current fishery. Gear wastefulness is, in part, a function of management and can be reduced with the development of alternative management measures. This license limitation program is anticipated to aid in development of effective alternative management measures and reduce wastage induced by the current types of management measures employed. See the response to comment 5 regarding the difficulty of improving the fishery through reduced waste absent a limited entry system. The objective of this amendment is to limit effort, not to favor certain gears.

24. The historic catch levels of vessels which received "B" endorsements should count toward the open access quota when the endorsements expire. (Half Moon Bay Fishermans Marketing Association)

Introduction of "B" endorsement holders into the open access fishery will most severely impact the open access fishery in the event of quotas within the open access fishery without allocation by gear type. (Small Boat Commercial Salmon Fishermen's Association)

The plan was modified to count the historic catch of vessels receiving "B" endorsements toward the open access quota when longline and fishpot endorsements expire. This should reduce the impact of the "B" endorsement recipients on the open access fisheries when the "B" endorsements expire. This was not done for trawl vessels because trawl gear may not be used in the open access fishery.

25. It is important to maintain a "point of access" to the groundfish fishery for young fishermen, either by maintaining a viable open access fishery or establishing a number of limited entry permits which in and of themselves have limited economic value. (Malone)

The Council expects that the open access fishery will remain viable. If there is a major influx of new entrants into the open access fishery, then it may be necessary to bring that fishery under the limited access system. Many of the gear types which would participate in the open access fishery are restricted through other limited entry programs, e.g. salmon trollers, Oregon shrimp vessels, and California gill net vessels. However, it is likely that new more powerful open access gears will be designed by those not receiving permits. This would likely result in declining trip limits and hence declining incentive for the design and use of the more powerful open access gears. Also, see response to comment 34.

26. If the Council proceeds with historic catch as a basis for allocation it should reflect area variations and not a coast-wide average. (Malone)

The decision to apply percentages on a coast-wide or area basis is left to the implementation phase of the program. Additional analysis will be conducted at that time and additional public testimony taken.

Vessel Size

27. Allow upgrades of ten feet in size or allow no upgrades at all. The five foot limit is unfair to smaller vessels. Larger vessels can add on five feet, widen their boats or increase horsepower. (Warnock)

In terms of percent increase in capacity, a five foot increase allows a greater percent increase for small vessels than for large vessels. If larger vessels have more opportunity to increase capacity through widening the vessel or increasing horsepower than small vessels, allowing up to a ten foot increase would create even larger capacity vessels and further frustrate achievement of the Council's goals and objectives.

28. Limit the length of trawl vessels because of the damage they do to the ecosystem. (Koblick)

It has not yet been determined whether or not trawl vessels do significant damage to the ecosystem, therefore no discriminatory actions are warranted. Trawl vessels are limited in growth in the same way that other vessels are limited. Additionally, if a trawl permit is transferred to a vessel more than five feet less in length than the length endorsed on the permit, the length of the permit is permanently reduced (this limit for drag vessels is applied not because of concern over habitat damage but because trawl vessels of different size target on different species of fish).

29. Provide more flexibility for increasing the size of vessel used. (Reamey)

In order to allow owners some flexibility in replacing vessels and fulfilling safety requirements without losing capacity, the Council has specified that vessel size should be allowed to increase up to five feet. Allowing further increases in size would allow even more capacity into the fishery and be counter to the limited entry objectives. Statistics for growth in the Alaskan Pacific halibut fishery indicate that, given the incentive for increased participation, vessels will tend to increase in both numbers and relative size (see Chapter 5).

Construction and Conversion

30. Revise the conversion investment criteria downward. Establish guidelines and have the review board hear each controversial case, relying mostly on intent being proved by action within a window after the September 30, 1990 date. (Schock)

The conversion criteria has been revised downward to $10,000. The review board will hear controversial cases at the request of the fisherman provided an appeal is involved. The window for proving intent is a three year window occurring after completion of conversion rather than after September 30, 1990. To use the 1990 date may allow more fishermen to qualify who by their earlier actions demonstrated a lack of intent to depend significantly on the fishery.

31. Provide exemptions for vessels under construction and allow a reasonable period of time for vessel completion, up to one and half years from time of rule making. (Mulkey)

The September 30, 1990 construction cutoff date should be set back three years. This date unfairly discriminates in favor of fishermen who were able and/or willing to incur higher debt loads. Those who construct or convert vessels over a longer period of time in order to incur smaller debt loads are more inclined to act responsibly with regard to the resource because of the small debt load and should be allowed to qualify. (Tarr)

Special provisions have been made to allow vessels under construction to qualify if they enter and participate in the fishery directly after construction is completed. The announced August 1, 1988 cutoff date gave vessel owners who began construction after that date sufficient warning that their vessel may not initially qualify for a permit. No reason is seen for changing that cutoff date to the date of rulemaking for vessels under construction. The construction cutoff date (September 30, 1990) would allow nearly two years and two months for completion of a vessel on which construction was begun August 1, 1988. In general, the Council and its advisory committees believed that absent extenuating circumstances, this was a sufficient amount of time to complete construction of a vessel. The proposed regulations allow consideration of extenuating circumstances outside the control of the vessel owner as reasons for granting exceptions.

Transfers

32. Modify the amendment so that it will track state law with respect to the expectations of buyers and sellers as to what is being conveyed when a vessel is sold. The commenter is concerned that his rights to enter the fishery were sold when he sold his vessel. (Stokes for Hartzell)

When notice of the cutoff date was publicized, it was made clear that permits would be issued on the basis of a vessel history rather than personal history. The rationale for this provision is explained in Chapter 4 of the SEIS.

33. Make permits nontransferable until the necessary biological data on groundfish populations and associated marine organisms have been gathered and evaluated to discern if the resources can withstand additional fishing pressure. (California Assemblywoman Allen)

Target harvest levels remain the same with or without limited entry. Making permits nontransferable would not aid in conservation efforts.

34. Permit costs may be very high. Restrict permit costs to a certain amount. (Ashwin, Malone)

A restriction on permit prices would result in a number of permits demanded much larger than the number supplied. As a consequence, transaction payments would probably be hidden or permits sold primarily on the basis of friendship or kinship.

Miscellaneous

35. Specify, in Section 14.2.4 of the amendment, that only entities qualified to own U.S. documented fishing vessels should be allowed to qualify for permits. An undocumented vessel may be foreign owned. (Schock)

The proposed regulations carrying out the Council's intent specify " Only a person eligible to own a documented vessel under the terms of 46 U.S.C. 12102(a) may be issued or may hold . . . a limited entry permit."

36. In case it is necessary, create a way to get out of the program without incurring the major costs of a buy-back program. (Parrish)

Section 14.4.1 of the adopted amendment provides the Council with the flexibility needed to move out of the program if necessary. The MFCMA under which this amendment is being implemented provides that the Council and Secretary of Commerce may amend an FMP as necessary to conserve and manage the fishery.

37. Pursue elimination of the Capital Construction Fund. (McMullen)

While elimination of the Capital Construction Fund would help reduce the incentive for overbuilding capacity in the fishery, lobbying for the elimination of such a fund is not within the scope of the Council's authorized activities. Even with elimination of the program the potential still exists for incentives to arise which induce more vessels to be constructed for entry into the fishery.

38. A high capacity permit should be divisible if the multiple permits created are used within a Council certified local limited entry program. Sections 14.2.10 and 14.3.1.4 of the amendment should be modified to allow this. (Half Moon Bay Fishermans Marketing Association)

Such a proposal would be in the realm of possibilities for a future plan amendment and is not eliminated as a possibility by adoption of the license limitation program as it now stands. It is not within the range of options available to the Council at the time of final consideration of the amendment. It has different costs and benefits than those of the proposal considered here. The industry has been in a long period of uncertainty as the Council has moved through the process of considering limited entry. At this point, there are greater benefits to industry from moving ahead with consideration of this plan than from further delay to consider this suggestion.

Description of Commenter Situations

Answers provided are general responses to the letters received. Additional factors not disclosed in the letters may also affect the situation.

Late Entry

39. After working in the fishery his entire life, the commenter purchased a vessel in 1989 and is not likely to qualify. (Merlo)

Individuals investing in vessels after August 1, 1988 were on notice that they may not receive access rights in the fishery if this limited entry system were implemented. Individuals not initially receiving permits can enter the fishery through purchase of a permit. See also the response to comment 15.

40. The commenter started fishing as a crewman in 1961 and became a captain in 1969. In 1984, he purchased a trawler and converted it to salmon fishing. Had he not converted to salmon,

he would most likely have qualified for a "A" endorsement under the high MLR. He fishes salmon six months of the year and trawls the remainder of the year. (Slostad)

The landing requirement for trawl vessels is relatively low (only nine days of landings over a 4 year period). This low landing requirement was intended to allow combination vessels which had some degree of dependence on the fishery to qualify. Vessels which did not have nine landings over a four year period are not considered to be significantly dependent on the fishery.

41. The commenter has invested $1.2 million in a black cod vessel which first began fishing in April 1991. They will be forced out of business if no alternative is provided for them. (Kace Trading Inc.)

See response to comment 39.

42. The commenter had participated in other fisheries for twenty years but is being excluded because he did not participate in the groundfish fishery. If the salmon fishery were viable the commenter would not be forced into groundfish. (Irwin)

See response to comment 39.

Construction or Conversion

43. The commenter lost his vessel and began construction of a replacement vessel, both events occurring during the window period. The construction was funded under the Capital Construction Fund. The new vessel was to be launched in June 1991. The commenter wished to make certain that a replacement vessel would not be subject to the construction deadline. (Thomas)

A two year limit on replacement of a vessel in the adopted alternative might prevent the commenter from receiving a permit. An individual dependent on the fishery would likely replace his or her vessel within the two year time period.

44. After 40 years in the industry, the commenter purchased a 65 foot hull. The seller had started the hull as a backyard project in 1973. Construction on the vessel began in 1980 and the boat was completed and documents issued November 15, 1988. (Commenter provided a copy of a builder's certificate dated May 8, 1990.) (Richter)

If the commenter owned the hull prior to August 1, 1988, had at least two groundfish landings with a limited entry gear in each of three consecutive 365 day periods commencing with its first landing of any species anywhere, it is likely the commenter will qualify for a permit.

45. The commenter laid a hull prior to August 1, 1988. The boat yard in East Palo Alto where the vessel was being built suffered major damage from the 1989 earthquake and had to be relocated to Redwood City. This delayed completion of the vessel until after September 30, 1990. (Yoshizumi)

If the reason for delay in completion of construction is outside of the control of the vessel owner, exceptions may be made to the September 30, 1990 construction cutoff date.

46. The commenter owns one vessel and has a second 67 foot vessel on which construction was begun in 1987. Property and a building were purchased in which to build the vessel and he is one-third the way toward completion (as of February 1991). Investment in the vessel alone is $150,000. Work on the vessel is limited to periods of nonfishing and he anticipates that he is two to three years away from completion. (Mulkey)

Vessels qualifying under the construction provisions were to have been completed by September 30, 1990. Delays outside of the control of the vessel owner may be considered as reason for not completing construction by this date. The Council felt that two years from the cutoff date was a sufficient period to allow individuals to complete construction of their vessels.

47. The commenter is currently (as of November 1990) building a boat to fish longline gear and was just informed of the proposed license limitation system. (Lester)

See response to comment 39.

48. The commenter started building a drag vessel in 1980 using his life savings. The vessel was launched in November 1989. Shortly thereafter, his wife became ill and he spent his time with her. He had hoped to start fishing but will not qualify because his fishing did not start prior to September 30, 1990. (Green)

Delays in construction outside of the control of the vessel owner may be considered as reason for granting extensions for construction, however, sickness and injury must generally involve the vessel owner if it is to be used as a reason for obtaining a hardship exemption. The rationale for not extending this beyond the vessel owner is that the owner is generally in a position to hire a captain to fish the vessel if he or she were dependent on the vessel for income but unable to fish it.

49. The commenter purchased a salmon troller in October 1987 and began converting it to a limited entry gear. When he learned of the limited entry proposal and that a single landing might qualify him, he went out and made one landing to preserve his rights. In December 1988 he was involved in an automobile accident and because of his need for knee surgery, was unable to fish until the summer of 1989 and thereafter fished only marginally for salmon. In February of 1991 he had the surgery and is now able to fish for groundfish but believes he may have lost his opportunity to due so. (Ashwin)

Exceptions can be made to the provisional "A" endorsement upgrade criteria for injury to a vessel owner. A decision would have to be made by the issuing authority as to whether or not the conditions in this case warrant such an exception.

50. The commenter purchased a poorly equipped and maintained vessel and invested over $83,000 between 1985 and 1988 on conversion and gear so it could operate as a small dragger. He was able to continue to participate in other fisheries during the conversion, and did so, paying for the conversion as he went and staying out of debt. One trip was made prior to the close of the window period (June 1988). In 1989 twenty two trips were made beginning in July. The commenter provided extensive documentation and sought the Council's agreement that he should qualify. (Burke)

The end of conversion and beginning of the upgrade period is defined as the first landing of any species anywhere. Since the commenter continued to fish for other species, his upgrade period was considered to have begun after the first structural modification to his vessel which was necessary for its use of trawl gear. The first groundfish landing occurred in June of 1988. Even if that landing was the first landing after the structural modification, two landings are required in each year of the qualifying period. The commenter's next landing did not occur until July of 1989, over one year after the first landing. Therefore the upgrade requirements were not met and no permit will be issued for this vessel on the basis of its trawl landings. The commenter does have the option of purchasing a permit. The rationale for the conversion provisions is explained in Chapter 4 of the SEIS.

Vessel Loss

51. The commenter's 48 foot vessel sank in April 1987. This vessel was a shrimp and groundfish trawler and would qualify for the fishery. In November 1987, a 75 foot vessel was purchased to replace the lost vessel. No information was available at that time on replacing lost vessels under the proposed limited entry plan. The replacement vessel arrived from Texas in March 1988. Modifications were made which allowed the vessel to begin shrimping but not groundfish fishing. At the end of the 1989 shrimp season, further modifications were made to allow the vessel to groundfish trawl; however, the net reel was not delivered on time to allow the vessel to participate in the 1989 groundfish fishery. The vessel did not participate in groundfish fishery in 1990 because of economic and market reasons. (Stolz)

This vessel would probably not qualify because of failure to meet the two year limit on replacement of a lost vessel. If an appeal were filed with the Regional Director, the review board (if requested by the applicant) would have to determine whether the reasons for delay in entering the fishery with the replacement vessel warranted issuance of a permit. Delay in delivery of the net reels might result in an extension through 1990, however, the reasons for not entering the fishery in 1990 (economic and market conditions) are generally not considered hardship conditions and therefore would not likely be accepted. If an appeal were successful, then the owner of the lost vessel would have the option of receiving a permit with an "A" endorsement and a size endorsement for the size of the lost vessel or a permit with a provisional "A" endorsement and a size endorsement for the size of the replacement vessel.

52. The commenter has been a fisherman for 25 years and owned his own salmon/tuna/crab vessels through mid-1980. In 1979-1980, a 70 foot vessel was built for $750,000 fully equipped for midwater and bottom fishing. The vessel was lost prior to its maiden voyage. Ensuing litigation lasted three years and the vessel was sold to cover mortgage payments and lawyers fees. The vessel now fishes in Alaska. Over the last 10 years, the commenter has been the captain of another vessel fishing in the groundfish fishery. In June 1991, a 44.4 foot vessel was purchased which he would like to equip for groundfish. (Beasley)

There are a number of reasons that many potential participants were not active during the window period, however, the response to comment 39 applies here as well.

53. The commenter purchased one black cod vessel in 1978 and another in 1981. One of these was sold in 1983 and the other was totally lost to a fire in 1991. They are now trying to procure another vessel. (Pacific Ocean Seafoods)

Provisions have been made for lost vessels which would have qualified for a permit. If the vessel lost in a fire qualified for a permit, the commenter is likely to receive a permit for a replacement vessel, provided conditions for replacement of a lost vessel are met.

