

NINTH AMENDMENT TO THE  
FISHERY MANAGEMENT PLAN FOR  
COMMERCIAL AND RECREATIONAL SALMON  
FISHERIES OFF THE COASTS OF WASHINGTON,  
OREGON, AND CALIFORNIA COMMENCING IN 1978

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## ACRONYM LIST

CDFG	California Department of Fish and Game
Council	Pacific Fishery Management Council
CVM	contingency valuation method
CZMA	Coastal Zone Management Act
DOE	Department of Ecology
EA	Environmental Assessment
EEZ	exclusive economic zone
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FMP	fishery management plan
I/O	input/output
KFMC	Klamath Fishery Management Council
KMZ	Klamath management zone (presently Port Orford Reef Buoy to Horse Mountain)
KRSMG	Klamath River Salmon Management Group
KRTT	Klamath River Technical Team
LCDC	Land Conservation and Development Commission
MFCMA	Magnuson Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act
MSY	maximum sustainable yield
NEPA	National Environmental Policy Act
NEV	net economic value
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPPA	Pacific Northwest Electric Power Planning and Conservation Act
NWS	National Weather Service
OCN	Oregon coastal natural
ODFW	Oregon Department of Fish and Wildlife
OFR	Office of Federal Register
OMB	Office of Management and Budget
OY	optimum yield
PacFIN	Pacific Coast Fisheries Information Network
PSTA	Pacific Salmon Treaty Act
RIR/IRFA	Regulatory Impact Review/Initial Regulatory Flexibility Analysis
SAS	Salmon Advisory Subpanel
SEIS	Supplemental Environmental Impact Statement
SPDT	Salmon Plan Development Team (renamed the Salmon Technical Team)
STT	Salmon Technical Team (formerly the Salmon Plan Development Team)
WCZMP	Washington State Coastal Zone Management Program
WDF	Washington Department of Fisheries

## INTRODUCTION

This document presents and analyzes the issues and impacts of the proposed ninth amendment to the "EIS and FMP for Commercial and Recreational Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1978."

The description of issues which follows incorporates or summarizes the elements analyzed by an RIR/IRFA and most of the requirements of an EA. Appendix A of this document contains or references the information required for a structurally complete EA. Appendix B provides supplemental information necessary for the structurally complete RIR/IRFA. Appendix C contains a review of the amendment's consistency with federal and state coastal zone management programs, and Appendix D provides a review of other applicable law. Appendix E contains various technical references and supporting documents cited within the issue descriptions, and Appendix F contains agency comments.

This is the third amendment developed since the FMP was converted into a framework plan in 1984. The six issues presented are:

1. Klamath River fall chinook salmon escapement goal
2. harvest allocation for non-Indian fisheries north of Cape Falcon
3. inseason notice procedures
4. steelhead management intent
5. radio reporting requirements for commercial salmon fishermen
6. limitations for season opening and closing dates

Purpose and Need for Action

This issue examines selection of a spawning escapement goal for Klamath River fall chinook in the face of uncertainty over the present spawning and rearing capacity of the river's natural habitat and with the recent establishment of a forum to negotiate ocean and inriver harvest allocations.

Background

During the development and adoption of the framework amendment (1982-1984), the Klamath River fall chinook salmon stock was at a depressed abundance level and there was no agreement or procedure for allocation of the stock to inriver fisheries. Therefore, the current framework amendment escapement goal begins with an interim rebuilding schedule to gradually increase inriver escapements and culminates in a specific long-term spawning escapement goal by 1998. The long-term FMP spawning escapement goal, 97,500 naturally spawning adults and 17,500 hatchery adults, was based on estimates of spawning escapement in the early 1960s and was first adopted by the Council in 1978.

The rebuilding schedule to achieve the long-term Klamath River fall chinook spawning escapement goal specifies an average inriver run size of 68,900 adults during 1983-1986. It then calls for an increase of 20 percent in average ocean escapement every four years until the long-term goal is achieved between 1994 and 1998. The schedule does not provide for a specific spawning escapement until after 1998.

For 1983 and 1984, the Klamath River fall chinook inriver run size averaged 50,600 adult chinook, well below the interim escapement goal for the 1983-1986 period of 68,900. In 1985, despite complete closure of the ocean troll fishery between Cape Blanco and Point Delgada, the escapement into the river totaled only 59,300. After those low escapement levels, meeting the FMP escapement goal in 1986 required 115,100 adults, near the target ocean escapement goal for the 1995-1998 period.

Faced with declining run sizes, even with reduced or closed ocean fisheries, concern mounted that the natural production capability of the Klamath River system had significantly decreased since the early 1960s. This possible reduction could make meeting the rebuilding schedule and long-term spawning escapement goal unrealistic. It could also create significant negative impacts on the ocean sport and commercial fisheries and the local coastal economies which they support.

In April 1985, the Council responded to the concern over Klamath River fall chinook management by calling upon the appropriate state, federal, and tribal management entities and commercial and recreational fishery representatives to meet and begin developing a new long-range management agreement for the ocean area managed primarily for Klamath River fall chinook. This action resulted in the formation of the KRSMG which included a technical team and allocation work group, including ocean and inriver users.

During 1985 and early 1986, the KRSMG used its interagency technical team (which also included fishery consultants selected by user groups) to evaluate

natural production information for the Klamath River and propose alternative spawning escapement strategies (KRTT 1986). The preferred escapement strategy developed by this team utilized a harvest rate management approach subject to a minimum escapement level for naturally spawning adults. This escapement policy was coupled to allocation agreements for ocean and inriver fisheries by all user groups to assure achievement of an actual spawning escapement goal rather than an inriver escapement level.

For the 1986 and 1987 seasons, harvest allocations among the various ocean and inriver fisheries were determined in user group negotiations within the allocation work group of the KRSMG. Beginning with the 1988 season, harvest allocations were recommended to the Council by KFMC created under the Klamath and Trinity River Basins Restoration Act (P.L. 99-552). The harvest rate management approach and user allocations developed by the KRSMG were considered by the Council for the 1986 and 1987 ocean salmon fishery seasons. In 1988, the Council considered the KFMC recommendations in adopting its final ocean salmon fishery management measures.

#### Identification of Alternatives

Three major concerns have been identified for the current spawning escapement goal for Klamath River fall chinook which may require amending the salmon FMP. To address these concerns, three possible alternatives to status quo (Alternative 1) have been developed.

One concern is uncertainty over the choice of the long-term fixed spawning escapement goal of 115,000 fall-run adult chinook. This escapement level may not be the correct escapement to provide MSY from the resource.

A second concern deals with the need to change the ocean escapement goal into a spawning escapement goal. Harvest allocations have been negotiated since 1986 and a permanent forum (KFMC) for such negotiation now exists. The FMP states that spawning escapement goals will be set when ocean and inriver allocations are agreed upon. Under the present FMP, the ocean escapement does not become a spawning escapement goal until after 1998.

A third concern results from the use of four-year averages in the ocean escapement rebuilding schedule. When ocean escapements are well above the required rebuilding level during any four-year period, the FMP allows escapement for the remaining years of the period to be reduced to a level which may be below that necessary to maintain minimal production. Alternatives 2A and 2B address this problem.

Alternative 3 (harvest rate management), developed by KRSMG and KFMC, addresses all three concerns raised above. It establishes harvest and spawning escapement rates to allow the resource to be managed for MSY and also establishes a spawning escapement floor to prevent extremely low escapements in any one year. The negotiation of harvest allocations under the Klamath and Trinity River Basins Restoration Act has been based on the harvest rate management approach and is closely linked to it. Alternative 3 establishes an annual spawning escapement goal. It does not establish a specific ocean and inriver harvest allocation or allocations between user groups, but allows for a wide range of possible harvest combinations to achieve the escapement goal.

## Proposed Alternatives

The Council proposes consideration of the following management alternatives under subheading "Klamath River Fall Chinook" on page 3-20 of Section 3.5.2.1. and in Table 3-2 on page 3-11 of the final framework amendment to the salmon FMP.

