TABLE OF CONTENTS

APPENDIX B: IFQ PROGRAM ELEMENTS AND ANALYSIS

Appendix B: IFQ Program Elements and Analysis

This appendix describes potential design elements and options for a trawl IFQ program. Included with each design element is an initial analysis of related impacts. Different choices of options for design elements will be grouped together in suites which define alternative IFQ programs (see Option Table C-1 in Chapter 2 for the TIQC recommended IFQ programs). The alternative IFQ programs will be the subject of the main analysis in the EIS. The EIS impact analysis of management regime alternatives will draw on the analysis provided in this appendix.

Each section includes the TIQC recommendations provided in the June 2004 public scoping document (bolded option numbers indicate which recommendations were incorporated in the TIQC recommended IFQ programs presented June 2005), recommendations from other Council advisors, and comments received during the public scoping period which ran from May 24, 2004 through August 2, 2004.

Incorporated in the discussion on each design element are references to relevant Magnuson-Stevens Act language and recommendations of a recent report from the National Research Council of the National Academy of Sciences (NRC 1999). The NRC report was mandated by Congress. Section 303(d)(5) of the Magnuson-Stevens Act requires that "In submitting and approving any new individual fishing quota program . . . the Councils and the Secretary shall consider the report of the National Academy of Sciences and any recommendations contained in such report."

B.1.0 IFQ Allocation

Section 303(d)(5)(C) of the Magnuson-Stevens Act requires that any new IFQ program "provides for a fair and equitable allocation of individual fishing quotas, . . ." Initial allocations are the most controversial aspect of IFQ programs. Over the long run, performance of the program does not depend substantially on the initial allocation. However, the initial allocation does distribute wealth. A substantial portion of a common opportunity (the capture of fish) is converted to private wealth through the creation of a marketable fishing privilege. Even though the IFQ is revocable without compensation, its function as the near equivalent of a private asset is evidenced by the value placed on it in the market place. When IFQ is awarded without charge, the initial recipient of IFQ may be viewed by some as receiving an apparently "free" asset and unearned income upon sale or lease of that asset.[1/]

Program Summary and Main Options:
IFQ Allocation (Section B.1.0)

IFQ would be allocated to the following groups in the following proportions: . . . **[e.g., groundfish trawl permit owners (xx%); groundfish trawl vessel owners (xx%); processors (xx%)**]. Processors would be defined as... [FMP definition/alternative definition]. *(Section B.1.1)*

In order to qualify for an initial allocation the applicant would . . . **[have to/not have to] . . .** demonstrate recent participation. If recent participation is required, the recent participation requirement for each group would be as follows: make/receive at least . . . **[X deliveries – number of deliveries to be determined]** . .. of trawl caught groundfish from . . . **[1998-2003 or 2000-2003]**. *(Section B.1.2)*

Those eligible for an initial allocation will be allocated quota shares based on the following formula:

[0-100%] of the quota share issued for the group would be issued based on history of catch/landings/processing;
[0-100%] of the quota share issued for the group would be issued based on equal sharing; and
[0-100%] of the quota share issued for the group would be allocated through an auction.
(Formulas may vary among groups, *Section B.1.3*)

For IFQ allocated based on delivery history, the applicant's . . . **[total groundfish; total for each IFQ species or species group; or total for each species, species group, or proxy species]** . . . **[caught, landed, or processed]** *(Section B.1.4)* . . . will be calculated for . . **[1994-2003, 1994-1999, 2000-2003, 1998-2003, or 1999-2004]** . . . , less . . . **[0, 1, 2, or 3]** . . . of the applicant's worst years. The calculation will be based on the applicant's . . . **[pounds, percent of total]** . . . for the relevant species/species group in each year. *(Section B.1.5)*

Permit history for combined permits would include the history . . . **[for all the permits that have been combined; for the permit originally associated with the permit number of the combined permit]**. Illegal deliveries would not count toward history. Catch in excess of trip limits, as authorized under an EFP and compensation fish . . . **[would/would not]** . . . count toward history. *(Section B.1.6)*

There would be no appeals process on the initial issuance of IFQ, other than that provided by NMFS and consistent with the Administrative Procedures Act. Any proposed revisions to fishtickets would undergo review by state enforcement personnel prior to finalization of the revisions. *(Section B.1.7)*

When a management unit is subdivided, quota shares for that unit will be subdivided by issuing quota share holders amounts of shares for the subdivisions equivalent to their holdings of the shares being subdivided. If a new management unit is established that is not a subset of an existing unit managed with IFQ, the Council will need to take action at that time to develop criteria for quota share. allocation. *(Section 1.8)*

1/ This unearned income may be regarded by some as an unfair windfall. Recovery of windfall and extraction of rents is addressed in Section B.3.2.

Within the context of current West Coast license limitation system, the creation of IFQ would redistribute wealth among existing participants through three mechanisms:

(1) Change in Asset Value (IFQ). The value of the asset received by the initial recipient (value in excess of any payment for IFQ issuance).
(2) Change in Asset Value (Limited Entry Permit). A reduction in the value of the existing LE permits due to the separation, redefinition, and reallocation of the bundle of fishing privileges previously associated with the permit.
(3) Change in Revenue Stream Associated with Fishing Privileges Held. The first and second mechanisms through which wealth may change are windfall gains or losses as a result in changes in the nature of the assets held as fishing privileges. The market value of those assets should represent the present value of the expected stream of net revenue associated with them. It is possible that the individual will experience an increase or decrease in their expected stream of net revenue that varies from the market value of the fishing privilege assets.

In many cases, the same individual may be subject to changes in wealth through all three mechanisms. The greater the degree to which the initial distribution of IFQ does not match the existing distribution of human and physical capital that exists in the fishery, the greater the disruption costs associated with implementation of the program. However, these disruption costs would be short-term phenomena that would not substantially affect the long-term performance of the program with respect to efficiency. In addition to disruption costs, there may be longer-term impacts on the balance of power between participants in the fishery, changing the composition of the stakeholders involved in managing the fishery. Initial recipients may be in a better position to obtain loans to buy additional quota than others in the fishery (NRC 1999) (pg. 202).

The NRC recommends that "the councils consider a wide range of initial allocation criteria and allocation mechanisms in designing IFQ program . . . " and more broadly consider ". . . (1) who should receive initial allocation, including crew, skippers, and other stakeholders (councils should define who are included as stakeholders); (2) how much they should receive; and (3) how much potential recipients should be required to pay for the receipt of initial quota (e.g., auctions, windfall taxes)." (NRC 1999) (pg. 203). Councils should "avoid taking for granted the option of 'gifting' quota shares to the present participants in the fishery, just as they should avoid taking for granted that vessel owners should be the only recipients and historical participation the only measure of what each deserves. Councils should consider using auctions, lotteries, or a combination of mechanisms to allocate initial shares of quota" (NRC 1999) (pg. 207).

Details on the IFQ options for initial allocation from the public scoping document are summarized in following subsections. Below are some general comments that did not fit neatly into one of the subsections.

Public Comments:

Comment	Source
Establish a control date for processors	1 individual
Don't make the shares so small that opportunity is reduced below current levels	1 individual

B.1.1 Eligible Groups and Group Shares

B.1.1.1 Discussion and Options

The topic of this section,"Who should be eligible to receive an initial allocation of IFQ?" is separate from a similar question "Who should be eligible to acquire IFQ after the initial allocation?" The latter question is covered in Section B.2.3.1.

The NRC report notes that vessel owners are usually the recipients of initial allocations and makes the following recommendations with respect to allocation to other fishery participants (NRC 1999) (pgs. 202-207).

NRC Recommendations for Allocation Groups **(Other than Vessel Owners)**	
Skippers and Crew Allocations	Consider where appropriate. Lack of detailed catch data is not a reason to forgo this option as equal allocation is an option. It may be less appropriate in industrial fisheries that do not involve crew members as co-venturers in the same sense as other fisheries.
Processor Allocation	No compelling reason to include or exclude processors from an initial allocation.
Communities	Consider initial allocations of IFQ to communities. Some communities may be heavily dependent on fishing for social, cultural, and economic values and/or are lacking in alternative economic opportunities.
Public	Consider auctions, lotteries or combinations of mechanisms to allocate initial shares. Avoid taking for granted the option of "gifting" IFQ.

Initial allocation to "permit owners" as a group is not considered in the NRC report. Since establishment of the groundfish license limitation system, permit owners have been the recipient of new limited entry allocations (the fixed gear sablefish endorsement and fixed gear tier system). Criteria often mentioned in connection with this issue include compensation for those whose asset values are adversely affected by the new program and minimizing disruption (PFMC, 1998).

For each group to be included in the initial allocation there would need to be a determination of the amount of IFQ to be divided among members of the group, unless some common point system is developed that can be applied across all qualifying groups.

The following is a current list of options for: *the groups eligible for initial allocation* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

Groups Eligible for an Initial Allocation	
Option 1	Allocate IFQ to Current Permit Owners.
Option 2	Allocate IFQ to Vessel Owners.
Option 3 (see below for TIQC recommendations for Options 3a and 3b, specifying percentages for each group)	Allocate IFQs to Permit-Owners/Vessel-Owners/Processors (consider all combinations and allocate to ownership of the vessel or facility at the time of initial allocation, where relevant). Processor Percentages: 0%, 25%, 50%
Option 4	Allocate to High Bidder in Auction (eligibility rules for participation to be developed)–not legal under the current Magnuson-Stevens Act.

At its June 2005 meeting the Council added two options. One would allocation 90% of the trawl quota shares to current permit owners and 10% of the trawl quota shares to processors. The second would allocation 50% of the trawl quota shares for whiting to current permit owners and 50% of the trawl quota shares for whiting to processors **and** for other species allocate 100% of the trawl quota shares to current permit owners.

There will need to be clear criteria for determining membership in each group. For permit owners and vessel owners the criteria are straight forward. For processors, skippers, crew, and communities, definitions and criteria require more careful consideration.

The following is a current list of options for: *defining processors for the purpose of an initial IFQ allocation* as identified by the TIQC through the scoping process. Bolded options are those for which the TIQC included in the IFQ programs it recommended for analysis.

Definition of Processor	
Option 1	Using Special IQ Program Definition for Processors: The processor is the entity which - 1. after processing, sells his or her own LE trawl vessel-caught groundfish directly to a wholesale or retail market; OR 2. buys unprocessed trawl-caught groundfish, processes it, and sells it to the wholesale or retail market. The entity is defined as: Suboption 1(a)(i) the processing facility and allocation goes to the current owner, unless leased, in which case it would go to the current lessee. Suboption 1(a)(ii) the processing facility and allocation goes to the current owner. Suboption 1(b) the person processing (individual, partnership, corporation or other entity).
Option 2	FMP Definition. A processor is a- "person, vessel, or facility that engages in processing; or receives live groundfish directly from a fishing vessel for retail sale without further processing." Same suboptions for definition of entities as in Option 1.

Processors should only receive credit toward the allocation formulas for fish they process (fish passed through to another processor without processing should not be counted). Information beyond what is on fishtickets will be needed to substantiate processing activities (fishtickets do not indicate whether or not the entity receiving the fish processed it).

The second part of the definition of Option 1 focuses on the entity processing. It bypasses the person acting as a buyer or agent and gives credit to the actual processing entity. It also limits the initial recipient of IFQ to those who are the initial processors of the fish. Companies or facilities that receive and further process fish after initial processing would not qualify for IFQ. The following matrix identifies those who would and would not qualify as processors under Option 1 based on three key parameters: (1) Do they take ownership of the fish? (2) Is the fish they receive processed or raw? and (2) Does the entity process it?

Status of Entity as a Processor Based on the Option 1 Processor Definition:					
Do they take ownership of the fish?	Is the fish received processed?	Does the entity process it?	Category	Eligible for an Initial IFQ Allocation as Processor?	
				Option 1 Definition	Option 2 Definition
Yes	No	Yes	Processor (Including: Operations that Both Harvest and Process AND Operations that Acquire Unprocessed Fish from a Vessel/Receiver/Dealer/Buyer	Yes	Yes
No	No	Yes	Custom Processor	No	Yes
No	No	No	Buyer	No	No
Yes	No	No	Fish Receiving-Station/Dealer	No	No
Yes	Yes	Yes	Secondary Processor	No	Yes
Yes	Yes	No	Fish Dealer/Wholesaler	No	No

TIQC Recommendations: The TIQC recommended that Options 1and 3 be maintained for the EIS. A minority supported maintaining Option 4 for purpose of analysis.

Groups Eligible for an Initial Allocation: Options Included In TIQC IFQ Program Recommendations:			
Group	***Option 1***	***Option 3a***	***Option 3b***
Permit Owners	*100%*	*75%*	*50%*
Vessel Owners	*-*	*-*	*-*
Processors	*-*	*25%*	*50%*
High Bidder	*-*	*-*	*-*

The TIQC recommended against allocating to:

1. vessel owners
2. those who owned the permit or vessel at time of landings (if different from the current permit owner),
3. lottery entrants,
4. crew or skippers,
5. communities.

The TIQC recommends against allocation to vessel owners rather than permit owners, because once the limited entry fishery was established most of the value of the fishery was capitalized into the value of the permit. The TIQC recommends not considering allocation to the owner of a vessel or permit at time of landing (i.e., personal history) because no rationale could be identified for allocating to someone who no longer owns the fishing asset used to take the fish. Allocations should go to the current owner of an asset based on the history of the asset (e.g., permit or vessel).

There was no TIQC consensus with respect to the definition of processors. Both of the options were maintained in the TIQC program recommendations. It was agreed that if allocation is based on the history of deliveries to a processor, the processor should only qualify for the portion of the catch they process.

Other Previously Identified Options

Another option would be to allocate to permit holders. Permit "holders" include permit owners and persons who lease or otherwise control a permit for use on his or her vessel. Thus allocation to permit holders would include all current vessel owners and permit owners. The NMFS NWR Limited Entry Permit Office identifies the vessel owner as the permit holder. The permit holder option differs from the vessel owner and permit owner option in that if an allocation were made for vessels owners and another for permit owners, a person could qualify for a portion of the IFQ allocation for permit owners and a portion of the IFQ allocation for vessel owners. Thus, in most situations, someone owning both a permit and vessel would likely qualify for approximately the same amount of an initial IFQ as they would under an option where the allocation was only for permit owners or only for vessels.

Public Comments:

Comment	Source
Allocate to processors that are NOT vertically integrated (do not own fishing operations)	1 individual
Allocate 50% to permit owners and 50% to primary processors	CJC
Allocate to permits, processors (company or facility, to be decided), and communities handling more than 1% of the annual landings	WCSPA
Allocate to permit owners, processors, and communities	CJC
Allocate to skippers who can demonstrate dependence	ED and two individuals
Allocate to crew members	Survey (ED)
Allocate to communities	Survey (ED)
Allocate to processors	Survey (ED)
Do NOT allocate to processors	Survey (ED)

B.1.1.2 Initial Analysis

Distribution Among Groups

Some basis will need to be established to determine the amount of IFQ to be allocated among members of all the eligible groups. If IFQ is to be allocated to more than one group, the most direct means is probably to allocate an amount of IFQ to each group and then come up with allocation criteria to allocate between members of the group. There are other approaches that might be taken but they are more complicated or problematic, for example, establishing a common allocation criteria that could be applied to all members of all groups (e.g., years of participation or pounds handled), or assigning points on the basis of different qualifying criteria for members of different groups and then allocating based on number of points relative to a common pool of points (e.g., one point per year for crew members and one point per 100,000 pounds for permit owners). During deliberations on an IFQ program for the West Coast sablefish fishery, a formula was considered that would have given equal weight to catch history of the vessel owners and catch history of the permit holders. Under such a formula, individuals who owned their vessel and permit would receive a "full share" as if the allocation were based only on vessel or only on permit. Those who owned one or the other would receive half as much IFQ as a person with a similar catch history who owned both.

Asset Value

One criteria that has been suggested for allocation of IFQ is to provide IFQ as compensation for those who own assets, the value of which might be adversely affected by an IFQ program. The following is a brief discussion of capital asset values. Skilled labor and community assets will be discussed in sections on those topics.

Theory suggests that the value of assets, such as permits and quotas, is a measure of the discounted stream of profit expected to be generated by that asset. Factors, such as ecological uncertainty, external economic occurrences, and uncertainty associated with management of the resource, can influence this value. It is likely that creating IFQs, a new type of asset, will influence the value of existing assets like permits, vessels, and processing plants. For example there are theoretical reasons to believe that implementing IFQs would exert a downward influence on the value of existing groundfish limited entry permits, as possession of the permit and vessel would no longer be sufficient for the holder to engage in fishing. Additionally, if fleet consolidation occurs under IFQs, there will be a surplus of available permits. On this basis, granting IFQ to the permit owner would compensate the owner for the reduced value of the permit asset, reducing some of the dislocational effects of creating the IFQ program.

Economic theory also suggests that vessel values will be affected under an IFQ system. Vessel values will be influenced by the level of consolidation that occurs, the ability of new entrants to gain access to the resource and to other fisheries, and the flexibility of current permit owners to adjust their operations in response to IFQ implementation.

The available literature provides no consensus on how processor assets would be affected by implementation of IFQs, except to indicate that consolidation of quota and other changes under an IFQ program can result in the occurrence of stranded capital. It will be important to define what stranded capital is. The term "stranded" appears to have been introduced in analyses associated with Alaska processing plants where the issue was focused on the processing of one or two species over a short season by processors often located in a remote area, such as was the case with several large pollock processing plants. One possible definition of stranded capital would be capital that has no alternative productive use as a result of a change in regulations. Under standard benefit-cost analysis, "stranded" capital reflects inefficient capital as a result of implementation of an IFQ system. Therefore, protecting or minimizing the amount of "stranded capital" becomes a public policy problem where efficiency goals are traded off against other social goals. It is not clear, whether or not in a situation in which processors have the potential to purchase IFQs after initial allocation (which may or may not include the processors), when capital can be considered to be "stranded" (November 29, 2004 conference call of NMFS economists).

The value some processors will be able to generate from their capital will likely go up while the value for others will go down as a result of IFQs. In addition, companies with several plants will likely be affected differently than companies owning single plants. Effects will depend on location and supply (November 29, 2004 conference call of NMFS economists).

In determining whether capital is "stranded" or utilization of the capital is enhanced as a result of IFQs, the alternative uses of the capital before and after implementation of IFQs needs to be

assessed. The chief technique for measuring the value of alternative uses is the employment of net present value techniques on whatever is defined as a capital asset. In short, what matters is the net present value of equipment and infrastructure (to be defined) (November 29, 2004 conference call of NMFS economists).

An analysis of the potential initial financial effect on various capital assets may be needed as part of the impact analysis. Such an analysis may form the basis of potential requests for economic mitigation/compensation. The TIQC has requested an assessment of the asset values of vessels and processors that might be affected by an IFQ program. Challenges in responding to this request and developing an impact analysis will include; availability of information on asset values (including permits, vessels, and processing capital values), valuation basis for the assets (replacement, depreciated, opportunity cost, or other), valuation of publically owned assets (port owned facilities leased to fishing industry members), determining the portion of total value to assign to groundfish for facilities used in more than one fishery (vessels, offloading, processing). The analytical team has provided a general description of factors affecting asset value (Appendix H).

Impacts of IFQs on Processors

Impacts of IFQ programs on processors under several other IFQ systems were investigated. The information in this section is based on discussions with DFO staff in British Columbia (Barry Ackerman), industry reps (Bruce Turris), and DFO staff in Nova Scotia (Andrew McMaster, Jorge Hansen, Michael Campbell), and Jim Sanchirico (Resources for the Future).

British Columbia (B.C.) Trawl Individual Vessel Quota (IVQ)

Shortly after implementation of the B.C. IVQ system there was some harvester rationalization (the number of vessels declined, from 130 vessels down to 70). This was partially a result of decreased landings due to the stricter adherence to the total allowable catch (TAC).

According to sources contacted, there was not a lot of change that occurred in the processing sector with regards to consolidation and harvester/processor relations. The lack of concern with regards to the occurrence of stranded capital and changes in bargaining power was due to 25-35% vertical integration of some sort (owned, co-owned, agreements) within the processing sector. Another reason for the lack of large scale changes was due to implementation of the Groundfish Development Authority (GDA), the goal of which was to prevent geographic relocation and to prevent impacts on processors.

The outcome of the trawl IVQ program for the processing sector in B.C. was not the same as it was for the B.C. halibut fishery IVQ program, where there was a big change in product quality and impacts on processors. Under the trawl IVQ program, the total number of processors actually increased slightly in B.C.; and of the top 10 processors, two dropped out and two more entered the fishery. Consolidation did not occur. This was partially due to the fact that fishermen started landing catch in Canada instead of in the U.S. due to decreases in trip limits in the U.S. Also, the value of the Canadian dollar increased against the U.S. dollar, providing another reason to land catch in Canada instead of the U.S.

There were large increases in ex-vessel prices paid to fishermen but this occurred for reasons other than changes in bargaining power.

Even though the GDA has provided some protection to processors, fishermen feel they have lost power due to the GDA program. Small processors also feel they have lost power to the GDA because they are at a disadvantage when it comes to writing a proposal. The bigger the processing facility, the greater the potential reward from the GDA.

GDA kept landings, processing, offloading, and processing in coastal ports and away from Vancouver. This also had a social impact of keeping more fishermen fishing closer to home.

There has been some growth in custom processing but that may be due to the trend for custom processing in seafood and other products in general.

Nova Scotia ITQ

A processing facility cannot own a groundfish license. In the beginning, processors wanted 50% allocation of the IFQ. In 1990, a task force was developed to make decisions with regards to ownership of IFQ. They made recommendations after consulting for one year and these recommendations were adopted. To secure access to the resource, processors develop contracts with harvesters.

Delineating the Groups and Assigning Catch History

Permit Owners/Holders

Initial allocations of IFQ could be given to those owning or leasing limited entry permits at the time of initial IFQ allocation. If the allocation is based on catch history, the catch history could be that of the person owning the permit or that of the permit itself. Past modifications of the West Coast groundfish limited entry program (creation of the fixed gear sablefish endorsements and fixed gear tier endorsements) have used catch history of the permit. Some equity issues discussed in those deliberations include the following: If personal history is used (as a permit owner, vessel owner, or other type of participant), and someone has recently bought a permit with little history, then they may suddenly find themselves with an asset substantially diminished in value and with little IFQ. Also to be considered, How will personal catch history be tracked for business entities with changing composition and the individuals who comprised those entities (e.g., partnerships and corporations)? On the other hand if permit catch history is used and a long-time participant recently traded an active permit for a relatively latent permit (perhaps as part of a vessel transaction), the long-time participant may suddenly find themselves with an asset substantially diminished in value and with little IFQ.

For the Amendment 6 license limitation program, allocation was based on vessel history as a means of taking into account present participation and minimizing disruption. Using vessel history allowed for orderly entry and exit to the fishery during the time the program was being developed. If personal history had been used, recent entrants would have been disadvantaged when permits were

issued. A similar rationale might be considered in evaluating allocation based on personal catch history as a permit owner vs. catch history of the permit itself.

Allocation to individuals who are not permit or vessel owners at the time of initial allocation is not being considered because, by definition, such persons are no longer current participants or dependent on the fishery as a vessel or permit owner. A strong rationale for allocation to past participants has not been made.

Vessel Owners

If an allocation is made to current vessel owners, when it comes to evaluating vessel history vs. history of the individual as a vessel owner, the equity considerations and allocational complications would be similar to those described for the issue of allocating to permit owners based on permit history vs. history of the individual as a permit owner (see discussion above).

First Receivers (Processors/Dealers/Buyers)

The business operations of entities receiving fish from groundfish trawl vessels may vary greatly. In the following, "wholesaler" and "dealer" are used synonymously. Vessels may sell directly to:

- a processing facility,
- a wholesaler/dealer,
- a buyer (state-licensed employee acting on behalf of a processor or wholesaler).

Not all processors are first receivers for some or all of the fish they process. Processors may receive fish from:

- vessels,
- other processing plants (owned by other companies),
- wholesalers/dealers,
- buyers (state licensed employee acting on behalf of a processor or wholesaler).

All of the above relationships are illustrated in Figure B.1-1. Table B.1-1 shows the state licensing requirements for various entities depending on from whom they purchase the fish, whether or not they process the fish received, and to whom the fish are sold. A following section provides definitions of "processing" and "processors" used by agencies.

Historically, PacFIN has used the term "processor ID" for state license identifying numbers for both processors and wholesalers. The field might be more accurately described as the "first receiver ID". The term "buyer" has recently been used in some reports to take into account that the data covers both processors and wholesalers. However, "buyer" has its own special meaning in the fish distribution chain; a state licensed individual acting on behalf of the wholesaler or processor.

The Council may want to consider alternative labels for the receivers of trawl caught fish that might be eligible for an initial allocation of IFQ. One option might be "those who process fish". Another option might be "those who have a reporting requirement as wholesale fish dealers (whether they process fish or not)". This would not include fish buyers who work for wholesale fish dealers.