Vessel Sale

54. The commenter would have qualified with a vessel, however, it has been sold. (Weikal)

Past ownership of a vessel with a qualifying history was rejected as a possible qualification criteria in order to limit the number of permits created from one vessel. One of the primary principles followed in designing the limited entry program was that a single vessel should not give rise to more than one permit. The purchaser of the vessel with the qualifying history would be granted a permit, as opposed to the seller, because the purchase price was based in part on the vessel's ability to catch groundfish.

55. The commenters owned a 30 foot vessel that probably qualified, have since purchased a larger 50 foot vessel which will not qualify, and would now like to sell their 50 foot vessel and purchase a larger one. Their current boat is worthless without a permit. (Reamey)

Vessels purchased part way through the window period may qualify an owner for an "A" endorsement if the provisional "A" upgrade criteria are met with the vessel. The response to comment 39 applies to any vessel transactions occurring after the window period. Replacement by larger vessels after September 30, 1990 (the approximate date the length restriction was announced) is not allowed to prevent increases in capacity.

56. The commenters owned a vessel which fished salmon and rockfish in 1986. In the fall of 1988, this vessel was sold and a larger vessel purchased. In the fall of the following year, after purchase and installation of a gear hauler, about 60,000 pounds of groundfish were delivered. The commenters sought Council assurance that they would qualify. (Josephs)

The commenter's investments and groundfish fishing activity with the vessel currently owned all occurred after the announcement of the August 1, 1988 cutoff date. They will not qualify for a permit. See response to comment 39.

57. The commenter spent $600,000 on a vessel that will not qualify. (Scarborough)

See response to comment 39.

Miscellaneous

58. The commenter has been experimenting for several years with groundtackle to develop a new market for live fish but will not qualify for a permit. Thousands of dollars have been invested in a truck, boat and gear. Also much time has been invested in experimentation. The volume of fish taken is minimal. (Stagnaro)

If the commenter uses longline gear, provisions for an open access fishery (added just prior to the Council's final adoption of the program) would likely allow this vessel to continue to use the gear,

provided landings are small. If the commenter uses exempted gear, he would not be required to have a permit.

Comments on Impacts of the Alternatives and Preference for Council Action

Conservation

59. The hook-and-line fleet should not be limited while allowing the use of habitat damaging roller gear. Limit gear instead of limiting entry. (Argetsinger, Barry, Chaffin, Merlo, M. Miller, Moss, Nungaray, Reeves, Rogers, Thime, Vrana, petition signed by 9, petition signed by 4)

A number of other conservation methods are available for saving fish (examples were given). (Merlo)

Biological understanding and proper conservation measures (including time and area closures) will address the problems. (Weikal)

Instead of implementing a plan, charge trawlers with their bycatch. They would quickly redesign their nets so that wastage would not occur. (Nungaray)

Conservation measures need to be taken instead of limited entry. (Murray)

Quotas already exist, limited entry is not necessary.(California State Senator Kopp, San Mateo County Harbor District)

These comments all speak to conservation measures as a substitute for limited entry. Conservation measures which reduce wastage or increase the future sustainable yield levels will not address the same problems addressed by limited entry. Absent limited entry, any regulations which increase allowable catch for a portion of the fleet will just encourage more entry into the fishery. Eventually there will once again be too many vessels relative to the allowable catch.

60. Limited entry is needed to protect stocks. (California Assemblywoman Allen)

There are measures currently at the Council's disposal which, combined with measures such as an observer program, would allow it to conserve the resource. Consideration of Amendment 6 is primarily intended to determine whether there might be a more desirable mix of social and economic impacts from management under limited entry. While helpful in conservation, limited entry is not necessary to conserve the fishery resource and may only change the mix of management measures the Council uses to solve the conservation problem.

61. Limited entry is not needed to protect stocks and will not solve the conservation problem. (Marchand, Weikal, PCFFA, Ashwin)

See response to comments 59 and 60.

62. A groundfish license limitation program would cause vessels in other fisheries to continue to fish depleted stocks. (Degner)

Conservation and management problems in other fisheries may be greater when there is no opportunity to redirect effort to the groundfish fishery. On the other hand, a groundfish management regime which encourages investment in more vessels for the fishery creates potential effort which may transfer to other fisheries in years in which there is a downturn in the groundfish fishery. License limitation allows a vessel to move into the groundfish fishery if the potential entrant is willing to pay for the displacement of a vessel already in the fishery through the purchase of a permit.

Flexibility and Stability

63. Flexibility to move between fisheries is needed by trawlers less than 58 feet in length. Ability to be flexible and move between species keeps the industry healthy during hard times. Limited entry prevents this. (Degner)

The Amendment 6 limited entry program will create a tremendous and permanent hardship on fishermen because it removes the opportunity for the fisherman to remain flexible and versatile in several fisheries. During the original window period, there were poor groundfish marketing conditions and other more lucrative fisheries. Many people who have participated in groundfish either prior to or after the window period took part in these other fisheries during that period of time. Thus, limited entry will create long-term instability throughout the industry and communities. (Half Moon Bay Fisherman's Marketing Association)

See response to comment 62. Additionally, note that stability in the groundfish fishery would be increased. New entrants would have to displace another vessel rather than just claiming a portion of their catch in open access competition. The MLRs were set low enough that individuals who regularly rely on the fishery, even as part of a mix of species, should be able to qualify. Information on cross participation between fisheries shows that qualifying vessels have more cross participation than nonqualifying vessels (See Chapter 7). With respect to participation in other fisheries before and after the window period, see response to comment 4.

64. Stability will result from limitation on new vessels coming into the fishery. (McMullen)

Stability in the groundfish fishery would be increased. New entrants would have to displace another vessel rather than just claiming a portion of their catch in open access competition.

65. Cutbacks in the salmon fishery make the groundfish fishery very important for financial survival. (Merlo)

This is a specific example of the previous arguments on flexibility. The same responses apply.

66. Some individuals argue that limited entry will eliminate flexibility. However, it should be noted that while some fisheries have natural seasons, and rotating among them is necessary to maintain year-round employment of the vessel, the groundfish fishery is a year-round fishery. Flexibility has not been necessary for a viable business. However, recent restrictions have caused groundfish fishermen to spend more time in other fisheries. (Young)

For many trawlers, the groundfish fishery is a year-round fishery. For large non-trawl gear vessels it has become more seasonal in recent years. Under license limitation, it is likely that permits will

end up in the hands of vessel owners which participate for longer periods rather than those which move into groundfish between other fisheries.

67. There is no option for combination vessels. (Slostad)

The adopted MLR requires that vessels make at most 9 trips over the 4 year window period. This is an average of two or three trips a year. While no options specifically address combination vessels, all options would require only a small number of landings. Combination vessels that consistently include groundfish in their fishing cycles should qualify.

68. The plan is inflexible and fails to consider changes in fishing gear technology. (PCFFA)

Changes in fishing gear technology are addressed in Chapter 7 of the SEIS. If necessary, the Council may amend the plan to address these changes.

Costs

69. The plan will be too expensive and is not justified. (Marchand, Murray, Patana, and Citizens Against Limited Entry)

Costs are estimated in the draft SEIS and a revised estimate is contained in the additional analysis produced in July. These costs are expected to average under $500 per vessel at initial issuance and after 1996 annual renewal may run between $300 and $400 per year. The Council believes this to be a reasonable amount to pay for the benefits to be derived from the program.

Effectiveness

70. The proposal will not do what proponents want. Factory vessels will not be kept out of the fishery and management restrictions will not be lessened. (Citizens Against Limited Entry)

There are too many vessels already in the fishery for limited entry. (Murray)

While in the salmon limited entry system there has been some attrition, the vessels that left were not producers. Therefore, the system has been ineffective. (Citizens Against Limited Entry)

The SEIS indicates that, at best, the number of "A" endorsements initially issued on the basis of the MLRs may be similar to the number of vessels active in 1987 (with the exception of trawl vessels for which a somewhat greater number of "A" endorsements will be issued). Additional vessels would qualify on the basis of other provisions (e.g. construction and conversion provisions). It is correct that those leaving the fishery will likely be lower producers. Determination of whether the system will be effective depends on what would have happened in the absence of a limited entry system. The SEIS provides information on fishery trends and leaves it to the reviewer to evaluate the probability of different outcomes in the absence of limited entry. The Council has determined that without limited entry it is reasonable to expect that changing fishery conditions may lead to an increase in the number of vessels active in the fishery. Factory trawlers may enter the fishery through the purchase and combination of permits or on a temporary basis through qualification for designated species "B" endorsements.

71. Effort will be encouraged as vessels must catch fish in order to maintain their endorsements. (Citizens Against Limited Entry)

Use requirements have generally been avoided to prevent this problem. At most, a vessel may be required to make at least two trips in each of its first three years in the fishery. For many of the vessels in this category, the time period in which these trips would have to be made has already passed. Therefore, the amount of additional effort encouraged by these provisions is expected to be very small.

72. Bycatch and wastage problems will not be solved. (Citizens Against Limited Entry)

Without license limitation, trip limits will grow to be less effective and discards result. (Cooper)

Limited entry alone will not solve bycatch and wastage problems, however, if vessel numbers would have increased in the absence of limited entry, the presence of limited entry will have made solution of these problems easier.

73. There will be no cap on the effort and effectiveness of remaining vessels. (Citizens Against Limited Entry)

There will be a potential for increased capacity under limited entry through vessels becoming more productive and the transfer of permits from less productive to more productive vessel owners. If effort continues to increase, what will the Council do? If this leads to an ITQ system, how will ITQs be allocated? (Deach)

Despite restrictions on vessel length, there would continue to be a potential for remaining vessels to increase their capacity under license limitation. However, under trip limit management their incentive for increasing capacity is much reduced. If faced with increased capacity, the Council would continue to rely on other management measures currently at its disposal. The Council is moving toward consideration of an ITQ system as a possible next step in its limited entry program. The method of allocation under an ITQ system would likely include criteria based on historical participation. The specifics would be developed as the program is considered. The implementation of a buy-back program is another alternative for reducing capacity.

74. Limited entry will add more boats to the fleet. History has shown that limited entry plans do not stop the growth of the fleet (e.g., West Coast troll fleets). (Marchand)

While the effectiveness of the West Coast troll limited entry systems may be debated, there are fewer active vessels and fewer permits than were present when the system was implemented. With owners qualifying under special circumstance (e.g. construction, conversion, etc.) there may be somewhat more "A" endorsements issued than there have been vessels active in any one year, allowing an increase in the number of vessels active in the fishery as compared to any given year during the window period. Estimating the number of vessels which might participate in the future is difficult. After reviewing the available evidence, the Council has determined that without limited entry it is reasonable to expect that changing fishery conditions related to profit or the timing of opportunity in other fisheries may lead to an increase in the number of vessels active in the fishery above that which would be allowed under the permit system.

75. The March 1991 actions on limited entry fall considerably short of reaching the goals for limited entry. They will cause the plan to be ineffective in establishing meaningful fleet reduction or limited entry. (Nine signatures from members of trawl, longline and crew organizations)

The comment refers to the briefly considered provisions which would have caused "B" endorsements to expire only on change in ownership of the vessel (These provisions were not adopted by the Council). The provisions would have made it very difficult to establish an effective limited entry system. Another action considered was extension of the qualifying window period for "B" endorsements to 1991, while at the same time raising the "B" endorsement landing requirements to three trips. This action would probably have reduced the number of "B" endorsements issued for every gear except trawl. However, after considering the analysis and public comment, the Council chose to raise the "B" endorsement landing requirement but maintain the original four year window period.

76. Recent increases in effort have been caused by the consideration of limited entry (McMaster)

This is an effect typically caused by the discussion of limited entry. For this reason, at the July 1988 Council meeting, the Council set the August 1, 1988 cutoff date. Its action was intended to discourage this type of entry and prevent those who might enter on speculation from qualifying. Effort by individual vessels may still increase if vessel owners anticipate implementation of an ITQ system. However, a recently published control date (November 13, 1991) is expected to limit incentive for increased effort.

77. A buy–back program will eventually help reduce excess capacity and lead to a more effective program. (Merlo)

While the Council believes that the future of the fishery will be better with limited entry than without it, capacity reducing measures such a buy–back program or ITQs may increase the effectiveness of the program.

78. When permits are combined based on capacity the resultant permit will have more capacity than the combined permit because it will be able to fish in more severe weather conditions. (Half Moon Bay Fisherman's Marketing Association)

This is a factor which the Council should take into consideration when it develops the schedule which specifies the size of endorsement issued when permits with smaller endorsements are combined.

79. When word about limited entry got out in the latter part of the 1980s, suddenly a lot of new draggers were built and these vessels will qualify. (Ashwin)

Only those new vessels on which construction was begun before the August 1, 1988 cutoff should be able to qualify.

Allocation Between Limited Entry and Exempted Gears

80. Allowable catch restrictions may be imposed on small boats as a result of stock reductions caused by more efficient gears. (Manners)

This will only occur if the Council is unable to be effective in preventing stock biomasses from declining below optimum levels. To date, the Council appears to have been successful in maintaining optimal levels as best as can be determined.

81. How will the Council allocate between the open and closed access gears? Will exempted gear and special interest allocations be taken off the total allocation? Or, will fixed gear exempt allocation be made from fixed gear limited entry allocation while non-fixed gear exempt allocations are made from non-fixed gear limited entry allocations? (Deach)

Since the time of these questions, these issues have been addressed through modifications of the adopted license limitation program. See Section 14.2.2 of the program (appendix to this document).

82. Recent entrants to the longline fishery and those with expired "B" endorsements are directed to the open access fishery. This will possibly result in a very unsatisfactory open access fishery from both the participant and management perspective. (Malone)

Open access landings by longline and fishpot vessels as a group will be held to the window period landing levels of longline and fishpot vessels which did not receive permits. Those recent entrants and "B" endorsement recipients who wish to continue in the fishery have the option of either purchasing a permit and continuing to harvest at a higher level, or entering the open access fishery and fishing under the restricted trip limits. The remainder of the limited entry gears will be relatively unaffected by this group. Additionally, see the response to comment 24 regarding the expiration of "B" endorsements.

Public Opinion

83. A clear majority of industry opposes limited entry. (Citizens Against Limited Entry)

The Council initially indicated it would pursue limited entry only if industry supported it. While a slight majority of the industry surveyed opposed limited entry, the Council's SSC pointed out that the majority of industry might oppose any specific regulation it was asked about. The Council decided to act favorably on limited entry because of their judgement that net social and national economic benefits would be increased. Also, see comment 84.

84. For most people support or opposition depends on whether they are included or excluded by the plan. Since the number of people excluded is far larger than the number included, the Council will likely hear far more testimony in opposition to the plan than in favor. (Young)

This is a consideration which the Council took into account in considering testimony, however, the results of the survey conducted by the Council have a more scientific basis and indicated that those in opposition to the program only slightly outnumbered those in favor, at a .05 level of statistical significance.

85. The survey results indicated that 80 percent of fishermen opposed limited entry. (Ashwin)

Eighty percent of all fishermen opposed ITQs. License limitation found much greater acceptance.

Local Community Impacts

86. San Mateo County Harbor District would face severe economic hardship if the proposed regulations do not allow local fishing boat owners to continue to fish as they have in the past. These fishermen are dependent on groundfish. (San Mateo Harbor District)

Fishermen from any area which have had some minimal amount of activity with a limited entry gear should qualify. Severe hardship would only occur if a significant portion of the fishermen in an area entered the fishery after the announced cutoff date or do not have proper landing records.

Small Business/Large Business Issues

87. Options should be open for small scale low impact fishermen. This would help address the needs of displaced salmon trollers. (Patana)

Options adopted at the September 1991 Council meeting would allow small scale fishermen to use longline gear in an open access fishery.