### Alternative 1 - Status Quo

The Klamath River fall chinook escapement goal consists of a rebuilding schedule to achieve the following adult inriver run sizes (natural and hatchery combined).

1983-1986	68,900
1987-1990	82,700
1991-1994	99,200
1995-1998	115,000 (long-term spawning escapement goal)

The long-term spawning escapement goal of 115,000 adult chinook under this alternative consists of 97,500 natural spawners and 17,500 hatchery fish. It represents a spawning escapement to which inriver harvest must be added, at least by the 1995-1998 period, to calculate the ocean escapement goal.

The present escapement goals are expressed as inriver run size (ocean escapement) until inriver Indian and recreational harvest allocations are established. Once these inriver allocations are agreed upon, annual inriver run size goals can be set.

### Alternative 2A - Status Quo With a Natural Spawning Escapement Floor of 35,000

This alternative is the same as Alternative 1 except it requires a minimum (floor) escapement level into natural spawning areas in all years of 35,000 adult fish. Under the current framework amendment rebuilding schedule, spawning escapement is not addressed until an inriver allocation can be agreed upon. Adoption of this alternative would require the Council make annual projections of inriver harvest level and hatchery fish contribution to establish the minimum inriver run size level required to clear the floor. The 35,000 adult fish escapement floor recommendation was developed by the KRTT of the KRSMG.

### Alternative 2B - Status Quo With a Natural Spawning Escapement Floor of 43,000

This alternative is the same as Alternative 2A, except it sets the escapement floor into natural spawning areas in all years at 43,000 adult fish. Such a level of escapement has been recommended by the STT as a more appropriate floor for the stock based upon data supplied by the KRSMG (see Appendix E).

### Alternative 3 - Harvest Rate Management

The objective of Klamath River fall chinook management under this alternative is to allow a fixed percentage of the potential adults from each brood of natural spawners to escape the fisheries and spawn, subject to a minimum escapement level for naturally spawning adults. An assessment of the measurable biological parameters for the stock and the selectivities of the

ocean and river fisheries acting upon it are used to determine the proportion of the potential adults from each brood that should be allowed to spawn. This can best be achieved by regulating offshore and terminal area harvest rates, based upon age-specific fishery impacts by ocean and inriver fisheries in combination (KRTT 1986).

Figure 1 depicts an example range of harvest rate combinations, based on current information, each of which would produce about the same long-term escapement rate. The values in this figure refer to the rates at which ages-4 and -5 Klamath River chinook can be harvested in the respective areas, while adjustments for fishery selectivities have been incorporated into the analysis for impacts on younger-aged fish. The ocean allocation under the example in Figure 1 ranges from about 86 percent (.50/.30) to 34 percent (.15/.70) of the combined annual ocean and river landings of Klamath River fall chinook. Any harvest allocation which meets the adopted spawning escapement rate or floor is possible under this harvest rate management spawning escapement goal.

Recognizing the mixed stock nature of offshore fisheries, total allowable ocean landings of chinook in the principal ocean zone managed for Klamath River fall chinook (KMZ) must also take into account relative abundance of other chinook stocks in the zone as well as contributions of Klamath River chinook to salmon fisheries in neighboring ocean areas.

An evaluation of available information on the production potential of Klamath River fall chinook indicates that a minimum escapement of 35,000 naturally spawning adults must be protected in all years in order to prevent extended periods of low juvenile production (KRTT 1986). Protection of this escapement floor may require reductions in allowable offshore and terminal area harvest rates in years of low adult production.

The initial natural spawning escapement and harvest rate percentages will be based on the 1986 recommendation of the KRSMG (a 35 percent natural spawning escapement rate and a 65 percent harvest rate for each brood of fish). The STT may annually consider input on the appropriateness of the current escapement rate goal and provide its determination to the Council in advance of preseason management option development. Both rates may be modified upon approval of the STT and Council. The natural spawning escapement floor assures a high probability that desired hatchery escapement will be met in all years.

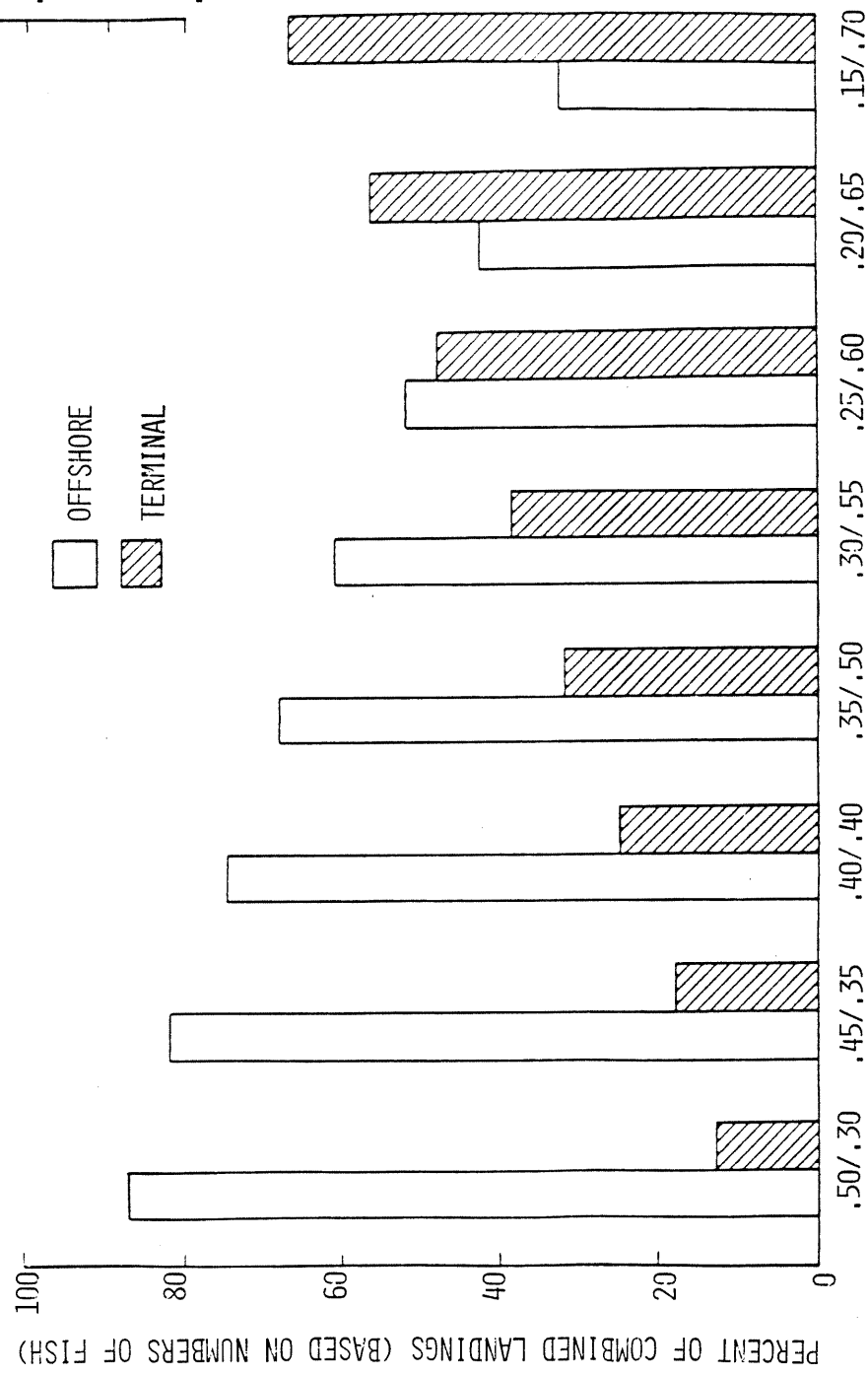
Various assumptions and estimates were used in the development of this harvest rate approach to the management of Klamath River fall chinook. The fishery model upon which the Klamath River natural spawning escapement rate is based will be continually under review as new information on the stock and the fisheries becomes available. The optimum escapement goal for the resource, expressed as a fixed escapement level or a fixed escapement rate, will be determined in future years as productivity measurements become available from a wide range of escapement levels of naturally spawning adults.