The lack of unique and stable identifying (ID) numbers for processors may make the analysis and initial allocation more difficult than for vessels. For vessels, the facility is the vessel and each vessel has a unique and stable ID number. Through that ID number, ownership can be tracked and catch history assigned. Processor identifiers may or may not change with changes in the ownership of a facility or company, and in some circumstances ID code numbers may change even if there is no change in ownership. There may also be multiple processor/wholesaler/buyer codes used at a particular offloading site. As an example of how the system works in an individual state, in Washington dealers and buyers are licensed. Buyers are individuals that work for dealers, and each buyer has their own unique identifier. Dealer ID numbers may

A number of issues were identified for TIQC consideration in addressing the issue of providing an initial allocation for processors. Most of the issues have been addressed in the current set of options. The following is the text that was provided to the TIQC for consideration in developing its recommendations.

One issue that would need to be resolved is how to treat those holding commercial fishing licenses who are licensed or endorsed to sell fish directly to the ultimate consumer.

Several issues should be clarified in the discussion of options that would qualify processors for an initial allocation of IFQ:

1. Is the term processor being used to reference all "1st receivers" or only true "processing entities"?
2. If the term "processor" is meant to include only true processing entities:
   Is it intended that processing entities that do not receive fish directly from vessels qualify for IFQ?
   Should other types of entities that receive fish receive an initial allocation?

Once the class of persons that might be eligible for an initial allocation of IFQ based on participation in the processing/marketing chain is determined, there are questions to be addressed regarding the apportionment of landings history (if landings history is to be used as an allocation criteria for processors):

1. How should landings history be counted for fish received by one processing company (or at one processing facility) but transferred to another company (or another facility) for processing?
2. How should landings history be counted for fish received at a dealer/wholesaler's offloading facility and transferred to another company for processing?

Finally is a set of questions related to the entity to which landings history accrues and how landings history might change with changes in ownership of that entity:

1. Is the entity for which landings history would be evaluated the facility or the company? In other words, If ownership of the facility changes does the catch history go with the buyer or the seller of the facility?
2. If catch history goes with the buyer, if ownership of this entity then changes, does the catch history go with the new buyer, stay with the sellers, or disappear?

Related to the processing facility ownership is the question of what defines the facility and the status of lease holders. Does "facility" refer to the land and building, or to the equipment inside? If the rule for attributing catch history is that (1) it goes with the facility, (2) the facility is the land and building, and (3) the facility is held in a lease arrangement, then does the catch history accrue to the lessee or the lessor? A similar question might apply if the facility was defined as the equipment but the equipment was leased.

change when the dealer is purchased by another company, or if the corporate status with the Washington Department of Revenue changes. When the dealer ID numbers change, the buyer ID numbers that work with that dealer would also change. While these difficulties in establishing unique identifiers make the analysis more complex, they do not prevent consideration of allocations to first receivers.

Definition of Processing

Discussion of "processing" and "processors" may benefit from the following background information on how these terms are defined under state regulations and under the Federal FMP. Each state program has a different licensing structure for fish business activities that deal with sale of commercially caught fish, including fishermen's retail sales, buying of fish for a wholesale fish dealer, wholesale fish dealing where fish are sold to retail dealers, and fish processing and canning. Definitions of fish processing or fish processor include:

> **Washington** (RCW 77.08.010 (42)) "To process" and its derivatives mean preparing fish, wildlife, or shellfish.
>
> (WAC 220-69-210 (11)) "Processed" means preparing and preserving, and requires a wholesale dealer's license. Preserving includes treated with heat, including smoking and kippering. **Cooked crab are processed**. Preserving also includes freezing fish and shellfish. (WAC 220-56-100 (20)) "Processed" means fish or shellfish which have been processed by heat for human consumption as kippered, smoked, boiled, or canned.
>
> **Oregon** (OAR 635-006-0001 (15)) "Processing" means smoking, reducing, loining, steaking, pickling, filleting, or fresh packaging requiring freezing of food fish, or any part thereof (**Does not include cooking crab**).
>
> (16) "Processor" means a person who buys fresh food fish from a licensed commercial fisher or a wholesale fish dealer and processes food fish for sale through retail outlets or for sale to the ultimate consumer.
>
> **California** "Fish Processor" is any person who processes fish for profit and who sells to other than the ultimate consumer.
>
> California Fish and Game Code 8031 (a) (1) "Process fish" means any activity for profit of preserving or preparing fish for sale or delivery to other than the ultimate consumer, including, but not limited to, cleaning, cutting, gutting, scaling, shucking, peeling, cooking, curing, salting, canning, breading, packaging, or packing fish. "Process fish" also means the activity for profit of manufacturing fish scraps, fish meal, fish oil, or fertilizer made from fish. "Process fish" does not include the cleaning, beheading, gutting, or chilling of fish by a licensed commercial fisherman which is required to preserve the fish while aboard a fishing vessel and which is to prevent deterioration, spoilage, or waste of the fish before they are landed and delivered to a person licensed to purchase or receive fish from a commercial fisherman.

Federal Pacific Coast Groundfish Fisheries Management Plan "Processing or to process" means the preparation or packaging of groundfish to render it suitable for human consumption, retail sale, industrial uses, or long-term storage, including, but not limited to, cooking, canning, smoking, salting, drying, filleting, freezing, or rendering into meal or oil, but does not mean heading or gutting unless additional preparation is done.

" Processor" means a person, vessel or facility that (1) engages in processing, or (2) receives live groundfish directly from a fishing vessel for sale without further processing.

Vessel Operators/Crew Members

Rationalization of the fishery is also likely to affect the nature of employment opportunities for vessel operators and crew. The exact result for operators and crew is uncertain but it is likely that there may be consolidation in the fleet with the result being fewer but more stable jobs. The likely effect on compensation rates for employment is also uncertain at this time. At the same time, IFQ may provide an opportunity for crew members to incrementally gain ownership of capital in the fishery through acquisition of IFQ.

Two issues would need to be addressed to provide an initial allocation to vessel operators and/or crew members:

(1) The proportion of total quota shares that would be divided among the crew or vessel operator.
(2) The criteria that would be used to determine which crew members qualify and how much of the initial allocation they would receive.

The following section provides information pertaining to the latter of these two issues.

Linking Vessel Operator and Crew to the Groundfish Trawl Fishery

In the fishery data systems, the only documentation pertaining to who works on fishing vessels comes from vessel operator/crew licensing system and the signatures on fishtickets. The fishery data system cannot generally link a crew member or vessel operator to a particular landing, or in some cases, to a particular vessel. Given the limited data available, the following table shows some options for allocating IFQ among crew and/or vessel operators.

Qualification Basis	Potential Allocation Formulas
Signature on a landings receipt (fishticket). [This data is not in the data system and would have to be submitted at the time of application]	-Equal allocation -One point for each year in which a groundfish fishticket is signed -Points based on pounds landed of each species for which the individual signed tickets
Tax return with information stating that the person received income from working on a groundfish trawl vessel (regardless of whether he or she helped in the harvest of groundfish) Sworn affidavit from the vessel owner/skipper. [Vessel owners may not know what crew was on board. Vessel skippers may have an interest in qualifying themselves–a conflict of interest.]	-Equal allocation -One point for each year working on a groundfish trawl vessel -Points based on the vessel's annual landings of each species for that year (a person working on multiple vessels in a year would . . . OPTIONS: (1) have to choose a vessel for his or her catch history that year, or (2) receive full credit for each vessel he or she worked on). Either option entails confidentiality issues.

Rules and circumstances determining who signs the fishticket vary between states and vary such that different individuals may sign the fishticket on different trips by the same vessel.

Another possible qualifying standard would be the submission of an affidavit by the applicant. Truthfulness of the affidavits would be difficult to verify, require self policing by the community and likely result in perceived inequities if it became broadly known that some individuals made substantial false claims.

Vessel Operator and Crew Licensing Rules

Which crew and operators on a vessel must be licensed in **California**?

- Everyone working on a vessel must hold a commercial license (except a person who does not contribute to the activities onboard or cause any fish to be brought ashore to sell and his/her presence is registered in the vessel log).
- The vessel may hold a permit for one crew member that may be assigned to any crew member working on the vessel.
- There is not a separate license for vessel operators.

In California there are some fisheries in which special crew member permits are required:

Crew Member Permit Categories	Conditions
General Commercial Fishing Crew Member Permit	
Lobster Crew Member Permit	* Lobster operator permittee must be onboard when crew member is fishing.
Sea Urchin Crew Member	* Crew member cannot dive for urchins.
Salmon Crew Member Stamp	* "John Doe" crew member stamp.

In California, commercial licenses for crew members are not vessel specific.

Which crew and operators on a vessel must be licensed in **Oregon**?

- Crew members assisting in the fish harvest must hold licenses.
- The vessel may purchase "Commercial Crew Member Fishing Licenses" (also known as "John Doe" licenses) and assign such licenses to the individuals working on the vessel. Names of individuals using these John Doe licenses are not recorded by the state.
- There is not a separate license for vessel operators.

As in California, Oregon commercial licenses for crew members are not vessel specific.

Which crew and operators on a vessel must be licensed in **Washington**?

- Crew members are not licensed.
- Vessel operators are licensed and there may be multiple operators licensed for a single vessel (primary and alternate operators).

In Washington, vessel operator licenses are linked to a vessel, however, where there are multiple operators licensed for a single vessel the only recorded information documenting which operator was present for a particular landing is the signature on the fishticket. The operator may not necessarily be the individual who signed the fishticket. The name of the person signing the fishticket is not recorded in the data system but would be available from the original landing receipts.

Signatures on Fishtickets

In California, the processors sign the tickets. The name and permit numbers for the vessel operators are recorded on the fishtickets.

In Oregon, the vessel owner or operator signs the tickets.

In Washington, the fishtickets must be signed by the buyer and the "fisher". The fisher signing must be the vessel operator.

Experience Making Initial Allocations to Crew in Other Fisheries

California has had experience allocating limited entry permits to crew members. California has had a practice--shared with other states, the Federal government, and other nations--of giving preference for issuing permits into a restricted access fishery to fishermen or vessels with past participation in that fishery. The practice has meant that those permits generally are issued to licensed California commercial fishermen rather than to nonfishermen or persons not licensed in the State. The practice has been viewed by many as a fair means to assure that those who rely on that fishery or who have invested in that fishery can remain in the fishery.

In determining priorities for the issuance of permits in a restricted access fishery, California has given licensed commercial fishermen/vessels with past participation in that fishery priority for receiving permits. Among fishermen or vessels with past participation in the affected fishery,

preference for permits may be based on factors such as years of participation in the fishery or level of participation (landings). Second priority for permits may be based on such factors as **crew experience**, number of years in California fisheries, or participation in fisheries similar to that for which a program is being developed. (An example of a similar fishery being considered for eligibility for a permit was when displaced abalone divers were added to those eligible for any new sea urchin permits.) Drawings or lotteries for permits are only used when two or more applicants have identical qualifications (e.g., the same number of points for eligibility for a herring permit). The following table shows conditions for crew member to apply and upgrade to operator permits in selected California fisheries.

Permits	Conditions/Criteria
Commercial Gillnet/ Trammel-net Permits for Gillnet/ Trammel-net Crew member	Applicant must have worked as a crew member for at least 12 months on vessels using gillnets or trammel-nets and shall have worked at least 180 days at sea on such vessels, or passed a CDFG proficiency examination. **Documented by fishing records or notarized document from a vessel owner/operator.**
Herring Permits for Herring Crew member	Crew members receive 5 experience points for one year of service as paid crew member, 3 points for a second year, 2 points for a third year, up to a maximum of 10 points cumulative. Herring Permits are issued according to the total number of points, beginning with applicants who accrue the most points. Remaining permits (if any) are allocated by a lottery. Drawing is used to assign limited permits across applicants if there are more applicants than available permits. **Documented by proof of payment for service as a crew member; tax records or cancelled check.**
Urchin Diving Permits for Sea Urchin Crew member	Available urchin dive permits are issued to applicants who held, for each of 2 immediately preceding years, a valid sea urchin crew member permit. **Documented by fishing records or notarized statement from vessel owner/operator that hired the crew member.** Random number drawing for applicants seeking urchin dive permit. Eligible crew members can receive one random number for the diving permit drawing. One additional random number is assigned for each additional year they possessed a crew member permit. Not more than 5 random numbers shall be assigned to any one individual in a given drawing.

The California salmon limited entry program was initially based on limiting the number of individuals participating as fishermen. In 1982, the fisherman-based moratorium was modified to a vessel owner-based license limitation system. Permits were issued to a number of classes of

owners and to individuals who had been licensed to fish commercially for at least 20 years and who had participated in the salmon fishery in at least one of those 20 years (Senate Bill 1917, 1982).[2/]

Communities

The Magnuson-Stevens Act defines a fishing community as "a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such a community (§3[16])." National Standard 8 (50CFR600.345(b)(3)) further defines a community as "a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent services and industries."

Communities might be positively or adversely affected by an IFQ program through a variety of mechanisms. One such mechanism is the potential for a geographic redistribution of landings and related fishery benefits. The ability to divide and transfer quota shares under an IFQ system will increase the likelihood that fishing activities will be responsive to influences in the natural or socioeconomic environment. These influences are muted under the current management system with its trip limits and indivisible permits. While the degree and direction of shift is not predictable, there is an increased likelihood of geographic shifts in fishing activity under IFQs compared with the current system. More background on factors influencing the distribution of harvest has can be found in the October 2004 Analytical Team Report (see Appendix H).

A community's interest in fishing activities may include benefits derived from the economic activity associated with the harvest and processing of fish, fees collected from the use of port facilities including wharfage fees, and possibly revenue streams from economic development projects such as the construction and leasing of buildings to house processing activities. Communities also have an interest in the fishing industry families that are part of the local social network.

There be a number of ways to take community interests into account in the design of an IFQ program. These include:

- Placement of geographic restrictions on the area of catch or landing associated with the IFQ (Section 2.1.1.3).
- Annual allocation of a portion of the IFQ to vessels and processors based on the merit of industry proposals designed to benefit fishing communities.

Direct community participation in individual quota programs can be accommodated through community-based control of individual quota. Such control may be accommodated by:

- Specification of a certain portion of the OY for control by communities (sometimes called Community Development Quotas or CDQ).

2/ If new permits were to be issued, they were first issued as interim permits. Interim permits had to be used in two consecutive seasons before a permanent permit could be issued.

- Allowing communities or their representatives to have an opportunity to acquire IFQ after initial issuance (Section B.2.3.1).
- Providing communities with an initial allocation of IFQ (covered in this section).

The decision for the Council under this section is "Should communities receive an initial allocation of IFQ?" If the answer is "yes", then guidelines would likely be needed to identify those entities eligible to represent the community interests and criteria for determining which communities qualify. The Analytical Team has provided a review of other IFQ systems including examples of ways in which communities were defined and interests accommodated (see Suzanne Russell's report in Appendix H, starting on page H-100).

B.1.2 Qualifying Criteria: Recent Participation

B.1.2.1 Discussion and Options

Recent participation requirements can be used to favor recent participation and ensure that current participants benefit more from initial allocations than those who may have left the fishery. To some extent, an allocation that places greater weight on recent participation than participation in the distant past may reduce disruptive effects of the initial allocation.

The relative importance of a recent participation requirement may be adjusted by limiting the portion of the allocation for which the recent participation requirement applies. Recent participation may be required to receive any allocation, or it may be only required for that portion of the IFQ allocated on a certain basis. For example, if a portion of the IFQ is to be allocated equally, that portion might be given only to those meeting recent participation requirements, and the portion being allocated on the basis of landings history may be distributed independent of whether or not a recent participation requirement is met.

The following is a current list of options for *recent participation* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

Qualification Criteria: Recent Participation	
Option 1.	No recent participation requirement
Option 2.	Recent participation (1998-2003) required to be eligible for an initial allocation (one groundfish trawl landing/delivery of any groundfish species, or a minimum number of trips and/or number of yrs to be specified).
Option 3.	Same as Option 2 but the years would be 2000-2003.
Option 4. (This option applies only to shorebased processors and motherships. Option 1, 2, or 3 could be applied to vessels or processors.)	Same as Option 2 but the years would be 1999-2004.

Recent participation in either the shoreside or at-sea fisheries would suffice to meet minimum landing requirements for shoreside or at-sea IFQ, if such a distinction is made. The requirements might apply to harvesters or processors.

TIQC Recommendations: The TIQC previously recommended that all options be maintained for the EIS. The TIQC program recommendations include only Options 1, 2, and 4. The 2000-2003 period covers the years for which use of a small footrope has been required.

Public Comments:

Comment	Source
Have a continuing recent participation requirement so that if IFQ are issued they do not go to individuals who have left the fishery.	1 individual

B.1.2.2 Initial Analysis

From the following table, it can be seen that requiring some groundfish trawl landing between 2000 and 2003 would eliminate 13 permits from qualifying for IFQ. The effect on the allocation to others would depend on the landings history for these vessels during the remainder of the allocation period (see B.1.5), and whether there are other criteria on which IFQ is allocated, such as some portion of the IFQ equally allocated (B.1.4).

Number of Unfished Permits by Consecutive Period (NMFS NWR, 3/9/04)			
Period	Number of Permits Not Fished During the Period	Year	Number of Permits Not Fished During the Year
1998-2003	5	1998	18
1999-2003	7	1999	14
2000-2003	13	2000	20
2001-2003	24	2001	32
2002-2003	33	2002	40
2003	40	2003	40

The 2000-2003 recent participation period (Option 2) corresponds to the portion of the potential qualifying period during which restrictions on large footropes were in place. The 1998-2003 recent participation period (Option 3) includes time both before and after the imposition of large footrope restrictions and both before and after the year 2000 declaration of a groundfish disaster. The 1998-2003 recent period qualifying criteria may not match up well with the 1998-2003 allocation period, unless its purpose is to entirely eliminate from the allocation those vessels/permits/processors with very small amounts of catch. If landings history is the only criteria used in determining amounts of fish to be allocated, the recent participation requirement would have little effect. If there are other allocation criteria, such as equal allocation, the effect on distribution of IFQs may be more significant.

The IFQ program would likely take much of the value currently embodied by the LE permit and split it off to the IFQ. Holders of permits for which no IFQ is issued will experience a significant decline in the value of the permit as an asset. The EIS for the Amendment 6 license limitation program identified that it was the Council intent that no use-or-lose provision be included in order that vessels not be encouraged to be more active than they otherwise would. A recent participation requirement that disqualifies permits entirely from receiving IFQ could be construed by some to retroactively impose a use-or-lose provision on the permit system.

B.1.3 Elements of the Allocation "Formula"

B.1.3.1 Discussion and Options

In determining the amount of initial allocation (NRC 1999) (pg. 224) encourages consideration of stewardship and other potential criteria in addition to landings history. The TIQC developed some preliminary recommendations for elements of formulas to allocate IFQ among permits and processors. If other groups are to qualify, such as those described in Section B.1.1, IFQ allocation formula would have to be developed for each group. Additionally, there would need to be an allocation of IFQ among the groups before it is subdivided within the groups (see Section B.1.1).

Vessel/Permit Related Allocation

The following is a current list of options for *vessel/permit related allocation,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

Allocation Formula Options for Qualified Permits/Vessels

Allocation Basis	Option 1	**Option 2**	Option 3	Option 4
Permit History	100%	Use permit catch/landings history for permits not bought back.	-	-
Augmented History (Catch/Landings History and/or Bycatch Estimate Based on Target Species)[a/]	-	-	100%	-
Equal Sharing	-	Catcher vessel permit owners: Equally split proportion of quota that could be attributed to bought back permits/vessels.[b/] Incidentally harvested overfished species suboptions, either: (a) same as for other species OR (b) equally divide overfished species quota shares.	-	-
Auction	-	-	-	100%
Other	-	For catcher-processor permit owners, use an allocation schedule developed by unanimous consent of that sector (to be provided).	-	-

a/ In some cases, history of target species, rather than bycatch or incidental catch, might be used to avoid rewarding those with high incidental catch rates.

b/ Earlier versions of the equal sharing option included a statement that only those with catch history for a particular species would qualify for the equal share portion for that species (for example, a vessel that fished only south of Cape Mendocino would not qualify for quota shares for a management unit north of Cape Mendocino). This provision was dropped due to the complexities it introduced.

TIQC Recommendations: The TIQC previously recommended developing a suite of options covering the range of Options 1 through 4 for purpose of analysis. The majority of the TIQC voted to eliminate the auction option from detailed analysis and a minority supported maintaining it. The TIQC program recommendations contain only Option 2.

Public Comments:

	Source
Measure landings history by value of product rather than weight of catch	Survey (ED)
Allocate based on an auction	CJC, WCSPA
Allocate based on an auction tiered for different types of operations	ED
Do NOT allocate based on an auction	1 individual

Processor Allocation

The following is a current list of options for *processor related allocation,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

Allocation Formula Options for Qualified Processors

Allocation Basis	**Option 1**	Option 2
Processing history of trawl groundfish landings received unprocessed	100%	-
Auction	-	100%

TIQC Recommendations: The majority of the TIQC voted to eliminate the auction option from detailed analysis and a minority supported maintaining it. The TIQC program recommendations contain only Option 1.

Options from Public Comment Period: See recommendations for permits/vessels.

Allocation for Other Groups

Allocation formulas for any other groups to whom an initial allocation of IFQ might be made need to be developed. There is a discussion of some allocation formula possibilities for crew members in Section B.1.1.

B.1.3.2 Initial Analysis

Initial allocations determine a distribution of wealth: the asset value of the initial allocation of IFQ distributed among IFQ recipients. The fairness and equity of that initial allocation is largely a judgement to be made by the Council, NMFS, and the general public. Initial allocation will also affect transition costs. If IFQ is allocated such that those who have caught the fish in recent years do not receive the IFQ, then transactions and adjustments will be required; either those recent participants will acquire the IFQ or the IFQ recipients will acquire the assets, labor, and other productive resources necessary to harvest the IFQ while the recent participants sell fishing assets and/or seek out alternative activities. M-S Act Section 303(b)(6) also provides guidance on the following factors that must be taken into account in designing a limited entry program (either the initial allocation or other aspects of the program design):

(A) Present participation in the fishery.
(B) Historical fishing practices in, and dependence on, the fishery.
(C) The economics of the fishery.
(D) The capability of fishing vessels used in the fishery to engage in other fisheries.
(E) The cultural and social framework relevant to the fishery and any affected fishing communities.
(F) Any other relevant considerations.

Auctions

All or a portion of the IFQ could be allocated through auction, providing the necessary changes are made under the Magnuson-Stevens Act.

Equal Allocation

The asset value most directly affected by an IFQ program would likely be the LE permit itself. If the relative values of permits do not vary as much as the catch history associated with a permit, and if an intent of the initial allocation is to compensate those who might be most adversely affected by the IFQ program, then this objective may be furthered for permit holders by placing some emphasis on equal allocation. There may be other rationales for not allocating equally, or rationales for allocating equally, that have yet to be presented.

Landings History

Emphasizing landings history in the allocation formula is one means of reducing transition and disruption costs that might be associated with a move to IFQs. This could be landings history for the permit, vessel, crew, processor, community, etc.

The quality of landings history data varies across the different allocation periods covered in Section B.1.5. The October 2004 Analytical Team Report addresses quality of landings data (see Appendix H) issues. Landings history for many species will have to be estimated by the application of species composition information to aggregate or unspecified landings categories. There are two issues of concern: First, some vessels may have more landings in an unspecified category than others. These vessels could be placed at a disadvantage in some allocation formulas. Second, the methods used to estimate the species composition of landings change over time. This could create argument over which methodologies should be used to estimate a vessel's true catch. The rationale for application of species composition data to the individual vessel will need to be carefully explained as will the rationale for fixing the species distribution methodology at a point in time. Provided there is sufficient and adequately documented justification, it is not apparent that any of these data quality issues present insurmountable barriers to the development and implementation of allocation formulas based on catch of species and species groups (as opposed to an approach where allocations of each nonwhiting species IFQ would be based on the relative share of all nonwhiting species summed together for a particular applicant).

Of particular concern is the use of landings history data for incidental catch species, some of which have become overfished in recent years. The concerns are:

1. Until recently, some species were not sorted. Therefore, there will need to be heavy reliance on species catch composition information. While this data is not designed to be used at the individual landing or vessel level, it may be the best reasonable proxy available.
2. For some years of the proposed allocation period, most of the catch of some incidental species may have been discarded and not included in the vessel's landing records. These vessels may not receive, as part of the initial allocaiton, the IFQ necessary to prosecute some of the fisheries in which they engage.
3. Allocation based on catch history of incidental species rewards fishers who were less successful avoiding the incidental species. In some cases, these are the species that are now overfished.

For these reasons it has been suggested that consideration be given to allocating some incidental species based on an estimate of their co-occurrence with target species (e.g., trawl bycatch rates).

To Whom Does Landings History Accrue?

Permit landings history could accrue to the permit and be transferred with it or accrue to the owner of the permit at the time of landing. For the limited entry fixed gear sablefish fishery history was assumed to accrue to the permit and be transferred with it. This issue along with similar issues for vessel owners and processors are addressed in Section B.1.1.2 in a subsection on delineating the groups and assigning catch history.