88. The plan is geared to protect the investments of the owners of large trawlers. The plan will cause small boat owners to quit because they cannot fish throughout the year. Small vessel owners will bear the brunt of a plan designed to solve problems created by larger vessels. (Nungaray)

Permits will be issued to vessels of all sizes. The size of a vessel used with a permit can be increased only up to five feet. Therefore, permits should remain available for small vessels. There exists the possibility that permits for small vessels may be purchased and combined into permits for larger vessels. If the number of permits for small vessels was to substantially decrease, the Council could amend the plan and issue more permits for vessels in this size range and restrict those specially issued permits from being combined into permits for larger vessels. For the trawl and open access fisheries, provision of year round fishing opportunities will be a Council objective. The Council also tries to maintain a year round opportunity for small vessels in the nontrawl sablefish fishery.

89. The plan favors those with a great deal of financial backing. Permits will be valued way above their original costs. (Nungaray)

It seems likely that there will be periods in which permits are overvalued. However, a permit will be like other assets the fishermen owns and may serve as collateral against which the fisherman may acquire a loan for purchase.

90. The 75 mt MLR for longline gear discriminates against small vessels. (Strom)

A vessel may meet the MLR through numbers of days of landings or total pounds of landings. The numbers of days of landings option favors small vessels which do not stay out more than one day at a time (Note: The final options adopted by the Council reduced the tonnage MLR options by 50 percent resulting in a 37.5 mt MLR for longline gear.)

91. Effort is being cut 25 percent on smaller size vessels and combination vessels which catch less than 40 percent of the fish. (Warnock)

Limited entry will displace small draggers. (Wright)

The SEIS shows that the greater impact of the high MLR option will be on smaller vessels. (Slostad, Warnock)

There does appear to be a greater impact on small vessels, particularly fishpot vessels, when comparing the total number of vessels in the window period to the number meeting the high MLR (the large discrepancy for fishpot vessels may be an artifact of a gear coding problem). However, when comparing the number of permits to be issued for each size class to the number of vessels active in the size class for 1987, the impacts are fairly well distributed between size classes. The discrepancy between these comparisons may result from a higher degree of transience in smaller vessel size classes. Under limited entry, this movement in and out of the fishery by small vessels may be maintained from the sale or short term lease of permits. The Council's objective is to issue a mix of permits which will reflect the current mix of the fleet active over the period of a year (as compared to the August 1, 1988 cutoff date).

92. There should be restrictions on larger vessels and multiple boat owners. (Warnock)

Ownership of permits should be limited to 1 or 2 per person and owners should be required to be actively engaged in harvest of the resource. (Malone)

It was decided that concentration of permits would be controlled solely through antitrust provisions. Because multiple ownership of vessels currently exists in the fishery, enforcement would be difficult, there was little basis for choosing a number of permits to which an individual might be limited, and corporate structuring could frustrate the intent of the limits on concentration. All sizes of vessels are restricted by the size endorsements on the permits. Requirements for permit owner activity in the fishery were not adopted because with corporate, trust, etc. permit ownership it would be difficult to determine whether the permit "owner" is actively engaged in the fishery.

Windfall Profits

93. A few will be enriched at the cost of many. (Degner)

It is correct that initial "A" endorsement recipients will receive windfall profits. The profit revenues will come from those who subsequently enter the fishery through purchase of a permit which has an "A" endorsement. Under license limitation, there will be many who perceive a cost because they are no longer able to enter the fishery freely. However, without license limitation there would also be widespread costs to many already in the fishery if vessel numbers increase.

Young and Deckhands

94. Young people coming into the fishery will not be able to enter. Permit prices will skyrocket and be a barrier to their entry. (Patana, S. Bettencourt and D. Bettencourt)

See the following comment and response to comment 89.

95. Young people will not be kept out of limited entry by high permit prices. License prices will reflect the value of participation in the fishery. If the fishery is profitable, high license prices

may result, but only because earnings are high. If the fishery stabilizes, it will be easier for new entrants to borrow money. (Young)

This is substantially one of the results expected by the Council.

96. As a deckhand, the commenter has no record of a history in the fishery and therefore cannot qualify. (Plourd)

Because a significant portion of the value of some vessels will be split off into the value of the permit received for the vessel, vessel owners who have invested in the fishery would experience a loss if they were not to receive permits. On the other hand, the value of the labor of a crew member without a permit for a vessel does not change. Since only a limited number of permits would be issued (one per vessel), preference was given to vessel owners in the issuing of permits.

Fairness and Equity

97. The window period is not a fair way to decide who receives permits. (Scarborough)

It is not fair to apply qualification requirements retroactively. (Weikal)

The window period and qualifying requirements encompass the idea that permits should be issued to those who are dependent on operations which have historically participated in the fishery, as of the time development of the amendment was initiated. The rationale for various provisions of the program and issue of fairness in the choice of the manner in which permits would be issued are discussed at length in Chapter 4 of the SEIS. Also, see response to comment 15.

98. Full utilization of the Pacific whiting resource has only come in the last year with the entry of vessels that catch and process whiting, yet qualification for limited entry is based on a window period which includes primarily years in which there was a foreign fishery. Those who fully Americanized the fishery should not be barred from future participation. The catcher vessel delivering to mother ships is not an appropriate means of participation with respect to whiting because it assures that the nation receives a significantly reduced value from the resource. (American Factory Trawlers Association)

There will be sufficient catcher capacity in the permitted fleet to harvest the entire whiting resource. Processors (including motherships) are not prevented from participating in the fishery by the limited entry system. As with any vessel entering the fishery after August 1, 1988, catcher-processors may displace current participants through the purchase of permits. If it appears that the fishery may become exploited by foreign vessels because of a lack of permitted catchers delivering to domestic processing NMFS may issue designated species "B" endorsements valid for one year's fishing. It has not been established that catcher-mothership operations are less efficient than catcher-processors.

99. Many of the provisions in the plan are inequitable without a clear rationale. Examples: (1) trawlers who landed nongroundfish species are not given permits while longliners with no landings history are allowed the opportunity to participate in the open access fishery; (2) the plan discriminates against exempt gears by not giving them transferable permits; (3) some fleets (the Newport Beach Dory fleet) are exempted while similar provisions are not made for other fleets. (PCFFA)

Chapter 4 of the SEIS provides the rationale for the significant provisions of the plan. Rationale for all of the commenter's examples have been provided in documents distributed to the public during the public comment period. In response to the examples given: (1) trawlers not landing groundfish were not given permits because they did not have a sufficient history with groundfish trawl gear. Trawlers were not provided an opportunity in the open access fishery because they would not be able to operate under the landing limits which would be allowed in that fishery without causing serious wastage through discards, and, as a group, trawlers were not seriously affected by the 500 pound landing threshold imposed on the MLR; (2) "exempt gears" were exempted from the requirement of having a permit at the request of their representatives (including the PCFFA representative); (3) the "exemption" which may be provided to the Newport Beach Dory fleet is open to any other small fleet under a local jurisdiction limited entry system as of July 11, 1991 which has a special historical and cultural significance to its local community.

100. The plan arbitrarily eliminates trawlers in the Santa Maria Basin and Santa Barbara Channel. (PCFFA)

See response to comment 4.

101. The window period selected is arbitrary. (PCFFA)

The cutoff date selected for the end of the window period is the earliest date which could be selected with adequate notice in the Federal Register. Regarding the importance of the cutoff date see response to comment 15. The length of the window period is such that it is felt that most vessels which rely on the groundfish fishery for a substantial portion of their income should have been active in the fishery at some time during that period. The level of activity required for the whole window period is rather low (between 5 and 9 landings depending on the gear type) and could be easily achieved by a vessel which was completely out of the fishery due to temporary circumstances as well as by combination vessels. A larger window would only result in a different set of qualifiers: the minimum landing requirements would have to be raised to result in the issuance of a reasonable number of "A" endorsements and, as a result, some of those active in the window period would be eliminated while some of those active only prior to the period would be included. Thus the net result of the suggestion is just another variation which alters who is among the group of "winners" and who is among the group of "losers." See Chapter 4 for further discussion of the factors considered in selection of the window period and qualification requirements.

Effect on Consumer Prices

102. To the extent that limited entry prevents overuse of other regulations, it will actually work to lower fish prices to the consumer. (Young)

The Council agrees with the comment.

Effect on Gill net Vessels

103. The plan fails to address how the rockfish gill net fishery will fit into the scheme of the proposed program. The banned rockfish gill net vessels may enter the trawl fishery for California halibut in which there is a bycatch of such groundfish species as starry flounder. (PCFFA)

Paragraph 9, Section 14.3.2.3 of the amendment, which contains provisions for prohibited gear, was designed with the possible situation of the California gill net vessels in mind. Under these provisions a banned gill net vessel may have the opportunity to acquire a permit for trawl gear which might be used in the California halibut fishery. See responses to comments 10.

104. The trawl fishery for halibut and starry flounder could serve as a replacement fishery for the gill net fishery if necessary. Limited entry will prevent this. (Wright)

Provisions have been made for prohibited gear, provided the prohibition is sufficiently extensive. Limited entry will prevent vessels involved in declining fisheries from entering the groundfish fishery without displacing existing vessels.

Limited Entry, the U.S. Economic System and Economic Policy

105. Let economics take care of the fishery or leave it to the states to regulate. (Scarborough)

The following two public comments reflect the response to the idea that economics can adequately regulate the fishery. Since much of the resource is harvested in Federal waters and there is movement of vessels between states, a limited entry system based on Federal permits is appropriate.

106. Limited entry is needed. Economics will not take care of limited entry. When a fishing business fails it does not reduce the capacity of the fleet. The boat will be tied up for a while then eventually be back on the grounds. (McMullen)

The process outlined by this comment is the reason the Council does not believe economics alone is sufficient to control capital investment in the fishery. The Capital Construction Fund exacerbates this problem when it continues to feed subsidized capital into an industry despite the fact that reduced profits have resulted in the sale of existing capital at prices below its original purchase value less real depreciation.

107. Fisheries are unique in that access rights are given away. The government commonly sells, leases or rents a large variety of public resources. Limited entry is not un–American or anti–free enterprise. (Young)

The Council notes that limited entry systems are authorized under the MFCMA and are constitutional. Limited entry is a step toward imbuing the fisheries with some of the attributes of private property. Private property is the basis of the free enterprise system.

108. Limited entry will result in a large reduction in the number of vessels active in the fleet and thus have an adverse effect on competition, contrary to what is intended under E.O. 12291. (Ashwin)

Competition where property rights are not fully defined has a different effect than competition in other sectors of the economy. E.O. 12291 also specifies consideration of the effect on investment. There is overinvestment in the fishery due to the absence of property rights for the fish. Limited entry will help to control this overinvestment.

109. The SEIS states that "any regulatory measures resulting from this amendment will only affect a smaller portion of the fleet." Examination of the numbers of vessels involved led the commenter to conclude that "a substantial number of small entities will be impacted by these measures." (Ashwin)

The statement in the SEIS was intended only to indicate the number of fishing vessels that would be affected out of a larger group. This statement does not indicate whether the number is considered substantial. A substantial number of small entities will be impacted.

MLR

110. Adopt the high MLR. (Hartzell, Miller, Schock, California Assemblywoman Allen)

If ITQs are not adopted, adopt limited entry with the high MLR. (Miller)

Adopt the low MLR. (Slostad, Malone)

Something greater than the low MLR should be chosen to prevent the fishery from going to vessels which have historically relied on it for only five to ten percent of their revenues. (Miller, Dan McDaniel, Lyshol, Newcoomb, Dale McDaniel, Catterall)

After considering public testimony and the effects of various MLRs, the Council has chosen an MLR which performs in a manner similar to the high MLR. As a result it expects a longline and fishpot fleet size close to, but slightly above, that operating in recent years in the fishery (the amount above will depend on the number of vessels qualifying on the basis of special circumstances). The MLR for trawl vessels is less restrictive because options were not provided for these vessels in the open access fishery.

Support and Opposition to License Limitation

111. Opposing Limited Entry (California State Senator Kopp, San Mateo Harbor District, Moss, Thime, Reeves, Marchand, Plourd, Strom, Wright, Degner, Warnock, Patana, Weikal, Thomas, Murray, Nungaray, G. Bettencourt, D. Bettencourt, Merlo, Burke, Irwin, PCFFA, Citizens Against Limited Entry, Scarborough, Merlo, McMaster, Pugh, Dupuy, Green, Parish, Reany, D. Choi, Y. Choi)

Supporting Limited Entry (Hartzel, McMullen, Miller, Dan McDaniel, Lyshol, Newcoomb, Dale McDaniel, California Assemblywomen Allen, Massey, Miller, Young, K. Bornstein, Yeck, Cooper, Tarr, Schock, Slostad)

The Council must act favorably on limited entry if ITQs are adopted for the sablefish longline fishery in Alaska, otherwise there will be a considerable increase in effort off the West Coast. (Miller, Dan McDaniel, Lyshol, Newcoomb, Dale McDaniel, Catterall).

The Council expects the license limitation program will be effective and believes the future of the fishery will be better with license limitation than without it.

Support and Opposition to ITQs

112. Adopt ITQs for the longline fleet off the West Coast. (Miller, Hartzel, PCFFA)

The reasons the Council did not choose to develop an ITQ program at this point in the process are outlined in Chapter 2 of the SEIS. The Council will be considering ITQs as an alternative which may further rationalize the fishery and has announced November 13, 1991 as the date beyond which it may not consider any landings as part of the fishing history on which it may base issuance of ITQs.

Miscellaneous

113. There is a fleet which catches small quantities of fish and delivers them live for high prices, which may be adversely impacted by limited entry. (Stagnaro, Tavasieff)

If this fleet has recorded landings during the window period, it should be able to qualify on the basis of number of days of landings. If the landings are very small, (under 500 pounds a day) the opportunity should continue to be available in the open access fishery.

114. Restrictive trip limits placed on the open access fishery may result in increased safety problems, a tendency to highgrade, reduced economic viability, and disproportionately high management efforts in a low volume fishery. Management should be directed toward the trawl and longline fisheries. (Malone)

See response to comment 25.

115. The Council should not use the recent historic period (mid-1980's) as the primary basis for establishing future allocations. It was during this period that excess longline and trawl capacity resulted in lost fishing opportunities for other gears. (Malone)

The lost fishing opportunity for other gears during this period was relatively minor and occurred in the nontrawl sablefish fishery. Less than one month was lost in 1985 when the sablefish fishery was shut down in December and in 1986 and 1987 the fishery shut down in mid-October. The closures occurring in 1988 occurred after the end of the window period. In total, less than six months of late fall and early winter fishing were lost out of the 48 month window period.

116. Limited entry must be evaluated in the context of all available fishery management tools. The burden of any individual management measure will be minimized by the use of a mix of management measures. (Young)

The Council's position has been that it has available most of the tools necessary to conserve the resource. The reason for consideration of limited entry is to evaluate whether alternative tools might have a better mix of social and economic impacts. For example, an observer program would provide knowledge of at-sea discards enabling the Council to properly conserve the resource. However, additional entry into the fishery would require more restrictive limits and waste inducing regulations.

117. The Council's program, like the California sea urchin limited entry program, may be found unconstitutional. (Reamey)

A large number of limited entry programs have survived constitutional tests.

118. Some people are having landing receipts made for them so they can qualify for a permit. (Green)

The state and federal government keep files with landing records. Landing records have unique ticket numbers and are correlated with specific vessels. Landing records presented in support of a permit application will be compared to these records. It will therefore be very difficult to create false landing records.