#### Impacts

Table 1 provides a summary of the impacts of the four proposed alternatives on landings and escapement at various levels of Klamath River fall chinook ocean abundance. For the purpose of comparing the impacts of the alternatives on

ESCAPEMENT/LANDINGS + ESCAPEMENT

.40  
.30  
.20



HARVEST RATE COMBINATION (OFFSHORE/TERMINAL)

Figure 1. Distribution of Klamath River fall-run chinook landings over the long term under a selected range of harvest rate combinations including relative impact on the adult spawning escapement

Table 1. Comparison of spawning escapement alternatives for Klamath River fall chinook in thousands of fish. a/

Klamath River Fall Chinook Ocean Abundance	Allowable Ocean Landings and Spawning Escapement of Klamath River Fall Chinook								
	Alternative 1 (115) c/		Alternative 2A (115 With 35 Floor) c/		Alternative 2B (115 With 43 Floor) c/		Alternative 3 (Harvest Rate)		
	Landings	Escapement	Landings	Escapement	Landings	Escapement	Landings	Escapement	
100	0	50.2					8.6 <sup>d/</sup>	44.9	5.4 <sup>d/</sup>
200	0	77.8					51.0	46.5	33.0
300	2.8	115.0					76.4	69.9	48.0
400	66.3	115.0					101.9	97.1	63.9
500	130.5	115.0					127.4	116.4	80.0
600	193.2	115.0					152.9	139.7	95.9
700	256.6	115.0					178.4	166.3	111.9

a/ For the purpose of comparing the impacts of the alternatives on spawning escapement, inriver harvest for all alternatives is set equivalent to that provided under the 1987 allocation agreement of KPMC. The KPMC harvest rate model and parameter estimates are used in the calculations (see Appendix E for details of calculating Alternative 1 for this table).

b/ Age composition is set at 72 percent age-3 and 28 percent age-4, the 1980-1987 average. Maturity probabilities are set at 0.43 for age-3 and 0.89 for age-4.

c/ The 115,000 adult chinook escapement goal in this alternative is considered to be the long-term spawning escapement goal (in effect by 1998) consisting of 97,500 natural spawners and 17,500 hatchery fish.

d/ Less than full harvest rate to clear the 35,000 floor under the KPMC agreement. Ocean and inriver catches are reduced in proportion to allocations of maturing adults with no floor in place.



spawning escapement, inriver harvest for all alternatives is set equivalent to that provided under the 1987 allocation agreement of the KFMC. Table 2 displays the postseason ocean abundance estimates for Klamath River fall chinook since 1980.

### Biological Impacts

The long-term spawning escapement goal under Alternatives 1, 2A, and 2B for Klamath River fall chinook salmon is 115,000 adult fish. It is based on Klamath-Trinity Basin escapement estimates for the early 1960s and includes 97,500 natural and 17,500 hatchery spawners. CDFG biologists, in 1985, were asked to provide an assessment of the current carrying capacity of the Klamath-Trinity Basin for naturally spawning Klamath River fall chinook salmon. CDFG developed estimates on a stream-by-stream basis using a variety of methodologies (Hubbell and Boydston, 1985). The assessment resulted in a wide range of estimates for the Klamath-Trinity Basin as a whole, from a low of 41,000 to a high of 106,000 Klamath River adult fall chinook. These values compare with the long-term escapement goal for natural spawners under Alternatives 1, 2A, and 2B of 97,500 natural adult fish.

Alternative 1 does not address spawning escapement until an inriver allocation has been agreed upon. Thus, the potential is high for overfishing the resource under this alternative. Without an ocean and inriver allocation, the ultimate spawning escapement goal under Alternative 1 might never be met. If the long-term escapement goal under this alternative (and Alternatives 2A and 2B) is too high, recruitment of juvenile fish would be reduced, and annual goal attainment would require more restrictive ocean regulations or no fishing at all.

Alternatives 2A and 2B consist of the same rebuilding schedule and ocean escapement goal as Alternative 1 but include annual spawning escapement floors for natural spawning areas of 35,000 and 43,000 adult fish, respectively. For annual management, this would require an estimate of inriver harvest and hatchery escapement. Short-term production might be greater under either Alternative 2A or 2B than under Alternative 1. This is because Alternatives 2A and 2B would protect a minimum spawning escapement level in rebuilding years (Alternative 1 does not provide for any level of spawning escapement until an allocation agreement is reached). The STT has previously commented that there is some technical justification for a minimum spawning escapement level for natural areas of the Klamath-Trinity Basin of 43,000 adult fish (see Appendix E).

The escapement rate plan, Alternative 3, was developed by the KRTT of the KRSMG (see KRTT 1986 for a complete description of its development). The STT has previously commented on the KFMC harvest rate plan (Appendix E). The harvest rate plan requires the establishment of harvest rate combinations in the offshore and inriver areas that will achieve MSY. This alternative also includes a 35,000 floor for natural spawning escapement levels to prevent extended periods of low juvenile production (see KRTT response to STT in Appendix E). Over time, the natural escapements under the harvest rate plan should begin to stabilize around the level needed to achieve MSY.

Under all four alternatives, the outside area impacts will affect the numbers of chinook that can be harvested within the KMZ. As outside area impacts are

Table 2. Estimated ocean abundance of Klamath River fall chinook in thousands of fish.<sup>a/</sup>

Years	Ocean Population Size by Age		
	3	4	Total
1980	79.5	86.0	165.5
1981	253.0	43.3	296.3
1982	190.8	105.1	295.9
1983	154.0	78.0	232.0
1984	53.9	45.6	99.5
1985	90.3	35.5	125.8
1986	669.7	60.5	730.2
1987	354.0	261.6	615.6

a/ This table is based on the data provided in Table II-3 of pre-season report I (SPDT 1988).

reduced, greater harvest can be permitted within the KMZ and unanticipated high harvest rates in outside areas usually will have a negative impact on achievement of spawning escapement objectives. Coastwide harvest of all Council chinook stocks will be maximized by focusing regulations aimed at protecting Klamath River fall chinook on the ocean areas with highest abundance of the stock. Recent years' data indicate the relative abundance of the stock declines rapidly both north and south of the current KMZ boundaries.

## Socio-Economic Impacts

### Approach to Analysis

There are three issues addressed by the alternatives: (1) the appropriate natural spawner escapement goal, (2) the escapement floor, and (3) the change from an ocean escapement to a spawning escapement goal. The economic effect of the four alternatives will occur through the numbers of Klamath River fall chinook available in any given year for harvest by all user groups (see Amendment Issue 1, Description of the Fishery, Appendix B). Division of the harvest among different user groups and the value the fish may have when harvested by different user groups are issues separate from those addressed or affected by the current alternatives. Therefore, no assumptions about the value of the fish need to be made for the analysis, except they have an economic value.

The analysis of the alternatives was made on the basis of four criteria.

- The expected numbers of fish provided for harvest
- The returns to investment through escapement floors (both returns and investment in terms of numbers of fish)
- Stability of the harvest
- Risk

### Analysis

Expected Harvests - A 40 year time series simulation model shows expected harvests of 129,900 and 128,700 Klamath River chinook for Alternatives 1 and 3, respectively (assumes high basin capacity, 106,000 natural spawners). If Klamath River Basin capacity is low (41,000 natural spawners), Alternative 3 performs significantly better than Alternative 1 with expected harvest yields of 49,900 and 26,100 chinook, respectively. The rebuilding period floor of Alternatives 2A and 2B are not expected to affect expected harvests over the long run. Their primary effects on expected harvests will be in situations of "disaster" returns during rebuilding, or in the event the Council gets ahead of the average escapements required in the rebuilding schedule and wants to consider increasing ocean harvests.