B.1.4 History: Species/Species Groups to Be Used for Allocation

B.1.4.1 Discussion and Options

For some species, species composition information would need to be applied to develop allocations that are based on landings history. This would entail application of average fleet species composition data to aggregate and unspecified categories of species taken by individual vessels (e.g., applying fleet average species compositions to landings recorded as "Slope Rockfish").[3/] The other apparent choice would involve allocating all species based on larger levels of catch aggregation (e.g., allocating each individual slope rockfish species based on a permit's landings history of all slope rockfish species combined; or in the extreme allocating each individual nonwhiting species based on a permit's landings history for all nonwhiting species combined).

The following is a current list of options for *species/species groups* to be used for allocation, as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

Landings History: Species/Species Group Options	
Option 1.	Allocate Quota Shares Based on Nonwhiting Groundfish (In Aggregate) and Whiting: Allocate quota shares for each species/species group based on relative amounts of total groundfish caught/landed or processed, except whiting. Use whiting history to allocate whiting IFQ. For permits applies to permit history; for processors applies to amounts processed.

3/ Such species composition information is often specific for a given area and time period.

Option 2.	Allocate Quota Shares Based on Individual Species/Species Groups: Allocate quota shares for each species/species group based on relative amounts of each respective species/species group caught/landed or processed. For permits applies to permit history; for processors applies to amounts processed.
Option 3.	Individual Species/Species Groups Plus Proxies for Special Cases: Allocate IFQ for each species/species group based on relative amounts of each species/species group caught/landed or processed, except for each of the following species use the indicated proxy:

Species/Species Group	Proxy Species/Species Group
xxxxx	xxxxxxxxxxxxx
xxxxx	xxxxxxxxxxxxx
xxxxx	xxxxxxxxxxxxx

For permits applies to permit history; for processors applies to amounts processed.

TIQC Recommendations: The TIQC previously recommended maintaining Options 1 and 2 for analysis. Option 3 is presented to provide consistency with Option 3 of Section B.1.3. The TIQC program recommendations contain only Option 2.

Public Comments: None.

B.1.4.2 Initial Analysis

The following table compares the primary tradeoffs associated with the first two species allocation options:

Trade-Offs	
Option 1	Option 2
a simple allocation formula	a reliance on species composotion data, generally not used at the vessel level.
an allocation result that does not match up with the species mix of the recipient's landings	an allocation result that is more likely to better match the recipients typical landings
all unspecified groundfish categories would be covered under the allocation formula	some method is needed to address groundfish landings that remain in unspecified categories even after application of the species composition data

Data quality issues are addressed in the October 2004 Analytical Team Report (see Appendix H).

B.1.5 History: Allocation Periods

B.1.5.1 Discussion and Options

If allocations are based on landings history, then a period would need to be used to define what landings count toward landings history. The periods and rules could be applied to any group for

which a portion of the IFQ allocation is to be based on landings history and different periods and rules might be applied to different groups.

The following is a current list of options for *allocation periods,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

History: Allocation Period Options			
	Number of Years in Allocation Period	Suboptions: Number of Worst Years to Drop from History	
Allocation Period Option		Suboption A	Suboption B
Option 1. 1994-2003	10	None	**2 for whiting fishery history 3 for nonwhiting fishery history**
Option 2. 1994-1999	6	None	1
Option 3. 2000-2003	4	None	None
Option 4. 1998-2003	6	**None**	1
Option 5. 1999-2004 (This option applies only to processors. Option 1-4 would be applied to vessels or processors.)	6	None	**2**

Additionally, the following suboptions might be consisdered to give different weight to catches in different years.

Allocation Formula: Weighting Suboptions	
Suboption (i)	Absolute Pounds: Base allocation on a calculation using total pounds across all years (e.g., if total fleet landings were greater in 1994 than in 2003, a pound landed in 1994 will qualify an individual for the same amount of quota share as a pound landed in 2003)
Suboption (ii)	Relative Pounds: Base allocation on a calculation using the percent of the total for each species in each year (e.g., if total fleet landings were greater in 1994 than in 2003, landing 0.005% of the fish in 1994 would qualify an individual for the same amount of quota share as landing 0.005% of the fish in 2003)

TIQC Recommendations: Previous to its last meeting, the TIQC recommended Options 1-4 for analysis. Option 5 was added at their May 2005 meeting, along with the option to drop three years as part of Option 1 Suboption B. The IFQ programs recommended by the TIQC include Option 1 Suboption B, Option 4 Suboption A, and Option 5 Suboption B.

The TIQC has recommended both of the weighting suboptions for analysis, and both options are contained in the TIQC IFQ program recommendations.

Public Comments: None.

B.1.5.2 Initial Analysis

Weighting the Catch

If all years are weighted equally then years when there was more fishing opportunity would have a greater influence on the amount of IFQ allocated than years when there was less fishing opportunity. Since there has been less fishing opportunity recently, recent years would have less

influence than years in the more distant past. A suboption would weight the landings history between years such that catch representing 0.05% of the landings in 1994 would receive a weight equal to catch representing 0.05% of the landings in 2003. The following table shows how groundfish catch varied over the years during 1994-2003.

Groundfish landings in thousands of mts by all limited entry trawlers (buyback and non-buyback, at-sea processors excluded) (NMFS NWR, 3/9/04)

	Shore			Whiting Deliveries to Mothership s		All Groundfish Taken by Catcher
Year	Nonwhiti ng	Whiting	Total	(Nontribal)	All Whiting	Vessels
1994	46	80	126	93	173	219
1995	50	75	125	41	115	166
1996	52	85	137	47	132	184
1997	47	87	135	50	138	185
1998	34	91	125	50	140	175
1999	33	87	120	48	135	167
2000	29	89	117	47	136	164
2001	25	73	99	36	109	135
2002	25	46	71	27	72	98
2003	22	55	78	26	81	104

The landings for individual species vary more than the nonwhiting totals in this table. The October 2004 Analytical Team Report provides historic landings information by species (see Appendix H).

Rationale for the Years Defining the Allocation Period Alternatives

The following is a discussion of the rationale for start and end years being considered for the landings history qualifying periods.

1994. The earliest year for the allocation period options was set at 1994, because this was the first year of the license limitation program. If the program is to allocate based on permit history, there would be no permit history before 1994 unless it is determined that permit history includes vessel history prior to that time. However, given the complexities of the qualification requirements for the original license limitation program, history prior to 1994 may be difficult to track and treat in an equitable fashion. For example, LE permits were issued to vessels that replaced qualifying vessels prior to the start of the license limitation program. Additionally, LE permits were granted to vessels under construction or conversion on a par with vessels that qualified based on 1984-1988 landings history. The use of vessel landings history prior to 1994 may be inconsistent with the equal treatment afforded vessels under construction or conversion in 1994 and those that had a 1984-1988 landings history, the former having had no opportunity to establish landings history prior to their completion. The fixed gear sablefish tier program used 1984-1994 as the allocation period, an 11 year period. A 1994-2003 allocation period would be of comparable length, 10 years.

1999/2000. Regulations prior to 2000 allowed extensive use of large footropes on trawl gear. In 2000, the imposition of restrictions on the use of large footropes shifted trawl effort away from reef and rocky bottom substrates. This substantially changed fishing opportunities and the mix of species landed. An allocation period that ends in 1999 would place more emphasis on the mix of opportunities that was available when small and large footropes could be used. The period after 2000 would reflect how vessels operated under the opportunities present under the most recent management regime.

1998. This year is used to start a six year period (1998-2003) that is of sufficient length to allow vessels to demonstrate their level of activity in the fishery and landings mix. Excluding 1994-1997 puts more emphasis on recent participation patterns. The license limitation program used a four year period for vessels to demonstrate a pattern of activities that would qualify for a permit. The six-year period resulting by starting in 1998 includes landings history two years prior to the large footrope restrictions and four years under the large footrope restriction. Thus, using 1998 as a start date for the allocation period, covers a greater variety of fishing strategy opportunities than a period that excludes 1998 and 1999 landings.

2000. This year is used to start a four year allocation period (2000-2003). Four years is the period of time used to qualify vessels for the license limitation program. The use of the shorter qualifying period puts more emphasis on more recent conditions in the fishery. Changes that occurred around 2000 include, declaration of overfished status for a number of groundfish stocks, declaration of a disaster in the groundfish fishery, limits on the use of large footropes, and the creation of large closures on the shelf (rockfish conservation area closures).

2003. In order to prevent speculative effort and the consequent exacerbated management problems, a control date of November 6, 2003 was announced. This announcement put fishery participants on notice that fishing after 2003 would not be counted toward qualifying for IFQ. Since there was little fishing opportunity in the last two months of 2003, all of 2003 is being included in the allocation period.

Dropping Worst Years

Allowing vessels to drop their worst years from the allocation period reduces the need to consider hardship provisions to develop an equitable basis for allocation. The effect of dropping the worst years is to even out the distribution of IFQ among recipients.

Allocation formulas will likely be based on weight of landings for individual species. However, as an indicator of the potential effect of dropping worst years out of the allocation formula the following table shows the number of vessels for which the share of average revenues increases (winners) when the two worst groundfish revenue years are dropped from a 10 year period (1994-2003). Note that average revenues for both winners and losers increases when the two worst years are dropped. Overall, an allocation formula based on vessel revenue which allows vessels to drop their two worst years would shift 2% of the allocation from the 101 vessel that would be better off to count all years during the period to the 276 who are better off counting only the best eight years. On average, losers would loose 0.02% while winners would gain 0.01% each. Analysis of this

provision based on weights and individual species is likely to show greater shifts for individual species than this example based on aggregate revenue.

Group	Vessels	Percent	Avg No. of Years of Participation	10 Year Average Revenue	8 Yr Average Revenue	Percent Increase	Group Share base on 10 Yr Avg	Group Share base on 8 Yr Avg
Winners	276	73%	5.12	$60.2K	$72.7K	21%	44%	46%
Losers	101	27%	9.97	$208.0K	$228.9K	10%	56%	54%
Total	377	100%	6.42	$99.9K	$114.6K	15%		

Number of vessels by maximum number of years of participation (whiting and nonwhiting vessels).										
No of Years:	1	2	3	4	5	6	7	8	9	10
No. of Vessels:	74	23	22	18	12	16	19	19	26	149

Similar information can be produced for permits and buyers/processors.

B.1.6 History: Combined Permits and Other Exceptional Situations

B.1.6.1 Discussion and Options

Under the Pacific Coast license limitation program, permits may be combined to create a single permit with a larger vessel size endorsement. This is different from, and sometimes confused with, registration of multiple permits for a singe vessel (permit stacking). When permit stacking occurs, the permits remain distinct from one another and the amount of fish that vessels with stacked permits are allowed to take increases.

The following is a current list of options for *treatment of the catch history of combined permits and other exceptional situations,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

History: Combined Permits and Other Exceptional Situations		
	Option 1	Option 2
Combined permits:	All Permits Count: Consider all landings history of the permits that have been combined to be part of the landings history of the permit resulting from the combination.	Only the Base Permit Counts: The combined permit would have only the landings history associated with its permit number (landings history of other permits with which it has been combined would not accrue to the combined permit).
Illegal landings/catch:	Don't count illegal landings/catch.	Count illegal landings [not viewed as a reasonable option]
Landings in excess of trip limits, as authorized under an EFP	Do not count landings in excess of cumulative limits in place for the nonEFP fisheries.	Count all landings authorized under the EFP, including those in excess of the cumulative limits in place for the nonEFP fishery.

Compensation fish (fish taken as payment by vessels assisting in research)	Don't count compensation fish	Count such landings

TIQC Recommendations: The TIQC recommended IFQ programs include only Option 1 under each of the above exception situations. No serious consideration was given to counting illegal landings/catch.

Public Comments: None.

B.1.6.2 Initial Analysis

Permit History for Permits that Have Been Combined

For the fixed gear sablefish endorsement and tier qualification requirements, landings history was considered to be transferred with the permit; and, when multiple permits were combined to create a single permit with a larger size endorsement, the landings history of all of the combined permits were considered to accrue to the resultant permit.

EFPs

On the one hand, EFPs provided fishermen with greater harvesting opportunity than they would have had otherwise, and participants in the EFP programs may have had an advantage in accumulating catch history. On the other hand, there is no way to determine the catch history that would have been accumulated by these vessels had they not been EFP program participants and had the opportunity to fish against larger limits. Absent that opportunity, such vessels may have engaged more intensely in the pursuit of other groundfish opportunities.

B.1.7 Initial Issuance Appeals Process

B.1.7.1 Discussion and Options

An appeals process will be needed to address disputes between permit applicants and the NMFS NWR Limited Entry Permit Office over landings records or other qualification criteria.

For the groundfish license limitation program there were numerous disputes over landings records and other qualifying criteria. Under that program there were minimum thresholds to reach and, depending on whether that threshold was reached, a permit either was or was not issued. As part of the appeals process, a Council Limited Entry Permit Review Board was convened composed of members of industry.

For the fixed gear sablefish tiered endorsement program, there was also a threshold landings history that had to be reached to qualify for a particular tier. However, the only criteria considered was total landings, and the thresholds were set at levels such there was a considerable gap between the permit with the highest landings history in a tier group and the threshold amount of landings history required to qualify for the next highest tier. The amount of landings in question would have had to have been substantial in order for any change made as a result of the appeal to have altered the end

result (their tier level issued to the applicant). There were no appeals associated with administration of this program.

For an IFQ program qualification requirement based on landings history, on the one hand any additional poundage that can be demonstrated through challenging a fishticket could lead to some additional quota for the applicant. On the other hand, the amount of benefit may be small relative to the cost of the appeal, unless there are a large number of landings records in dispute. An exception to this might be a recent participation requirement. Such a requirement would present a threshold amount of landings history that an applicant must demonstrate before being able to qualify for any IFQ. In this case, an applicant coming close to the threshold but falling short may have considerable incentive to appeal.

Only one provision identified thus far: Appeals would occur through processes consistent with the Administrative Procedures Act.

At its June 2005 meeting the Council added an option specifying that NMFS develop a proposal for an internal appeals process and bring it to the Council for consideration. This appeals process would apply to more than just the initial issuance of quota shares.

TIQC Recommendations: None identified.

TIQ Enforcement Group Recommendations: Require that any proposed revisions to fishtickets undergo review by state enforcement personnel prior to finalization of the revisions.

Public Comments: None.

B.1.7.2 Initial Analysis

No options have been developed to analyze. Allowing applicants qualifying based on catch history to drop their two worst years may reduce the need to rely on appeals to address hardship provisions (see Section B.1.6).

B.1.8 Creating New IFQ Species/Species Groups After Initial Implementation

B.1.8.1 Discussion and Options

From time to time the IFQ program may need to be revised through the subdivision of IFQ already allocated. Such subdivisions may be necessary if management units are changed. Possible changes include the separation of a species from a species group, or the establishment of new management areas for a species or species group. In such an event, the following option outlines procedures that could be used to do the reallocation.

IFQ Division Procedure (Option 1)

When a management unit is subdivided, quota shares for that unit will be subdivided by issuing quota share holders amounts of shares for the subdivisions equivalent to their holdings of the shares being subdivided.

For example, let's say an individual holds 1% of the quota share for "Other Slope Rockfish" (OSR), which includes redbanded rockfish. If as a result of a new assessment redbanded rockfish is to be split out from OSR then the individual would receive 1% of the quota shares for redbanded rockfish and continue to hold 1% of the quota share for what was left in the OSR category. A similar approach would be used for an new area split. If the OSR quota share were originally coastwide and it was decided that a north-south split were needed, after the split, the same individual would hold 1% of the OSR quota for the north and 1% of the OSR quota for the south.

If a new management unit is established that is not a subset of an existing unit managed with IFQ, the Council will need to take action at that time to develop criteria for quota share allocation, unless such a provision is added to the suite of options prior to completion of the analysis for public review. An example subdivision for which such provisions would be needed might be the movement of an established geographic boundary dividing types of quota shares (e.g., the boundary used to delineate a north and south "other slope rockfish" management unit) or the addition of a new groundfish species to the program (if an IFQ program is adopted that does not cover all groundfish species).

IFQ Division Options Rejected

Options Considered but Rejected

IFQ Division Option 2 (Rejected)

When a management unit is subdivided, quota shares for that unit will be subdivided by: apportioning an IFQ account's quota shares between the new subdivisions according to the relative use of the quota share in the previous year. The previous year's history for a particular quota share account will be used to calculate the percentage of the history associated with each of the new subdivisions being established. The account's quota share will be split into the new subdivisions based on those percentages.

Under this approach, if 5% of the history associated with a particular quota share account were redbanded rockfish and 95% were other slope rockfish (OSR), then the OSR shares in the account would be split 5/95 between redbanded rockfish and OSR. The account's quota share of redbanded rockfish after the split could vary substantially from its share of the OSR quota before the split. As an extreme example, say redbanded rockfish were landed by only two vessels in a particular year. Further, say two accounts each held identical amounts of OSR quota shares for use with each vessel (1% of OSR each) and both vessels had identical landings history for the previous year. After the subdivision each account would end up holding 50% of all the the redbanded rockfish quota shares, and probably slightly less than 1% of the OSR shares.

IFQ Division Option 3 (Rejected)

When a management unit is subdivided, quota shares for that unit will be subdivided by: for each of the newly divided management units allocating to each account one share for each pound of that new unit associated with that account in the previous year.

Under this approach, there would be a complete reallocation of quota shares based on the previous year's catch history. Using an extreme case, if 1% of the OSR quota were associated with a particular account but no landings were made in the previous year in association with that account, the account would have no OSR related shares after the subdivision.

Options that would be based on quota share landings or catch history were rejected because of the complexity and costs associated with tracking quota share catch history. The rejected options are provided in the side panel.

B.1.8.2 Initial Analysis

Tracking Catch History for Quota Shares

There are several design element options under consideration for which the ability to associate catch history with quota shares is a central element. IFQ subdivision is one, and a "use-or-lose" provision is another. The IFQ subdivision options that would have required such tracking were rejected from further consideration by the TIQC and, at its June 2005 meeting, the Council rejected the "use-or--lose" provision that would have required such tracking. In both cases, the concern was the effect of these options on program costs. The discussion provided here is to document the options considered and rationale for their rejection.

Associating landings with quota shares would appear to be a complex and expensive undertaking. IFQ would be issued as quota shares. Each year, quota pounds would be issued to quota share holders based on the amount of quota share held. Quota pound accounts could be held by any type of entity but quota pounds would have to be transferred to a particular vessel in order to be used (Figure B.1-2). Thus there could be three types of accounts: quota share accounts, general quota pound accounts, and vessel quota pound accounts. Catch would be landed against the vessel quota pound accounts. In order to track catch to a specific quota share account, the portion of the vessel quota pound account against which a landing is made would have to be related back to the particular quota shares used to generate those quota pounds. The tracking of catch history to quota shares would be complex because of the many opportunities to transfer quota pounds generated from a single quota share account to quota pound accounts held by different owners and different vessels, and for quota shares to transfer from one account to another within and between years (Figure B.1-2). Consider a pound of fish landed by Vessel 5 in Figure B.1-2. First the pound would have to be attributed to one of the two quota pound accounts from which the vessel acquired its quota pounds. If the pound is attributed to Quota Pound Account 6, then it must be associated with one of three Quota Share Accounts. If it is attributed to Quota Share Account 6, and quota shares have transferred between Quota Share Accounts 6, 5, and 3, then those transfers would have to be followed and the catch history attributed to the proper quota share account. While technically feasible, the amount of programming and data which would have to be accurately recorded and maintained is substantial. Thus far, the only option that has been identified that would facilitate this type of tracking would be to serialize (assign something like a serial number to) each quota pound or blocks of quota pounds.

If some simplified accounting rules are developed, it might be possible to track history back to quota shares from a particular quota share account for one year at a lesser cost than for a multiyear tracking system. To do this quota shares and quota pounds would be "branded" with the quota share account number at the time the quota pound is issued each year. That "start of year" account number would have to remain with the quota share and quota pounds through all transfers during the year. At the end of the year, vessel catch history would be distributed among the quota pounds in the vessel's account on a proportional basis. This eliminates the need to assign pounds to a particular

quota share at time of landing and the associated data entry work. For example, if 75% of a vessel's quota pounds came from quota share account A and 25% of the quota pounds came from quota share account B, then 25% of the catch history would go to account A and 75% to account B. No matter how many times the quota shares and quota pounds transferred during the year, the start of year account number would have to be maintained in order to assign catch history at the end of the year. Because history could not be assessed and new subdivisions could not be implemented instantaneously at the end of a year, it might be necessary to maintain two or three years of branding on the quota shares. The branding would need to be maintained so that if quota shares were traded it would be possible to go back and find out what account the shares were associated with during the year that was to serve as the basis for the subdivision. Each additional year of branding maintained, depending on the frequency of quota share transfers, may result in a geometric increase in the amount of data that would need to be maintained in the system.

For purposes of quota share subdivision, two problems would have to be addressed to develop viable options based on quota share landing history:

- Treatment of quota pounds never associated with a vessel in a particular year.
- Treatment of quota shares for which no pounds were used in a particular year.

Adjustment Costs and Program Costs

The program costs would likely increase substantially under IFQ subdivision Options 2 and 3 (both of which were rejected from detailed analysis). A significant amount of data would be maintained on every quota share and quota pound transaction for only occasional use when new IFQ subdivisions are created. Thus, under Options 2 (rejected) and 3 (rejected) the burden of the adjustment costs for quota share subdivisions is largely borne by the government. However, industry would also be burdened by some increased record keeping requirements. Under the only option recommended, the burden of adjustment costs associated with IFQ subdivision would be borne mainly by quota share account owners and only at the time actual subdivision occurs. These costs would be incurred as post subdivision transaction costs associated with the trading of quota shares and quota pounds to realign their distribution with the needs of participants in the system.

Potential Targeting Incentives

Under IFQ subdivision Options 2 (rejected) and 3 (rejected) there may be incentives to selectively target fish for which it is anticipated there will be a new subdivision. Such incentive would exist if fishermen anticipate that the shares for one of the new subdivisions would be of greater value than the other subdivision. Using the example from above, if it was anticipated (1) that redbanded rockfish would be split out from "Other Slope Rockfish" in a subsequent year as a result of a new stock assessment, and (2) that redbanded rockfish quota shares would be more valuable than the remaining "Other Slope Rockfish" quota shares, under Options 2 (rejected) or 3 (rejected) , there would incentives to target redbanded rockfish. There would be no such incentive under the recommended option, and the incentive under Option 3 (rejected) could be much greater than under Option 2 (rejected).

Matching Landings to Quota Holdings

Data from the B.C. trawl IFQ fishery appear to indicate that one or two years of adjustment was required when fishers were allocated IFQ for areas and species for which they did not fish. Fishermen in B.C. were allocated a percentage of IFQ for all species and areas based on their relative catch history of all groundfish combined. Thus, they received allocations for areas and species for which they did not fish. Discarding was high for the first few years of the program relative to later years. It has been suggested that the reason for the discarding was that catch did not match IFQ holdings and it took a few years for fishermen to adjust their IFQ holding to their catch composition. Thus an option which results in a fisherman receiving quota for an area or species they do not fish (the recommended option) could result in more discards over the short term. However, for the West Coast trawl IFQ system (as specified to date) this would be an economic wastage problem, rather than a biological problem. The current system anticipates that IFQ must be held to cover all catch, and there is no credit provided for assumed discard survival. Additionally, once participants are familiar with the program, response to such changes my occur more rapidly than was observed at the inception of the B.C. system.