119. The program is cumbersome and difficult to understand. The rationale behind the provisions is incomprehensible. For example, what valid purpose do the "A" and "B" endorsements serve. (PCFFA)

As acknowledged by PCFFA, the species mix (particularly the presence of underutilized species) and various gear types make the groundfish fishery a complex fishery. To design an effective plan in this situation required more complexity than might have otherwise been necessary. Many parts of the limited entry program have been simplified in content and presentation since the program was initially sent out for public review (e.g. provisional "A" endorsement upgrade requirements have been simplified, the designated species "A" and provisional designated species "A" endorsements eliminated, and endorsements renamed to reflect the two tiered endorsement structure). The rationale for many of the provisions in the plan were explained in the section of Chapter 7 of the draft SEIS on fairness and equity. It was also explained that the "B" endorsements are provided for individuals who would not otherwise have been given access rights in the fishery (an "A" endorsement"). "B" endorsements provide an adjustment period for those who had some low level of activity in the fishery, but did not meet the MLRs. The duration of these endorsements also allow complete depreciation after the cutoff date for all vessel owners using the seven year depreciation schedule commonly used by fishermen. In response to comments on the need to provide more information on rationale, a new chapter has been added to the SEIS (Chapter 4) and most information previously found in the section on fairness and equity moved there.

120. Even though only U.S. citizens may obtain fishing permits to operate documented vessels over 5 tons, Vietnamese fishermen receive special treatment and government subsidies. (Ashwin)

This is beyond the scope of the limited entry program.

121. Those that have invested time and money in the fishery should be protected. (Cooper)

The primary objective of license limitation is to limit or reduce capacity. This objective is based on the overcapitalization resulting from the open access status of the resource and the consequent wastage of national economic resources together with the management problems presented by too much capital in the fishery. Protection of individuals in the industry is consistent with objectives for stability and not disrupting the fishery, however, it is not a specific objective of the program. Nonetheless, the window period and MLRs were designed to provide initial permits to owners of vessels with a history in the fishery and dependence on the resource (see Section 4.4.4.)

122. Consider a system based on "sole ownership." Under sole ownership, the fishery would be managed by a single owner of the resource. (Keene)

The Council solicited comment on the alternative limited entry schemes to be considered during the scoping phase of developing the amendment. This was not suggested at that time and so has not been included in the SEIS. While sole ownership may provide an interesting conceptual contrast to the schemes currently under consideration, the change in social and economic structure entailed in such an alternative is tremendous and would run counter to several of the objectives in the groundfish management plan.

123. There is no analysis of the buy-back program and no information concerning who is to bear the burden of this cost. (Parrish)

The buy-back program is not being proposed or adopted here but identified as a future possibility. The funds would be collected through fees on permits and monies directly used to buy back permits from voluntary sellers. This is not authorized under current law.

124. What consideration is given to small vessel safety in making allocations? (Malone)

The Council generally considers safety issues when the regulations which implement the allocation are determined.

125. How will the historic catch of the set-net fishery be allocated? Is it the Council's intent to manage the open access fisheries as year-round fisheries? (Malone)

Actions were taken at the July 1991 Council meeting to address these issues. The historic catch of this group will count toward determining the open access quota for the fishery, unless as a result of the gill net ban, these vessels are issued limited entry permits. If this happens, the historic catch of these vessels would be counted toward determining the limited access quota. It is the Council's intent to manage the open access fishery as a year round fishery.

126. Are Scottish seine gears included as limited entry trawl gear? (Malone)

Yes. Scottish seines are within the definition of trawl gear.

127. What are the Council's estimates of lost economic opportunity due to discards of juvenile market fish and adult excess-quota fish resulting from trawl operations? How will limited entry reduce this lost opportunity as a percentage of total catch? Council estimates of waste by gear should be included in the SEIS. (Malone)

An observer program would be required to make these estimates. Assumptions about discards are made in some of the stock assessments. The secondary objective of reducing bycatch and waste is being pursued through minimization of the expansion of numbers of vessels in the fishery so that regulations which induce waste will be less restrictive, and hence result in less waste. See response to comment 23.

128. Additional description of the impacts on exempted gears is required. (Citizens Against Limited Entry)

Additional analysis has been carried out and is incorporated in the final SEIS.

129. Data should be provided in the SEIS supporting the contention that stocks in the Monterey and Conception management areas are not fully utilized. (Malone)

This statement has been dropped from the license limitation alternative and the SEIS.

130. The Council has not provided the option of no limited entry (Warnock)

Status quo (no action) is the no limited entry alternative.

131. Despite representations in the Council documents, the LEC was clearly 100 percent in favor of limited entry and only looking to defeat arguments against it. (Ashwin)

The members of the LEC were charged with designing the best system they could regardless of their personal beliefs. Several members remain opposed to limited entry and comments against limited entry from at least one of the members are summarized in this chapter.

132. Adequate opportunity has not been provided for public comment regarding future allocations. (Malone)

Tables in the additional analysis distributed to the public in July 1991 (45 days prior to the end of the official comment period) provide information on historical catch and more opportunity for public comment on allocation between exempted and limited entry fisheries.

133. The PCFFA representative is not currently a member of the limited entry committee and has not participated on the committee for over two years. Listing PCFFA as a member of the committee misleads reviewers. (PCFFA)

At the start of the document which specifies the license limitation program in detail, acknowledgement is given to seven committees which participated at some point in the process of development of this amendment package. The first of these is the LEC on which PCFFA was represented. This committee held its last meeting in June of 1988 and made its final report to the Council in July of 1988, as indicated in the introduction to the SEIS. PCFFA's seat was never eliminated from that committee. The work product of the committee was two limited entry alternatives which varied mainly in the MLRs suggested and the transferability of "B" endorsements. These proposals contained the basic principles and provisions on which the Council's adopted license limitation alternative was based. Many of the provisions to which the PCFFA has raised objections (addressed in other parts of this document) were in both of the LEC's original proposals. The next committee with major responsibility for the development of the limited entry amendment was the LEADOC. This committee was dominated by government representatives with expertise in regulatory requirements, but had representation from the two major gear groups, trawl and fixed gear, and a representative for the exempted gears, who sat as committee chairman. The primary charge for this committee was to consider the information gathered through the industry survey and public comments at workshops in crafting a single license limitation alternative out of the two alternatives developed by the LEC.

During this committee's existence, reports were made at every Council meeting at which time the Council made decisions affecting the content of the license limitation alternative. Industry input came to the Council through industry seats on the oversight committee, through the Groundfish Advisory Subpanel and through testimony to the Council at every meeting.

134. The Council failed to enact a moratorium during the lengthy consideration of limited entry, state with certainty its intentions, and develop a plan in a timely manner. The notice that a limited entry system was being considered and that there was a cutoff date left many individuals in a state of uncertainty about whether or not to invest in the fishery. These individuals could not afford to wait to make their decisions. (PCFFA)

The process of developing this amendment took four years. The amendment was completed and recommended for implementation three years after the August 1, 1988 cutoff date. One of the major reasons for the length of the process was the one and a half year period which the Council took to hold workshops, survey the industry and incorporate the results of the workshops and survey into the design of the license limitation alternative. This was done on the consensus recommendation of the original LEC. This process did involve a sustained period of uncertainty for many in the industry, but provided a proposal based on broad industry input. Many fishermen continued with the purchase and sale of vessels by making reservations in their contracts for transfer of limited entry permits at a later date should a permit be issued for the transferred vessel. It was impossible for the Council to state its intentions with certainty until the amendment was developed, analyzed and public comment received. A moratorium would have required as much government action and expense as the limited entry program, would have required a similar decision making process, and would have left individuals in a similar state of uncertainty while the details of the moratorium were worked out. In addition, nothing is certain until the plan is implemented and approved by the Secretary of Commerce.

135. Many fishermen in southern California are surprised to find out about limited entry. Prior to investing in the fishery, the commenter had contacted the state and NMFS about fishery regulations but had not been told about a pending limited entry system. (Plourd)

While individuals at these agencies may not have informed the commenter about the pending limited entry plan, the plan and cutoff dates have been publicized in Council mailings, fishing publications, fishermen association mailings, fishing expositions, Sea Grant newsletters and the Federal Register. Posters announcing Council workshops on limited entry were distributed through Sea Grant offices up and down the West Coast. It is usually incumbent on persons investigating entry or modification of a business to make inquiries with all regulatory agencies under whose jurisdictions they will operate. See comment 15.

ACKNOWLEDGEMENTS

The development and drafting of the adopted license limitation program is the product of a great number of individuals with expertise in the science, management and politics of the West Coast groundfish resource and fisheries. Included were the Limited Entry Committee and Technical Advisory Group, ad hoc committees, a workshop committee, workshop teams, amendment oversight and drafting committees, and a technical review committee. Jerry Hallam and Fred Anderson, both of whom have since passed on, were among the individuals who served on or were major participants in committee meetings. While these two individuals and all the other people listed on these pages may or may not have supported limited entry, their commitment to wise resource management and willingness to participate in the process are greatly appreciated. A special thanks also goes to Mr. Charles Korson, National Marine Fisheries Service, Southwest Region, for the provision of data for the analysis supporting this amendment package.

Limited Entry Committee

Mr. Rick Malsed (Chairman), Fishing Vessel Owners Association, Seattle, Washington
Mr. Jerry Hallam (Chairman – deceased), Coast Draggers Association, Aberdeen, Washington
Mr. Doug Ancona, National Oceanic and Atmospheric Administration, Seattle, Washington
Lt. Dan Brosnan, Oregon State Police, Salem, Oregon
Mr. Ralph Brown, trawler, Brookings, Oregon
Mr. Paul Heikkila, Coos County Extension Service, Coquille, Oregon
Mr. Pierre Marchand, Jessie's Ilwaco Fish Company, Ilwaco, Washington
Mr. Haddon Salt, pot fisherman, Sonoma, California
Mr. Larry Schock, shrimp fisherman, Newport, Oregon
Mr. Robert Steele, Pacific Coast Federation of Fishermans Assoc., Mill Valley, California
Mr. Mike Waldrop, trawler, North Bend, Oregon
Mr. Tony West, California Gillnetters Association, San Pedro, California

Technical Advisory Group

Dr. Rebecca Baldwin, National Marine Fisheries Service, Seattle, Washington
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Mr. Gene Fleming, California Department of Fish and Game, Sacramento, California
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Mr. Al Millikan, Washington Department of Fisheries, Seattle, Washington
Dr. Dale Squires, National Marine Fisheries Service, La Jolla, California
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Limited Entry Ad Hoc Committee
(August through September 1988)

Ms. Judy Merchant (Chairman), Washington Department of Fisheries, Olympia, Washington
Mr. Doug Ancona, National Oceanic and Atmospheric Administration, Seattle, Washington
Mr. Gene Fleming, California Department of Fish and Game, Sacramento, California
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Mr. Al Millikan, Washington Department of Fisheries, Seattle, Washington
Mr. William Robinson, National Marine Fisheries Service, Seattle, Washington
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Limited Entry Workshop Committee

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Mr. Jim Golden, Oregon Department of Fish and Wildlife, Newport, Oregon
Dr. Daniel Huppert, University of Washington, Seattle, Washington
Mr. Bob Jacobson, Lincoln City County Extension, Newport, Oregon
Mr. Pete Leipzig, Fishermen's Marketing Association, Eureka, California
Mr. William Robinson, National Marine Fisheries Service, Seattle, Washington
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Dr. James Wilen, economist, University of California, Davis, California
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EXECUTIVE SUMMARY

The following is a summary that covers the primary components of the adopted license limitation alternative of Amendment 6 to the "Pacific Coast Groundfish Fishery Management Plan". There may be specific provisions in the adopted alternative which are not included in this summary but are significant to individual circumstances. It is important to directly consult the adopted language and the proposed regulations in determining how the license limitation alternative might apply to individual situations. The rationale for various provisions of this program are provided in Chapter 3 of the supplemental Environmental Impact Statement.

Overview

The following is a brief overview of the license limitation alternative. A more detailed summary follows. The proposed license limitation program, when combined with the current management system, controls capacity of gears covered by the program in four main ways: (1) numbers of vessels, (2) gear used by the vessels, (3) length of vessel, and (4) trip size and frequency limits (primarily trawl).

The program is based on a federal permit. The fishery will be divided into limited and open access segments. Vessels using groundfish trawl, longline or fishpot gear may qualify for the permits. Vessels using these gears generally land over 90 percent of the catch. Vessels using all other gear (exempted gears) would not be required to have a permit to continue to fish for groundfish. Additionally, vessels making small landings with longline and fishpot gear would be allowed to fish in the open access segment. Other management measures would be used to control harvest rates in the open access segment of the fleet with the goal of providing year-round fishing opportunities. This goal would result in very restrictive management measures for longline and fishpot vessels relative to measures applied in the limited access fishery. Rather than issuing a separate permit for each gear that a vessel qualifies for, a single permit would be issued and endorsed for each gear with which the vessel meets the qualifying requirements. There are a number of different kinds of endorsements which may be issued for each gear (Table ES-1).

"A" endorsements are intended for those vessels with a significant involvement in the fishery during the window period. The window period and landing requirements chosen allow vessels with active, present or recent, historic participation in the fishery to qualify. "A" endorsements are transferable with the permit and valid for all Pacific Fishery Management Council (Council)-managed groundfish fisheries. There is no specified time limit on the permits; i.e., they will remain valid until the groundfish fishery management plan is amended to change the nature of the endorsement.

Provisional "A" endorsements are primarily intended for those persons who made large investments to enter the fishery at significant levels, but did not have full opportunity to meet the qualifying requirements established for the four-year window period. Through means of the provisional "A" endorsement, the Council requires that a vessel develop a history of landings in order to demonstrate its intent to enter the fishery. For example, included among those for whom the provisional "A" endorsements are intended are vessels that were under construction during some part of the window period. When construction on these vessels is completed, the vessel owners will have three years in which they must fish at an annual rate that is approximately equal to the average rate required for vessels receiving full "A" endorsements. After completion of these three years of fishing, the

Table ES-1. Summary of characteristics of the limited entry permit gear endorsements.[1/]

Type of Gear Endorsement[2/]	Endorsement Characteristics				
	Nature of Issuance Criteria	"Transferable"[3/]	Duration	Species	Upgradable
"A"	Vessel meets minimum landing requirements during the window period,[4/] upgrade from provisional "A" endorsement, or certified fleet.[5/]	Yes	No Specified Limit	All Species	No
Provisional "A"	Conversion/construction/purchase/replacement[6/]/ prohibited gear.	No	Three Year Maximum[7/]	All Species	Yes
"B"	Vessel does not meet minimum landing requirements but has 3 or more days of over 500 pound landings prior to August 1, 1988.	No	Expires December 31, 1996[8/]	All Species	No
Designated Species "B"	Seniority/first come/lottery (when harvesting capacity committed to domestic processors by vessels holding other types of endorsements is less than acceptable biological catch or an apportionment to total allowable level of foreign fishing would otherwise be required.)	No	One Year Maximum	Specified Species	No

1/ This table summarizes the characteristics of various kinds of gear endorsements. It should be used only as a guide to understanding the endorsements. There may be details important to individual circumstances which are not included in the summary table.

2/ All gear endorsements may be issued for groundfish trawl, longline or fishpot gear, depending on which gear is used to meet issuing criteria.

3/ Endorsements are not separable from the master permit. A "transferable" endorsement generally remains valid when the master permit is transferred. When a vessel is totally lost, transfer of endorsements which would not otherwise be transferable may be allowed.

4/ The qualifying window period is July 11, 1984 through August 1, 1988.

5/ Small fleets under local jurisdiction limited entry programs may be incorporated under this federal program if they meet certain criteria. Such local limited entry programs must be in existence as of July 11, 1991.

6/ As used here "replacement" references only the special circumstance where a qualifying vessel was replaced with a larger vessel and permit rights transferred prior to September 30, 1990.

7/ Expires in the first year in which the upgrade criteria are not met.

8/ Or on transfer of the vessel to a new owner.

provisional "A" endorsements may be upgraded to "A" endorsements. Provisional "A" endorsements are valid for all Council-managed groundfish fisheries but are not transferable.