Returns from Escapement Floors - The application of the simulation model to Alternative 3 in the presence of high Klamath River Basin capacity showed net benefits for the Alternative 3 escapement floor. An artificial disaster was created in the year 1996; the imposition of a floor required that harvest be cut back from 14,900 to 0 fish. The gain in future harvest (discounted at a 10 percent rate) was the equivalent of a 32,500 fish harvest in the year of the disaster.

Alternative 2A and 2B escapement floors could cause a reduction in expected harvests if Klamath River Basin capacity is low (41,000 fish). In this situation, both floors would be above estimated MSY returns.

Stability of the Harvest - Earlier analysis of Alternatives 1 and 3 by the KRTT showed standard deviations of 73,000 and 34,000 fish, respectively, for the same expected harvest level. The greater stability in the harvests expected under Alternative 3 should provide opportunity for additional stability in the local coastal economies.

Risk - The concerns which stimulated the development of the alternatives (Identification of Alternatives, page 3) bring out three factors involving risk, (1) uncertainty about the accuracy of the assessment of Klamath River Basin capacity, (2) management for spawning escapement as opposed to river escapement, and (3) the possibility of lost harvest with or without escapement floors.

Concerns over the accuracy of assessment of Klamath River Basin capacity are addressed by Alternative 3 which should result in the ability to harvest at MSY regardless of Klamath River Basin carrying capacity. With Alternatives 1, 2A, and 2B, the simulation models show a risk that opportunities to harvest up to MSY will be lost if Klamath River Basin capacity is below the spawner escapement goals (Table B-8).

The imposition of natural spawner escapement floors under Alternatives 2A, 2B, and 3 requires the Council take into account the effects of inriver harvest on spawner escapement while setting ocean harvest levels. Under Alternatives 2A and 2B, once the floor is met for a given year, inriver harvest is not a factor in determining whether average spawner escapement targets are being met. Alternative 1 does not provide for specific consideration of the effects of inriver harvest on spawner escapement. The risk of depressed future harvests is greater when inriver harvest is not taken into account in determining whether needs for natural spawner escapement are being met.

The presence of the floors in Alternatives 2A and 2B may reduce risk during rebuilding so long as basin capacity is high. However, if basin capacity is low the floors will be above MSY escapement levels and there is a risk that harvests will be depressed.

#### Summary of Results

Allowable landing for different levels of Klamath River fall chinook ocean abundances are shown in Table 1. Table 2 shows recent ocean Klamath River chinook stock abundances. Table 1 demonstrates that under harvest rate management (Alternative 3) there could be higher allowable landings at lower ocean abundances and lower allowable landings at higher abundances than under a 115,000 fixed escapement goal (Alternatives 1, 2A, and 2B). Thus, with Alternative 3, more stability in the fishery and less risk are traded for less upside potential. However, it should be noted that times of high ocean abundance shown in Table 1 will be achieved less frequently the lower the actual Klamath River Basin capacity. Thus, if basin capacity is low, expected situations in which Alternative 3 performs less well than the other alternatives would be fewer.

Interaction With Other Amendment Issues

There is no interaction between Issue 1 and any of the other issues in this amendment. Management of the KMZ is related to Issue 6.

Council Recommendation

**The Council recommends implementation of Alternative 3 to replace the complete text under subheading "Klamath River Fall Chinook" on page 3-20 of Section 3.5.2.1. of the final framework amendment to the salmon FMP. Table 3-2 on page 3-11 must be modified as provided below to reflect this change.**

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System	Spawning Escapement Goal	Management Objectives	
		Other	Rebuilding Schedule
Klamath River Fall Chinook	35 percent of the potential adults from each brood of natural spawners, but no fewer than 35,000 naturally spawning adults in any year	Ocean and inriver fisheries to be managed based on allowable harvest rate combination, except as needed to protect the escapement floor	None at present

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Alternative 3 assures annual protection of a natural spawning escapement which should allow eventual determination and achievement of MSY for the stock. Implementing harvest and escapement rates, rather than a fixed escapement level, allows the magnitude of landings and escapement to vary in proportion to stock abundance. This reduces the possibility of having complete fishing closures in any one year. At the same time, it allows for natural variation in the spawning escapement to provide information on productivity from which to assess optimum spawning escapement. The escapement floor protects against extended periods of depressed natural production and failure to meet hatchery escapement needs. Additionally, Alternative 3 provides a framework within which compatible harvest allocations can be determined. The other alternatives fall short of providing a compatible framework for allocation and in resolving the uncertainty in determining the optimum spawning escapement for Klamath River fall chinook.

As part of the amendment, the Council adopted a 35,000 natural adult spawning escapement floor as recommended by the KRIT. Based on basin capacity estimates made by the KRIT, the STT believes there is some technical justification for selecting a floor of 43,000. However, the lower floor was deemed sufficient by the Council to protect the stock and reduce the risk of prolonged depressed production without as much loss of present harvest to the fishermen as incurred under a 43,000 floor. This decision is based, in part, on the fact that the 35,000 floor exceeds the natural escapement levels observed from 1979-1985 which averaged 26,800. In addition, the KRIT tested the effectiveness of the 35,000 floor by modeling a 40 year time series with 3 consecutive years of poor recruitment. One model run included the floor and one did not. The yield to the fishery was about 17 percent greater with the floor in place (KRIT 1986). The requirement of a 35,000 natural spawning escapement floor should also provide a very high probability of attaining sufficient escapement for hatchery production needs.

The initial adult natural spawning escapement rate adopted by the Council of 35 percent is the rate proposed by the KRIT based on its evaluation of the productivity of Klamath River fall chinook. The STT will annually consider input on the appropriateness of the current escapement rate goal and provide its determination to the Council in advance of preseason management option development. This rate may be modified upon approval of the STT and the Council to meet OY. Modification of the natural spawning escapement floor will require FMP amendment.

The parameters of the model upon which harvest rate management depends will be reviewed as needed by the KRIT and by the Council's Scientific and Statistical Committee and STT to assure that the management objectives are attained. Changes in the model parameters may be approved by the Council, based upon the best scientific information available. The optimum natural spawning escapement rate or level will be determined in the future as productivity measurements become available from a wide range of escapement levels of naturally spawning adults.

Alternative 3 is compatible with a wide range of ocean and inriver harvest allocations. Any harvest allocation which meets the annual spawning escapement rate or floor (whichever is greater) is possible under this harvest rate management spawning escapement goal.

#### References

##### Literature Cited

Hubbell, Paul M. and L. B. Boydstun. 1985. An Assessment of the Current Carrying Capacity of the Klamath River Basin for Adult Fall Chinook Salmon, CDFG, Inland Fisheries Division, Sacramento, CA.

KRIT. 1986. Recommended Spawning Escapement Policy for Klamath River Fall Run Chinook, Council.

SPDT. 1988. Preseason Report I Stock Abundance Analysis for 1988 Ocean Salmon Fisheries, Council.

##### FMP

Table 3-2 and Section 3.5.2.1., Final Framework Amendment for Managing the Ocean Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1985: pages 3-11 and 3-20.

##### Regulations

50 CFR Part 661, Appendix IV.

##### Miscellaneous (See Appendix E)

"KRIT Response to SPDT Comments on Klamath Escapement Floor," March 6, 1987.

"SPDT Comments Regarding Klamath Escapement Policy," April 7, 1986.

AMENDMENT ISSUE 2 - HARVEST ALLOCATION OF NON-INDIAN  
FISHERIES NORTH OF CAPE FALCON

Purpose and Need for Action

For the past three years, the Council has recommended harvest allocations for the non-Indian commercial and recreational ocean salmon fisheries north of Cape Falcon which have deviated from the framework allocation schedule. This requires the Secretary of Commerce to implement the recommendations by emergency rule. The deviation in 1986 involved a user-proposed preseason transfer of coho from the commercial fishery to the recreational fishery to minimize impacts on critical coho stocks while maximizing ocean harvest by each user group. A deviation in 1987 was requested to allow a quota overage in one ocean fishery to be deducted from the other ocean fishery if needed to avoid exceeding a total ocean quota or impact. In 1988, a significant preseason species trade (more than the 25 percent allowed in the framework allocation) was requested to optimize harvest for each user group under an extremely low total allowable coho harvest level.