B.2.0 IFQ/Permit Holding Requirements and IFQ Acquisition (After Initial Allocation)

Program Summary and Main Options: Holding Requirements and Acquisition (Section B.2.0)

In order to be used, IFQ representing quota pounds would need to be registered for use with a particular vessel (deposited to the vessel's quota pound account). Only LE trawl vessels would be allowed to participate in the IFQ fishery. A vessel would need to acquire quota pounds to cover the catch for a particular trip. . . **[by the time of landing; no more than 24 hours after landing; no more than 30 days after landing].** A vessel . . . **[would not need to hold quota pounds; would need to hold at least xxx quota pounds]** . . . before leaving port on a fishing trip. An LE permit may not be transferred from any vessel for which there is deficit in the vessel's quota pound account for any species or species group (i.e., if the vessel has caught IFQ species not covered by quota pounds). A vessel with a deficit in its quota pound account could not leave port. *(Section B.2.1)*

Each year quota pounds would be issued to quota share holders based on the amounts of quota shares they hold. *(Section B.2.2.1)* For species that are not overfished, a vessel . . . **[would/would not]**. . . be able to roll-over . . . **[up to . . . 5%, 10%, 20%, 30% . . . of its]** . . . unused quota pounds or cover an overage . . . **[of . . . 5%, 10%, 20%, 30%]** . . . with quota pounds from the following year. For overfished species, . . . **[a full; a partial; no]** . . . rollover allowance would be provided. *(Section B.2.2.2)*

Quota share use would be monitored as part of the TIQ program review process. **[Quota shares not used in at least one of three years would be revoked . . . OR . . . During program review processes, if it is determined that significant portions of the available quotas shares are not being used (catch is not being recorded against quota pounds issued for those shares), use-or-lose or other provisions will be considered to encourage more complete utilization]**. *(Section 2.2.3)*

There are many program features that would facilitate new entry and participation by small fishing operations (e.g., highly divisible access privileges as compared to limited entry licenses). Additional provisions for such purposes could include . . . **[none; a low interest loan program; provisions for new entrants to qualify for revoked shares being reissued (the latter two options are not mutually exclusive)]**. *(Section B.2.2.4)*

A percentage of the quota pounds each year . . . **[would/would not]** . . . be held back from that allocated to quota share holders **. . . [up to 25%; based on analysis].** The amount held back would be awarded to proposals from fishermen and processors working together to benefit the local community. *(Section 2.2.5)*

[Anyone eligible to own a U.S. documented fishing vessel; Anyone eligible to own or operate a U.S. documented fishing vessel; Stakeholders] . . . would be eligible to own or otherwise control IFQ (quota shares or quota pounds). *(Section B.2.3.1)* Leasing . . . **[would/would not]** . . . be allowed. *(Section B.2.3.2)* Quota pounds could be transferred any time during the year. Quota shares would be transferrable . . . **[any time during the year/only at the end of the year].** *(Section B.2.3.3)* There would be no limit on the divisibility of quota shares for purpose of transfer. Quota pounds could be transferred in as little as single pound units. *(Section B.2.3.4)* Liens on IFQ are a matter of private contract and would not be specifically limited by this program. A central registry might be created as part of the program administration. *(Section B.2.3.5)* There . . . **[would/would not]** . . . be accumulation limits on the amounts of quota shares or pounds owned, controlled, or used on a vessel. The definition of control may extend beyond ownership and leasing. The range of limits being considered **varies from 1% to 50% to no cap.** The limits may **vary by species, segment of the fleet, or type of entity (e.g., vessel owner, permit owner, processor).** Accumulation limits for groundfish in aggregate may also be different than limits for individual species or species group. *(Section B.2.3.6)* There would be no direct limits on vertical integration. *(Section B.2.3.7)*

B.2.1 IFQ and LE Permit Holding Requirements

B.2.1.1 Discussion and Options

If the only requirement for landing groundfish with trawl gear is the possession of IFQ, the number of vessels participating in the fishery could potentially increase. In order to facilitate cost effective enforcement it may be useful to identify and limit the number of participants. This can be done through a requirement that IFQ be fished only from vessels with limited entry trawl permits.

Determination of when the IFQ must be held has a substantial bearing on program enforcement and monitoring costs and on discard rates (bycatch). A program that requires IFQ be held at some time prior to offloading would allow greater opportunity for ensuring compliance through enforcement activity during fishing or offloading activities. In such a case, enforcement officers in the field (USCG at-sea, or state or NMFS agents on the dock) can determine at the time of inception whether there is sufficient IFQ to cover a particular landing. Allowing IFQ to be acquired after offloading has been completed provides little opportunity for in-the-field detection of quota busting (i.e., attempts to catch fish in excess of a vessel's IFQ holdings). On the other hand, allowing a vessel to cover its landing of IFQ after offloading has been completed reduces the incentive for at-sea discards (bycatch) or underreporting a landing for which insufficient IFQ is held.

Where IFQ may be acquired after a landing is completed, greater emphasis must be placed on ensuring that catch information is accurately recorded at the time of catch or landing. Once accurately recorded, at a later time a determination can be made as to whether adequate IFQ was acquired to cover the landing. Ensuring accurate recording of catch may require at-sea monitoring and possibly weigh master presence during offloading. Such presence would ensure that both discards and landings are recorded and counted against IFQ holdings. Even if IFQ must be held before harvest operations, monitoring must be sufficient to ensure that fishermen do not try to conserve their IFQ by underreporting catch (underreporting discards or landings). Enforcement program elements are discussed in Section B.3.1.

The following is a current list of options for *IFQ and LE Permit Holding Requirements,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC recommends be maintained for more detailed analysis in an EIS.

IFQ and LE Permit Holding Requirement Options	
Option 1	**Time of Landing:** Register IFQ to the LE trawl vessel - vessels must cover the catch with IFQ representing pounds (i.e., quota pounds) at the time of landing.
Option 2	**Within 24 Hours:** Register IFQ to the LE trawl vessel - vessels must cover the catch with IFQ representing pounds (i.e., quota pounds) within 24 hours of the time of landing.
Option 3	**Within 30 Days:** Register IFQ to the LE trawl vessel - vessels must cover the catch with IFQ representing pounds (i.e., quota pounds) within 30 days of landing.

Note: For all options, only vessels with LE trawl permits would be allowed to participate in the IFQ fishery, this implies a limited entry permit holding requirement. For any vessel with an overage (catch not covered by quota) there would be no more fishing until the overage is covered. Additionally, for vessels with an overage, the limited entry permit cannot be sold or transferred until the deficit is cleared.

SUBOPTION: These options may be combined with a suboption that requires that some threshold amount of unused IFQ be held at the time a vessel departs from port.

TIQC Recommendation: The TIQC IFQ program recommendations include only Option 3, however, all three options and the suboption should be considered as part of the analysis.

The industry would need flexibility in fishing under an IFQ program. The greater the opportunity to match IFQ to catch, the less incentive there would be for discards, and the more opportunity to acquire IFQ at a reasonable price. The Canadian program has shown that total allowable catches are only occasionally taken under their IFQ program, therefore, there appears to be little risk that optimum yield (OY) would be exceeded due to vessels catching fish for which they do not have IFQ and then not being able to acquire the needed IFQ after landing.

TIQ Enforcement Group Initial Recommendation: The enforcement group recommends Option 2, including a suboption that requires some quota be held prior to departure from port, and that the vessel IFQ account have no deficits for any species.

If a landing is not covered within 24 hours, catch in excess of IFQ holdings would be forfeited and additional enforcement actions possibly taken. If there are carry over provisions, it might be that only the amount of catch in excess of the carry over provisions would be forfeited. Overages would be debited against a vessel's IFQ account and show up as a deficit balance until additional IFQ is acquired.

Public Comments: None.

B.2.1.2 Initial Analysis

When violators can be detected and cited in the field, enforcement actions can be taken more efficiently and a deterrence is created for engaging in the detectable phase of the illegal activity. However, this deterrence may lead to the adoption of less detectable methods of noncompliance, for example, underreporting discards rather than attempting to make landings of fish in excess of IFQ.

The following table compares monitoring and enforcement implications of the three IFQ holding options:

Monitoring and Enforcement Implications			
Option	When IFQ Needs to be Held to Cover Catch	In the Field Detection of Violation	Incentive for Illegal Discard or Underreporting
Option 1	Time of landing	Detect and cite for excess retained fish at time of landing (no difference in opportunity to detect unreported discards, as compared to options with grace periods).	High costs associated with tight time limit for acquiring IFQ create greatest incentive for illegal discarding. Greatest disincentive to attempt to underreport a landing.
Option 2	24 Hour Grace Period (catch must be covered with IFQ within 24 hours of a landing)	Detect potential violation at time of landing, verify w/in 24 hours, and immediately collect corroborating statements and evidence. Enforcement cost slightly higher.	As compared to Option 1: Lower incentive for illegal discarding. May have to pay high prices for IFQ on "spot" market. More opportunity for underreporting if there is no monitoring presence.
Option 3	Within 30 Days (catch must be covered with IFQ within 30 days of a landing)	Same as Option 2 except 30 day delay may substantially increase the cost of developing enforcement cases.	Lowest incentive for illegal activity. Most time to locate IFQ at best price. Opportunity to underrerpot if there is no monitoring presence would be similar Option 2.

Under provisions that might allow fishermen a grace period of up to 30 days to acquire IFQ to cover their catch, individual vessels may end up with harvest uncovered by IFQ such that their individual quota is exceeded. If this were to occur it may cause the fleet allocation to be exceeded. The ramifications of the fleet exceeding its allocation are discussed in Section B.2.2.2.2 with respect to rollover provisions.

Frequency of Departure Without Sufficient IFQ

Information on experiences with other programs was sought. The based on a series of conversations with DFO staff in British Columbia (Barry Ackerman), industry reps (Bruce Turris), DFO staff in Nova Scotia (Andrew McMaster, Jorge Hansen, Michael Campbell), Jim Sanchirico (Resources for the Future), and Dan Holland (New Zealand Seafood Industry Council).

Nova Scotia - One ton is needed to go out fishing. However, people have gone out with no quota before and the DFO has not gone after those people. Dockside monitors would record when a fisherman does not have enough pounds to cover landings. However, this information was not readily available since fishermen are allowed a certain amount of time and overage before penalties are assessed. In most cases, managers indicated that fishermen made phone calls at sea to cover what was caught. Managers contacted also indicated that fishermen have become very good at targeting.

British Columbia - No pounds are required to depart on a fishing trip. At-sea monitors note when fish is caught for which that a vessel does not hold pounds. Data on amounts of uncovered pounds was not available. Mr. Turris and Mr. Ackerman indicated that fishermen have become very good at targeting. Also, quota and pounds are often bought and sold "uncut" (combinations of quota or pounds sold together because they are typically caught together).

B.2.2 Annual IFQ Issuance

B.2.2.1 Start-of-Year Quota Pound Issuance

IFQ would be issued as *quota shares* at the time of initial issuance (Section B.1). At the start of each years *quota pounds* would be issued to quota share holders. The amount of quota pounds issued to an entity would be based on the amount of quota shares the entity holds relative to all other quota share holders. An entity holding one percent of the quota shares for a particular management unit would receive one percent of the quota pounds to be issued in a particular year for that management unit.

B.2.2.2 Rollover (Carryover) of Quota Pounds to a Following Year

B.2.2.2.1 Discussion and Options

A one year rollover provision might be used to carry unused quota pounds over from one year to the next, or to count catch in a current year against quota pounds in a subsequent year.

In order to be used, quota pounds would be registered to particular vessel (see Section 2.1). Allowing a vessel to catch more than its quota pound holdings, but counting the catch against the following year's allotment, is one means of penalizing the vessel for exceeding its quota pound holdings without creating large incentives for the vessel to discard its excess harvest (NRC 1999) (pg. 217). Particularly in a multispecies fishery, allowing a vessel to carry over some portion of its unused quota pound allotment from one year to the next creates a situation in which there is less incentive for the vessel to catch up to its full quota pound holdings and hence risk exceeding those holdings. While midseason transfers can facilitate coverage of any over catch, as the season progresses there would be less and less IFQ available for transfer to cover overages.

The following is a current list of options for *Rollover (Carryover) of Quota Pounds to a Following Year,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

Provisions for nonoverfished and overfished species may be mixed-and-matched.

Rollover (Carryover) Options		
	Non-overfished Species	Overfished Species
Option 1	No rollover	No rollover
Option 2	5% rollover	No rollover
Option 3	10% rollover	5% rollover
Option 4	20% rollover	5% rollover
Option 5	30% rollover	Full rollover (30% rollover under Option 5, 20% when matched with Option 4, etc.)

Percentage-based rollover allowances would be evaluated based on pounds held in the vessel accounts. Vessels exceeding their account holdings and exercising their option to rollover an overage, would acquire pounds from the subsequent year's allocation before going fishing again. Such vessels would have to wait for the annual issuance of pounds for the subsequent year before they could start fishing again. Rules regarding not going fishing when a vessel's account is in deficit

would still apply (Section B.2.1). Therefore, any overage to be covered by pounds from a subsequent year would be limited by the rollover allowance and by the amount of the rollover allowance the vessel was able to take in a single trip. Vessels would be in potential violation until such time as they acquired the necessary quota pounds to cover their overage.

Vessels with unused quota pounds from one year would be able to use those quota pounds in the subsequent year.[4/] The rollover provision would not allow pounds to be carried over more than one year. Concern was expressed that underages not be allowed to accumulate across many years such that potential harvest might far exceed the target in some future year. Thus, for a 10% rollover allowance, the harvest in a subsequent year could never exceed the target for that year by more than 10% of the harvest in the previous year.

The rollover provision may interact with the grace periods specified in the IFQ holding requirement provisions (Section 2.1.1). There may be some penalties associated with an overage, even if the overage is within the rollover allowance. For example, revenues may be forfeited. In such a case, a vessel could only completely avoid a penalty if the overage occurred at the end of the year such that it would be able to acquire quota from the following year to cover the overage but still be within the grace period (e.g., the 30 day grace period specified in IFQ holding requirement Option 3).

The rollover provision could also be specified such that underages are allowed but not overages.

Initial TIQC Recommendations: The TIQC IFQ program recommendations include Options 2, 3, and 5; however, all options should be considered in the analysis.

Public Comments: None.

B.2.2.2.2 Preliminary Analysis

Potential for Fleet Overages

Roll-over provisions might allow or create circumstances under which the trawl sector exceeds its allocation in a single year. The trawl fleet allocation will be some portion of the total OY for many species (for some species it may be all or nearly all of the OY). The advisability of creating a situation in which trawl overages could occur and result in exceeding the OY would need to be evaluated on a species by species basis. The potential effects of such overages on other sectors would vary depending on the circumstances. The OY is a target which we are trying to achieve over the long-term. The status of, and response to, overages may vary depending on whether the OY is

4/ Unused pounds in an account not associated with a vessel would decline to whatever level is allowed by the rollover provision. For example, if at the end of the year there were 1,000 quota pounds in an individual's account, by definition none of it was used (otherwise it would be associated with a vessel). If there is a 30% rollover allowance, the individual will be able to carry 300 pounds from one year to the next. On the other hand, a vessel may have 1,000 pounds in its account and fished against 700 of those pounds. The rollover provision would allow it to carry all of the unused 300 pounds into the next fishing year.

set at or below ABC, and whether the stock is under a rebuilding plan. Exceeding the ABC constitutes overfishing. Therefore, if OY is set to ABC, an overage in the trawl fishery could result in inseason constraints on other sectors and visa versa. For stocks that are being rebuilt, even though the OY is set below the ABC, the OY may be considered a harder cap than for nonoverfished stocks. For rebuilding stocks any provisions that might allow harvest to exceed OY in a given year, but achieve it on average, would need to be accounted for as part of the rebuilding plan. For healthier stocks for which OY is set below ABC, there may be more ability to allow OY overages so long as the system is designed to achieve the OY on average over the long-term. Overfishing (exceeding ABC) is based on a one year criteria, not a long-term average. Therefore, whatever system is developed should not result in harvest in excess of the ABC in any one year. Thus, different rules for rollover may be appropriate for different stocks, depending on whether or not the OY is set below the ABC, and on whether a stock is overfished.

In multispecies fisheries, it is highly unlikely that every vessel would be able to fully utilize all of the IFQ for every species held by the vessel. Therefore some vessels are bound to underharvest their quota pounds resulting in a fleet harvest that is less than the total IFQ issued, unless there is a rollover. The main problem with a rollover would occur in circumstances under which vessels tend to run into limits on certain species before others, such that the fleet as a whole overruns its allocation for a particular year. The situation for overfished species may present such a circumstance. With the severe constraints on the harvest of overfished species, there may be a tendency for many vessels to limit out on those species first. The "rebuilding paradox" adds to the concern in this regard. Under the rebuilding paradox, as a species rebuilds fishermen encounter it more frequently, however, due to an information lag, the higher encounter rates precede any upward adjustments to stock assessments and management targets. As a result the fishery is more constrained than would be necessary given actual stock conditions and more vessels may tend to limit out on the same species, resulting in one year fleet overages for the species. The overage would be with respect to the modeled stock biomass and productivity and the associated regulatory standards, but would not necessarily be an overage with respect to the actual biomass and productivity. With a rollover, that overharvest in one year would be taken off the following year's harvest (achieving the management objective on average). Similarly, underharvest of a particular species could result in a harvest in excess of the annual target in a subsequent year as a result of the rollover of unused quota pounds into that subsequent year.

The potential for a rollover provision to severely constrain harvest in a subsequent year is a concern. A rollover of excess harvest for a species like canary rockfish could substantially reduce the quota pounds available in a subsequent year; potentially resulting in a severe constraint on total harvest, depending on the size of the rollover allowance, whether the entire trawl fleet harvest comes in at or below its allocation, whether the harvest from all sectors comes in at or below the OY, and intersector allocation rules. The potential for a substantial constraint on harvest in a subsequent year due to overharvest in a previous year is one reason why the Council adopted discrete annual OYs for each year under the current biennial system.

For some vessels, a rollover could just become another target up to which it would fish. However, if the fishery is fully monitored at-sea, given that quota pounds count against catch, penalties would be incurred for fish caught in excess of the rollover provisions. For those wishing to avoid such penalties, the rollover provisions provide an opportunity to fully take each year's quota pounds

without incurring penalties from violations or from leaving fish "on the table". The ability to fully take the available harvest is necessary if, on average, OY is to be achieved.

A system run without the roll-over provision (accounting starts fresh each year, as under status quo management), as evaluated on a multiyear basis, may result in harvest in excess of allocations more often than a system which adjusts OYs based on previous years overage. Because of the way it would be administered, the roll-over provision might be thought of as a means by which to impose an administrative penalty for low level overages (i.e., fishing must stop until your overage is covered and if you do not acquire IFQ pounds from the current year to cover the overage you must acquire it from a subsequent year). Without the rollover, some other penalty for an individual's overages would have to be imposed. There would be associated enforcement and administrative costs, but not the harvest reduction to compensate for the overage (unless some other mechanism were created to adjust subsequent harvest).

Rollover allowances need not be set at a constant level. The system could be designed to allow the Council to recommend changes in the overage and underage allowances from year to year based on stock conditions and previous years' experiences.

TAC Overages in the British Columbia System

The British Columbia trawl IFQ system has rollover provisions and grace periods similar to what is being discussed for the West Coast system. Evidence shown in the following table indicates that the B.C. fleet underharvests its targets far more often than it exceeds targets. The number of TACs exceeded and the amount by which they were exceeded are significantly lower in the last three years, as compared to the first three years of the program.

Fishing Year	Number of TACs	Number Exceeded	TACs Exceeded - Species (Percent Over)
'97-'98	54	3	Silvergrey Rockfish, Area 5C/D (3.34%) Pacific Ocean Perch, Area 5E (1.04%) Roughey Rockfish, Coastwide (10.30%)
'98-'99	52	5	Yellowtail Rockfish, Rest of Coast (0.11%) Silvergrey Rockfish, Area 5C/D (2.62%) Pacific Ocean Perch, Area 5E (4.79%) Pacific Hake, Coastwide (7.72%) Pacific Hake, Joint Venture (10.33%)
'99-'00	52	5	Yellowtail Rockfish, Area 3C (5.40%) Yellowtail Rockfish, Rest of Coast (3.61%) Silvergrey Rockfish, Area 5E (3.12%) Pacific Ocean Perch, Area 5E (3.65%) Pacific Hake, Joint Venture (4.00%)
'00-'01	53	2	Yellowtail Rockfish, Rest of Coast (4.78%) Pacific Ocean Perch, Area 5E (2.92%)
'01-'02	53	2	Yellowtail Rockfish, Rest of Coast (0.77%) Pacific Ocean Perch, Area 5E (2.92%)
'02-'03	54	1	Yellowtail Rockfish Area 3C (0.87%)

Source: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/Groundfish/GFTrawl/GfTrawlInfo.htm

Note: The TACs are adjusted each year based on the previous year's overage or underage. Thus the yellowtail rockfish TAC that was exceeded in the 2002-2003 fishing year had been reduced by an amount equal to 2.92% of the 2001-2002 TAC (if the 2002-2003 TAC had not been adjusted downward due to the previous year's overage, the harvest would have been within the unadjusted 2002-2003 TAC). Because there is 100% observer coverage in the Canadian system, the small percent overage estimates are more likely to reflect actual overages than would be the case if such an estimate were derived for the West Coast fishery.

Rationale for Rollover Provisions from Other Systems

The following information is summarized from a series of discussions with DFO staff in British Columbia (Barry Ackerman), industry reps (Bruce Turris), DFO staff in Nova Scotia (Andrew McMaster, Jorge Hansen, Michael Campbell), Jim Sanchirico (Resources for the Future), and Dan Holland (New Zealand Seafood Industry Council).

Definition - A rollover (also called a carryover, carryunder, overage, underage, overrun) is typically a species-specific (and sometimes area specific) allowance of quota pounds that may be deducted (in the case of an overage) or added (in the case of an underage) from or to the following year's quota pounds allocation. Typically, rollovers only "roll over" for one year due to administrative burdens of extending rollovers for more than one year. Also, typically, a monetary fee is charged for an exceedance of an overage equivalent to the revenue the exceedance is worth. In addition, usually the individual that has an overage is restricted from fishing again (sometimes in that area and/or for that species for which he has an overage) until the overage is covered by quota pounds.

Purpose of rollover provisions - 1) Allows fishermen flexibility by providing another method for covering catch. This can be particularly useful in fisheries with species that have low TACs and in fisheries where avoiding catch of unwanted species is not entirely possible; 2) Decreases the incentive to discard when an individual does not have enough quota pounds to cover catch; 3) Helps enforce individual accountability; 4) Eliminates the need to penalize fishermen that catch more than they can cover with quota.

British Columbia - A 30% underage or overage is allowed for most species. Species with low TACs have low or no overage allowances. If catch exceeds quota pounds held plus the allowed overage, catch must be matched to quota pounds within 30 days or before the next fishing trip. Until the catch overage is covered by the quota pounds, the fisherman is restricted to mid-water trawl fishing in that area where the overage occurred, or for the remainder of the fishing year. Anyone owning a vessel licencse is allowed to carry an underage or overage up to 30% of pounds held.[5/] In the instance where catch exceeds the overage allowance, catch can be retained but the revenue from that catch must be relinquished to the Canadian Groundfish Research and Conservation Society, an organization that conducts research for the benefit of the fishery. The

5/ Overages are set less for some species including hake (15%), Pacific cod in certain areas (0%), and halibut (15% underage, 0% overage) to safeguard against an undesirable deviation from the TAC.

society is responsible for securing the monies owed. In addition, the pounds of fish caught in excess of the overage allowance are deducted from next year's allocation. The B.C. experience has been that penalties for violations of rollover provisions have only been assessed twice in the past seven years. The British Columbia Groundfish Trawl Management Plan can be found at: http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/mplans/plans04/trawl0405.pdf

Nova Scotia - In the past, a 20% overage has been allowed for most species. This past year, there were twenty instances of overages. Most of these overages will be matched to purchased quota before next season. If someone exceeds their holding of pounds, they are restricted from fishing. They also give up the revenue earned from the pounds they exceeded their quota. No underages have ever been allowed to roll over. Starting April 1st, overages will no longer be allowed due to the administrative burden it entails. If someone exceeds their pounds holdings next year, they will have the pounds taken from next year's allocation, will need to forfeit the revenue from those pounds, and are restricted from fishing until the pounds are covered.

Note: In Canada, in order to have an overage, one has to own a groundfish trawl licensed vessel. A license holder has to be a full time fisherman. This is defined as a person with two years experience fishing for seven months each year.

Alaska, New Zealand, Iceland, and Australia do not include rollover provisions as part of their IFQ programs.

B.2.2.3 Quota Share Use-or-Lose Provisions

B.2.2.3.1 Discussion and Options

Use-or-lose provisions would require that if quota shares are not used over a certain period of time they would expire or be revoked and reallocated. Concerns motivating consideration of this provision stem from a desire to prevent the reservation of quota by persons that may not use it for a variety of reasons. Possible reasons include acquiring large amounts of quota shares for a key species and then cornering the market for it. Non-use may adversely affect program performance with respect to the goal of increasing regional and national net benefits, and objectives pertaining to providing for a viable, profitable and efficient groundfish fishery; minimizing adverse effects from IFQs on fishing communities; and promoting measurable economic and employment benefits (Section 1.2.3).

The following is a current list of options for *Quota Share Use-or-Lose,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

Quota Share Use-or-Lose Options	
Option 1	Include use-or-lose provisions (e.g., must be used at least 1 year in 3).
Option 2	Do not include use-or-lose provisions.
Option 3	Do not include use-or-lose provisions but evaluate program performance: Identify the potential nonuse of IFQ as an issue to be evaluated in the program review process. Indicate that, depending on the findings of the evaluation, the program may be modified in the future to create use-or-lose or other provisions to address any concerns.

At its June 2005 meeting the Council eliminated Option 1 from the TIQC recommended IFQ programs.

Several questions have been raised with respect to additional detail required for the use-or-lose provision:

- How long would quota shares need to go unused before they would be revoked?
- What portion of the quota shares would have to be unused in order for this provision to be applied?
- If someone failed to utilize the required proportion, what portion of the quota shares in the account would be forfeited?
- Would the quota shares be reissued or would the value of all remaining quota shares simply be allowed to increase?

The use-or-lose provision would apply to the person owning the quota share. A requirement that quota share be used in three out of five years was considered.

TIQC Recommendations: The TIQC IFQ program recommendations include Option 1 and 3, however, all three options should be considered as part of the analysis.

Public Comments: None

B.2.2.3.2 Preliminary Analysis

Implementation Issues

The following implementation issues would need to be addressed in order to develop a viable use-or-lose provision.