"B" endorsements are intended for vessels that have some low level of activity in the fishery prior to August 1, 1988 and under the current owner, but did not meet the landing requirements for vessels receiving "A" endorsements. These vessels had a very low level of dependence on the fishery. The "B" endorsements provide a three-year adjustment period during which the vessel owners may either make arrangements to stay in the fishery through the purchase of a permit or make adjustments in their fishing activity. "B" endorsements are valid for all Council-managed groundfish fisheries, but are not transferable.

Designated species "B" endorsements are intended for owners of vessels which wish to harvest potentially underutilized fisheries, but would only be issued when the commitments of "A," provisional "A" and "B" endorsement holders to harvest for domestic processors are not sufficient to take the entire allowable harvest. The endorsements issued may be valid only for delivery to domestic processors, or, if necessary, to prevent an apportionment to total allowable level of foreign fishing (TALFF), may be valid for delivery to foreign processors. Harvest limits would be placed on the designated species "B" endorsement fleet.

In addition to gear endorsements, all permits will be endorsed for the length overall of the vessel that the permit is originally issued. Length is not expected to limit the increase of harvest capacity, but will place an ultimate bounds on the per trip vessel capacity. Under a trip limit management regime, there will be little incentive to expand a vessel's trip capacity. And, where trip limits for a species include a frequency limit, there is little incentive to expand capacity for the species in terms of the number of trips which may be taken over a given period.

Establishment of this license limitation system will provide a starting point for any future programs which may be necessary to further reduce harvest capacity. To further reduce harvest capacity, a voluntary buy-back program should be implemented and the appropriate enabling legislation for funding sought. Incremental implementation of a groundfish individual transferable quota program may also be considered as a means of further reducing harvest capacity.

Detailed Summary

The Limited and Open Access Groundfish Fisheries

Under the license limitation alternative, the groundfish fishery off the West Coast (Washington, Oregon and California) would be divided into limited and open access segments. The only vessels allowed to participate in the limited access segment of the fishery would be vessels with federally issued limited entry permits valid for groundfish trawl, longline or fishpot gear (limited entry gear). Exempted gears (all other gears) and vessels using longline or fishpot gear without a limited entry permit would take part in the open access segment of the fishery. Any vessel with a limited entry permit would be considered a participant in the limited access fishery when using the limited entry gear(s) for which the permit was issued. The Council anticipates that the states would adopt complementary regulations.

The open access fishery for vessels using longline or fishpot gear without a limited entry permit would be intended to facilitate year-round harvest by small producers. The total catch of these small

producers has been minor. The open access fishery would be managed with the intent of keeping the catch of small producers in line with the historic harvest of the group as a whole.

Allocation and Management

The limited and open access segments of the fishery would be distinguished by the quotas and regulations which apply to each segment. Species and species groups for which quotas or harvest guidelines are fully utilized would be allocated between limited entry and exempted gears.

When allocations are made, the open access fishery would be apportioned a specified percentage of available yield each year based on the catch history of nonpermitted longline, fishpot and exempted gear vessels between July 11, 1984 and August 1, 1988 (the window period). On the basis of landings over this period, the percentage of catch by nonpermitted longline and fishpot vessels together with exempted gear vessels would be determined and applied to harvest guidelines or quotas in order to set the allocation for the open access portion of the fishery. After the expiration of longline and fishpot "B" endorsements, the window period catch history of vessels which received these "B" endorsements would be added to the catch histories used to determine the open access fishery allocation.

As necessary, trip limits and other management measures would be used to control harvest rates for the open and limited access fisheries. One of the primary management objectives for the open access fishery would be to provide year-round fishing opportunities. The group of vessels using longline and fishpot gears without a permit would be managed with the intent of keeping its landings in line with the window period landings of the group of longline and fishpot vessels which do not qualify for permits.

Limited Entry Permits

Limited entry permits would be issued subject to the following general criteria:

- Permits would be issued to anyone who qualifies for a gear endorsement.
- Permits would generally be issued to **current** owners (owner at the time the permit is issued) of qualifying vessels.
- Only one permit would be issued for each qualifying vessel.

Limited entry permits would be transferable; however, the gear endorsements may or may not remain valid when the permit is transferred. **A limited entry permit without a valid gear endorsement confers no rights to participate in the groundfish fishery.** After initial issuance of the permits, an individual may acquire any number of permits from other permit holders; subject to antitrust law limits. Permits would be renewed between October 1 and November 30 each year and would expire on failure to pay renewal fees for reissuance.

Gear Endorsements

Rather than issuing a separate permit for each gear with which a vessel qualifies, a single permit would be issued and an endorsement attached for each gear with which the vessel qualifies. The gear endorsement would essentially be a stamp on the permit which specifies the gear that may be used

under the limited access quota and regulations, and other general characteristics of the permit when used with that gear; e.g., whether the right to use the permit with a particular gear is transferable, what species may be harvested with the gear and the length of time the permit would be valid with the gear. **Gear endorsements may not be transferred separately from the permit to which they are attached. A "transferable" gear endorsement is one that would remain valid when the permit it is attached to is transferred.** Table ES-1 contains a summary of the various kinds of gear endorsements.

"A" Gear Endorsements - "A" gear endorsements would be valid for the catch of all Council-managed groundfish with the gear specified in the endorsement, would be valid for an indefinite period of time except as noted in Section 14.1.4 of the license limitation alternative and would be transferable.

The current owner of a vessel which met the minimum landing requirements (MLRs) between **July 11, 1984 and August 1, 1988 (the window)** may qualify for an "A" gear endorsement. The MLRs would be as follows:

Trawl: At least 9 days in which over 500 pounds of any groundfish species caught with groundfish trawl gear except Pacific whiting are landed or delivered, or 450 mt of landings or deliveries of any groundfish species caught with groundfish trawl gear except Pacific whiting, or 17 days in which over 500 pounds of Pacific whiting caught with groundfish trawl gear are landed or delivered, or 3,750 mt of landings or deliveries of Pacific whiting caught with groundfish trawl gear.

Longline: At least 6 days in which over 500 pounds of any groundfish species caught with longline gear are landed or delivered, or 37.5 mt of landings or deliveries of any groundfish species caught with longline gear.

Fishpot: At least 5 days in which over 500 pounds of any groundfish species caught with fishpot gear are landed or delivered, or 150 mt of landings or deliveries of any groundfish species caught with fishpot gear.

The groundfish species referenced in the MLR are Council-managed groundfish species caught off the West Coast.

In addition to the regular "A" endorsement, a **provisional "A" endorsement** would be issued which could be upgraded to an "A" endorsement. These endorsements would be issued for the (1) vessel owner who, during the window period, was preparing to use a vessel with limited entry gear in the West Coast groundfish fisheries (had a vessel under conversion or construction, or purchased a vessel during the window period); (2) owner of a replacement vessel who would otherwise receive an "A" endorsement on a permit endorsed for a smaller sized replaced vessel, when the replacement occurred prior to September 30, 1990; and (3) owner of a vessel making sufficient groundfish landings during the window period to meet the adopted MLR, but using a gear type which has been prohibited subsequent to the window period. To qualify under the construction or conversion provisions, construction or conversion must have been completed prior to September 30, 1990.

Like "A" endorsements, **provisional "A" endorsements** would be valid for all Council-managed groundfish caught with the gear specified, but would not be transferable. The endorsements would

be upgraded to an "A" endorsement if the vessel is used in each of the first three 365-day annual periods commencing with the date of endorsement issuance, or the date of completion/purchase/ replacement, whichever is earlier. "Use" of a provisional "A" endorsement is specifically defined in the adopted alternative and requires annual vessel performance equivalent to about one-quarter of the "A" endorsement MLRs. The endorsement would expire at the end of any annual period in which landings (or deliveries) are not sufficient to meet the use criteria.

"B" Gear Endorsements - "B" gear endorsements would be valid for the catch of all Council-managed groundfish with the gear specified in the endorsement, expire three years after program implementation (approximately seven years after the end of the window period); and be nontransferable, except in the event a vessel is totally lost.

A "B" endorsement may be granted to those persons who:

- own a vessel which used limited entry gear to catch and land or deliver (joint venture or domestic) more than 500 pounds of Council-managed groundfish on three separate days prior to August 1, 1988;

- did not meet the MLRs for an "A" endorsement during the window period; and

- have continuously owned the vessel during and since the last three qualifying landing days by the vessel prior to August 1, 1988.

Designated species "B" endorsements would be issued for the harvest of specific underutilized or potentially underutilized species. The endorsement would be issued to allow the expansion of domestic harvesting capacity when the commitment to domestic processors by holders of permits valid for all species is not sufficient for full domestic utilization of the species. Catcher-processors are among the catcher vessels which may qualify for designated species "B" endorsements. Designated species "B" endorsements would also be issued for delivery to foreign processors if there might otherwise be an apportionment to TALFF. Designated species "B" endorsements would be valid for the year that they are issued and would be nontransferable. Priority for initial issuance of designated species "B" endorsements would be based on seniority in the fishery for the designated species and subsequent issuance would be based on seniority in use of the designated species "B" endorsements. Endorsements would be issued in tiers, generally to all those of equal seniority, and a harvest limit would restrict the total catch of designated species "B" endorsement recipients.

Size Endorsements

Limited entry permits would be endorsed for vessel size. Size endorsements would primarily be intended to hinder increases in the capacity of a vessel used with a permit. To allow flexibility in replacing vessels and achieving vessel stability, a permit could be used with a vessel of up to five feet greater length than the size endorsed on the permit. There would be no limit on using a permit with a vessel of smaller size, except for permits endorsed for trawl gear. For permits endorsed for trawl gear, use of the permit with a vessel more than five feet smaller than the endorsed size would result in a permanent reduction in the size endorsement to reflect the smaller size of the vessel. A provision would also allow the combination of permits into a single permit with a larger size endorsement.

Incorporation of Local Jurisdiction Limited Entry Programs

A limited entry program for a small fleet under local jurisdiction and in place as of July 11, 1991 could be incorporated under this program and gear endorsements issued for its members if it is certified as being consistent with the goals and objectives of the license limitation alternative and meets the purposes for this provision. Such a program would need to have special social significance to warrant an exception to the MLR requirements.

Appeals and the Issuance Review Board

Appeals concerning disputes over the issuance of an endorsement and permit would be made to the National Marine Fisheries Service (NMFS) review authority. At the request of the applicant, a Council appointed issuance review board, made up of representatives from the fishing industry, would make recommendations on the appeals. The Council would review the board's recommendation and provide advise to NMFS on appropriate action.

Initial Issuance and Renewal of Permits

All applications for a permit would have to be made within six months of the date NMFS announces it is ready to receive permit applications. A fee would be charged for processing the application and annual fees would be charged to renew and reissue the permit. Failure to pay renewal fees could result in the revocation of a permit. The issuance review board would be an integral part of the permit issuance process. As such, the review board expenses would be included in determining permit fees. NMFS would staff the review board and, to the extent allowable, cover its administrative expenses.

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ACRONYMS

Council	Pacific Fishery Management Council
FMP	fishery management plan
ITQ	individual transferable quota
JV	joint venture
LE permit	limited entry permit
MLR	minimum landing requirements
MSY	maximum sustainable yield
mt	metric tons
NMFS	National Marine Fisheries Service
TALFF	total allowable level of foreign fishing

14.0 GROUNDFISH LIMITED ENTRY[1/]

14.1 Introduction

14.1.1 Problem to be Addressed by this Groundfish Limited Entry System

The Council adopted the following problem statement in April 1990.

> Nearly all groundfish stocks are now fully harvested by domestic fishermen in the Pacific coast groundfish fishery. While fleet harvesting capacity has increased, harvests are declining as stocks are fished down to MSY levels. Further, there is a general level of excess harvest capacity existing in most West Coast and North Pacific fishing fleets (e.g., shrimp, crab, halibut, salmon, etc). As these other fisheries grow increasingly overcrowded relative to available harvest, it becomes more likely that capacity will be redirected to the West Coast groundfish fishery when downturns occur elsewhere. In addition, the implementation of more restrictive management regulations in other fisheries, including ITQ limited entry systems, may result in increased effort during season openings in the West Coast groundfish fishery.
>
> In the Pacific coast groundfish fishery, declining stocks and the presence of harvest capacity in excess of that necessary to catch the resource result in increasing number and complexity of regulations. Accordingly, the Council faces increased pressure to balance the conflicting need to adopt more restrictive regulations for protecting the resource with the need to provide sufficient allowable catch to sustain the fleet.
>
> Increased number and complexity of regulations have many adverse impacts in such areas as fleet costs, resource utilization, safety, and enforcement costs and effectiveness. Additionally, there is a point beyond which added regulations which interfere with day to day vessel operations (e.g., trip limits or mesh size regulations) will not improve the Council's ability to accomplish its goals. Pressures on industry arise not only from management measures which restrict operations, but also the division of the allowable catch among larger numbers of vessels.
>
> Two components comprise fleet harvest capacity: vessel fishing power and number of vessels. As harvesting capacity in the fisheries continues to increase, problems arising from the need for more restrictive management measures and resolution of allocation issues

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1/ All references to fishing activities in these proposals are references to catching activities occurring off the Washington, Oregon and California coasts unless otherwise noted. This statement should occur throughout the regulations when they are drafted.

become more acute. It is apparent that no relief from these problems will occur if management actions continue to allow increased harvest capacity.

14.1.2 Goals and Objectives for Groundfish Limited Entry

The following are the goals and objectives for limited entry adopted by the Council in April 1990. The primary objective directly addresses the overcapacity problem, and the secondary objectives address the ways the Council hopes limited entry will promote achievement of the Council's goals and objectives for the groundfish fishery.

Goals. The goals for the West Coast groundfish fishery limited entry program are to improve stability and economic viability of the industry while recognizing historic participation, meet groundfish management objectives and provide for enforceable laws.

Primary Objective. The primary objective of the limited entry program will be to limit or reduce harvest capacity in the West Coast groundfish fishery.

Secondary Objectives. In pursuit of the primary objective, the following secondary objectives will be addressed:

Economic.

- Promote long-term economic stability
- Increase net returns from the fishery
- Allow flexibility for combination vessels

Management.

- Stabilize management regimes by reducing need for frequent inseason changes
- Reduce the cost of management
- Reduce by-catch and waste
- Encourage effort in underutilized species fisheries

Enforcement.

- Promote cost-effective enforcement by reducing need for frequent changes and tight trip limits
- Promote logistically viable enforcement by minimizing need to use regulations such as trip limits or subarea closures which are more difficult to enforce

Social.

- Recognize and accommodate historical participation of those investing their life and resources in the fishery
- Maintain a mechanism for fishery entrance/exit and flexibility for change in the fleet
- Reduce conflicts between user groups by limiting or reducing effort competition for the same resource
- Provide a stable supply of groundfish to the public at a reasonable price

14.1.3 Achievement of Goal and Objectives and Need for Additional Measures to Reduce Capacity

The license limitation system adopted under this amendment to the groundfish FMP will not in itself immediately accomplish in a readily apparent manner the goals and objectives the Council has set out for limited entry. It is a first step that may slow or prevent the worsening of conditions which impede the Council from achieving the overall goals and objectives for the fishery. The Council believes it is reasonable to expect that the primary objective will be accomplished through this license limitation system; i.e., there will be an effective limit which reduces growth in the active fleet and results in less capacity in the fishery under the adopted license limitation program than would have been present in its absence. However, movement toward the goals and objectives as compared to the existing fishery will become apparent only when a way is found to substantially reduce the capacity already present.

Establishment of this license limitation system will provide a starting point for any future programs which may be necessary to further reduce harvest capacity. To further reduce harvest capacity, a voluntary buy-back program should be implemented and the appropriate enabling legislation for funding sought. Incremental implementation of a groundfish ITQ program may also be considered as a means of further reducing harvest capacity.