Significantly reduced allowable harvests for both commercial and recreational fisheries since the mid-1980s have greatly shortened seasons and resulted in negative socio-economic impacts within the coastal communities which depend on the recreational and commercial fishing industries. Recent total allowable ocean harvest quotas have been consistently below those anticipated at the time the framework salmon FMP amendment was proposed and approved. At these low stock abundance levels, the present allocation schedule establishes allowable commercial and recreational harvest quotas which have not provided for the fisheries most beneficial for both the commercial and recreational users.

The current allocation schedule has resulted in extremely short recreational seasons which have been particularly damaging to local community businesses which depend on attracting recreational fishermen from many different geographic areas. Not only have recreational seasons been extremely short, but they have been continually disrupted by numerous inseason regulatory changes in an effort to more closely achieve full utilization of the coho and chinook salmon quotas. Both of these factors have made it difficult for coastal communities to attract and sustain large numbers of charter and private boat fishermen and have significantly reduced community income. Determination of the base recreational allocation which provides more stability to the local communities is an inappropriate determination to make annually in the Council's short preseason process. It requires a new allocation schedule which reflects the Council's emphasis on increased stability for the recreational fishery.

Background

The 1984-1988 average total allowable harvest of coho and chinook salmon for the non-Indian ocean fisheries north of Cape Falcon was less than one-third of the 1976-1980 average (Table 3). The average commercial season duration of 25 days for 1984-1988 compares to a 132-day average for 1976-1980. Average season duration for the 1984-1988 recreational fisheries was 43 days compared to a 153-day average for 1976-1980 (Council 1988a). In addition to the shortening of recent seasons, area closures and species restrictions have been instituted to help reduce or shape catch rates for the two salmon species.

Table 3. Non-Indian commercial and recreational ocean salmon harvest and season length north of Cape Falcon.

Year	Commercial Fishery		Recreational Fishery		Total Season (in days) <sup>a/</sup>	Total Season (in days) <sup>a/</sup>
	(Thousands of Fish) Chinook	Coho	(Thousands of Fish) Chinook	Landings Coho		
<u>Average</u>						
1976-1980	269	780	132	576	132	153
1981	92	349	96	292	146	96
1982	136	276	115	242	47	83
1983	56	28	52	246	62	107
1984	13	37	7	51	11	55
1985	43	169	30	199	29 <sup>b/</sup>	51
1986	39	120	31	213	25	37
1987	62	61	45	148	14	40
1988	75	0	19	98	45 <sup>c/</sup>	33

a/ Sum of consecutive subarea seasons.

b/ There was an additional pink salmon season which is not included in this number.

c/ The season in 1988 was limited to a chinook fishery. Seasons prior to 1988 contained some all-salmon seasons.



Not only have the allowable harvests been greatly reduced in recent years, but large percentages of the allowable harvests have gone unharvested, due in some part to the limited flexibility in the allocation schedule of the framework amendment. In 1986, the commercial fishery harvested only 76 percent of its chinook quota and 85 percent of its coho quota. In 1987, the commercial fishery exceeded its chinook quota by 9 percent but was only able to harvest 43 percent of its coho quota, forfeiting over 80,000 coho. The 1986 recreational fishery harvested 103 percent of its coho quota while landing 84 percent of the chinook quota. In 1987, the sport fishery was unable to harvest 26 percent of its coho quota while landing 100 percent of its chinook quota (Table 4) (Council 1987 and 1988a).

There are several reasons for the reduced non-Indian ocean salmon fisheries north of Cape Falcon. Certain weak chinook and coho salmon stocks have limited the ocean harvest rate in recent years. Other constraints and adjustments under the U.S.-Canada Pacific Salmon Treaty, treaty Indian and non-Indian allocation requirements under U.S. v. Washington and Hoh v. Baldrige, and inside/outside sharing have all had a part in the harvest changes. Managers and users are working with these issues on an annual and long-term basis to assure increased allowable harvest and equitable harvest allocation for the future. However, significant increases in available non-Indian ocean harvest are not likely for some years. The present total allowable ocean harvest is simply not sufficient to provide more than near minimal needs of the recreational and commercial fisheries. Modifying the present allocation schedule to allow more flexibility for commercial and recreational users will not resolve this problem, but it could allow for more productive use of the available harvest quotas for both fisheries. It should also significantly reduce the need for annual emergency actions.

The problem of incompletely harvesting quotas results from the tremendous fishing power of the commercial fishery, the unpredictability of its harvest potential in one- and two-day seasons, the variability in relative chinook and coho abundance, and the inflexibility of the present allocation schedule to allow fish to be transferred between commercial and recreational fisheries both preseason and inseason. Coho and chinook are caught concurrently in this area and fishermen have only limited ability to target on one species without impacting the other. When the quota of one species is taken, the fishery must close for both species. The present allocation does not allow for adjusting quotas inseason between recreational and commercial fisheries to take advantage of possible variations in species harvest rates between the two fisheries. Therefore, both fisheries may be closed with a considerable portion of a quota unharvested. The limited inseason management measures, such as area closures and bag limit changes, which have been implemented to correct for imbalances in quota attainment have been largely ineffective. They have served to increase confusion and dissatisfaction among fishermen.

#### Identification of Alternatives

Given the problems cited above, the Council approved a motion in April 1987 directing the States of Oregon and Washington to review the harvest allocation schedule north of Cape Falcon. To initiate the process, WDF and ODFW held a user group meeting on October 12-13, 1987 in Olympia, Washington. Users at this meeting formed a smaller work group known as the North of Cape Falcon Allocation Work Group. This group, which included pertinent members of the

Table 4. Preseason catch quotas and actual harvests in thousands of fish for non-Indian ocean salmon fisheries north of Cape Falcon, 1981-1988.

Year	Chinook			Coho		
	Quota	Catch	Catch/Quota	Quota	Catch	Catch/Quota
<u>COMMERCIAL</u>						
1981	None	92	-	372	349	0.94
1982	None	136	-	293	276	0.94
1983	114	56	0.49	164	28	0.17
1984	17	13	0.76	25	37	1.48
1985	47	43	0.91	91	169	1.86
1986	51	39	0.76	141	120	0.85
1987	57	62	1.09	141	61	0.43
1988	74	75	1.01	0	0	-
<u>RECREATIONAL</u>						
1981	None	96	-	248	292	1.18
1982	None	115	-	215	242	1.13
1983	88	52	0.59	318	246	0.77
1984	10	7	0.70	50	51	1.02
1985	37	30	0.81	198	199	1.01
1986	37	31	0.84	207	213	1.03
1987	45	45	1.0	201	148	0.74
1988	30	19	0.63	100	98	0.98

Council's SAS, has met five times since the initial meeting to develop the details presented in Alternatives 2 and 3 below.

In addition to the alternatives presented in this document, the Council submitted two other non-status quo alternatives for public review in January 1988. One of these alternatives was submitted to the Secretary of Commerce, who rejected its implementation as an emergency rule for 1988 (Council 1988b). Finally, in April, the Council adopted an emergency allocation which was agreed upon by the users and implemented by the Secretary of Commerce. The alternatives presented here build on the information and experience gained in the process of adopting an acceptable and beneficial emergency allocation.

### Proposed Alternatives

#### Alternative 1 - Status Quo

Appendix E provides the full text of the present allocation section of the framework amendment. It is characterized by a sliding scale percentage for each species which is tied to the total allowable coho harvest. The recreational percentage of coho harvest starts high at low levels of total allowable coho harvest and decreases as total harvest increases. The opposite is true for chinook. It also includes allowance for preseason deviation from the schedule, within limits, when total allowable coho harvest is less than 600,000.