1. How would it be determined which quota shares had been used and which not used?
2. If there were a requirement that quota shares be used in three out of five years or be lost, and it was determined that certain quota shares had not been used in two years, if the quota shares were then transferred to a new owner would the new owner be required to use the shares immediately? What if the new owner already has quota shares, other than requiring the owner to utilize all shares in his or her account, is there a way to determine whether he or she had used the newly acquired shares?
3. If someone owns quota shares and leases out shares (or quota pounds) to someone who owns some of his or her own quota shares, how would it be determined which quota shares were utilized?
4. How would use-or-lose provisions be applied if part but not all quota shares were transferred from one account to another?

These questions all have to do with the difficulty of tracking the use of specific quota shares across time (quota share history). Quota share use would be defined as the landing of fish against quota pounds generated by the particular quota shares. The problem can be partially illustrated with a bank account analogy. If the requirement is that some portion of the money in a bank account be used over some period of time then how would such use be demonstrated and how would the "unused" portion of the money be tagged and tracked as it is transferred from one account to another. Barriers to these types of provisions and the potential for tracking quota share history are discussed in Section B.1.8.2. That discussion indicates that it may not be feasible to track more than the most recent year of quota share history, if that.

Interaction with Rollover Provisions

While a use-or-lose provision penalizes nonuse, a rollover provision for underages (Section B.2.2.2) would be designed to accommodate nonuse. If both use-or-lose and rollover provisions are included in the program, nonuse threshold levels for the use-or-lose provision should be set to accommodate rollover provisions. Rollover provisions may be an important part of an effective IFQ program because, in a multispecies fishery catching near 100% of all quota pounds without exceeding some quota pound holdings would likely be impossible.

Potential Discard Incentive

Under the proposed system, quota shares would be used to cover catch (as opposed to covering landings). If quota shares are issued for all species (including some that are currently not fully harvested) the use-or-lose provision could result in wastage as fishermen might catch and discard fish only to ensure that they do not lose quota shares that might someday become more valuable (either for catch and retention or to cover bycatch).

Comparison With Other Programs

The following information is from a series of discussions with DFO staff in British Columbia (Barry Ackerman), industry reps (Bruce Turris), and DFO staff in Nova Scotia (Andrew McMaster, Jorge Hansen, Michael Campbell), and Jim Sanchirico (Resources for the Future).

British Columbia - There have not been any use-or-lose provisions or other design elements implemented to discourage underutilization of quota pounds. However, there are design elements that became active in April 2005 to help prevent speculative activity and "armchair fishermen." In April, quota owners were required to harvest 25% of groundfish equivalent (GFE) or they lose that 25% minus the rollover allowance. This will increase to 40% after three years and last for four years. In addition, the number of permanent reallocations (quota transfers) will be restricted to two over each of those periods of time. Purchase of quota by environmental groups that would not harvest what they owned has never been a big concern.

Nova Scotia - There are no use-or-lose provisions or other design elements implemented to discourage underutilization of quota pounds. Currently, there are "armchair fishermen". Approximately one-third of the fleet (100 of 350 quota owners) leases out all of their pounds each year to other fishermen.

Note: In order for an entity to hold pounds and not harvest them, the entity would have to either purchase quota or purchase pounds each year. In order to purchase quota or pounds, the entity would have to own a groundfish license for the IVQ fishery. To own a groundfish license, a license holder has to be a full-time fisherman. This is defined as a person with two years experience fishing for seven months each year. The Nova Scotia fishery representatives contacted felt the expense to hire a fisherman not to fish would be significant.

Therefore, one of the reasons this issue is not a concern for either the B.C. or Nova Scotia fishery is because of the requirements for quota purchases which make speculative activity or ownership without harvesting more expensive and difficult.

B.2.2.4 Entry Level Opportunities for Acquiring Quota Shares and Low Interest Loan Options

B.2.2.4.1 Discussion and Options

Section 303(d)(5)(c) of the Magnuson-Stevens Act requires that any new program "considers the allocation of a portion of the annual harvest in the fishery for entry-level fishermen, small vessel owners, and crew members who do not hold or qualify for individual fishing quotas."

Individuals who do not receive an initial allocation and lack collateral or credit history may have a difficult time acquiring IFQ, particularly in situations where IFQ price is overinflated (NRC 1999) (pg. 211). However, the NRC (pg. 210) warns that measures to facilitate new entry could defeat the purpose of an IFQ system if they expand the quota share pool or hinder consolidation.

There are also provisions in the Magnuson-Stevens Act that allow for the creation of loan programs to finance small boat and entry level participation. Section 303(d)(4) of the Magnuson-Stevens Act allows the dedication of 25% of fees collected for the IFQ program to be used to issue obligations to aid in financing:

(i) purchase of individual fishing quotas in that fishery by fishermen who fish from small vessels; and
(ii) first time purchase of individual fishing quotas in that fishery by entry level fishermen.

The criteria for qualifying under (i) and (ii) would need to be determined as part of the Council recommendations.

With respect to facilitating new entry, a central lien registry system could make loans more available (NRC 1999) (pg. 202), and taxing quota rents would reduce their price (NRC 1999) (pg. 214), though at the same time it would reduce the revenue stream from the IFQ and the purchasers ability to recover investment in the purchase of IFQ. The NRC recommends consideration of a zero-revenue auction (NRC 1999) (pg. 211). Under such a system, some percent of the IFQ reverts back to government each year for auctioning, with the proceeds of the auction returning to those forced to give up their quota shares. The advantages cited for this auction are that it provides excellent information about prices (helpful both to fishermen and bankers) and it guarantees the presence of a steady flow of IFQs in the market, ensuring an opportunity for potential entrants to gain access (NRC 1999) (pg. 145). It might also provide price information for the purpose of determining taxes to be levied against the first transfer of IFQ.

The following is a current list of options for *Entry Level Opportunities,* as identified by the TIQC through the scoping process. Bolded elements are those which the TIQC included in the IFQ programs it recommended for analysis.

Entry Level Opportunity Elements (NOT MUTUALLY EXCLUSIVE)	
Element 1	Provide a low interest loan program (qualification factors to be determined).
Element 2	Provide an opportunity for new entrants to qualify for shares revoked for program violations or, if there is a use-or-lose provision, non-use (qualification factors to be determined).

TIQC Recommendations: The TIQC recommendations for IFQ Program C include Element 2, and the other two programs (A and B) recommend that neither element be included. There was no support for Element 1 but it has been provided in order to ensure that all reasonable options are discussed.

The TIQC identified a number of provisions that would or could facilitate new entry.

The following are some provisions that would help ensure opportunity for new entry:
- Providing unlimited divisibility in the size of share blocks traded.
- Providing a central lien registry to facilitate obtaining financing by increasing security in the collateral and therefore lower interest rates.
- Limiting ownership to individuals.

A zero revenue auction should not be considered as there should be sufficient trading to ensure the availability of quota on the market for purchase by a new entrant.

Public Comments:

Comment	Source
Provide low interest loans for community nonprofit organizations to purchase IFQ	ED
Provide low interest loans for new entrants and younger fishermen to purchase IFQ	Survey (ED)
Allocate to new entrants or provide IFQ for purchase from: IFQ reclaimed from IFQ already distributed, IFQ created from increasing TAC, forced sale in an auction (each year existing IFQ holders would provide a portion of their IFQ for annual auction).	Survey (ED)
Provide low interest loans to assist "lease-dependent" fishermen	Survey (ED)

B.2.2.4.2 Initial Analysis

Option 1 is a loan program. The amount of fees collected under IFQ programs is currently limited to 3% of exvessel value. It is likely that administration of the program, including tracking and monitoring, would require the collection of the maximum fees allowed, leaving no additional money for a loan program. Some other source of funding would be required. Loan guarantees, the use of Capital Construction Fund accounts or other such measures might be options which would reduce the cost of entry.

Under Option 2, a source of IFQ would need to be identified in order to provide an amount of IFQ each year for new entrants. There are other program provisions under which IFQ might be forfeited, either as part of an enforcement action or if a viable use-or-lose option is implemented. Such forfeitures might be used for supporting new entrants. Another option would be to issue a certain amount of new or recalled[6/] quota share each year to new entrants. The effect of these two mechanisms (new shares and recall) would be mathematically equivalent with respect to the reduction in the pounds represented by the quota share held by each existing participant.

6/ The mandatory return to the government of a certain portion of an entity's quota shares, independent of any enforcement action or penalty (e.g., all quota share holders return 1% each year).

Whether to qualify for a loan program or the reissuance of shares, qualifying requirements would need to be developed in order to identify and prioritize the various classes of beneficiaries.

B.2.2.5 Community Stability Holdback

This section was added in May 2005. Further development of the options and analysis is needed.

B.2.2.5.1 Discussion and Options

The TIQC discussed the issue of community needs with respect to an IFQ program. The following proposal has been put forward and is included as part of IFQ Program C of the TIQC recommendations from its June 2005 report.

> Set aside up to 25% of the nonwhiting shoreside trawl sector allocation each year and allocate that amount as quota pounds for joint fishermen/processor venture proposals, ranked on the basis of objective criteria that evaluate benefits to local communities. Criteria for these proposals would have to be developed but would include reference to the goals and objectives identified for the proposed action (Section 1.2.3) and encourage other community groups (Port, Chamber, etc.) to lend their support to the proposals being submitted. The program should be designed with simplicity, adaptability, fairness, and potential revenue production as core elements.

The following additional details were submitted by some TIQC members for discussion/analysis and are included as part of the TIQC June 2005 report.

> The intent of the community hold back is to economically benefit coastal communities. Market development and enhancement, flexibility/coordination with market forces, facilitation of new operations, and industry stabilization at the local level are all desired outcomes.
>
> This program should be simple and straightforward – using a point system based on specific measurable criteria. Program models in Alaska, Canada, and the Shetland Islands are more subjective and would not be a good fit for the West Coast because of wide ranging differences community to community and the profusion of lawsuits based on subjective decisions.

Purpose

> Quantitative benefits for coastal communities.

Description

Community set aside quota awarded to fishermen and fishermen/processors or others who submit proposals to a review panel which will rank the proposals based on a point system designed to specifically bring additional fishery economic benefits to coastal communities. This quota is in addition to the initial quota allocation for any specific fisherman.

Quantitative criteria would be used as a simple and clear means of ranking proposals received for review. These criteria are specifically linked to TIQ program Goal 1: *Increase regional and national net benefits including improvements in attainment of economic, social, environmental objectives and attainment of fishery management objectives.*

These are further linked to specific TIQ Program Objectives:

1. Provide for a viable, profitable, and efficient groundfish fishery;
5. Increase stability for business planning;
6. Increase operational flexibility;
7. Minimize adverse effects from IFQs on fishing communities; and
8. Promote measurable economic and employment benefits through the seafood catching, processing, distribution elements, and support sectors of the industry.

Who Reviews Proposals and Awards Quota

By using a point system and quantitative criteria, NMFS should be able to rank these proposals. Alternatively, a community committee could be formed with adequate community representation. PSMFC in consultation with community and fishery representatives could also rank these proposals.

Who May Submit Proposals

1. Fisherman(men) and processor(s) who meet the qualifying criteria set forth under TIQ Program design alternative Section B.1.2. Qualifying Criteria. These would be joint proposals
2 Fisherman(men) meeting the qualifying criteria set forth under B.1.2
   a. alone
   b. in association with a coastal community member or coastal community organization (i.e., community economic development department; port district, etc.)
   c. in association with a person or organization from outside the community.

Criteria for Ranking Proposals (* see notes)

- *Stabilization - (max 25 points*) (Objectives #1, 5, 7*)*
  Additional product flow into community
  Maintain product flow into community
  Additional traditional processing
  Maintaining traditional processing

- *Innovation - (max 25 points)* (Objectives 1, 5, 6)
  New or additional niche marketing
  New or additional value added products
- *Employment Opportunity* - (max 25 points)* (Objectives 7, 8) (see notes)
  Number of coastal community jobs created
  Increase in jobs
  Maintaining jobs, avoiding loss
- *Personal Quota Committed - (max 25 points)* (Objectives 7, 8)
  Amount of quota committed to community proposal

(Max 100 points total)

Additional Criteria for Subsequent Years and Applicants Who Re-Apply

- *Evaluation of Follow on Proposals - (max 10 points)*
  For existing projects, additional consideration will be provided for meeting
  or
  exceeding performance indicated in prior award.
  (Max of 110 points possible when subsequent year criterion in effect)

Timing of Awards and Duration

Awards made in January of each year, held for two years. May reapply to continue.

Program Review

Program reviewed and adjustments made as part of the overall TIQ Program review.

Notes:

- *Net benefits measured in dollars, where possible.*
- *Jobs created measured not only in employment numbers. Additional factors include full time vs. part time, year around vs. seasonal, wage, duration, training, and other benefits.*
- *Small communities compete equally with larger communities. Point ranking based on the merits of the individual community.*
- *In total personal quota committed, the intention is to promote collaboration between parties to foster investments into community.*
- *Suggest 10% of initial quota allocation held back for Communities.*
- *Program intent is to award quota among multiple applicants in any single proposal review process. For example, the top five qualifiers may share the quota setback amount, or minimum requirements can be established for proposal scores to receive a percentage of hold back quota. How much is enough for any individual project needs to be determined.*

TIQC Recommendations: This option has been included in one of the IFQ Programs recommended for analysis by the TIQC.

Public Comments: None.

B.2.2.5.2 Initial Analysis

To be developed.

B.2.3 Transfer Rules

Transferability promotes economic efficiency but often the potential structural changes to the fishing industry and fishing communities resulting from transfers are perceived as a threat. These perceived threats include the concentration of quota shares, a lopsided distribution of economic gains, and a change in social relations among members of a community (NRC 1999) (pg. 208).

To further goals of economic efficiency and rationalization, transferability should be as free as possible. Restrictions on transferability may be warranted to promote other goals such as protecting the owner-operator mode of production, preventing absentee ownership, or protecting fishery dependent coastal communities (NRC 1999) (pg. 208).

B.2.3.1 Eligible Owners/Holders (Who May Own/Hold)

B.2.3.1.1 Discussion and Options

In this section, the issue is who will be allowed to acquire IFQ **after** the initial allocation. In Section B.1.1 the issue addressed was identification of the groups that would receive an initial allocation of IFQ. In discussing who may own or hold IFQ one of the major concerns of the TIQC is that there not be absentee ownership of IFQ or ownership of IFQ by interests who would leave the IFQ unused. These concerns relate to the goal of increasing regional and national net benefits and objectives pertaining to providing for a viable, profitable, and efficient groundfish fishery; minimizing adverse effects from IFQs on fishing communities; and promoting measurable economic and employment benefits (Section 1.2.3).

The NRC study notes that some communities may be heavily dependent on fishing for social, cultural, and economic values and/or are lacking in alternative economic opportunities; and recommends that Councils be permitted to "authorize communities to purchase, hold, manage and sell IFQs" (NRC 1999) (pg. 206). In making this recommendation the NRC states that Councils should determine the qualifying criteria for a community that is permitted to hold quota.

The potential for foreign ownership and control of IFQ is another issue related to determination of the class of eligible owners. In this regard, the NRC recommended that Congress take the lead in determining eligibility of foreign individuals and companies to receive IFQ in an initial allocation. Because of foreign ownership interest in the existing fishery, limitations on foreign ownership could be problematic and discriminate against U.S. co-owners and investors. Also, bearing on this issue are current trends toward the liberalization of direct foreign investment worldwide (NRC 1999) (pg. 211). Groundfish LE permit ownership in the current license limitation system is controlled with provisions that prohibit ownership of permits by anyone not eligible to own a U.S. documented fishing vessel.

Other groups to consider for potential eligibility to acquire IFQ include crew members, skippers, vessel owners, permit owners, members of fishing communities, those that may wish to hold IFQ for their nonuse benefits (e.g., members of conservation organizations), individual members of the general public, those with security interest in the IFQ (e.g., a lender), and any other person (including business entities such as corporations).

The following is a current list of options for *Eligible Owners/Holders,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis. The options apply to both quota shares and quota pounds, and describe eligibility criteria for owning or holding (leasing) quota.

Options for Eligible Owners/Holders	
Option 1	Any entity eligible to own a U.S. documented fishing vessel.
Option 2	Any entity eligible to own or operate a U.S. documented fishing vessel.
Option 3	Stakeholders: include owners and lessees of LE permits or vessels, skippers/crew, processors, buyers, communities. *(NOTE: If ownership is restricted to certain classes, criteria will need to be established to define membership in these classes.)*

TIQC Recommendations: The TIQC's main concern is that anyone currently participating in the fishery should be allowed to continue to do so and to acquire IFQ. It is the TIQC's understanding that certain provisions of the AFA are currently allowing participation by a limited number of entities that would otherwise not be eligible to own a U.S. documented fishing vessel. It is the TIQC's understanding that Option 2 would accommodate those entities but Option 1 may not. On this basis, the TIQC has included only Option 2 in its recommended IFQ programs. However, the other options shown here should be considered in the analysis.

The "stakeholder" option was specified to increase the likelihood the quota shares and the benefits therefrom are held by members of individual fishing communities, such that the communities benefit.

Public Comments:

Comment	Source
Allow communities to form nonprofit organizations and acquire IFQs	ED

B.2.3.1.2 Initial Analysis

Initial allocation of IFQ generally determines how windfall gains and losses will be distributed. The question of who will be allowed to own IFQ is one of control over future benefits from the fishery.

In general the more participants and more types of participants in the IFQ market the closer IFQ prices will come to reflecting their true value given their full range of alternative uses, and the higher the likely price for IFQs.

Groups with social concerns can be accommodated at least in part through the scope of eligible owners. For example, communities and others that are concerned about losing the benefits of fishing

activities can be provided the opportunity to organize themselves and acquire IFQ, unless the IFQ ownership provisions prohibit them from doing so.

If the class of persons eligible to own IFQs is to be limited, there would need to be rules for establishing membership in those classes. For example, if a qualifying class is "crew members", among the states there is not consistent licensing of crew members or other means of crew identification. Therefore some system would need to be developed to identify members in this class. Section B.1.1 identifies issues pertaining to the identification of members of the following groups of fishery stakeholders: vessel owners, permit owners, vessel operators, crew members, buyers, wholesalers, processors, and communities.

If the option is selected where classes of persons must be identified, where the person in an eligible class is a partnership or corporation, a determination would need to be made as to whether the individuals holding an interest in the partnership or corporation can separately qualify to own or lease IFQ or whether only the partnership or corporation itself may own or lease IFQ. If the latter is the case, a person who owns a vessel in a partnership might not, on his or her own, separately own IFQ. If the former is the case, then Option 2, which attempts to restrict ownership to stakeholders, could allow a larger class of persons to own IFQs than Option 1.

B.2.3.2 Leasing and Sale

B.2.3.2.1 Discussion and Options

Leasing can allow fisheries to adapt to change and cover overages and incidental catch through the short term transfer of IFQ, rather than through discarding (NRC 1999) (pg. 208).[7/] However, under a system in which quota pounds are issued annually based on the amount of quota shares held, short term transfers may be achieved by selling quota pounds while retaining quota shares. One of the primary social concerns with leasing is the potential for absentee ownership in the fishery. Provisions that might be considered to restrict leasing (if such restriction is desirable) include limiting the proportion of the total quota which may be leased, the frequency of leasing, and taxing leases (NRC 1999) (pg, 208). The NRC recommends permanent transfers generally be allowed with restrictions on to whom or where the quota may be transferred, if necessary to address concerns about absentee ownership, geographic distribution of the fishery, or other structural features of the industry.

The following is a current list of options for *Leasing and Sale,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis. The options apply to both quota shares and quota pounds, and describe eligibility criteria for owning either (note: quota pound leasing and quota pound sale would be roughly equivalent as, once used, quota pounds convey no ongoing harvest opportunity[8/]).

7/ With 100% accounting of catch using observers or other means of monitoring, discarding to avoid the need to cover catch with IFQ would not be an option.

8/ Quota pound leasing might be used within season as a hedge or option. One fisherman might lease his/her quota pounds to another in case they are needed but if they are not needed by a certain date they return to the lessee.

Duration of Transfer - IFQ Leasing and Sale Prohibition Options	
Option 1	Permanent quota share transfers only - leasing prohibited. Permanent transfers and leasing of quota pounds is allowed. (Note: Quota pounds are valid only for one year and expire at the end of the year (unless there is a rollover provision, see Section B.2.2.2); quota pound transfers do not affect ownership of the quota shares).
Option 2	Permanent transfers and leasing of quota shares and quota pounds allowed.
Suboption	Suboption: Prohibit all permanent quota share transfers (leasing only) during the first year of the program.

TIQC Recommendations: The TIQC recommended IFQ programs include both Options1 and 2 but not the suboption. However, the suboption is included for consideration in the analysis.

Option 2 allows lease and sale of IFQ. A suboption under Option 2 would restrict permanent transfers of quota shares in the first year(s) of the program in order to allow industry members to become familiar with them, gain a greater understanding of their value and make better business decisions when buying and selling quota shares. Concern was expressed that restrictions on transfers would have two negative effects. First, for the individual fisherman the initial allocation is not likely to match recent catch, and exchange of quota share among fishermen would likely be necessary to allow them to achieve an IFQ mix that better matches their recent catch mix. Second, the transfer of IFQ among fishermen is necessary for fleet rationalization, and not allowing permanent transfers would delay rationalization.

Prohibiting leasing would be intended to reduce the opportunity for absentee ownership in the fishery.

Public Comments:

Comment	Source
Compel quota holders who have historically leased their permits to others to continue to lease their IFQ to those individuals.	Survey (ED)

B.2.3.2.2 Initial Analysis

Participants in the New Zealand fishery have reported that in the first year of the program some individuals made unwise transactions as they did not have a good understanding of how the program would work. They recommended that during the initial years of a new program consideration be given to prohibiting the permanent transfer of IFQ.

The analysis done for the Amendment 6 groundfish license limitation program showed that while rules may be put in place to prohibit leasing or sale of a permit, private contractual agreements provide many opportunities to circumvent the intended effect of such prohibitions.

B.2.3.3 Limits on Time of Transfer

B.2.3.3.1 Discussion and Options

One reason for considering a restriction on the time of sale is to facilitate tracking IFQ, particularly if roll-over provisions for catch overages are to be applied to quota share or if the IFQ tracking system is not a real time electronic system. In some programs there are restrictions on transfers of

quota shares at the end of the year in order to facilitate the settling of accounts and issuance of quota pounds for the subsequent year.

The following is a current list of options for *Time of Transfer,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis. The time of transfer options apply to quota shares only and not quota pounds. Quota pounds would be transferable any time during the year.

Time of Year for Quota Share Transfer Options	
Option 1	Allow transfers of quota shares any time during year.
Option 2	Allow transfers of quota shares only at the end of year.
Option 3 (added by Council June 2005)	Prohibit the transfer of quota shares during the last two months of the year, if it will help reduce administrative costs or is an administrative necessity.

On a related topic, an embargo on transfer of quota shares was considered for situations in which a vessel had catch not covered by quota pounds. However, because the quota shares underlying a vessel's quota pounds may be held by someone not directly associated with the vessel, these options were eliminated as not reasonable.[9/] They were replaced with a limit on transfer of permits (see Section B.2.1).

TIQC Recommendations: The TIQC IFQ program recommendations include only Option 1. Option 2 is maintained for purpose of analysis and possible need with respect to administration of the IFQ program. [Option 3 was added by the Council at is June 2005 meeting.]

A restriction on the inseason transfer of quota pounds has not been suggested because vessels need to be able to adjust their quota pound holdings to match the composition of their catch.

A transfer embargo on IFQs was considered but rejected because of difficulty relating quota pounds to the quota shares for which transfer would be restricted. If kept, the transfer embargo provision should be revised such that the embargo would only apply to quota shares owned by the vessel. Individuals who lease their quota pounds to a vessel should not be penalized for the vessel's excess harvest.

Public Comments: None.

B.2.3.3.2 Preliminary Analysis

The need for and costs of restrictions on time of tranfer, or lack thereof, will likely become more apparent as the program is further developed. A limitation on the time of year of transfer might be

9/ The TIQC has recommended elimination of the transfer embargo options.

Transfer Embargo Options	
Option 1	Quota shares may not be transferred from any account for which there is a deficit of quota pounds (i.e., any account for which catch exceed quota pounds for at least one species).
Option 2	Quota share pounds may be transferred from an account even if it is deficit for some species.

useful in the administration of the program. Rules such as provisions allowing for roll-over may affect the need for restrictions on transfer.

Restrictions on transfers of quota shares from accounts with a deficit of quota pounds (catch in excess of quota pounds) was proposed to serve an enforcement and deterrence function. The restriction sought to improve the likelihood that quota shares would be available if necessary to cover a deficit with pounds from a following year (if there is a rollover provision in place), or would be available for seizure as a penalty, if the deficit is part of a sufficiently severe compliance problem. However, there was an equity concern in that the quota shares underlying a vessel's quota pounds may be held by someone not directly associated with the vessel. Additionally, a vessel may acquire quota pounds from multiple sources, and it would not be possible to associate the overage with any particular source of quota pounds. These options were eliminated as not reasonable.