14.1.4 Nature of the Interest Created

Groundfish LE permits and endorsements confer a right to participate in the West Coast groundfish fishery with an limited entry gear in accordance with the limited entry system established under the groundfish FMP as modified by this chapter of the FMP (created under Amendment 6) or any future amendment which may modify or even abolish the limited entry system. The permits and endorsements are also subject to sanctions, including revocation, as provided by the Magnuson Fishery Conservation and Management Act, 16 USC at 1858(g) and 15 CFR Part 904, Subpart D.[2/]

14.1.5 Fisheries Within the Scope of the Limited Entry Program

The provisions of this chapter apply only to the commercial groundfish fisheries. Regulations and allocations for the treaty Indian and recreational fisheries are not affected by the provisions of this chapter unless specifically mentioned. All harvest guidelines, quotas and catches referenced are those specific to the non-treaty commercial fisheries.

2/ It is intended that a statement of the nature of the interest created be included on the groundfish LE permit.

14.2 Management, Allocation and General Rules on the Issuance and Use of Groundfish LE Permits, Gear Endorsements and Size Endorsements

14.2.1 Federal LE Permits Required Only for Gears Fishing on the Limited Access Quota

1. Federal groundfish LE permits will be required and issued only for those vessels catching Council-managed groundfish species[3/] with groundfish limited entry gears (trawl, longline or fishpot gear) under the limited access quota.[4/]

2. Vessels using exempted gears (all gears other than trawl, longline and fishpot) or using longline or fishpot gear[5/] without a permit endorsed for one of those gears may continue to catch groundfish under an open access system. (Exempted, longline and fishpot gears used by vessels without endorsements for those gears are termed open access gears.)

14.2.2 Allocations Between the Limited and Open Access Fisheries and Management of the Open Access Fishery

1. The division of the fleet into limited and open access participants will require that separate allocations be established for each group.

2. Allocations for the open access fishery will be based on historical catch levels for the period July 11, 1984 to August 1, 1988 by exempted, longline and fishpot gears used by vessels which did not receive an endorsement for the gear.

   a. On the basis of landings over this period, a percentage of catch[6/] for these gears will be determined and applied to harvest guidelines and quotas in order to establish the allocation for the open access portion of the fishery. The open access portion of harvest guideline or quota will be set aside before other allocations are made.

   b. Limited/open access allocation percentages for specific species and species groups will be determined after this limited entry program is implemented and permitted and nonpermitted vessels are identified.

3/ All references to "Council-managed groundfish" refer only to groundfish species specified in the Council groundfish FMP which are caught in the exclusive economic zone or adjacent state waters off Washington, Oregon and California.

4/ References to longline, pot and trawl gear are references to legal groundfish gears as defined by the groundfish FMP.

5/ Trawl gear may not be used without a permit because the open access fishery for limited entry gears is aimed at accommodating small producers and will likely be managed under restrictive trip limits. The fishing power of trawl gear would result in excessive discards under these trip limits. Additionally, while longline and fishpot vessels catching small quantities of groundfish will be prevented from qualifying by the structure of the MLRs (a day's landings must be greater than 500 pounds in order for the day to count toward meeting the MLR; Section 14.3.1.3), this structure will provide little barrier for most trawl vessels. Thus, there is no strong reason to provide the open access opportunity to compensate for the 500 pound per landing day threshold.

6/ Percentage of catch as determined through the Pacific Coast Fisheries Information Network database or some comparable database.

c. An open access allocation based on catch history will be determined for each separate species, species group and area for which the Council determines an allocation is necessary.

d. Initial determination and any subsequent revision of the species or species groups and areas for which an open access allocation will be made will occur through a rule making under the appropriate framework in Chapter 6 of this plan.

e. Open access allocations for species, species groups and areas identified for such allocation by the Council will be specified during the annual process for setting specifications and apportionments described in Section 5.8 of this plan.

f. A change in the catch history allocation method for determining the allocation for the open access fishery will require a plan amendment.

g. If a group of vessels that initially is to participate in the open access fishery later receives permits in the limited access fishery, the historical catch levels of those vessels shall be deducted from the historical catch levels used to calculate the open access allocation, and the percentages used in setting the open access allocation recalculated. For example, if a vessel whose gear is prohibited by a state or the Secretary of Commerce qualifies for a LE permit under Section 14.3.2.3(9), or if a small limited entry fleet is incorporated under Section 14.3.1.3(9) and its vessels are issued LE permits, their catch history with the banned gear or the limited entry gear for which they are now going to receive permits, shall be deducted from the open access fishery's historical catch levels and open access percentages will be recalculated.

h. Prior to expiration of "B" endorsements, vessels' catch history using gears for which they receive "B" endorsements is not included in the catch history used to calculate the percentage of catch for open access vessels. When "B" endorsements expire, the historic catch levels of vessels which received "B" endorsements for longline or fishpot gear when using that gear will then count toward determining the proportion allocated to the open access quota. The historic catch levels of vessels which received "B" endorsements for trawl gear will continue to count toward determining the limited access quota and will not be transferred to the catch history used to determine the open access quota, even after trawl "B" endorsements expire.

3. For International North Pacific Fisheries Commission areas where quotas or harvest guidelines for a stock are not fully utilized, no limited/open access allocation will be established until it is anticipated the allowable catch for a species or group of species will be reached.

4. Any groundfish catch by vessels with an LE permit will be counted against the quota for the limited entry gears while the fishery for the limited entry gear for which its permit is endorsed is open. A vessel may not carry or deploy limited entry gear for which its permit is endorsed when the limited entry fishery for that gear is closed. Once the limited entry fishery for the gear for which the permit is endorsed has closed, any landings by the vessel with exempted gear, or limited entry gears for which no endorsement is held, will count toward the open access quota. The catch of vessels fishing without LE permits will count toward the open access quota regardless of what open access gear is used.

5. Allocations among gear types for species other than sablefish may be established in the future. If this occurs, portions of the new allocations may, in turn, be allocated to the open access fishery under the principles set forth in this section.

6. Management of the open access fishery.

   a. The open access portion of the fishery will be managed to provide year-round fishing opportunity.

   b. The purpose of providing an open access alternative for vessels using longline or fishpot gear is to allow a group of vessels which has historically fished at low levels, with minimal impacts on the resource (fewer than 5 or 6 landings greater than 500 pounds per vessel during the qualifying window period, July 1, 1984 through August 1, 1988), to remain in the fishery without creating permits which may be used at higher effort levels.

   c. The open access fishery will be managed with the intent of maintaining the historic fishing opportunities for the participant groups and to keep the overall catch in line with historic harvests. For example, trip limits for nonpermitted longline and fishpot gears operating in the open access fishery will likely be fairly low because the historic fishing levels of this group are low. Trip limits, when necessary, for some exempted gears will probably be higher because their historic fishing levels are higher.

14.2.3 Initial Issuance of LE Permits

1. Each qualifying vessel will entitle only the current owner[7/] to one LE permit.

2. A vessel qualifies for an LE permit by meeting the initial issuance criteria for one or more gear endorsements (see Sections 14.2.5 and 14.3).

3. A given vessel will not result in the issuance of more than one LE permit.

14.2.4 Ownership Restriction and Changes in Ownership

1. Only entities (human beings, corporations, etc.) qualified to own a U.S. fishing vessel may be issued or may hold (by ownership or otherwise) an LE permit. (Foreign ownership of LE permits should be limited to the maximum degree possible given what is allowed under the law.)

2. Ownership of a permit will be considered to change when there is an ownership change on U.S. Coast Guard documents, however, an owner can submit documents to demonstrate that the controlling interest has not changed and therefore the change in documentation is not a change in ownership.

7/ An exception to this would occur in the case of a lost vessel (Section 14.2.9.1 paragraph 2), or if a contract transferring vessel ownership specified that the seller would retain the rights to the LE permit. In this case, a past owner (the seller) may ultimately receive the LE permit.

14.2.5 Gear Endorsements

1. An LE permit confers no rights without a valid gear endorsement attached.

2. There are four types of gear endorsements: "A" endorsements, provisional "A" endorsements, "B" endorsements and designated species "B" endorsements.

3. Gear endorsements will be affixed to the LE permit and specify type of limited entry gear which may be used to catch Council-managed groundfish.

4. A gear endorsement for a particular gear authorizes the catch of all Council-managed groundfish species with that gear, except in the case of the designated species "B" gear endorsements. Designated species "B" gear endorsements authorize catch of only the designated species specified in the endorsement and by-catch as specified for the JV fishery for that species.

5. More than one gear endorsement may be affixed to a single LE permit.

6. An LE permit will not allow the use of limited entry gears to catch any Council-managed groundfish unless a valid gear endorsement for the specific gear is affixed to the LE permit. Trawl gear and Council-managed groundfish may not be on board a vessel at the same time, nor may the gear be deployed, without an LE permit registered for the vessel and endorsed for trawl gear. If a vessel has longline or fishpot gear on board, an LE permit registered for the vessel and the permit is endorsed for the gear on board, regulations for the limited access fishery will apply.

7. Depending on the type of gear endorsement (see Section 14.3 on the specific type of gear endorsements):

   a. the period for which the gear endorsement is valid may be limited, and
   b. the gear endorsement may or may not remain valid when the LE permit is transferred.[8/]

8. Gear endorsements are not separable from the LE permit and therefore may not be transferred separately from the LE permit.[9/]

9. Limitations which apply to a given gear endorsement shall not restrict the use of any other gear endorsement on the same LE permit.

10. Rules on the issuance of gear endorsements and other characteristics of the gear endorsements are specified under sections on each type of gear endorsement (see Section 14.3).

8/ Unless otherwise noted:
   a. Transferable means separable from the vessel owner and vessel.
   b. LE permit transferability, with respect to an owner, means the LE permit may be transferred, inherited, sold, bartered, traded, given or otherwise alienated from the LE permit owner.
   c. LE permit transferability, with respect to a vessel, means the LE permit may be registered for use with a different vessel.

9/ The intent of this provision is to not allow the fishing capacity to expand by separate transfer of endorsements which might otherwise go unused.

14.2.6 Size Endorsement Will Specify the Vessel Length

The LE permit will be endorsed with the length overall (as defined for purposes of U.S. Coast Guard documentation) of the vessel for which the LE permit is initially issued. The length for which the LE permit is endorsed will be changed only when LE permits are combined, as per Section 14.2.10, or, in the case of LE permits endorsed for trawl gear, when the size of the vessel used with the permit is more than five feet less than the originally endorsed length. In the latter case, the LE permit will be reissued with a size endorsement for the length of the smaller vessel. Vessels which do not have documents stating their length overall will have to be measured by a marine surveyor or the U.S. Coast Guard and certified for that length.[10/]

14.2.7 An LE Permit and Necessary Gear Endorsements Will Be Held by the Owner of Record of the Vessel

1. The vessel owner is responsible for acquiring and holding an LE permit with the necessary gear endorsement(s) for each vessel that is required to have an LE permit to catch Council-managed groundfish under the limited entry system (vessels fishing limited entry gear under the limited access quota and regulations).

2. The vessel owner is responsible for maintaining NMFS required documentation of the LE permit on board the vessel.

3. The LE permit will be used with one vessel only. That vessel must be declared and registered with the NMFS issuing authority. Registration is incomplete until acknowledged in writing by NMFS. (Transfer of an LE permit to a different vessel is allowed as per Section 14.2.8.)

4. A vessel owner may not use a vessel, or allow a vessel to be used, to catch any Council-managed groundfish with limited entry gear under the limited access quota and regulations unless the vessel owner holds an LE permit with gear endorsement(s) which explicitly allows such catch and the LE permit has been registered with NMFS for use with that vessel.

14.2.8 Transfer of an LE Permit to Different Owners or Vessels of the Same Owner

1. LE permits may be transferred to other owners for use with other vessels or used with other vessels under the same ownership, but will continue to be restricted by size and gear endorsements.

2. Whenever an owner wishes to transfer an LE permit to a different owner or use an LE permit with a different vessel under the same ownership, the NMFS issuing authority must be notified of the change. Notification is not complete until acknowledged in writing by NMFS.

3. LE permits may be used with vessels greater in length than the endorsed length provided the increase does not exceed five feet of the endorsed length. Original size endorsements will

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10/ While not an immediate cap on vessel capacity, the size endorsement places an upward limit on the amount by which the capacity used with an LE permit may increase.

change only when LE permits are combined as per Section 14.2.10,[11/] or when an LE permit with a trawl endorsement is transferred to a vessel five feet less in length than the endorsed length. In the latter case, the LE permit will be reissued with a size endorsement for the length of the smaller vessel.

4. The transfer of LE permits between vessels or owners may not be used to circumvent vessel landing limits.

5. When an LE permit is transferred to a different owner or vessel, provisional "A", "B" and designated species "B" gear endorsements will become invalid, unless the transfer is caused by the total loss of a vessel (as per Section 14.2.9) and ownership of the LE permit is not transferred.

14.2.9 Loss of a Vessel

14.2.9.1 Loss of a Vessel Prior to Permit Issuance

1. A "B" or provisional "A" endorsement will be issued for a vessel which qualified for a "B" or provisional "A" endorsement but is lost before the LE permits are issued. The vessel must be replaced within two years of the loss unless otherwise determined by the NMFS regional director, and the requirements of the third paragraph of Section 14.2.8 apply. The validity of the "B" or provisional "A" gear endorsement on transfer of the LE permit to the new vessel will be subject to review by the NMFS review authority.

2. For a vessel that would qualify an owner for an "A" endorsement, in the case of a vessel's sinking or total loss, all rights to a permit from the fishing history of the vessel prior to the sinking or total loss remain with the owner at the time of sinking or total loss unless specifically transferred. The vessel must be replaced within two years of the loss, unless otherwise determined by the NMFS regional director, and the requirements of the third paragraph of Section 14.2.8 apply.

14.2.9.2 Loss of a Vessel After Permit Issuance

In the event that a vessel is totally lost, the provisional "A" or "B" gear endorsements on an LE permit will remain valid if the LE permit is transferred to a different vessel owned by the same LE permit owner, subject to the following: (1) the replacement vessel may not exceed the endorsed length by five feet of the official length overall and (2) the lost vessel is replaced within two years of the loss unless otherwise determined by the NMFS regional director, and the requirements of the third paragraph of Section 14.2.8 apply. The validity of the provisional "A" or "B" gear endorsements on transfer of the LE permit to the new vessel will be subject to review by the NMFS review authority.

11/ Allowance for a slight length increase over the endorsed length is made to provide flexibility in replacing vessels.

14.2.10 Combining LE Permits

1. Two or more LE permits with "A" gear endorsements for the same type of limited entry gear (either trawl, longline or fishpot) may be combined (based on specific criteria) to "step-up" to a permit with a larger size endorsement. NMFS, with professional advice of marine architects and other qualified individuals, and after consultation with the Council and review board, will develop and implement a standardized measure of harvest capacity for the purpose of determining the appropriate endorsed length for LE permits created by combining two or more permits possessing smaller length endorsements. The capacity represented by the appropriate length endorsement for the combined permit should not exceed the sum of the capacities of the LE permits being combined.

2. LE permits may not be divided to "step-down" to more than one permit with smaller size endorsements.

3. When LE permits are combined, "A" endorsements identical on both LE permits will remain valid. Provisional "A", "B" and designated species "B" gear endorsements will generally become invalid because they are not separable from the vessel for which they are initially issued.[12/]

14.2.11 Permit Renewal

1. Permits must be renewed each year between October 1 and November 30 in order to remain valid for the following calendar year.

2. Notice of upcoming renewal periods will be sent by September 1 each year to the most recent address as provided to the permit issuing authority by the permit holder. It shall be the permit holder's responsibility to provide the permit issuing authority with address changes in a timely manner.