#### Alternative 2 - Recreational Allocation Increased for Coho at Low Total Allowable Harvest Levels and Decreased for Chinook

The following language would be adopted to replace the entire text and table under "Option 5" on pages 3-39 and 3-40 of Section 3.7.1.1. of the final framework amendment.

Harvest allocations will be made from a total allowable ocean harvest which is maximized to the largest extent possible but still consistent with treaty obligations, state fishery needs, and spawning escapement requirements. The Council shall make every effort to establish seasons and gear requirements which provide troll and recreational fleets a reasonable opportunity to catch the available harvest. These may include single-species directed fisheries with landing restrictions for other species.

The goal of allocating ocean harvest north of Cape Falcon is to achieve, to the greatest degree possible, the objectives for the commercial and recreational fisheries as follows.

1. Provide recreational opportunity by maximizing the duration of the fishing season while minimizing daily and area closures and restrictions on gear and daily limits.
2. Maximize the value of the commercial harvest while providing fisheries of reasonable duration.

Initial commercial and recreational allocation will be determined by the schedule of percentages of total allowable harvest provided in Table 5, Alternative 2. This allocation schedule should, on the average, allow for

Table 5. Comparison of alternative allocation schedules for north of Cape Falcon non-Indian ocean catches.

Harvest (Thousands of Fish)	Coho		Chinook		
	Percentage		Harvest (Thousands of Fish)	Percentage	
	Troll	Recreational		Troll	Recreational
<u>Alternative 1 - Status Quo (Current Framework Amendment)<sup>a/</sup></u>					
0-600	31-49	69-51	0-600	63-54	37-46
600-1,300	49-69	51-31	600-1,300	54	46
>1,300	69	31	>1,300	54	46
<u>Alternative 2 - Recreational Allocation Increased for Coho at Low Total Allowable Harvest Levels and Decreased for Chinook<sup>b/</sup></u>					
0-150	0 <sup>c/</sup>	100 <sup>c/</sup>	0-100	70	30
150-180	100	0	>100-150	50	50
180-300	50	50	>150	70	30
>300	80	20			
<u>Alternative 3 - Recreational Allocation Increased at All Levels of Coho and at Low Levels of Chinook<sup>b/</sup></u>					
0-300	25	75	0-100	50	50
>300	60	40	>100-150	60	40
			>150	70	30

a/ This is a shortened version of the actual framework table. It should be noted that in the framework allocation schedule the chinook percentages are tied to total allowable coho harvest.

b/ In Alternatives 2 and 3, the percentage allocation is tiered and must be calculated in additive steps when the harvest level exceeds the initial tier. For example, in Alternative 2, the recreational allocation for a total allowable chinook harvest of 150,000 would be composed of 2 parts. The first part would be calculated by multiplying 100,000 by 30 percent. The result of this calculation would be added to the product of multiplying 50,000 by 50 percent (30,000 + 25,000 = 55,000 or 37 percent).

c/ Enough coho will be allocated to the troll fishery to allow for (1) any needed hooking mortality to access the troll chinook quota in May and June and (2) to access a pink fishery in odd years.

meeting the specific fishery allocation priorities described below. The initial allocation may be modified annually by preseason and inseason trades to better achieve (1) the commercial and recreational fishery objectives and (2) the specific fishery allocation priorities. The final preseason allocation adopted by the Council will be expressed in terms of quotas which are neither guaranteed catches nor inflexible ceilings. Only the total ocean harvest quota is a maximum allowable catch.

To provide flexibility to meet the dynamic nature of the fisheries and to assure achievement of the allocation objectives and fishery priorities, deviations from the allocation schedule will be allowed as follows.

1. Preseason species trades (chinook and coho) which vary from the allocation schedule may be made by the Council based upon the recommendation of the pertinent recreational and commercial SAS representatives north of Cape Falcon. The Council will compare the socio-economic impacts of any such recommendation to those of the standard allocation schedule before adopting the allocation which best meets FMP management objectives.
2. Inseason transfers, including species trades of chinook and coho, may be permitted in either direction between recreational and commercial fishery quotas to allow for uncatchable fish in one fishery to be reallocated to the other. Fish will be deemed "uncatchable" by a respective commercial or recreational fishery only after considering all possible annual management actions to allow for their harvest which meet framework harvest management objectives, including single species or exclusive registration fisheries. Implementation of inseason transfers will require (a) consultation with the pertinent recreational and commercial SAS members and the STT and (b) a clear establishment of available fish and impacts from the transfer.
3. Preseason trades shall be based on an exchange ratio of four coho to one chinook. Inseason trades or transfers may vary from the specified exchange ratio to meet overall fishery objectives.
4. The percentages presented in the allocation table are averages for the entire area between Cape Falcon and the U.S.-Canada border. The geographic distribution of the allocation may be varied by major subareas only if there is need to do so to protect weak stocks. Deviations within major subareas from the overall percentages must not exceed 50 percent of the allocation of each species which would have been established in the absence of the transfer.

#### Fishery Allocation Priorities

The priorities listed below will be used to help guide establishment of the final harvest allocation while meeting the overall commercial and recreational fishery objectives.

At total allowable harvest levels up to 150,000 coho and 100,000 chinook:

- o provide coho to the recreational fishery for a 5 day per week season for as much of the July through Labor Day period as possible and provide enough chinook to allow access to the coho quota.

- o provide chinook to the troll fishery for as much of a May and early June chinook season as possible and provide coho to (1) meet coho hooking mortality in June where needed and (2) access a pink salmon fishery in odd years.

At total allowable harvest levels between 150,000 to 300,000 coho and between 100,000 to 150,000 chinook:

- o increase the troll coho allocation to provide an all-salmon troll season.
- o continue to provide chinook and coho to the recreational fishery to relax any restrictions on increase in the total length of the season.

At total allowable harvest levels above 300,000 coho and 150,000 chinook:

- o increase recreational season length with an adequate balance of chinook and coho.
- o increase the harvest in the troll all-salmon season.

Alternative 3 - Recreational Allocation Increased at All Levels of Coho and at Low Levels of Chinook

This alternative would be identical to Alternative 2 except for (1) the description of criteria for deviations from the allocation schedule under items three and four on page 20 as listed below, (2) the use of the Alternative 3 allocation schedule in Table 5, and (3) the following allocation priorities listed below.

The four criteria for deviations from the allocation schedule are the same as for Alternative 2 except:

3. An exchange ratio of four coho to one chinook shall be considered a desirable guideline for preseason trades. Deviations from this guideline should be clearly justified. Inseason trades and transfers may vary to meet overall fishery objectives. (The exchange ratio of four coho to one chinook approximately equalizes the species trade in terms of average ex-vessel values of the two salmon species in the commercial fishery. It also represents an average species catch ratio in the recreational fishery.)
4. The percentages presented in the allocation table are averages for the entire area between Cape Falcon and the U.S.-Canada border. If there is need to protect weak stocks, the allocation percentages may vary between the area north of Leadbetter Point to the U.S.-Canada border and the area south of Leadbetter Point to Cape Falcon. Deviations from the overall percentages in these two major subareas would generally not exceed 50 percent of the allocation of each species which would have been established in the absence of the transfer. (The geographical deviations from the allocation schedule may allow for a larger total allowable ocean harvest, depending on the distribution of the controlling weak stock. The limit on deviations assures that seasons will not be eliminated or unfairly reduced along some portions of the coast.)

### Fishery Allocation Priorities

The priorities listed below will be used to help guide establishment of the final harvest allocation while meeting the overall commercial and recreational fishery objectives.

At total allowable harvest levels up to 300,000 coho and 100,000 chinook:

- Provide coho to the recreational fishery for a late June through early September all-species season. Provide chinook to allow (1) access to coho and, if possible, (2) a minimal chinook-only fishery prior to the all-species season. Adjust days per week and/or institute area restrictions to stabilize season duration.
- Provide chinook to the troll fishery for a May and early June chinook season and provide coho to (1) meet coho hooking mortality in June where needed and (2) access a pink salmon fishery in odd years. Attempt to ensure that part of the chinook season will occur after June 1.