B.2.3.4 Divisibility

B.2.3.4.1 Discussion and Options

Limited divisibility (blocked quota shares) combined with limits on the number of blocks that can be stacked were used in Alaska to try to preserve the character of the fishery. With the limits on stacking, quota shares in small blocks were expected to preserve small fishing enterprises and be available at substantially lower prices. In the Alaska system, only a portion of the quota shares were blocked and the remainder were completely divisible. Greater divisibility of IFQ may increase the number of transactions and hence the administration costs.

The following is a current list of design elements for *Divisibility,* as identified by the TIQC through the scoping process. Options have not been developed and the design elements are not mutually exclusive. Bolded elements are those which the TIQC included in the IFQ programs it recommended for analysis.

Elements of Divisibility Provisions	
Element 1.	Quota Shares, issued as a portion of total available harvest, would be nearly unrestricted in their divisibility - "many decimal points".
Element 2.	Quota Pounds, issued annually based on quota shares a person holds, would be divisible down to a single pound of fish.

TIQC Recommendations: The TIQC recommends no limit on divisibility and no blocked shares. The option of requiring quota shares and quota pounds be held in larger blocks was rejected from consideration in order to provide greater flexibility. Requiring that IFQ be traded in blocks may increase incentive for discards. Fishermen faced with needing only small amounts of IFQ to cover incidental catch might chose to discard when faced with the cost of buying blocked shares in excess of their need. Allowing the purchase of small quantities will allow individuals to tailor their IFQ holdings to their needs. It will also make it easier for people to work their way into the fishery. Ability to transfer IFQ in small increments will make it easier to take full advantage of allowed harvest, generating the associated benefits for the nation.

During TIQC discussions it was noted that if transactions go through brokers, transaction costs should largely be privatized. Therefore, there should not be concerns over government costs associated with high divisibility of IFQ.

Public Comments:

Comment	Source
Consider blocked quota shares	ED-Survey

B.2.3.4.2 Preliminary Analysis

Blocking quota shares with stacking limits could result in some quota being substantially lower in value on a per unit basis. Two factors may bear on the relevance of the Alaska system to what might be desirable for a West Coast trawl IQ program. First, the Alaska sablefish and halibut programs were not for multispecies fisheries. There was little need to acquire quota shares to cover incidental catch. Second, the blocked quota share program has since been repealed.

If quota shares were available in both blocked and unblocked form with a limit on the number of blocks that could be stacked, individuals entering the fishery could either acquire blocks (likely available at a lower price per unit of quota) or divisible quota in what ever size increment they could afford.

B.2.3.5 Liens

B.2.3.5.1 Discussion and Options

This section focuses on whether or not liens should be allowed to restrict transfer. Closely related is the question of creating a central lien registry. Such registries are discussed in Section B.3.1 and B.3.4.

The NRC (NRC 1999) (pg. 202) found that "Individuals who do not receive an initial allocation, or those who received a small quantity of quota, may find it difficult to obtain bank financing to purchase shares because they lack acceptable collateral." Lenders have expressed concern that liens on IFQ might be passed on to IFQ purchasers without the purchaser's knowledge. This situation may undermine the confidence of lenders, making it more difficult for potential new entrants or existing operations to gain the financing needed to purchase IFQ. The Magnuson-Stevens Act includes creation of a lien registry system, but none has been implemented to date.

TIQC Recommendations (Comment): Liens are a matter of private contractual arrangements. The TIQC believes that placement of liens should not be restricted and that liens can and should be facilitated through a central lien registry. Encourage NMFS to establish the central lien registry system mandated under the Magnuson-Stevens Act, and specify that IFQ ownership information be available for public review (see Sections B.3.1 and 3.4).

Public Comments: None

B.2.3.5.2 Preliminary Analysis

The ability for new entrants to acquire financing for purchasing IFQ may rest in part on their ability to use IFQ as collateral. No restrictions on the use of IFQ as collateral for loans have been proposed, however, lenders should be advised that such IFQ may be modified or extinguished through plan amendment, regulatory amendment, or change in the law, without compensation to those with an interest in the IFQ. IFQ may also be revoked as part of an enforcement action, without compensation.

If IFQ is accepted as collateral, a central lien registry system would help provide assurance to lenders that their interest in the IFQ, while attenuated by potential government action that might modify or extinguish the IFQ, would not be threatened by other lien holders. Consideration could be given to the creation of a central or West Coast lien registry system for IFQ and other Federal fishery permits.

B.2.3.6 Accumulation Limits

B.2.3.6.1 Discussion and Options

Accumulation limits may be used to promote equity by preventing a few IFQ holders from acquiring excessive market power and thereby adversely affecting other participants. Accumulation limits may also be an indirect way to encourage broader geographic distribution of quota shares. While some IFQ programs rely solely on antitrust law to prevent excessive concentration of shares, experience has shown this not to be sufficient to prevent problems resulting from excessive concentration of IFQ (NRC 1999) (pg. 209). The NRC also notes that concentration limits may not be very effective if ways can be found to circumvent them.

Section 303(d)(5)(c) of the Magnuson-Stevens Act requires that any new program "prevent any person from acquiring an excessive share of the individual fishing quotas issued . . ." The NRC has recommended that all IFQ programs define excessive shares, including specifying how that is measured, and prevent the accumulation of "excessive shares" of IFQ (NRC 1999) (pg. 210).

The following options for ownership, control and use caps were developed by the TIQC through the scoping process. Note that different options can be selected for ownership, control and use limits, and for different species, groundfish species as well as for different divisions of the trawl sector (e.g., nonwhiting and whiting sectors.)

Options for IFQ Concentration Limits						
	Non-Whiting Groundfish			Whiting Fishery **(Separate Matrix for Each Sector Specified in the Options Specified for the Management Regime, See Chapter 2)**		
	Ownership	Control	Use by a Vessel	Ownership	Control	Use by a Vessel
Option 1	1%	1%	1%	5%	5%	5%
Option 2	5%	5%	5%	10%	10%	10%
Option 3	10%	10%	10%	25%	25%	25%
Option 4	50%	50%	50%	50%	50%	50%
Option 5	No Cap	No Cap	No Cap	No Cap	No Cap	No Cap

If an entity is eligible to receive more than the cap as part of the initial allocation, then that entity would be allowed to receive and use the amount in excess. Control may be broadly defined to include more than just ownerhip or leasing.

A person's ownership interest in an entity should be taken into account when calculating that person's holdings. For example, if a person has a 1% interest in a corporation, then only 1% of the IFQ owned by that corporation should count toward that person's cap.

The caps may be for individual species and/or total groundfish IFQ. A total groundfish cap should be lower than the individual species cap so that an individual cannot control the maximum amount of IFQ for every species. This provides another constraint on accumulation. The caps would need to take into account special situations, such as specialty fisheries, emerging or low utilization fisheries, or those with a skewed geographic distribution such that they are harvested by relatively few vessels compared to the size of the fleet (e.g., whiting, arrowtooth, sanddabs, POP, dogfish).

If options are developed under which different caps apply to different types of entities then there needs to be a definition (categorization criteria) for each entity to which a different accumulation cap would apply.

TIQC Recommendations:

Due to the unavailability of summary data, the limits included in the TIQC IFQ program recommendations are broad and not specific with respect to the various species or groups to which they might be applied. Once the needed summary data is available, it may be possible to craft more specific options for consideration.

The TIQC had extensive discussions on whether or not there should be different caps for different types of entities (for example, one cap for permit owners, and other caps for processors, communities, crew members, etc.). It was argued by some that processors need to be able to control larger portions of the IFQ in order to be economically competitive. While large, relative to the West Coast, the total product they would control through IFQ would be small in the context of combined West Coast, Alaskan, and British Columbia fisheries and markets. Small caps could put them out of business. Others argued that processors did not need to control IFQ in order to benefit from landings. Concern was expressed that if larger caps were created for some entities, others would find ways to qualify for the larger cap (for example, by acquiring a processor license). Those supporting a separate cap for processors felt that qualifications could be established that would make it difficult to qualify for the larger cap unless a person truly belonged to that class of individuals. Four TIQC members wanted to include separate caps for processors and other entities as a recommended option for Council consideration in this report. There were nine in opposition to separate caps for different types of entities. Minority position: Provide different caps for different types of entities (e.g., processors, communities, etc.)

The TIQC rejected the idea of not taking into account a person's ownership interest in an entity when evaluating an ownership accumulation cap. Under such an option, for example, a corporation would be charged with controlling all quota share held by any member of the corporation and the individual members would be charged with holding 100% of the quota shares held by the

corporation. Under the recommendation of the TIQC if an individual holds only a 1% interest in a corporation, then only 1% of that corporations quota share count toward the individuals cap. The TIQC believed that to do otherwise would hold a corporation or partnership at "ransom" for the holdings of a minority partner.

Under the British Columbia system, value equivalents are established, using Pacific Ocean Perch as a base unit. The Committee discussed the possibility of basing accumulation limits (caps) on measures of value and decided it would add too much complexity to the program.

Caps should be considered to limit the amount of IFQ held (owned or leased). However, the TIQC recommended analysis of broadening the definition of control to include more than just the ownership and leasing of permits. Control should include any ability to direct the use of quota share. For example, employers might try to acquire more control than allowed under the cap by having employees hold quota shares under their own name. Full disclosure of information on control should be required along with appropriate penalties for nondisclosure. At the same time, it should not be assumed that just because an employee owns quota share, that employee's use of the quota share is at the direction of his or her employer. The intent of using a broader definition of control is to allow prosecution of those who might use subterfuge to circumvent the intent of accumulation caps.

Independent Experts Panel Comment: If IFQs are area specific, the Council may wish to specify area specific accumulation caps.

Public Comments:

Option	Source
Include a no-cap option	WCSPA
Consider different caps for different types of owners (e.g., vessels, buyers, communities)	WCSPA
Apply the same caps to all types of owners	1 individual
Caps for processors should take into account any IPQ held (NOTE: applies only if there is IPQ)	1 individual

B.2.3.6.2 Preliminary Analysis

To address the concern that an excessive share of an individual segment of the fishery not be controlled by a single entity, caps would be applied to individual species IFQ and for total groundfish IFQ. Additionally, by essentially allowing more vessels to participate in the fishery, vessel caps may help reduce the chance that some ports may be bypassed due to consolidation of harvest.

A limit on control would be more restrictive than a limit on ownership. Since it may become relatively easy to circumvent limits on control or ownership of IFQ, placing limits on the concentration of catch by a single vessel may help spread the benefits from harvest more widely than the other types of caps.

An important issue pertaining to ownership and control is the degree of control required before IFQ counts against the ownership or control cap. Under the sablefish tier limit program, if a person has any interest in the ownership or control of a permit the whole permit counts against that person's cap. A vessel owner is considered to control a permit if the permit is registered for use with that person's vessel. Under the sablefish program, if a person has the maximum (three permits) for his or her vessel and he or she has a partial interest in a second vessel, no permits could be fished from the second vessel. The Alaska IFQ system is similar in that if an individual has any ownership interest in an IFQ account, all IFQ in the account counts against their cap.

Ownership and control of IFQ will likely be determined in part on the basis of ownership or control of IFQ accounts. IFQ would be held and tracked in accounts because it is likely to be fungible (interchangeable) and divisible much like money. However, an IFQ account may or may not be associated with a permit or vessel. In order to be used, however, quota pounds held in accounts not associated with a vessel will likely need to be transferred to an account associated with a vessel.

If rules parallel to the sablefish permit stacking program were in place under an IFQ system, a person who:

- owns IFQ and fishes it off his or her vessel and
- has at least part ownership in a second vessel that is leased out to someone else;

could have counted as being under his or her control all of the following:

- IFQ held under direct ownership,
- IFQ held by a crew member that he allows to be fished off his vessel,
- IFQ he leases from someone else to fish off his vessel,
- plus any IFQ associated with the vessel he leases out, including
  - IFQ owned by the person to whom he leases his vessel,
  - IFQ the vessel lessee leases from other quota share holders, and
  - IFQ fished by crew members off the leased vessel.

The TIQC has recommended control be based on percent interest in an IFQ account. Therefore, if a person had a 50% interest in a vessel then only 50% of any quota pounds registered for use with their vessel would count against their personal cap.

The options developed by the TIQC include the potential for there to be different accumulation limits for different types of entities. This would require the developing criteria for qualifying each type of entity for which a different cap applies. The different licensing requirements for vessels, processors, and buyers in each state are described in Section B.1.

Setting vessel caps greater than ownership caps would allow a vessel owner to hold the maximum quota allowed but still provide an opportunity for crew members to hold IFQ and fish them off the same vessel. As compared to owners of single vessels, owners who choose to maintain multiple vessels will have a greater need to gain cooperation from other IFQ holders in order to fill out the IFQ needs for their vessels without exceeding ownership caps.

To allow for greater potential efficiency in certain targeting strategies, individual species caps may be set higher than total groundfish caps. The whiting fishery is notably different in this regard and so greater degrees of consolidation (larger caps) may be appropriate.

Three important factors to consider in setting cap levels are the effects of different concentration caps on efficiency, market control, and the distribution of benefits among communities, crew, etc. In this regard the history of fleet consolidation and catch per vessel in the B.C. individual quota fishery may be instructive. Before the individual quota program in B.C. there were 117 vessels in the groundfish fishery. After implementation of the IFQ program, there were 78 active vessels (in 2003). Total catch of nonwhiting species was around 40,000 mt in 2003, an average of 500 mt nonwhiting groundfish harvest per vessel.

If the accumulation limits are expressed as percentages of the total IFQ for a management unit, then consolidation may become very restricted under area management. It may be appropriate to set area caps higher than coastwide caps, so that vessels can catch enough fish to be economically viable.

Caps may affect a vessel's ability to cover overages. For example, if a vessel owns IFQ up to the level of a vessel cap and then exceeds the cap, the only way to cover the overage would be to violate the cap.

While it will be difficult to determine the optimal accumulations limits for each type of quota and each type of entity, it is much easier to prevent excessive market control using defined accumulation limits than by relying on Federal antitrust enforcement.

Accumulation Cap Examples

In considering accumulation caps there are several different types of control to consider. The first is direct control through ownership or leasing of a permit or IFQ. The entities registered with the NMFS Permit Office as owners or lessees of permits are those nominally in control of the permit. The second is direct control that may be hidden through the ownership of entities that are the nominal owners or lessees of a permit or IFQ (e.g., a partnership that owns the corporation which is the nominal owner of the permit). Information on these owners is not currently kept by the Permit Office. And, the third type of control is indirect control through combinations of partial ownership, leasing, financing, and exclusive marketing arrangements which, while not providing ownership, provide substantial influence and control over the operation of the entity which nominally has direct control over the permit or IFQ.

The following examples of combinations of accumulation cap options were constructed to begin discussion of the key elements and associated strengths and weaknesses of the different approaches.

Most of the options being considered by the TIQC would place no limit on the number of IFQ holders (owners or lessees) and establish accumulation caps for amounts owned, used on vessels, and controlled. The following examples of different approaches are presented to illustrate some of the other choices available and the implications of each. The examples vary mainly in terms of whether or not there is a control cap and whether or not an IFQ holder must also be the registered holder of a limited entry permit.

	Example 1	Example 2	Example 3
Eligible IFQ Holders (Owners or Lessees)	Registered Permit Holders	Registered Permit Holders	Anyone Eligible to Own or Operate a U.S. Documented Fishing Vessel
Ownership Cap	1%	1%	1%
Vessel Cap	2%	2%	2%
Control Cap	None	1%	1%

The following assumptions are used for each example.

a. IFQ use would be restricted to"vessels", defined as a U.S. Coast Guard craft.[10/]
b. Permit leases would continue to be tracked by NMFS.
c. Latent permits would be allowed (i.e., a permit not registered to a vessel).
d. Permits would still only be allowed to be assigned to two vessels each year.
e. Annual permit renewal would continue to be required. [11/]
f. Caps would be species/species-group specific, and in some cases area specific, as necessary to prevent localized depletion.
g. Persons who are allocated more than is allowed under the caps would be restricted from purchasing more quota than they already own ("grandfathering-in").

As part of the frame of reference for understanding the additional costs that may be associated with an IFQ program, it is important to know that the current permit inventory is 170 active and inactive permits. So at any one time there are only 170 permits that must be tracked. These permits can be transferred only one time per year so at most in a year, if every permit was transferred one time, there could be 340 vessels involved in the fishery. Permits may be leased and there is no limit on the number of times a permit may be transferred to different owners or lessees. However, at any one time, the maximum number of permit owners and lessees in the system is 170 for each.

Example 1: No control cap and only those persons holding permits may hold IFQ

Eligibility to Hold IFQ: In this example, quota shares or quota pounds must be directly associated with a groundfish trawl permit.[12/] That is, only the entity registered as the direct owner or lessee of

10/ Requiring this allows for easier linking of a person with a vessel than allowing a "vessel" to be any seafaring craft since some states do not require registration. Consideration would be given to the effects of such a requirement if the IFQ system were expanded to cover the current open access fleet.

11/ This ensures that NMFS has current contact information for the permit/IFQ holder.

12/ In this way, the number of entities holding quota shares or pounds each year would be dramatically limited as compared to a system under which anyone could hold shares or quota pounds, thereby reducing costs. Costs would also be controlled because tracking participation by permit ownership or holdings is consistent with the tracking task for other limited entry sectors. Associating quota share or pounds with holders of a *permit* is preferable to associating quota share or pounds with ownership of a *vessel* because the current Permit Office software tracking system is set up to track permit holders. Vessel

a limited entry permit can be a registered holder of the quota shares or quota pounds. For example, if a permit is held in the name of the partnership then all quota must be held in the name of the partnership and may not be held by an individual partner, unless the individual partner also holds a permit under his or her individual name.

Ownership cap: 1% on ownership of quota pounds or quota shares for each IFQ management unit. That is, no entity can own more than 1% of the IFQ of a species or species group in a given area (coastwide or region specific) in a given year (quota pounds or quota shares). Those entities allocated more than 1% would be grandfathered-in but restricted from purchasing more quota than they already own.

Vessel cap:[13/] **2% cap on the total amount of groundfish that can be caught** each year on a given vessel. This could be tracked in the Permit Office by limiting the pounds that could be registered for use with a vessel or allowing pounds in excess of the cap to be registered with the vessel and using the catch monitoring data system to ensure that caps are not exceeded.

Control cap: None. Limiting market control and manipulation would be left to the Department of Justice (as an antitrust determination). Leasing and indirect control could allow concentration in excess of ownership limit.

Impacts to Consider:

1. Substantially lower costs for tracking IFQ holders as compared to options that allow more participants to register as holders of IFQ. The number of direct IFQ holders to track at any one time would be between 100 (using the 1% ownership limit and assuming no leases) and 340 if all permits are leased. Information about the ownership and cross ownership of any corporations or other legal entities involved in the fishery would be needed if unregistered owners or indirect ownership are to be tracked. The number of vessels to track would be between 50, if IFQ were consolidated such that all vessels fished at the 2% cap (i.e., owners of latent permits would have to assign/lease their quota shares to an active vessel in order for the 2% cap to be reached), and 340, if all permit remained active and were transferred to a different vessel the maximum number of times allowed during the year (1 time).
2. The program would likely be criticized for not having a control cap.
3. Requires ownership or lease of a permit by entities that would like to acquire quota shares or quota pounds as registered holders.
4. May create incentives for hiding unregistered ownership or indirect ownership of quota.

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information is linked to the individual through Coast Guard data, which requires the submission of data requests and thus is not immediately accessible by the Permit Office.

13/ The maximum number of vessels is already capped at 340 since the number of permits is 170 and each permit can only assign a permit to two vessels each year. However, designers of the IFQ may want to limit the minimum number of vessels since there is no cap on the number of permits a vessel can lease; theoretically, a small number of vessels could lease all of the permits in the fishery and harvest all the pounds while permit holders still adhered to the "two vessels per permit each year requirement".

Example 2: Control cap and only those persons holding permits may hold IFQ

Eligibility to hold IFQ and vessel and ownership caps are the same as under Example 1.

Control cap: Control over quota share and pounds each year limited to 2% for each person. Direct control through ownership and leasing will be tracked through the system as described in Examples 1 and 2. To monitor control through unregistered ownership or to help detect indirect control, a requirement can be made for registered IFQ holders to reveal individual ownership names, contact information, and portion of ownership interest in the registered holder and its quota share and pounds. However, assessing control can be difficult since persons could put ownership or leases under another person's name in the same family or entity. The data system would likely be suboptimal for ensuring complete compliance and would need to evolve as problems are recognized. Enforcement of attempts to circumvent the control cap through deception or indirect control would require investigative work. Entities exceeding the control cap at the time of initial issuance would likely have to be grandfathered-in.

Impact to Consider:

1. Vessel and ownership tracking requirements similar to Example 1.
2. Develops a system to attempt to track **control** of quota share and/or pounds which may build confidence in the systems ability to ensure distribution objectives are met.
3. If control includes only registered ownership and leasing, between 100 and 340 persons would need to be tracked at any one time, including information about the ownership and cross ownership of any corporations or other legal entities that are permit holders. If the definition of control extends beyond registered ownership and leasing to unregistered ownership or leasing or indirect control, there is no identifiable limit on the number of persons that would need to be tracked to enforce the control provision.
4. Tracking control may require a major programming and administrative effort that will likely not capture all information wanted on control.
5. Requires ownership or lease of a permit by entities that would like to acquire quota shares or quota pounds as registered holders.
6. May create incentives for hiding unregistered ownership or indirect ownership of quota.

Example 3 : Control cap (see Example 2) and IFQ may be acquired by persons not owning an LE permit

Vessel, ownership, and control caps are the same as under Example 1.

Eligibility to Hold IFQ: Anyone eligible to own or operate a U.S. documented fishing vessel would be allowed to own or lease IFQ.

Impacts to Consider

1. Vessel tracking requirements similar to example 1.

2. Develops a system to attempt to track **control** of quota share and/or pounds which may build confidence in the systems ability to ensure distribution objectives are met.
3. Allows for relatively inexpensive entry into the fishery since no permit is required to hold quota share or pounds.
4. No limit on the number of participants who can be registered owners or lessees of IFQ.
5. Tracking control may require a major programming and administrative effort that will likely not capture all information wanted on control.
6. Potentially adds substantial costs to enforcement of both ownership and control limits if more persons become IFQ holders.
7. May create incentives for hiding unregistered ownership or indirect ownership of quota.

The existence of and information on control caps in other IFQ fisheries was not readily available. Preliminary research indicated that the B.C. fishery does not have control caps per se, but they do have lease/ownership caps. That is, an individual can own or lease a certain percentage of quota pounds each year by area/species. It does not matter if these are allocated through ownership of quota or leased from a quota owner. The same single cap applies and cannot be stacked. Control caps were considered at one time due to concern over Japanese ownership. But, due to the complexity of tracking ownership, it was decided that control caps would be too onerous and difficult to implement.

Similarly, there are no control caps for the Nova Scotia IFQ fishery.

The following table summarizes ownership caps in some of the existing IFQ fisheries:

IQ Fishery	Quota Ownership Cap
B.C. Groundfish	4-10% for most species/area; 15% (hake); about 2% vessel caps[14/]
Nova Scotia Groundfish	About 2% depending on species/area
Alaska Halibut & Sablefish	Area specific[15/]
Austrailia SE Trawl	None
Iceland Groundfish	10% for cod and haddock; 20% for other species; 12% of value of all TACs in all areas.
New Zealand	35% of total IFQ in all areas or 20% of total IFQ in any one area for a species (will vary for some species)

14/ IVQ holdings caps were calculated for each groundfish trawl license, during the first year of the IVQ program. The total IVQ holdings cap for each groundfish trawl license is measured in groundfish equivalents (described in FMP) as a percentage of total groundfish equivalents. These holdings caps, determined in 1997, continue to remain in effect.

15/ "Rules on the accumulation and transfers of halibut and sablefish IFQ are constantly evolving. In general, there are limits on accumulation and transferability. No person (individual, company, corporation) may own more than 0.5% of the total halibut QS in combined Areas 2C, 3A, and 3B; more than 0.5% of the total halibut QS in Areas 4A-E; or more than 1% of the total QS for Area 2C. No person may control more than 1% of the total Bering Sea-Aleutian Islands and Gulf of Alaska sablefish QS or more than 1% of the total sablefish QS east of 140 degrees west…Individuals whose initial allocation exceeded the ownership limits were grandfathered-in, but prohibited from acquiring additional QS."

IQ Fishery	Quota Ownership Cap
U.S. Surf Clam/Ocean Quahog	Min: 5 cages (160 bushels); Max: None
U.S. Wreckfish	None

B.2.3.7 Vertical Integration Limit

B.2.3.7.1 Discussion and Options

Vertical integration in fisheries occurs when a single entity operates at more than one level in the harvesting, processing, and distribution chain (e.g., a processing facility also owning a limited entry permit or catcher vessel). This section will primarily discuss the role of IFQ accumulation limits in limiting vertical integration.

In discussing vertical integration limits it is important to be clear about what is meant by at-sea processing. Currently, heading and gutting and icing at sea is not considered processing. However freezing is generally considered processing.

TIQC Recommendations: The TIQC recommended no additional limits on vertical integration other than what is provided through the accumulation limits.