3. An annual fee will be charged which reflects the administrative costs of maintaining the permit system.

4. Failure to renew during this period will result in expiration of the permit at the end of the calendar year.

12/ For example:

1st Permit	+	2nd Permit	=	Combined Permit

Endorsement on 1st LE Permit	Endorsements on 2nd LE Permit	Endorsements on the Combined LE Permit
"A" - Trawl	"A" - Pot	None
"A" - Longline	"A" - Longline	"A" - Longline
"A" - Trawl	Provisional "A" - Trawl	None
"A" - Pot	"B" - Pot	None
"A" - Trawl	Designated Species "B" - Shortbelly - Trawl	None

5. Once a permit has expired because of failure to renew during the renewal period, it may not subsequently be renewed or reissued, except through an appeals process.

6. If a permit expires because of failure to renew, the permit holder may appeal for reissuance, provided the appeal is received by the issuance review authority by March 31 of the following year. Conditions for reissuance of a permit are listed in Section 14.4.1 paragraph 1.h.

14.3 Multilevel Gear Endorsement System

This section contains a description of the characteristics specific to each type of gear endorsement. Gear endorsements may not be transferred separate from the LE permit to which they are affixed. An LE permit confers no rights without a valid gear endorsement attached. These and other general characteristics of all gear endorsements are described in Section 14.2.5.

14.3.1 "A" Gear Endorsement

14.3.1.1 Overview of the "A" Endorsement

The "A" endorsement is intended for participants who were significantly active in the groundfish fishery with limited entry gear(s) during the qualifying window period (July 11, 1984 through August 1, 1988). The "A" endorsement allows the catch of all Council-managed groundfish species with the specified gear, remains valid when the LE permit is transferred and is valid for an unlimited period of time (subject to Section 14.1.4).

14.3.1.2 Description, Use and Transferability of the "A" Endorsement

1. Each "A" endorsement affixed to an LE permit will specify the type of gear with which the LE permit may be used (e.g., "A-Trawl").

2. The vessel for which the LE permit is registered will be allowed to catch all Council-managed groundfish with the gear specified in the "A" endorsement.

3. The "A" endorsement will remain valid when the LE permit is transferred to a different owner or vessel.

14.3.1.3 "A" Endorsement Initial Issuance Criteria

1. An "A" endorsement will be affixed to a vessel's LE permit for each gear the vessel qualifies with under these "A" endorsement initial issuance criteria.

2. Vessels must qualify separately for each gear that an "A" gear endorsement is requested.

3. A current owner of a vessel[13/] that meets the MLRs (as per the following paragraph) between the window period (July 11, 1984 and August 1, 1988) may receive an "A" endorsement.[14/]

4. MLRs are gear specific amounts of landings or deliveries (JV or domestic) of West Coast groundfish.

   The MLRs for the limited entry gears which must be met during the window period would be as follows:

   Trawl: At least 9 days in which over 500 pounds of any groundfish species except Pacific whiting are landed or delivered, or 450 mt of landings or deliveries of any groundfish species except Pacific whiting, or 17 days in which over 500 pounds of Pacific whiting are landed or delivered, or 3,750 mt of landings or deliveries of Pacific whiting.

   Longline: At least 6 days in which over 500 pounds of any groundfish species are landed or delivered, or 37.5 mt of landings or deliveries of any groundfish species.

   Fishpot: At least 5 days in which over 500 pounds of any groundfish species are landed or delivered, or 150 mt of landings or deliveries of any groundfish species.

5. Landings coded as groundfish trawl, longline or fishpot gear may be credited toward meeting the MLRs for the gear except any landing with:

   a. salmon in it will not be counted toward meeting MLRs with longline gear;

   b. shrimp in it will not be counted toward meeting MLRs with trawl gear;[15/]

   c. abnormal catches for the indicated gear may result in an issuing authority review of the validity of all tickets presented as evidence of meeting MLRs and a request by the issuing authority that additional evidence be presented that the gear was actually used.

13/ Only the **current** owner of a qualifying vessel at the time the permit is initially issued will be issued an LE permit (except in the case of vessel loss as per Section 14.2.9.1 paragraph 2). Without this provision, a single vessel could qualify several owners for LE permits. If private contractual arrangements have been made between a vessel buyer and seller to reserve to the seller the right to the LE permit issued for the vessel, the LE permit may ultimately be issued to the vessel seller in place of the current owner.

14/ Notice of this qualification period was published in the Federal Register on August 4, 1988 in Volume 53(150), page 29337.

15/ The Council notes that in Washington when shrimp and groundfish are landed together tickets are sometimes filled out for the groundfish and shrimp separately. The issuing authority will have to be aware of such circumstances in evaluating whether a vessel meets MLRs with trawl gear.

6. In addition to the specifications of the above paragraph, the NMFS issuing authority will have broad authority to examine information other than codes on landing tickets in determining whether MLRs are or are not met by a particular vessel and gear.

7. Prior to permit issuance, all rights of a vessel owner to an "A" endorsement will be considered transferred with the sale of the qualifying vessel unless otherwise stipulated in a contract.[16/]

8. Vessel owners who acquire a provisional "A" endorsement will receive an "A" endorsement after meeting the upgrade criteria (Section 14.3.2.4) provided all other requirements of the limited entry program are met.

9. Members of local limited entry programs which have been Council certified and incorporated by the issuing authority (as per Section 14.3.1.4) may be issued "A" endorsements subject to the following constraint. The "A" endorsements issued on the basis of a vessel's membership in a certified limited entry program will be valid only when the vessel for which it is registered is operating under and in conformance with the certified program.

10. The NMFS review authority will have discretionary powers to grant exceptions to the qualification criteria on specified grounds. The basis on which the NMFS review authority may grant exceptions are described in Section 14.3.5.

14.3.1.4 Incorporation of Small Limited Entry Fleets

1. Small limited entry programs which are operated by local governments, in existence as of July 11, 1991 and have negligible impacts on the resource may be certified as consistent with the goals and objectives of this limited entry program and incorporated into the federal limited entry program.

2. The purpose of this provision is to recognize and provide for small fisheries with unique cultural and social importance that are dependent on the groundfish resource but have negligible impacts on the resource, as long as the size and number of vessels in the fishery are sufficiently controlled through a limited entry program under local jurisdiction.

3. A representative of a small limited entry fleet may apply to NMFS to be certified as consistent with the goals and objectives of this limited entry program and incorporated into the limited entry program. NMFS will refer the application to the permit issuance review board. The board will provide its recommendations to the Council, which in turn will provide its recommendation, together with the reasons therefore, to NMFS. If NMFS determines that a fleet meets the goals and objectives of this limited entry program and the standards of this section, it shall certify the fleet and incorporate it into the limited entry program.

4. If a fleet is certified and incorporated into the limited entry program, vessels in the fleet at the time of incorporation will be issued LE permits with "A" endorsements as provided in Section 14.3.1.3.

16/ If by contractual agreement permit rights are transferred separate from the vessel, the LE permit size and gear endorsements will continue to be restricted to those which would have been issued to the originally qualifying vessel as per Federal Register notice 55 FR 29337.

5. A permit issued to a vessel in a certified fleet under this section is only valid when the vessel for which it is registered is operating under and in conformance with the certified program. Such a permit and endorsement may be transferred to another vessel that will operate in the same certified fleet as long as the total number of vessels in the fleet does not increase.

6. If more vessels are added to a fleet in a certified limited entry program, these additional vessels will not receive "A" endorsements unless the program is recertified for the greater number of vessels, and the larger fleet is incorporated into the limited entry program.

7. For each certified fleet, there may be an upper limit placed on the amount of groundfish that vessels operating in the certified fleet may land.

14.3.1.5 Expiration of the "A" Endorsement

The "A" endorsement is valid for an unlimited period of time, except as noted in Section 14.1.4 and Section 14.2.11.

14.3.2 Provisional "A" Gear Endorsement[17/]

14.3.2.1 Overview of the Provisional "A" Endorsement

The provisional "A" endorsement is intended for: (1) the vessel owner who, during the window period, was preparing through construction, conversion or purchase to use a vessel with limited entry gear in the West Coast groundfish fisheries; (2) the owner of a replacement vessel who would otherwise receive an "A" endorsement on an LE permit endorsed for a smaller sized replaced vessel when the replacement has occurred prior to September 30, 1990; and (3) owners of a vessel landing sufficient groundfish during the window but using a gear type which has been prohibited by a state (Washington, Oregon or California) or the Secretary of Commerce subsequent to the window period. The purpose of the provisional "A" endorsement is to require the owner demonstrate, by actual catching activity, intent to participate in the West Coast groundfish fisheries with the vessel and limited entry gear. When intent has been demonstrated (as per Section 14.3.2.4), the provisional "A" endorsement may be upgraded to an "A" endorsement. The provisional "A" endorsement allows the catch of all Council-managed groundfish species with the specified gear; becomes invalid when the LE permit is transferred, except in the case of a lost vessel; and is valid for a maximum of three years.

14.3.2.2 Description, Use and Transferability of the Provisional "A" Endorsement

1. Each provisional "A" endorsement affixed to an LE permit will specify a combination of gear type and vessel that the LE permit may be used (e.g., "Provisional 'A'-Trawl-vessel identification").

17/ If this type of endorsement were not provided, vessels constructed, converted or purchased during the window destined for any fishery in the U.S. could qualify the owner for an "A" endorsement in the West Coast groundfish fishery. The owner could then sell the permit for use with another vessel in the groundfish fishery and never participate in the fishery. Therefore, demonstration of intent through a period of substantial participation in the fishery is required before an "A" endorsement is issued. Opportunity to demonstrate this intent is afforded through the provisional "A" endorsement.

2. The vessel identified in the provisional "A" endorsement will be allowed to catch all Council-managed groundfish with the gear specified in the provisional "A" endorsement.

3. The provisional "A" endorsement will become invalid if the LE permit is transferred to a different owner or vessel, unless the transfer to another vessel is caused by the total loss of a vessel (as per Section 14.2.9) and ownership of the permit does not change.

14.3.2.3 Provisional "A" Endorsement Initial Issuance Criteria

1. A provisional "A" endorsement will be affixed to a vessel's LE permit for each gear that the vessel qualifies for under these provisional "A" endorsement initial issuance criteria.

2. No provisional "A" endorsement will be issued if a vessel has already failed to meet the upgrade criteria (Section 14.3.2.4). If a vessel has already met the upgrade criteria at the time of initial issuance, an "A" endorsement, rather than provisional "A" endorsement, may be issued.

3. A vessel must qualify separately for each gear that a provisional "A" endorsement is requested.

   a. Owners of vessels qualifying for a provisional "A" endorsement under the following construction or conversion criteria for initial issuance must select one gear type for endorsement at application time.

   b. Owners of vessels qualifying for a provisional "A" endorsement under the following prohibited gear criteria for initial issuance may be issued only one provisional "A" endorsement regardless of the number of gears for which the vessel might meet the qualifying requirements.

4. For a vessel to be considered "under conversion," for the purpose of determining provisional "A" endorsement eligibility:[18/]

   a. the conversion must have impacted the vessel's ability to meet MLRs;

   b. previous to the conversion, the vessel must not have been structurally capable of fishing for groundfish with the specified limited entry gear, and the conversion must have involved a structural change to the vessel which makes it functionally able to fish for groundfish with the specified gear; and

   c. the amount invested in conversion (including all equipment and gear) must be more than

      (1) 25 percent of the appraised value of the converted vessel, or
      (2) $10,000

18/ Specifications of the conversion criteria in earlier drafts stated that the purchase of gear alone will not be considered sufficient to establish that a vessel is under conversion. This provision is contained by implication in Criteria b and c. To maintain this intent, any revision to these two criteria should continue to require, by implication, that the purchase of gear alone would not be sufficient to qualify the vessel for conversion provisions.

whichever is less, and of which not more than one-fifth of the expenditures may be for gear.[19/]

d. The NMFS issuing authority may develop additional administrative criteria for determining whether a vessel was under conversion and whether the conversion impacted the vessels ability to meet MLRs.

5. A person who contracted to have a vessel constructed or converted may qualify for a provisional "A" endorsement for the vessel if:

   a. a contract for any part of the work was signed and substantial earnest money was paid (10 percent or more of the value on that contract) prior to August 1, 1988; and

   b. the contract for the vessel under construction (or ownership of a vessel under conversion) is not transferred or otherwise alienated from the contract holder between August 1, 1988 and the issuance of the endorsement;[20/] and

   c. construction or conversion had not been completed[21/] prior to July 11, 1984; and

   d. fishing commenced prior to September 30, 1990.

6. An owner who constructed or converted a vessel may qualify for a provisional "A" endorsement for the vessel if:

   a. the keel was laid or conversion began prior to August 1, 1988; and

   b. vessel ownership is not transferred or otherwise alienated from the owner between August 1, 1988 and issuance of a provisional "A" endorsement; and

   c. construction or conversion was not completed prior to July 11, 1984 ; and

   d. fishing commenced prior to September 30, 1990.

7. A vessel owner who purchased the vessel during the window period and used a limited entry gear to catch and land or deliver Council-managed groundfish but does not meet MLRs for an "A" endorsement may qualify for a provisional "A" endorsement endorsed for the limited entry gear(s) used during the window period, provided ownership of the vessel is not transferred between August 1, 1988 and the issuance of the endorsement.

19/ Gear is defined as anything that is not permanently affixed to the vessel (not welded or bolted). Only expenditures for electronic equipment, which is specifically required for use of the gear in the groundfish fishery, will be included as an expenditure for gear for the purpose of the conversion criteria.

20/ The prohibitions against transfer of construction contracts prevents keels laid prior to August 1, 1988 on sales speculation from qualifying purchasers buying after that date.

21/ For vessels qualifying under construction provisions, completion is defined as occurring when a landing or delivery of any kind of fish is made anywhere. For vessels qualifying under conversion provisions, completion would occur with the first such landing after vessel conversion began.

8. An owner of a replacement vessel (i.e., a vessel that replaces, through construction, conversion, purchase or trade, a vessel that would qualify for "A" endorsement) more than five feet longer than the replaced vessel may be issued a provisional endorsement for the length of the replacement vessel if the replacement vessel is in place prior to September 30, 1990. "In place" means the owner of the vessel which would have qualified has acquired a replacement vessel and disposed of the replaced vessel (the vessel which would have qualified), while reserving the right to a future LE permit issued on the basis of the history of the replaced vessel. Such a vessel owner must choose between (1) an "A" endorsement on an LE permit with a size endorsement for the replaced vessel or (2) a provisional "A" endorsement on an LE permit with a size endorsement for the replacement vessel. The endorsement would be for the gear(s) that the replaced vessel would have qualified for an "A" endorsement.

9. If after the window period a gear is prohibited by a state (Washington, Oregon or California) or the Secretary of Commerce, the owners of such vessels who would not otherwise qualify for an "A" or provisional "A" endorsement may qualify for a provisional "A" endorsement for one of the three limited entry gears subject to the following provisions:

    a. In order to qualify for an endorsement for a particular limited entry gear, the vessel must have used the prohibited gear to make sufficient landings of groundfish during the window period to meet the MLR for the limited entry gear that the endorsement is to be issued (as specified in Section 14.3.1.3 paragraph 4).

    b. If a vessel would qualify an owner for an endorsement for more than one limited entry gear, the owner must choose from among those gears the type of gear for which the endorsement will be issued.

    c. No endorsement will be issued if none of the MLRs for limited entry gears were met with the prohibited gear.

    d. If an "A" or provisional "A" endorsement was previously issued for the vessel and the endorsement was subsequently transferred or expired, no endorsement may be issued under these criteria for prohibited gear.

10. The NMFS review authority will have discretionary powers to grant exceptions to the qualification criteria on specified grounds. The basis on which the NMFS review authority may grant exceptions are described in Section 14.3.5.

14.3.2.4 Criteria for Upgrading a Provisional "A" to an "A" Endorsement

1. A provisional "A" endorsement may be upgraded to an "A" endorsement by demonstrating through actual catch intent to participate in the Council-managed groundfish fishery with the limited entry gear specified in the endorsement.