At total allowable harvest levels above 300,000 coho and above 100,000 chinook:

- Relax any restrictions in the recreational all-species fishery and/or extend the all-species season beyond Labor Day as coho quota allows. Provide chinook to the recreational fishery for a Memorial Day through late June chinook-only fishery. Adjust days per week to ensure continuity with the all-species season.
- Provide coho for an all-salmon troll season in late summer and/or access to a pink fishery. Leave adequate chinook from the May through June season to allow access to coho.

### Impacts

Table 6 and Figures 2 and 3 provide a comparison of the numbers of coho and chinook allocated to each fishery under the three alternative allocation proposals.

#### Biological Impacts

None of the alternatives reviewed for this action would have an impact on the salmon stocks or their habitat that is different from those occurring under the current framework regulation. Allocation merely divides the allowable harvest among the user groups. To the degree known, differential stock impacts by different fisheries are accounted for in the Council's harvest impact models which are used to establish total allowable harvest within the Council's stock management objectives.

#### Socio-Economic Impacts

The economic and social concerns in Issue 2 are the effects of the allocation schedules on individuals, the user groups, the local communities, and the national economy. In addition to the allocation issues, the economic effects

Table 6. Comparison of the number of salmon (in thousands of fish) allocated to non-Indian commercial and recreational fisheries north of Cape Falcon under three proposed alternatives.

	Total Harvest	Harvest Allocation					
		Alternative 1 (Status Quo)		Alternative 2		Alternative 3	
		Troll	Sport	Troll	Sport	Troll	Sport
Chinook	50	30.9	19.1	35.0	15.0	25.0	25.0
Coho	75	24.9	50.1	0 <sup>a</sup> /	75.0 <sup>a</sup> /	18.8	56.2
Coho Per Chinook		0.8	2.6	0	5.0	0.8	2.3
Chinook	50	30.8	19.2	35.0	15.0	25.0	25.0
Coho	100	34.0	66.0	0 <sup>a</sup> /	100.0 <sup>a</sup> /	25.0	75.0
Coho Per Chinook		1.1	3.4	0	6.7	1.0	3.0
Chinook	50	30.4	19.6	35.0	15.0	25.0	25.0
Coho	150	53.2	96.8	0 <sup>a</sup> /	150.0 <sup>a</sup> /	37.5	112.5
Coho Per Chinook		1.8	4.9	0	10.0	1.5	4.5
Chinook	75	46.4	28.6	52.5	22.5	37.5	37.5
Coho	75	24.9	50.1	0 <sup>a</sup> /	75.0 <sup>a</sup> /	18.8	56.2
Coho Per Chinook		0.5	1.8	0	3.3	0.5	1.5
Chinook	75	46.1	28.9	52.5	22.5	37.5	37.5
Coho	100	34.0	66.0	0 <sup>a</sup> /	100.0 <sup>a</sup> /	25.0	75.0
Coho Per Chinook		0.7	2.3	0	4.4	0.7	2.0
Chinook	75	45.6	29.4	52.5	22.5	37.5	37.5
Coho	150	53.3	96.8	0 <sup>a</sup> /	150.0 <sup>a</sup> /	37.5	112.5
Coho Per Chinook		1.2	3.3	0	6.7	1.0	3.0
Chinook	75	45.0	30.0	52.5	22.5	37.5	37.5
Coho	200	74.0	126.0	40.0	160.0	50.0	150.0
Coho Per Chinook		1.6	4.2	0.8	7.1	1.3	4.0
Chinook	75	44.4	30.6	52.5	22.5	37.5	37.5
Coho	250	96.3	153.8	65.0	185.0	62.5	187.5
Coho Per Chinook		2.2	5.0	1.2	8.2	1.7	5.0
Chinook	100	61.5	38.5	70.0	30.0	50.0	50.0
Coho	100	34.0	66.0	0 <sup>a</sup> /	100.0 <sup>a</sup> /	25.0	75.0
Coho Per Chinook		0.6	1.7	0	3.3	0.5	1.5
Chinook	100	60.8	39.3	70.0	30.0	50.0	50.0
Coho	150	53.3	96.8	0 <sup>a</sup> /	150.0 <sup>a</sup> /	37.5	112.5
Coho Per Chinook		0.9	2.5	0	5.0	0.8	2.3
Chinook	100	60.0	40.0	70.0	30.0	50.0	50.0
Coho	200	74.0	126.0	40.0	160.0	50.0	150.0
Coho Per Chinook		1.2	3.2	0.6	5.3	1.0	3.0



Table 6. Comparison of the number of salmon . . . (continued).

	Total Harvest	Harvest Allocation					
		Alternative 1 (Status Quo)		Alternative 2		Alternative 3	
		Troll	Sport	Troll	Sport	Troll	Sport
Chinook	100	59.3	40.8	70.0	30.0	50.0	50.0
Coho	250	96.3	153.8	65.0	185.0	62.5	187.5
Coho Per Chinook		1.6	3.8	0.9	6.2	1.3	3.8
Chinook	100	58.5	41.5	70.0	30.0	50.0	50.0
Coho	300	120.0	180.0	90.0	210.0	75.0	225.0
Coho Per Chinook		2.1	4.3	1.3	7.0	1.5	4.5
Chinook	100	57.8	42.3	70.0	30.0	50.0	50.0
Coho	350	145.3	204.8	130.0	220.0	105.0	245.0
Coho Per Chinook		2.5	4.8	1.9	7.3	2.1	4.9
Chinook	150	91.1	58.9	95.0	55.0	80.0	70.0
Coho	150	53.3	96.8	0 <sup>a/</sup>	150.0 <sup>a/</sup>	37.5	112.5
Coho Per Chinook		0.6	1.6	0	2.7	0.5	1.6
Chinook	150	90.0	60.0	95.0	55.0	80.0	70.0
Coho	200	74.0	126.0	40.0	160.0	50.0	150.0
Coho Per Chinook		0.8	2.1	0.4	2.9	0.6	2.1
Chinook	150	88.9	61.1	95.0	55.0	80.0	70.0
Coho	250	96.3	153.8	65.0	185.0	62.5	187.5
Coho Per Chinook		1.1	2.5	0.7	3.4	0.8	2.7
Chinook	150	87.8	62.3	95.0	55.0	80.0	70.0
Coho	300	120.0	180.0	90.0	210.0	75.0	225.0
Coho Per Chinook		1.4	2.9	0.9	3.8	0.9	3.2
Chinook	150	86.6	63.4	95.0	55.0	80.0	70.0
Coho	350	145.3	204.8	130.0	220.0	105.0	245.0
Coho Per Chinook		1.7	3.2	1.4	4.0	1.3	3.5
Chinook	150	85.5	64.5	95.0	55.0	80.0	70.0
Coho	400	172.0	228.0	170.0	230.0	135.0	265.0
Coho Per Chinook		2.0	3.5	1.8	4.2	1.7	3.8
Chinook	200	108.0	92.0	130.0	70.0	115.0	85.0
Coho	600	294.0	306.0	330.0	270.0	255.0	345.0
Coho Per Chinook		2.7	3.3	2.5	3.9	2.2	4.1

a/ Coho would be provided to the troll fishery as needed to meet coho hooking mortality in June during the all-salmon-except-coho season and to access a pink salmon fishery in odd years.