Public Comment: None

B.2.3.7.2 Preliminary Analysis

Some degree of vertical integration already exists in the West Coast groundfish fishery through processor control of permits and vessels. Vertical integration can reduce the impacts of implementation of an IFQ on processors. In B.C., processor concern about IFQ was somewhat mitigated since 25% to 35% of the processors had vertical integration of some sort (owner/co-ownership agreements) and other features of the program (groundfish development quota) ensured processor influence over where fish was landed and sold.

Concerns over market control and foreign ownership in Alaska prompted attempts to identify ownership and the degree of processor-harvester vertical integration in the pollock and crab fisheries. However getting this information for West Coast groundfish fisheries will be very difficult.

Vertical integration will be automatically limited to some degree by the accumulation caps discussed in Section B.2.3.6. Any initial allocations to processors may already approach or exceed the accumulation limits selected under B.2.3.6. A grandfather clause may allow such an entity to control their initial allocation, but probably would not allow additional accumulation of quota share through consolidation or vertical integration.

It is not clear if IFQs will lead to more or less vertical integration. The creation of IFQ may redefine the privileges conveyed by a limited entry permit. For example, if processors can hold IFQ, there may be no incentive for processors to vertically integrate to control fishing permits. Instead they may contract with vessels for their deliveries. Consequently it will be difficult to assess

whether the economic effects of vertical integration in the fishery will change. Initially, we may want to describe what little we know about the existing level of vertical integration in the fishery and review IFQ situations such as the B.C., Iceland, and New Zealand fisheries where processors either received initial IFQ allocations or were able to purchase such allocations after they were assigned.

B.3.0 Program Administration

B.3.1 Tracking IFQ, Monitoring Landings, and Enforcement

B.3.1.1 Discussion and Options

The NRC report finds that compliance and self policing would be more likely if the process of establishing an IFQ program involves co-management schemes that allow fishermen to participate in the development and implementation of the IFQ program (NRC 1999) (pg. 216). This program is being developed and considered in an open Council process that provides substantial and significant opportunity for participation of members of industry, other interest groups, and the public.

Section 303(d)(5)(B) of the Magnuson-Stevens Act requires that any new program "provides for the effective enforcement and management of any such [new IFQ] program, including adequate observer coverage...."

A program that requires IFQ to cover bycatch must have some means by which to ensure that bycatch is not discarded without being accounted for.

Program Summary and Main Options:
Program Administration (Section B.3.0)

Enforcement for the IFQ program may include one or more of the following elements:

- onboard compliance monitors;
- dockside compliance monitors (20%-100%);
- hailing requirements, small vessel exemptions for onboard compliance monitors;
- video monitoring systems;
- full retention requirements;
- a vessel-specific bycatch reporting system;
- electronic landings tracking system;
- limited delivery ports;
- limited delivery sites;
- electronic IFQ tracking systems; and
- VMS.

These measures have been arrayed into the enforcement and monitoring programs provided in Table B.3-1 (Appendix B). While some likely specifics are identified to facilitate program design and impact analysis, the FMP amendment language on this issue may be general, specifying that the Secretary will promulgate regulations to establish an adequate monitoring and enforcement regime. Strong sanctions may be recommended along with provisions specifying that illegal overages be forfeited and debited against the vessel's account *(Section B.3.1)*. A part of the program administration, a centralized publicly accessible registry for liens against quota shares would be requested with . . . **[all related ownership information/essential ownership information].** (*Section B.3.1*, also see *Section B.3.4*, Data Collection).

Landings fees would be charged to cover program costs (up to MSA limits) and, over time, some elements of the program may be privatized, as appropriate. *(Section B.3.2)*

The IFQ program would not have a built-in sunset provision nor would quota shares be issued for fixed terms (i.e., IFQs would not expire after a certain number of years). The program would be revised as necessary through standard FMP and regulatory amendment processes. Information on certain aspects of program performance would be compiled annually and a program review would be conducted every 4 years. *(Section B.3.3)*

The data collection program . . . **[would/would not]** . . . be augmented to include the . . . **[expanded and mandatory; expanded voluntary]** . . . provision of economic data from the harvesting and processing industry. All data collected would be maintained in a confidential manner. Aspects of these provisions would require modification of the MSA. A central registry of IFQ shareholders and transactions would be maintained and include market value information. Government costs would also be tracked. *(Section B.3.4)*

Enforcement and Monitoring Goals and Objectives

The TIQ Enforcement Group developed the following goals and objectives for an enforcement and monitoring program.

Goal: An effective enforcement system that ensures that the possible gains from violating rules do not exceed the risks of violation penalties and that the costs of enforcement are in balance with the final outcome.

Objectives:

A. Develop reasonably enforceable regulations that are not overly complex.
B. Ensure that catch, landings, and deliveries are properly recorded.
C. Ensure that IFQ is held/acquired to cover landings and deliveries.
D. Prevent and detect fraud.
E. Conduct operations in a cost-effective manner.
F. Facilitate joint Federal-state enforcement activities including the complete sharing of data between agencies.

Tracking, Monitoring, and Enforcement Program Options

The following is a current list of elements for *Tracking, Monitoring, and Enforcement,* as identified by the TIQC through the scoping process. Bolded elements are those which the TIQC included in the IFQ programs it recommended for analysis.

Elements of Tracking, Monitoring, and Enforcement System	
Element 1.	Onboard compliance monitors (20%-100%)
Element 2.	Dockside compliance monitors (20%-100%)
Element 3.	Hailing requirements
Element 4.	Small vessel exemptions for onboard compliance observers
Element 5.	Video monitoring system
Element 6.	Full retention requirement
Element 7.	Upgraded bycatch reporting system
Element 8.	Electronic landings tracking system
Element 9.	Limited delivery ports
Element 10.	Limited delivery sites
Element 11.	Electronic IFQ tracking systems
Element 12.	Vessel monitoring system (VMS)

The TIQ Enforcement Group developed the following additional detail on those design elements it used to develop five initial enforcement program options for consideration (Table B.3-1).

At-Sea Monitors ("Observers"): At-Sea Monitors would be obligated to share information with enforcement personnel in a timely fashion. A camera backup might be considered for at-sea monitors.

With partial at-sea monitoring, require a camera if there is no compliance monitor onboard. If cameras are used to monitor a vessel there can be no discards of any species (e.g., no discards of sea-stars). There are issues associated with chain of custody and costs of reviewing films that

would need to be addressed with a camera system. If there is not a camera requirement for vessels not carrying at-sea monitors (i.e., some trips are completely unmonitored while at-sea), adjustments would need to be made to the OY to account for likely illegal discards. An accurate violation factor to apply to the OY would be difficult to assess and would be dependent on the officer's ability to detect violations and comparison of observed and unobserved trips.

Retention Requirement: Under a full retention requirement, the role for at-sea monitors would be to ensure that no fish went overboard. Under a partial retention requirement the role for at-sea monitors would be to record information on any discards and ensure that information was entered into a discard/bycatch reporting system, to be debited against IFQ accounts.

Bycatch Reporting System: If at-sea discards are allowed and IFQ is required to cover catch, a bycatch reporting system comparable to the landings reporting system would be required to match catch against IFQs. At-sea estimation of the weight of discards could be problematic.

Landings Tracking System: Either the current fishticket system could be converted to an electronic system to record close to real time information, or a parallel reporting system could be developed. The paper fishticket system might work for an IFQ program but flexibility of the IFQ system and associated benefits would have to be substantially constrained. Under the current cumulative limit system, citations are issued on the basis of the dock receipt. The TIQ Enforcement Group believes that landings should be debited against IFQ accounts based on the dock receipt and not what goes on the final fishticket. How this would work for an electronic fishticket system or if the paper fishticket system is used needs to be addressed. If a system for tracking landings based on dock receipts is implemented parallel to the fishticket system, there could be inconsistencies between the fishticket system and what is reported as landed against IFQs.

Shorebased Monitoring: Either 100% of the landings would have to be observed, or the opportunity to observe would have to be provided through an advance-notice-of-landing requirement.

Limited Landing Locations: Limited landing locations would enhance cost-effective enforcement. Enforcement costs would be substantially greater without such limits than with the limits. One way to limit landing locations would be to specify that landings be made only in certain ports. Another way would be to license specific landing sites. Licensing specific sites would ensure that all communities can participate while still gaining enforcement efficiency. There would be facilities standards that would need to be met for a site to qualify for a license (e.g., activities at the site might have to be arranged such that a shorebased monitor can observe the off-loading and weighing activity at the same time).

Electronic IFQ Tracking System: Regardless of other elements of the system, an electronic IFQ tracking system would be required such that an enforcement officer in the field can determine the current IFQ account balances for a particular vessel.

Other Provisions to Assist in Tracking and Monitoring

Initial Application Fraud Detection

The following element for *Detection Application Fraud* was as identified by the TIQ Enforcement Group and should be included as part of the five IFQ enforcement programs.

Detection of Application Fraud	
Element	Any proposed revisions to fishtickets should go through enforcement review.

PacFIN data should be used to determine the initial allocations. Capability should be built into the data system to screen illegal landings from the fishtickets–possibly focus primarily on gross violators using a threshold value . Other landings that may not qualify toward IFQ should also be screened from use in the determination of landings history (e.g., landings over fleet limits taken by EFP vessels, compensation fish).

IFQ Tracking Options–Lien Registry

The following is a current list of options for *IFQ tracking through a lien registry,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis. These options pertain to the provision of information to allow members of the public to ascertain the existence of a lien and ownership information about quota shares.

Lien Registry Options	
Option 1.	Create a central lien registry including all related ownership information.
Option 2.	Create a central lien registry but exclude all but essential ownership information.

Limits on Transboundary Activities

The following is a current list of options for *Limit on Transboundary Activities,* as identified by the TIQC and the TIQC Enforcement Group through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

Transboundary Landings	
Option 1.	If some IFQ are catch area specific, then all landings should occur in ports within the catch area and vessels can only fish in one catch area on a trip, unless catch is separated and monitored at-sea.
Option 2.	No limits on transboundary trips or landings.

Penalties

With respect to enforcement related penalties, the NRC report to Congress on IFQ programs recommends a set of graduated sanctions:

> "Administratively imposed sanctions should be established for minor violations with specified increase in penalties for each additional offense. Criminal penalties (jail sentences and/or seizure of catch, vessel, and equipment and forfeiture of quota) should be reserved for serious offenders and for intentional falsification of reports" (NRC 1999) (pg. 217).

The following is a current list of elements for *penalty provisions,* as identified by the TIQC and the TIQC Enforcement Group through the scoping process. Bolded elements are those which the TIQC included in the IFQ programs it recommended for analysis.

Elements of Provisions Related to Penalties	
Element 1.	Strong sanctions for violators.
Element 2.	Forfeiture and suspension until overage is covered. Illegal overages should **be** forfeited on landing and debited against the IFQ holders account. Additional enforcement action should be taken, as appropriate. Fishing suspended until quota pounds have been acquired to cover the overage.

Civil penalties for Magnuson-Stevens Act violations are limited to $100,000 for each violation and permit restriction, denial, suspension, or revocation (Magnuson-Stevens Act, Section 308). Criminal penalties are punishable by a fine of not more than $100,000, or imprisonment for not more than six months unless such acts involve threats to observers or enforcement officers, in which case the penalties may reach $200,000 and ten years imprisonment (Magnuson-Stevens Act, Section 309). Criminal penalties include knowingly and willfully submitting to a Council, the Secretary, or the Governor of a State false information regarding any matter that the Council, Secretary, or Governor is considering in the course of carrying out the Magnuson-Stevens Act (Magnuson-Stevens Act, Section 307).

TIQC Recommendations:

The TIQC recommends a compliance monitoring program to monitor harvest (catch and/or landings). The TIQC Enforcement Group considers only Enforcement Programs 1, 2, and 3 to be reasonably viable without reducing harvest to compensate for noncompliance risk. Those three programs have been included in TIQC recommended IFQ programs.

The TIQC notes that the skills of compliance monitors may or may not be different from those generally required for Federal fishery observers.

With respect to enforcement penalties, the TIQC was generally supportive of strong sanctions for violators.

To facilitate liens and increase the acceptance of IFQ as collateral for loans, there should be a publically available record of ownership and liens on IFQ. Ownership information should be made available because fish are a publically owned resource and public scrutiny of who holds harvest privileges should be allowed. A minority of the TIQC (4 members) believed that IFQ ownership information is not necessary to establish an effective lien registry and unnecessarily divulges information that should be kept confidential. The minority (4 members) recommends excluding detailed information on ownership from the central lien registry system (November 2004 TIQC report)

TIQ Enforcement Group Recommendations:

With only partial at-sea monitoring and no full retention requirement, the Enforcement Group's initial assessment is that compliance would start to break down. If the IFQ were specified to cover landings instead of catch, expected compliance would likely be similar to the current system, except instead of existing cumulative landings limits there would be IFQs.

A situation should not be created in which it is cheaper to catch fish in a manner that violates the IFQ program and incur penalties than to acquire the IFQ needed to cover catch or otherwise comply with the program. Situations wherein a legal participant incurs greater operational costs than a violator are viewed as inequitable and reduce program compliance.

Illegal overages should be landed and forfeited and additional enforcement action possibly taken. Illegal overages should be debited against the IFQ holders account and fishing suspended until they are covered, thereby ensuring that compliance would have been less expensive than violating program rules (with respect to the trip on which the illegal overage occurred).

Public Comments:

Comment	Source
Require VMS and 100% observer coverage - shoreside and at-sea	ED
Analyze limits on number of ports to which deliveries are allowed	WCSPA

B.3.1.2 Initial Analysis

Details of the enforcement program will need to be developed for the EIS in order to complete the impact assessment. However, there is question as to how much of the detail needs to be included as part of the FMP amendment or formal Council policy. The Alaskan sablefish and halibut IFQ program monitoring system was developed by an implementation committee comprised of governmental representatives and working in consultation with an industry advisory committee. These groups developed an implementation plan that was included as a chapter in the EIS. Few details were provided in the Council FMP amendment. The following is the extent of the FMP language related to tracking and monitoring from the Alaska sablefish and halibut IFQ program.

(D) Limitation on Ownership and Use of Quota Shares
- Frozen products may only be off-loaded at sites designated by NMFS for monitoring purposes.
- Quota share owners wishing to transport their catch outside of the jurisdiction of the Council must first check in their catch at a NMFS specified site and have the load sealed.
- Persons holding IFQs and wishing to fish must check-in with NMFS or their agents prior to entering any relevant management area, additionally any person transporting IFQ caught fish between relevant management areas must first contact NMFS or their agents.

(G) Administration and Enforcement
(1) All sales, transfers, or leases of quota shares (or IFQ arising from those quota shares) must occur in a manner approved by the Secretary. [administered by NMFS, in developing rules public hearing must be held]
(2) The Secretary will promulgate regulations to establish a monitoring and enforcement regime to assure compliance with this program. [appropriate penalties for violators, Council directs implementation to develop recommendations on penalties]

On board observers could be a large cost for small boats. The impacts of exempting vessels under a certain size from on-board observer requirements should be considered. Include consideration of possible long-term effect of distorting the size of vessels in the fleet. Consider the possibility of an

observer pool and cost sharing. The following table shows the number of LE trawl permits in the groundfish fishery before and after the recent buyback, including 10 catcher-processors..

Permit Endorsed Length (feet)	All Trawl Permits	Permits After Buyback
33-40	5	5
41-50	26	21
51-60	73	41
61-70	40	26
71-80	71	38
81-90	27	23
91-100	7	6
101-110	8	6
111+	16	16
Total	273	180

Consideration needs to be given to the likely effect of a set of penalties on the incentive to commit more serious crimes. For example, a severe penalty on landing incidental catch for which no IFQ were held would create incentive for discards (which would result in unmonitored discard mortality), whereas penalizing overages by deducting any overage from a subsequent year's IFQ would result in a lower incentive to discard (NRC 1999) (pg. 217).

Databases would need to be built and communication equipment provided to go with the personnel requirements of the enforcement program.

Council and NMFS control over penalties is limited. Penalty determination is generally exercised by the courts. The Council may establish guidance on the reallocation of forfeited quota. Like the enforcement program, the Council should consider the level of detail into which it wants to enter in considering penalties. The following is the language from the Alaskan halibut and sablefish IFQ amendments:

(G) Administration and Enforcement

(2) The Secretary will promulgate regulations to establish a monitoring and enforcement regime to assure compliance with this program. [appropriate penalties for violators, Council directs implementation to develop recommendations on penalties]

B.3.2 Cost Recovery/Sharing and Rent Extraction

B.3.2.1 Discussion and Options

Fees or taxes can be used for cost recovery and to capture for the public some of the value fishermen gain through use of the public resource (rents). Fees and taxes on transfers should not be so large as to eliminate transfers and the attendant benefits derived from establishing a market for harvest privileges (pg. 213). Moreover, because such charges would affect the value at which IFQ trades in the market place, they should be established at the start of the program rather than added on at a later time after investments have already been made (NRC 1999) (pg. 213).

Section 303(d)(5)(b) of the Magnuson-Stevens Act requires that any new program "provides for... fees... to recover actual costs directly related to... enforcement and management [of the new IFQ program]."

Section 304(d)(2)(A)[16/] states that the "Secretary is authorized and shall collect a fee to recover the actual costs directly related to the management and enforcement of any–(i) individual fishing quota program; and (ii) community development quota program that allocates a percentage of the total allowable catch of a fishery to such a program." Such a fee is not to exceed three percent of the exvessel value of the fish harvested under the program. Section 304(d)(2)(C)(ii) allows a state to receive up to 33% of any fee collected in relation to a community development program to reimburse the state for related management and enforcement costs.

Noting that for many resources the government captures a significant portion of the rent above cost recovery (timber, oil, etc), the NRC recommends that Magnuson-Stevens Act be amended to allow such cost recovery from fisheries, and that the collected rents be placed in funds dedicated to improving the fisheries and the fishing communities dependent on them (NRC 1999) (pg. 215). One means of extracting such rents would be a tax on first transfer of the IFQ (NRC 1999) (pg. 214). The tax would serve a dual purpose of reducing the socially objectionable windfall and collecting rents.[17/] Another means of cost recovery and collecting rents would be a two-fee system. Under such a system a per quota share fee might be levied to recover program costs and a tax per pound of landing charged to recover rents (NRC 1999)(pg. 215).

The following is a current list of design elements for *cost recovery,* as identified by the TIQC through the scoping process. Bolded elements are those which the TIQC included in the IFQ programs it recommended for analysis.

16/ Section 304(d)(1) states that "The Secretary shall by regulation establish the level of any fees which are authorized to be charged pursuant to Section 303(b)(1). The Secretary may enter into a cooperative agreement with the States concerned under which the States administer the permit system and the agreement may provide that all or part of the fees collected under the system shall accrue to the States." Section 303(b)(1) authorizes the charging of fees for permits for fishing vessels, operators, and processors (first receivers).

17/ A first transfer tax would have to be carefully structured so that mock transfers at lower than market values could not be used to minimize windfall payment. If a zero-rent auction were in place, prices from that auction might be used to determine taxes to be applied at first transfer.

Elements of Cost Recovery/Sharing Rent Extraction Provisions	
Element 1.	Landings Fee (max of three percent under current Magnuson-Stevens Act).
Element 2.	Privatization of Elements of the Management System, for example: Monitoring IFQ Landings (e.g., industry pays for their own compliance monitors) Fishtickets (industry payment for Trawl IQ program landings information to be fed into a Federal electronic system)

TIQC Recommendations: Recommended IFQ Programs A and B state that "cost recovery should be only for management (not enforcement or science) and should be limited to 3% of exvessel value." Recommended IFQ Program C states "Landings fee plus privatization of elements of the management system. In particular, monitoring of landings (e.g., industry pays for their own compliance monitors). Stock assessments should not be privatized and the electronic fishticket system should not be privatized."

Public Comments:

Comment	Source
An IFQ Program should have discrete and secure funding.	UASC
Include cost recovery provisions with a sliding scale for those that may be disadvantaged by such provisions.	ED
Split all or a portion of observer costs evenly between quota holders.	Survey (ED)

B.3.2.2 Initial Analysis

The 3% fee currently authorized under the Magnuson-Stevens Act may not be sufficient to recover all direct costs related to the IFQ program. (NRC 1999) (pg. 214) recommends an increase in the cap to above three percent.

The Magnusen-Stevens Act requires the Councils and Secretary to provide for effective enforcement and management of an IFQ program including adequate observer coverage, and for fees to recover actual costs directly related to enforcement and management [303(d)(5)(B)] except that fees are limited to 3%of the exvessel value of the program [304(d)(2)(B)]. The initial interpretation of this is that the program costs are not limited to 3% of exvessel value, just the Secretary's ability to collect related fees from industry. That being said, program costs still must be considered and weighed against program benefits to determine whether implementation makes sense.

It may work to set up a system that requires participants in the IFQ program to pay private contractors for government certified observers when making IFQ landings. Payments made under such provisions would not likely count against the 3% limit so long as the fees were not being paid to the Secretary. If the total costs for the IFQ program were no more 3% of exvessel value, the industry's direct payment for at-sea monitors (or any other direct payments to entities other than the Secretary) would reduce the amount of the fees that could be collected by the Secretary.

Interaction between the IFQ at-sea monitoring program and the NMFS observer program will need to be considered. Would an exception be made to the requirement for carrying an IFQ monitor if an observer from the West Coast Groundfish Observer Program (WCGOP) is on board? Would the WCGOP need to place observers on trawl vessels if IFQ monitors are required (i.e., could the IFQ monitors in combination with full catch accounting requirements supplant the need for WCGOP

observers on trawl vessels, leaving the observer to focus on other sectors)? What would be the implications of having differential treatment of trawl and other sectors with respect to payment for observers? Would there be a problem in requiring trawl vessels without WCGOP observes to pay for at-sea monitors while those with WCGOP observers would not need to make such payments?

The TIQ Enforcement Group has indicated that the privatization of catch and landings monitoring responsibility would require increased enforcement activity to verify that the monitoring program is functioning properly.

B.3.3 Program Duration and Procedures for Program Performance Monitoring, Review, and Revision (Magnuson-Stevens Act (d)(5)(A))

B.3.3.1 Discussion and Options

Section 303(d)(5)(A) of the Magnuson-Stevens Act requires that any new program "establishes procedures and requirements for the review and revision of the terms of any .. .[program], (including any revisions that may be necessary once a national policy with respect to individual fishing quota programs is implemented), and, if appropriate, for the renewal, reallocation, or reissuance of individual fishing quotas."

Noting the need for the nation to learn from its mistakes and successes in order to improve management, the NRC has recommended the promulgation of guidelines for monitoring IFQ program effectiveness (NRC 1999) (pg. 218). A monitoring and evaluation program for short-term and long-term impacts should be included as part of the initial program design (pg. 198). The program should include a clear timetable, criteria to be used in evaluation, and steps to be taken if the programs do not meet these criteria (pg. 221). At a minimum, monitoring the effectiveness of an IFQ program should involve maintaining a central registry of shareholders and share transactions (including the value of such transactions); assessing the biological status of the stock, measuring economic performance and characteristics of commercial and recreational fisheries and subsistence patterns; assessing performance of the IFQ market; collecting data on administrative and enforcement costs; and monitoring translocational effects on other fisheries (pg. 218). Additionally, annual reports should be provided describing trends in the fishery and effects of the IFQ program (pg, 222).

The NRC report also recommends that to lay the groundwork for the impact review, a preliminary study be conducted of relevant socioeconomic aspects of a fishery prior to the design of the management program (NRC 1999) (pg. 198). Such information may already be contained in recent groundfish programmatic EISs, the EISs for annual specifications and rebuilding plans, and in baseline description documents such as the community description produced by the Economic Fishery Information Network (EFIN) program of Pacific States Marine Fisheries Commission (PSMFC).

Sunset provisions signify the need to reevaluate an existing law or policy after a period to ensure that they are best achieving program objectives. However, with respect to IFQ programs, the NRC report identifies that sunset provisions are fundamentally inconsistent with the nature of IFQs and may be counter productive to their purpose (NRC 1999) (pg. 201).

While sunset provisions are not recommended by the NRC, it is recommended that consideration be given to the issuance of cascading fixed-term entitlements. This system works by issuing IFQ for a long but limited duration (e.g., 30 years). The program is then reviewed and if adjustments are needed, new IFQ are defined with a different set of privileges and obligations. IFQ holders are given the option of switching over to the new IFQ prior to the expiration of their existing shares or waiting until their existing shares expire. If they switch prior to the expiration of their existing shares, the new shares would be valid for another 30 years commencing with the date on which they switch. The recommendation for consideration of this design feature is not a recommendation that this type of feature should necessarily be incorporated.

The following is a current list of design elements for *program performance, monitoring, review, and revision,* as identified by the TIQC through the scoping process. Bolded elements are those which the TIQC included in the IFQ programs it recommended for analysis.