2. To demonstrate intent to participate in the Council-managed groundfish fishery and in order to receive the endorsement upgrade, a holder of a provisional "A" endorsement must use or have used, as per paragraph 3 of this section, the vessel to receive the endorsement upgrade in each of the first three 365-day annual periods commencing with the earliest date of:

a. endorsement issuance;
b. vessel completion[21/] for vessels qualifying under the construction or conversion provision;
c. vessel purchase for vessels qualifying under purchase provisions; or
d. vessel replacement for vessels qualifying under replacement provisions.

3. For upgrading a provisional "A" endorsement, "use" will be defined for a particular 365-day period as one fourth of the MLR:[22/]

Trawl: At least 2 days in which over 500 pounds of any groundfish species are landed or delivered, or 113 mt of landings or deliveries of any groundfish species except Pacific whiting, or 5 days in which over 500 pounds of Pacific whiting are landed or delivered, or 938 mt of landings or deliveries of Pacific whiting.

Longline: At least 2 days in which over 500 pounds of any groundfish species are landed or delivered, or 10 mt of landings or deliveries of any groundfish species.

Fishpot: At least 2 days in which over 500 pounds of any groundfish species are landed or delivered, or 36 mt of landings or deliveries of any groundfish species.

14.3.2.5 Expiration of the Provisional "A" Endorsement

1. The provisional "A" endorsement will expire at the end of any annual period in which a vessel's landings (or deliveries) are not sufficient to meet the use criteria. (The maximum duration of a provisional "A" endorsement is three years.)

2. The provisional "A" endorsement expires if the LE permit it is attached to is transferred, except in the case of total loss of a vessel (as per Section 14.3.2.2, paragraph 3).

3. The provisional "A" endorsement expires on failure to renew the permit (as per Section 14.2.11).

4. In the event the provisional "A" endorsement expires, another provisional "A" endorsement will not be issued.

14.3.3 "B" Gear Endorsement

14.3.3.1 Overview of the "B" Endorsement

The "B" endorsement is intended for the vessel owner who was active in the West Coast groundfish fishery prior to the cut-off date (August 1, 1988) with a limited entry gear, but did not land sufficient groundfish with the gear during the window period to qualify for an "A" endorsement. The "B" endorsement provides for an adjustment period during which a vessel owner may seek to acquire a permit with an "A" endorsement or find an alternative fishery. The "B" endorsement which allows

22/ One-fourth of the MLR is the approximate equivalent of the annualized MLR. Thus, vessels are required to land at a rate which equalized the average rate required for the window period.

the catch of all Council-managed groundfish species with the gear and vessel specified in the endorsement, becomes invalid when the LE permit is transferred or three years after implementation of the limited entry program. To qualify for a "B" endorsement, an owner must own a vessel which meets the initial issuance requirements and must have owned it during and continually since the time the qualifying activities occurred.

14.3.3.2 Description, Use and Transferability of the "B" Endorsement

1. Each "B" endorsement affixed to an LE permit will specify a combination of gear type and vessel with which the LE permit may be used (e.g., "B"-Trawl-vessel identification).

2. The vessel identified in the "B" endorsement will be allowed to catch all Council-managed groundfish with the gear specified in the "B" endorsement.

3. The "B" endorsement will become invalid if vessel ownership changes, or if the LE permit is transferred to a different owner or vessel, unless the transfer to another vessel is caused by the total loss of a vessel (as per Section 14.2.9) and ownership of the permit does not change.

14.3.3.3 "B" Endorsement Initial Issuance Criteria

1. A "B" gear endorsement will be affixed to a vessel's LE permit for each gear that the vessel qualifies under these "B" endorsement initial issuance criteria.

2. A vessel must qualify separately for each gear for which a "B" endorsement is requested.

3. Vessel owners may qualify if they:

   a. own a vessel which landed or delivered (JV or domestic) at least 500 pounds of groundfish with limited entry gear on at least three separate days prior to August 1, 1988, but during the window period did not meet the MLRs for an "A" endorsement; and

   b. have continuously owned the vessel during and since the last making of the landings described in paragraph a (except in the case of vessel loss, see Section 14.2.9).[23/24/]

4. An owner will not be issued a "B" endorsement for the same gear for which an "A" or provisional "A" endorsement may be received except as follows. If an owners fails in an attempt to upgrade a provisional "A" endorsement to an "A" endorsement, and if the provisional "A" endorsement was not issued under initial issuance criteria covering replacement of smaller qualifying vessels, the owner may then apply for and receive a "B" endorsement if the vessel meets the other initial issuance criteria for "B" endorsements.

23/ The continuous ownership provision prevents individuals purchasing vessels after the cut-off date, where the vessel meets the first criteria, from qualifying for a limited duration endorsement, and prevents the repurchase of a vessel by a previous owner in order to qualify.

24/ Ownership will be considered to change when there is an ownership change on the U.S. Coast Guard documentation; however, an owner can submit documents to demonstrate that the controlling interest has not changed and therefore the change in documentation is not a change in ownership.

5. The NMFS review authority will have discretionary powers to grant exceptions to the qualification criteria on specified grounds. The basis on which the NMFS review authority may grant exceptions are described in Section 14.3.5.

14.3.3.4 Duration of the "B" Endorsement

1. The "B" endorsement will expire three years after implementation of the program.

2. The "B" endorsement will expire if the LE permit it is attached to is transferred to another vessel or owner, except in the case of total loss of a vessel (as per Section 14.3.3.2).

3. The "B" endorsements will expire on failure to renew an LE permit as per Section 14.2.11.

14.3.4 Designated Species "B" Gear Endorsements

14.3.4.1 Overview of the Designated Species "B" Endorsement

The designated species "B" gear endorsement is intended to allow for expansion of domestic processing of underutilized species in the event the limited entry fleet (those holding LE permits other than the designated species "B" endorsement holders) is unwilling to harvest the full amount of the underutilized species desired by domestic processors or acceptable biological catch, whichever is less. In this event, designated species "B" endorsements would be issued to harvesters willing to deliver to domestic processors. In addition, the endorsement may be issued when the possibility exists that an apportionment to TALFF will occur. In this event, designated species "B" endorsements would be issued to harvesters willing to deliver to JV processors. A separate endorsement is required for each combination of gear type and species. The designated species "B" endorsement allows the catch of the specified species with the gear and vessel specified in the endorsement. The endorsement becomes invalid when the LE permit is transferred and would expire at the end of the fishing year.

14.3.4.2 Description, Use and Transferability of the Designated Species "B" Endorsement

1. Each designated species "B" endorsement affixed to an LE permit will specify the combination of gear type, vessel and species with which the LE permit may be used (e.g., "Designated Species "B"–Trawl–shortbelly rockfish–vessel identification").

2. The vessel identified in the designated species "B" endorsement will be allowed to catch the species specified in the endorsement with the gear specified in the endorsement.

3. Deliveries may be made only to domestic processors (including catcher–processors delivering to themselves), unless the possibility of an apportionment for TALFF exists as per Section 14.3.4.3, paragraph 4.

4. By–catch allowances will be established using the procedures specified for incidental allowances in JV and foreign fisheries as outlined at 50 CFR Part 663, Appendix II.J.

5. The designated species "B" endorsement will become invalid if the LE permit is transferred to a different owner or vessel.

14.3.4.3 Designated Species "B" Endorsement Initial Issuance Criteria

1. A designated species "B" gear endorsement will be affixed to a vessel's LE permit for each combination of gear and species for which the vessel qualifies under these designated species "B" initial issuance criteria.

2. Designated species "B" endorsements will be issued for only Pacific whiting, jack mackerel north of 39°N and shortbelly rockfish.

3. A vessel must qualify separately for each combination of gear and species for which a designated species "B" endorsement is requested.

4. In the fall of each year, NMFS will determine the limited entry fleet's commitment[25/] (the commitment of those holding LE permits with "A", provisional "A" or "B" endorsements) to harvest a particular underutilized species for domestic processors in the following year. If this commitment is less than domestic annual processing and the harvest guideline or quota for the species, designated species "B" endorsements valid for delivery to domestic processors only (including catcher-processors delivering to themselves) will be issued in numbers necessary for full domestic utilization. Additionally, if the procedures specified in Sections 5.8 and 5.9 of this FMP would result in the apportionment of TALFF, "B" endorsements valid for delivery to foreign processors will be issued in numbers necessary to fulfill JV processing.

5. The NMFS issuing authority will grant the designated species "B" endorsements first on the basis of seniority and then on a first come basis. Seniority will be based on use of the designated species "B" endorsement in previous years. If there are more seniority or first come applicants with equal priority than endorsements to be issued, a lottery may be held to determine who should receive the endorsements. In the first year of issuance for a particular species, endorsements will be issued first on the basis of seniority (number of years) in the fishery for the designated species rather than use of the designated species "B" endorsement.

6. A designated species "B" endorsement catch limit will be established as the harvest guideline or quota for the designated species minus the commitment of the limited entry fleet. If at any time during the fishing year it is determined that any part of the limited entry fleet commitment will not be taken, a reapportionment will be made to the designated species "B" endorsements

14.3.4.4 Expiration of the Designated Species "B" Endorsement

1. The designated species "B" endorsement expires at the end of the calendar year.

2. The designated species "B" endorsement expires if the LE permit to which it is attached is transferred to a different owner or vessel.

25/ "Commitment" means a permit holder's definite arrangement (by contract or agreement) with a specific domestic processor to deliver an estimated amount of the underutilized species.

14.3.4.5 Designated Species "B" Gear Endorsements for Holders of "A", Provisional "A" and "B" Gear Endorsements

1. "All-species" endorsement ("A", provisional "A" or "B" endorsements) holders must hold designated species "B" endorsements to catch an underutilized species with gear for which they do not hold an all-species endorsement.

2. An all-species endorsement holder is not required to hold any kind of designated species "B" endorsement for the same gear for which an all-species endorsement is held.

3. A provisional "A" or "B" endorsement holder may apply for and receive a designated species "B" endorsement for the same gear for which a provisional "A" or "B" endorsement is held, provided the endorsement holder meets the initial issuance criteria for a designated species "B" endorsement.

14.3.5 Exceptions to the Issuance Criteria and Grounds for Appeal

1. Exceptions may be granted for the time limit on replacing lost vessels, and requirements for timeliness with respect to applications for permits and permit renewal, for good cause. With respect to permit renewal, only illness, injury or death of one of the vessel owners will be considered good cause. Additionally, in the following hardship situations, where appropriate, the NMFS issuing authority may grant exceptions to permit issuance and upgrade criteria, the time limit on replacing lost vessels, and requirements for timeliness with respect to applications for permits and permit renewal.[26/]

   a. Insufficient documented landings with legal groundfish gear in the qualifying period due to disputes over records of landings (evidence other than landing records may be considered).

   b. Construction or conversion criteria are not met due to documentation disputes or delays in construction or conversion.

   c. A qualified vessel was totally lost before permits were issued (the vessel should be replaced within two years of the loss and the requirements of the third paragraph of Section 14.2.8 apply).

   d. Illness or injury.

   e. Litigation involving the vessel preventing the vessel owner from making sufficient landings in the qualifying period.

   f. Death of a vessel owner preventing the surviving vessel owner(s) from making sufficient landings in the qualifying period because the vessel could not be fished.

26/ Economic hardship, loss or inactivity of a vessel due to a violation (involving the vessel) of domestic laws which prevent the use of the vessel during the window period will not entitle the owner to a LE permit or endorsement granted through the review process.

g. Death of a vessel owner preventing fulfillment of upgrade criteria for converting a provisional "A" endorsement to an "A" endorsement.

2. Implementation of the license limitation program will require exercise of judgement in the application of particular provisions. Any dispute over how the issuing authority has applied provisions of the program may be appealed.

14.4 LE Permit Issuance Review Board

14.4.1 Functions

A permit issuance review board will be created by the Council with three functions.

1. Review appeals related to issuance of permits and gear endorsements.

2. Make recommendations to the Council on whether a non-federal/non-state limited entry system in place as of July 11, 1991 should be certified as being consistent with the goals and objectives of this limited entry program, as described in Section 14.3.1.4.

3. Make reports to the Council on the progress of the program and need for adjustments.

14.4.2 Expenses

The intent of the Council is that the issuance review board be an integral part of the permit issuance process. As such:

1. the board expenses will be included in determining permit fees, and
2. the board members will be reimbursed for expenses.

14.4.3 Advisory Role of Group

Issuance, administration of permits and review of appeals will be through the issuing and reviewing authorities (NMFS regional offices). The issuance review board shall function in an advisory capacity only.

14.4.4 Nominations

Nominations for the board may be made by anyone. Selection will be made by the Council or its designee.

14.4.5 Membership

The board should consist of:

1. "knowledgeable" fishing industry members.
2. 7 to 10 voting members.[27/]
3. Two-thirds of the members must be present for a quorum.

14.4.6 Majority Vote

A simple majority of those present and voting shall be necessary to take action on a review.

14.4.7 Terms of Members

The term for a board member shall be three years. Terms will be staggered.

14.5 Implementation, Application and Appeals Process

1. When NMFS announces it is ready to receive applications, individuals must make application to the issuing entity for LE permits and "A", provisional "A", and "B" endorsements within six months, except as follows: (1) Owners of vessels qualifying for provisional "A" endorsements under the prohibited gear provisions must make application within six months of the prohibition date, or six months of the NMFS announcement that it is ready to receive applications, whichever comes last and (2) owners of vessels applying for a "B" endorsement after the vessel has failed to meet the provisional "A" endorsement upgrade criteria, must make application within six months of failure to meet upgrade criteria or six months of the NMFS announcement that it is ready to receive applications for permits, whichever comes last.

2. Vessel owners are responsible for submitting evidence that qualification requirements have been met.

3. Applications to the issuing authority involving the hardship situations and other special circumstances described in paragraphs 4 and 5 of Section 14.2.3, shall be submitted within six months of the NMFS announcement that it is ready to receive applications, or six months of the event which would potentially qualify the applicant for a hardship exemption or under a special circumstance, whichever comes last.

4. Untimely applications will be rejected and no permit will be issued thereon. To be timely, an application must provide all of the information required in the NMFS application announcement or in the application form, by the deadline specified in paragraph 1 of this section. If the application is complete and valid, NMFS may request any supplementary information it needs to act on the permit application.

5. If an application is denied, the applicant may appeal to the NMFS regional director. In making such an appeal, the applicant may request that in deciding the issue the NMFS regional director consult with the Council and its review board. Such a consultation would require the applicant to wave any rights to confidentiality of information.

27/ The Council should look at the composition of the fishery in each state and determine the appropriate representation from each gear group so that a broad range of expertise is available to the Council.

6. At the time of implementation, NMFS in consultation with the Council, will set and publish in the Federal Register a date after which all vessels using a limited entry gear to catch Council-managed groundfish under the limited entry quota and management regulations will be required to have an LE permit with endorsements allowing such activity.

14.6 Council Review and Monitoring

On an annual basis, either the NMFS issuing authority or the issuance review board will review the economic status of the fishery and the fishing fleet, and issue a status report to the Council evaluating achievement of the goals and objectives established for the limited entry system.

Limited Entry Ad Hoc Committee
(April 1991)

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Ms. Eileen Cooney, National Oceanic and Atmospheric Administration, Seattle, Washington
Mr. Dave Duncan, Hammond, Oregon
Mr. Paul Heikkila, Coos County Extension Service, Coquille, Oregon
Mr. Pete Leipzig, Fishermen's Marketing Association, Eureka, California
Mr. Rick Malsed, Fishing Vessel Owners Association, Seattle, Washington
Mr. Jim Martin, Oregon Department of Fish and Wildlife, Portland, Oregon
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GROUNDFISH LICENSE LIMITATION PROGRAM

APPENDIX TO AMENDMENT 6

OF THE

PACIFIC COAST GROUNDFISH PLAN

Approved by the Pacific Fishery Management Council
September 1991

DECEMBER 1991