Elements of Provisions Related to Performance Monitoring, Review, and Revision		
Element 1	Revision Process	Standard for FMP and regulatory amendments.
Element 2	Sunset Provisions and Fixed Term Entitlements	None (Sunset provisions and fixed term entitlements (i.e. IFQs that expire after a certain number of years) were considered and rejected from further analysis).
Element 3	Response to Forthcoming National Policy	Standard revision FMP and regulatory processes, clear public notice that the IFQ may be revoked and/or reissued and that the program may be modified or cancelled without compensation.
Element 4	Monitoring	Annual reports.
Element 5	Review	Every four years.

The following outlines program monitoring, review and revision procedures, and standards in greater detail.

Process for Revision: Revision of the IFQ program will be achieved through FMP and regulatory amendments in compliance with the Magnuson-Stevens Act and policies and procedures already specified in the FMP and Council procedural guidelines.

Sunset Provisions and Fixed Term Entitlements: In line with the recommendations of the NRC, program sunset provisions are not included in this option. Suboptions on fixed term entitlements were considered but rejected because of their complexity, adverse affect on business planning, and flexibility and administrative costs (see text box). Changes to IFQ privileges will be made as necessary through FMP and regulatory amendment processes, effective on dates specified through those processes.

Response to Forthcoming National Policy: If necessary and required for compliance with forthcoming national standards and policies, IFQ issued under the current program may be revoked and reissued in a manner that complies with such new national standards and policies. Revocation and reissuance will be a last resort means for achieving compliance with future national policy

direction as certain costs and disruptive effects would be expected to accompany such actions. ***This section of the IFQ program re-emphasizes that IFQs are not property rights and are subject to modification or elimination through FMP and regulatory amendments without compensation to IFQ holders.***

Monitoring Program Performance: While the NRC recommends annual reports describing trends in the fishery and effects of the IFQ program, the Council's groundfish fishery is managed on a biennial cycle. Therefore, while data on the fishery will be collected annually, it will be summarized every two years, except for issues where annual reports are needed to assess criteria, such as for overfishing.

Review Schedule: The performance of the IFQ program will be reviewed every four years commencing in the first management "off-year" of the groundfish bienniel management cycle occurring at least four years after the initiation of fishing under an IFQ system. An amendment to the program which includes a comprehensive program review as part of the decision process will count as a program review and reset the review schedule such that the next

Options on Fixed Term Entitlements Considered and Rejected

Fixed Term Option 1: Fixed term quota shares will be used to adjust characteristics of the quota shares, so long as (1) delayed implementation of changes to the nature of the quota shares do not result in significant adverse biological, economic, or social impacts and (2) the maintenance of shares with different characteristics does not add excessive complexity to enforcement and administration of the program. Quota shares will be valid for a maximum of 10 years. Unless the program is modified or eliminated through FMP or regulatory amendment, shares will be automatically be replaced at the end of 10 years. If program adjustments made through amendment processes have included delayed implementation features, the characteristics of the replacement shares (i.e., associated privileges and obligations) may vary from those of the original shares. If it is found that maintaining a system with two different types of shares will not create an excessive enforcement or administrative burden or otherwise substantially increase costs or reduce program benefits, quota share holders may be given the option of replacing their original shares with new shares at any time. Nothing in this option precludes NMFS or Council action to make program adjustments that result in immediate modification of the characteristics of all quota shares. No compensation will be due any quota share holder from changes to or elimination of the IFQ program. A notice of the uncompensatable nature of the privilege associated with quota shares and quota pounds will be included on all communications, certificates, or other documentation provided to quota share holders informing them of the amounts of quota share or quota pounds under their control.

Fixed Term Option 2: The term of quota shares will be limited only as specified by future FMP and regulatory amendments which may adjust the associated privileges and obligations or totally eliminate the IFQ program. No compensation will be due any quota share holder from changes to or elimination of the IFQ program. A notice of the uncompensatable nature of the privilege associated with quota shares and quota pounds will be included on all communications, certificates or other documentation provided to quota share holders informing them of the amounts of quota share or quota pounds under their control.

review will occur in the first "off year" occurring at least four years after the implementation of such an amendment. Certain criteria may be assessed more frequently than every four years. The following are some of the main criteria on which basis the program will be reviewed and the documents in which the criteria will be assessed. These criteria will be augmented with forthcoming national standards on IFQ programs.

Source of Criteria (See Section 1.2.3)	Criteria	Report
Objective 1	Vessel Efficiency	4 Year Review
Objective 1	Processor Efficiency	4 Year Review
Objective 2	Habitat Impacts	4 Year Review
Objective 3	Discard Mortality	Annual Report
Objective 4	Externalities (Individual Accountability)	4 Year Review
Objective 5	Regulatory Stability	4 Year Review
Objective 6	Operational Flexibility	4 Year Review
Objective 7	Adverse Community Effects	4 Year Review
Objective 8	Employment Effects	4 Year Review
Constraint 1	Effects on Biological Status of the Stock	Stock Assessment
Constraint 2	Harvest in Excess of OY or ABC	Annual Report
Constraint 3	Total Mortality Accounting	Annual Report
Constraint 4	Change in Balance of Market Power	4 Year Review
Constraint 5	Quota Concentration	4 Year Review
Constraint 6	Enforcement Effectiveness	4 Year Review
Constraint 7	Assess Review Process	4 Year Review
Other Criteria 1	Degree to which Available Quota Pounds are Adequately Utilized	4 Year Review
Other Criteria 2	Existence of Localized Depletion Problems	4 Year Review

Annual Reports (Annually Published Portion of the SAFE Document). Annual harvest impacts will be assessed in the SAFE document. Harvest in excess of ABC or, for overfished species, in excess of OY, will require immediate remedial response. Discard mortality will be summarized in annual reports. If it is determined that the management system is not accounting for total mortality, needed adjustments will be made to ensure harvest is not resulting in greater than acceptable levels of total mortality. If it is determined that discard mortality is trending toward undesirable levels, early review of relevant segments of the program may be initiated.

Stock Assessments. The terms of reference for stock assessments will be modified to include assessment of changes in the biological status of the stock that might be attributed to the IFQ program. The detection of adverse changes attributable to IFQs at levels that may significantly damage the long-term productivity of the stock will require immediate initiation of a review of aspects of the IFQ program causing the adverse changes.

4 Year Review. All objectives, constraints, and national standards will be evaluated as part of the four year program review. The four year review may be incorporated in broader groundfish program reviews including, but not limited to, programmatic EISs, biennial management EISs, or strategic planning exercises. The four year review will include summarization of information and results from annual reports and stock assessments, as outlined above. Problems identified

in the four year review will be addressed through FMP or regulatory amendments which will proceed on a schedule determined to be based on the relative severity of the problem. Any problems related to stock biology that may significantly damage the long-term productivity of the stock will be given high priority for action. Such effects on productivity may affect all sectors, including those not under IFQ management. The first four year review will occur in the first "off year" after completion of two biennial management cycles.

TIQC Recommendations: No options have been developed. All elements are included in all of the TIQC recommended IFQ programs. The program should include a review period, built in performance monitoring, and opportunity for adjustments to the program.

TIQC Considered But Rejected Options: The committee recommends that automatic sunset provisions for the program and limited duration (fixed term) IFQs not be considered. Sunset provisions make the fishery less stable and make investment planning more difficult. Fixed term entitlements were considered but rejected because of their complexity, adverse affect on business planning and flexibility, and administrative costs.

Public Comments:

Comment	Source
Consider a range of automatic sunset provisions (1-10 years).	PMCC
Consider sunset provisions with disposal of the quota in a manner that satisfies the public trust.	UASC
Include performance reviews.	PMCC

B.3.3.2 Initial Analysis

No analysis provided at this time.

B.3.4 Data Collection

B.3.4.1 Discussion and Options

The Magnuson-Stevens Act 303(a)(8) states that FMPs must assess and specify the nature and extent of scientific data which is needed for effective implementation of the plan. Section B.3.3 discusses the need for ongoing assessments of the status of the IFQ program and its impacts in order to monitor and make changes required to meet the original objectives. The NRC (NRC 1999) (pg. 198) recommends these assessments be incorporated as part of the IFQ program design.

The NRC recommendations state that Councils and NMFS should ensure that long-term routine data collection and studies be initiated that are complementary to data collection for IFQ monitoring (NRC 1999) (pg. 218). Further, the NRC states that this data collection should occur separate from the consideration of specific management alternatives for a fishery and should facilitate evaluation of impacts of various allocation actions, including IFQs (pg. 199).

The issue of whether industry provision of data should be mandatory or voluntary will likely be addressed under this design element. Mandatory industry compliance provisions are included as part of the data collection provisions of the Alaska crab rationalization program.

The following is a current list of design elements for *data collection,* as identified by the TIQC through the scoping process. Bolded options are those which the TIQC included in the IFQ programs it recommended for analysis.

	Data Collection Options		
	Option 1: Mandatory	**Option 2: Expanded Voluntary**	Option 3: Status Quo
Limited Entry Trawl Industry (including processors)	Mandatory submission of economic data	Voluntary submission of economic data (expanded efforts)	Voluntary submission of economic data (status quo efforts)
Other Affected Sectors of the Fishing Industry	Voluntary submission of economic data	Voluntary submission of economic data	Voluntary submission of economic data
Central Ownership and Transaction Value Registry	Yes	Yes	No
Government Costs	Formal monitoring	Formal monitoring	Ad hoc assessment

Option 1: Mandatory Data Collection Program

The following is patterned after a North Pacific Fishery Management Council motion to establish a mandatory data collection system in order to evaluate the impacts of the crab rationalization program.

Mandatory Provisions: The Pacific Fishery Management Council and the National Marine Fisheries Service shall have the authority to implement a data collection program for cost, revenue, ownership, and employment data, compliance with which would be mandatory for members of the West Coast groundfish industry harvesting or processing fish under the Council's authority. Data collected under this authority will be maintained in a confidential manner and may not be released to any party other than staffs of Federal and state agencies directly involved in the management of the fisheries under the Council's authority and their contractors.

A mandatory data collection program shall be developed and implemented as part of the groundfish trawl IFQ program and continued through the life of the program. Cost, revenue, ownership, and employment data will be collected on a periodic basis (based on scientific requirements) to provide the information necessary to study the impacts of the IFQ program as well as collecting data that could be used to analyze the economic and social impacts of future FMP amendments on industry, regions, and localities. This data collection effort is also required to evaluate achievement of goals and objectives associated with the IFQ program. Both statutory and regulatory language shall be developed to ensure the confidentiality of these data. Additional funding (as compared to status quo) will be needed to support the collection of these data.

Any mandatory data collection program shall include: A comprehensive discussion of the enforcement of such a program, including enforcement actions that would be taken if inaccuracies are found in mandatory data submissions. The intent of this action would be to

ensure that accurate data are collected without being overly burdensome on industry in the event of unintended errors.

Voluntary Provisions: A voluntary data collection program will be used to collect information needed to assess translocational impacts on nontrawl fisheries.

Central Registry: Information on transaction prices will be included in a central registry of shareholders. Such information would also be included for limited entry license holders.

Government Costs: Data will be collected and maintained on the monitoring, administration, and enforcement costs related to governance of the IFQ program.

Option 2: Voluntary Data Collection Program

Voluntary Provisions: Attempts will be made to collect, on a voluntary basis, the same types of data identified for collection through a mandatory program. Additional funding (as compared to status quo) will be needed to support the collection of these data.

Central Registry: Information on transaction prices will be included in a central registry of shareholders. Such information would also be included for limited entry license holders.

Government Costs: Data will be collected and maintained on the monitoring, administration, and enforcement costs related to governance of the IFQ program.

Option 3: Status Quo Data Collection Program

Voluntary Provisions: NMFS will continue to support the PSMFC EFIN project attempts to collect economic and social data useful in evaluating the impacts of fishing and fishing regulations.

Central Registry: The program will include no new central registries for shareholders or limited entry license holders other than that necessary to directly support the IFQ tracking and monitoring system, as maintained by the NMFS Permit Office.

Government Costs: Data on the monitoring, administration, and enforcement costs related to governance of the IFQ program will be collected and summarized on an ad hoc basis.

TIQC Recommendations: Options 1 and 2 are included in the TIQC's recommended IFQ programs. Option 3 should also be considered as part of the analysis.

A minority of members recommends excluding collection of detailed information on ownership in central lien registry system (November 2004 TIQC report).

TIQC Considered But Rejected Options: None identified.

Public Comments: None.

B.3.4.2 Initial Analysis

The NPFMC mandatory data collection program was adopted partially in response to a February 2002 report from the NPFMC SSC, which restated the need for mandatory data reporting as follows:

> A critical part of the Council's ability to understand the social and economic consequences of implementation of rationalization measures is mandatory reporting of socioeconomic data. For example, harvest and production costs, expenditure patterns, vessel ownership data including identifiers (name and address files), employment, and earnings data are absolutely necessary to determine the magnitude and distribution of net benefits that arise from the granting of an entitlement to a public resource. If these data had been required as a component of the plan amendments authorizing IFQs in the halibut/sablefish fisheries and co-operatives in the pollock fishery, analysts would be in a much better position to identify the likely economic consequences of the rationalization alternatives currently under consideration for the crab fishery. The SSC recommends that provision of the data listed above be made mandatory. This action is necessary to fulfill the Council's stated desire to have the economic performance of the rationalized crab fishery evaluated.
>
> Implementing a mandatory data collection requirement would require changes to the Magnuson-Stevens Act as well as other laws governing the collection of data from fishermen and processors. Changes to the Magnuson-Stevens Act would be required in Section 303(b)(7) and Section 402(a). Section 303(b)(7) prohibits the Council and NOAA Fisheries from collecting economic data from fish processors. Section 402(a) prohibits the Council from requesting that the Secretary implement an information collection program for the fishery which would provide the types of "information that would disclose proprietary or confidential commercial or financial information regarding fishing operations or fish processing operations".

B.4.0 Some Other Possible Provisions

The above categories were based on design elements that the TIQC identified for consideration. Design elements not fitting under the above categories that were brought forward during the public comment period are included here for Council consideration. Some elements have since been incorporated in the above, for example, a community stability hold back.

Public Comments:

Comment	Source
Prohibit highgrading.	ED
Incorporate unambiguous language to address concerns about IQs becoming property right.	ED and 1 individual
Develop measurable performance objectives.	ED
Make a policy statement that IFQ program for groundfish trawl should not be considered a policy precedent for other sectors of the fishery.	Survey (ED)
Make a statement on the eventual need to address inter-gear transferability of IFQs.	Survey (ED)
Crew:	
Provide worker protections in the regulations.	Survey (ED)
Withhold 10% of quota from a vessel if a review board finds the vessel is not treating the crew well.	Survey (ED)
Tax quotas to fund crew protections such as unemployment insurance, pensions, or health care.	Survey (ED)
Establish a minimum base wage in addition to any percentage based compensation.	Survey (ED)
Establish an outreach program to assist industry refugees in accessing public services and making transitions to other employment.	Survey (ED)
Buyers/Processors:	
IFQ shares allocated to processors that diminish over time (e.g., annual % reductions).	Survey (ED)
IFQ processor shares that are valid only at the plants for which they are issued.	Survey (ED)
Hold back a percent of IFQ and allocate it annually based on fisher-processor proposals.	ED
Compensate processors through transfer payments at time of initial allocation.	Survey (ED)
Compensate processors through transfer payments, upon demonstration of stranded capital.	Survey (ED)
Harvesters:	
Assign vessel size class endorsements to IFQ and restrict trading between size classes.	Survey (ED)
Require that the IFQ owner be on board the vessel when it is used.	Survey (ED)
Individuals leasing permits get the right of first refusal if the IFQ issued for that permit is sold.	Survey (ED)
Local Businesses:	
Establish a fund to assist negatively affected businesses or to fund business development.	Survey (ED)
Local Governments:	
Establish a revenue sharing system among active groundfish trawl ports.	Survey (ED)
Other Fishing Sectors:	
Set aside IFQ from TAC increases and allocate it to low impact gears.	Survey (ED)
Set aside certain areas for fishing only by non-trawl gears.	Survey (ED)
Use a buyback program to offset spillover effects.	Survey (ED)
Restrict use of vessels that sell IFQ and leave the fishery (make IFQ allocation contingent on this provision).	Survey (ED)

Comment	Source
If a trawler sells IFQ to a fisher in another sector, require that a certain percentage of that IFQ be allocated among all participants in that sector (an increase in the quota for the sector).	Survey (ED)
Take into account disaster tows and increases in participation that exhaust the allocated quota and the resultant necessary adjustments to allocations both within and outside the trawl IFQ fishery.	UASC
Environment:	
Set aside IFQ from TAC increases in order to address conservation concerns.	Survey (ED)
Combine the IFQ system with marine reserves.	Survey (ED)
Research:	
Capture some of the surplus and dedicate it to a fund for research and conservation.	Survey (ED)

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Table B.1-1. State license requirements in the foodfish distribution chain based on type of transaction and change to the product before resale.

Type of Transaction		Change to Product (Groundfish)[a/]			
Bought From	Sold To	None (passed thru, possibly repackaged)	Processed for Food (not canned)	Processed/Manufactured for Other Byproducts	Canned
None (Fishermen Selling Own Catch)	Consumers	WA - WFD OR - WFD R CA - FRET or MULT	WA - WFD OR - WFD R CA - FR or MULT	WA - WFD OR - WFD R CA - FR or MULT	WA - WFD OR - WFD CA - FR or MULT
	Anyone Out of State	WA - WFD OR - WFD R	WA - WFD OR - WFD R	WA - WFD OR - WFD R	WA - WFD OR - WFD R
Fishermen	Consumers	WA - WFD OR - WFD R CA - FR or MULT	WA - WFD OR - WFD R CA - FR or MULT	WA - WFD OR - WFD R CA - FR or MULT	WA - WFD OR - FFC R CA - FR or MULT
	Wholesalers/ Retailers	WA - WFD OR - WFD R CA - FR	WA - WFD OR - WFD R CA - FP	WA - WFD OR - WFD R CA - FP	WA - WFD OR - FFC R CA - FP
Wholesalers	Consumers	WA -No License Req OR - No License Req CA - No License Req*	WA - No License Req OR - No License Req CA - No License Req*	WA - No License Req OR - No License Req CA - No License Req*	WA - No License Req OR - No License Req CA - No License Req*
	Wholesalers/ Retailers	WA - WFD OR - WFD NR CA - FW or Mult	WA - WFD OR - WFD NR CA - (FW & FP) or Mult	WA - WFD OR - WFD NR CA - (FW & FP) or Mult	WA - WFD OR - FFC NR CA - (FW & FP) or Mult
Other processor/wholesaler licensing requirements		WA - Anyone employing a fish buyer - WFD			
State "buyer" licensing requirements:		WA - Fish buyer licenses for individuals acting "on behalf" of WFDs OR - Fish buyer licenses for individual employees of WFDs and for sites, including vehicles, boats, or barges CA - Fish buyer licenses - none			

a/ Direct sale licensing requirements of selected species and licensing requirements for shellfish and baitfish not included.

* In California there is no Fish Business License Requirement but there is an Accounting Requirement (FGC Section 8050)

KEY: FP = Fish Processor (CA)
FR = Fish Receiver (CA)
FRET = Fisherman's Retail License (CA)
FW = Fish Wholesaler (CA)
Mult = Multifunction Commercial Fish Business License (CA)
WFD = Wholesale Fish Dealer License (WA)
WFD NR = Wholesale Fish Dealer License - NonReporting (does not receive from fishers) (OR)
WFD R = Wholesale Fish Dealer License - Reporting (landings reported) (OR)

Table B.3-1. TIQ Enforcement Group preliminary scoping of possible enforcement programs.

	Program 1	Program 2	Program 3	Program 4	Program 5
At-Sea Monitoring	100% (Compliance Monitors)	100% (Compliance Monitors)	100% (Compliance Monitors or Camera)	Partial Compliance Monitor Coverage	None
Retention Requirement	Full Retention	Discards Allowed	Full if Camera, Discards Allowed if Compliance Monitor Present (see NOTE)	Discards Allowed if Compliance Monitors Present	Full Retention
Bycatch Reporting System Comparable to Landing Tracking System	Not Needed	System Needed (electronic)	System Needed (electronic)	System Needed (electronic)	Not Needed
Landing Tracking System	Electronic	Electronic	Parallel Electronic Federal System (maintain paper fishtickets)	Parallel Electronic Federal System (maintain paper fishtickets)	Paper Fishticket
Shorebased Monitoring	100%	Monitoring Opportunity (Based on Notice)	Monitoring Opportunity (Based on Notice)	Monitoring Opportunity (Based on Notice)	Monitoring Opportunity (Based on Notice)
Vessel Provides Advance Notice of Landing	Yes	Yes	Yes	Yes	Yes
Limited Landing Locations	Specified Ports	Site Licenses	Site Licenses	Specified Ports	Specified Ports
Electronic IFQ Reporting	Yes	Yes	Yes	Yes	Yes
Limited Landing Hours	Yes	No	No	Yes	No
Overall Assessment of Program Effectiveness	Programs provide adequate control with different degrees of cost and flexibility for the vessels.			Control inadequate. Compensation required through a reduction in the OY in anticipation of unreported landings.	
VMS is an assumed component of the enforcement environment. Small vessel provision: small vessels may apply for an exemption and carry a camera instead of an compliance monitors.					

NOTE: For systems relying on cameras and a "no discard" rule, there may be a problem with not being able to discard prohibited species.

Figure B.1-1. Example paths in the foodfish distribution chain.

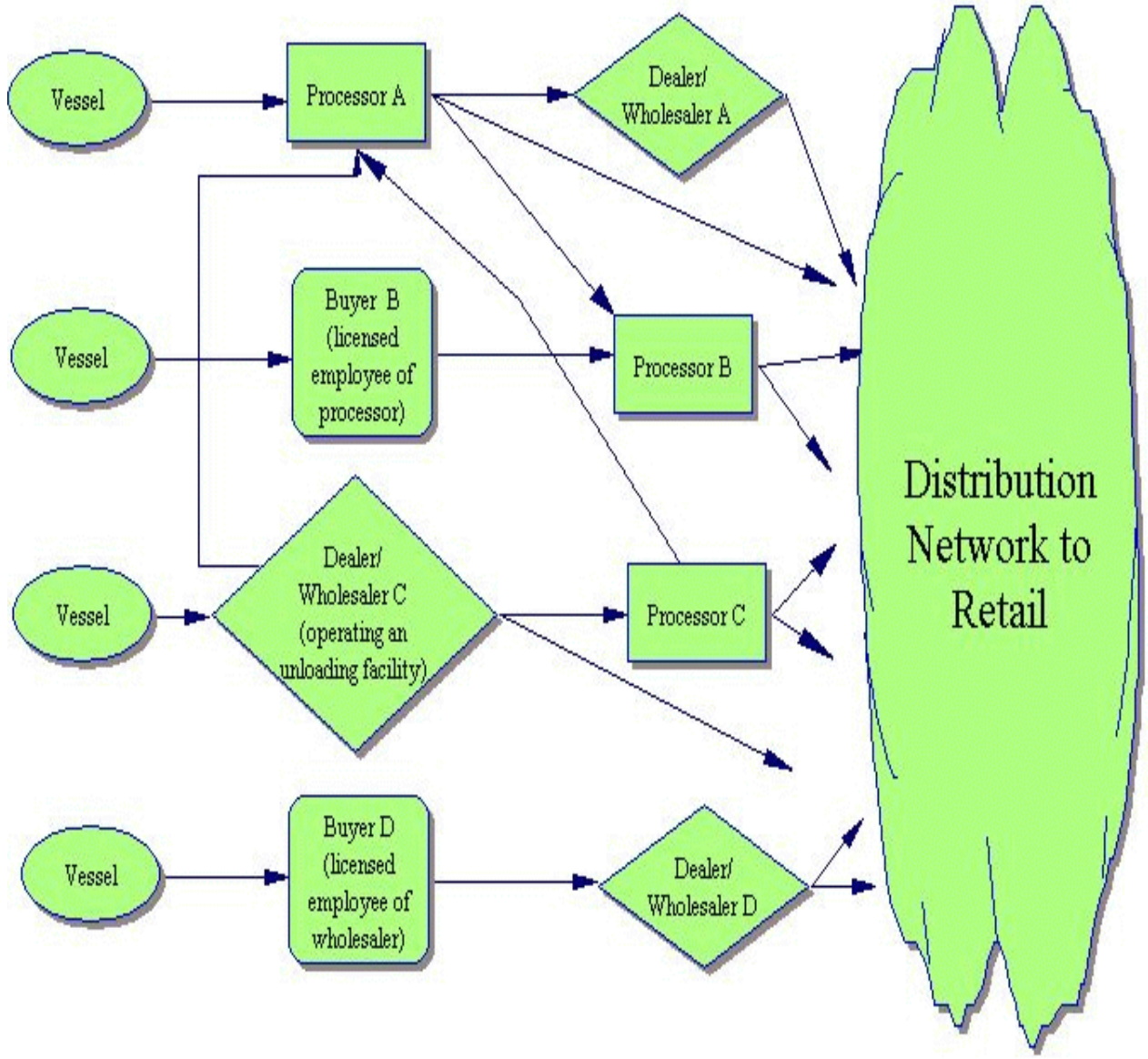

Figure B.1-2. Potential transfer paths for quota shares and quota pounds (arrows reflect the transfer of quota shares and quota pounds).