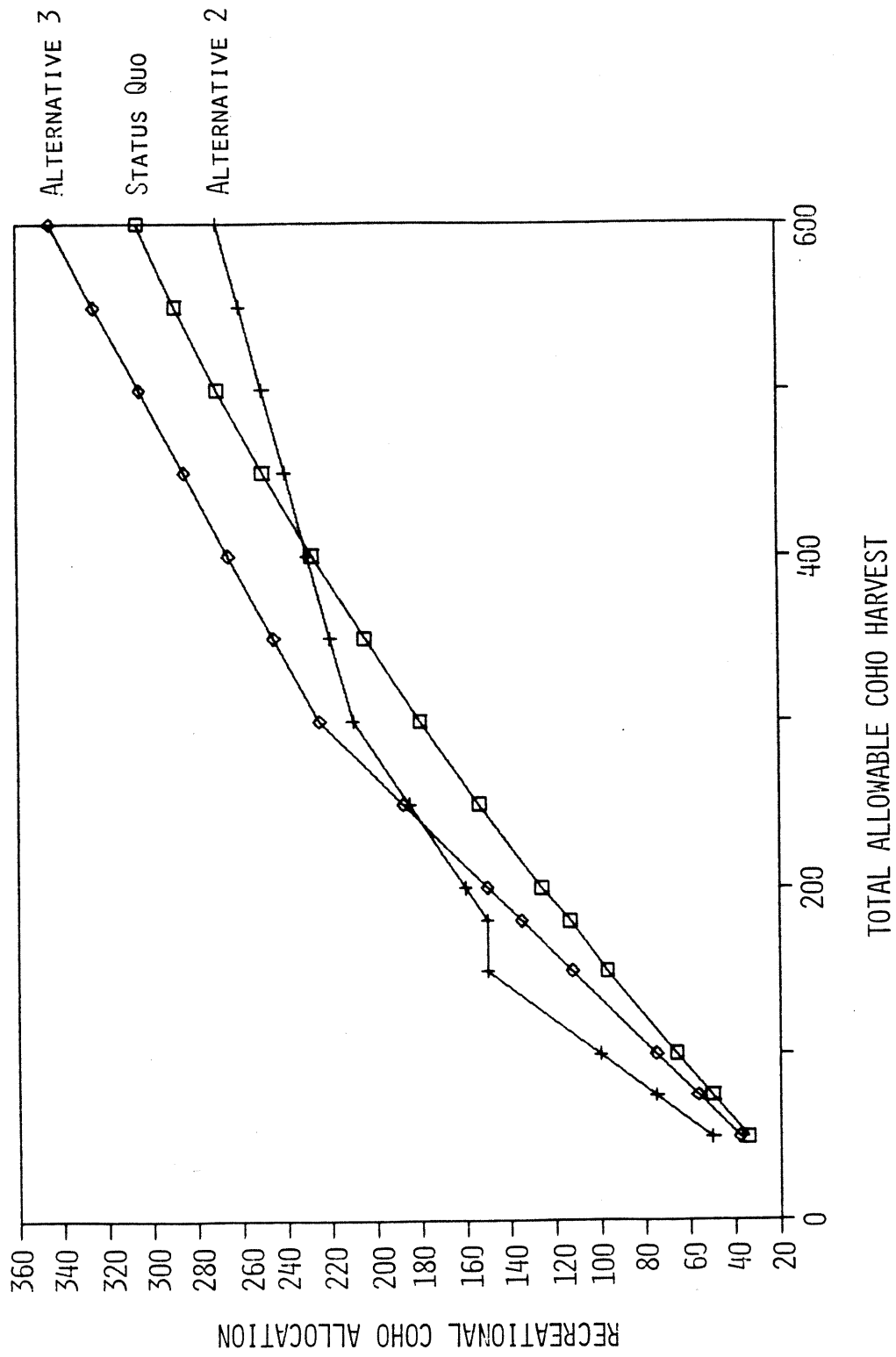


Figure 2. Recreational coho allocation north of Cape Falcon for various levels of total allowable harvest in thousands of fish.

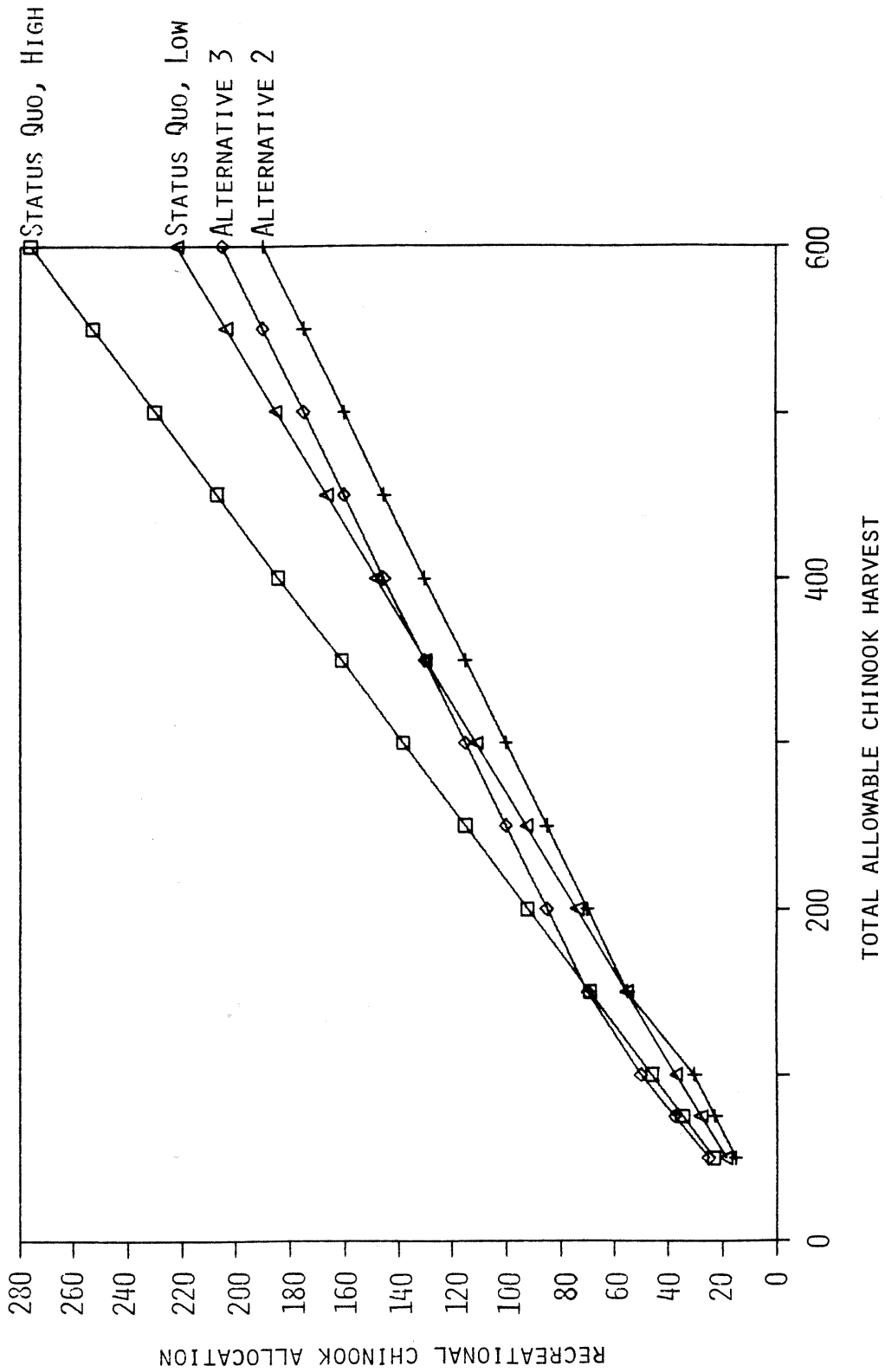


Figure 3. Recreational chinook allocation north of Cape Falcon for various levels of total allowable harvest in thousands of fish.

of preseason and inseason trades are discussed at the end of the summary on the benefit cost analysis results. Dependence and other social factors affected by the alternatives are also discussed.

Two basic concepts, NEV and local personal income impact, are used to estimate the economic effects of the alternative north of Cape Falcon allocation schedules. NEV refers to the "difference between the gross value of an economic activity and the costs (properly defined and measured) of carrying out that activity" (Rettig 1984) and are used here to generate a cost benefit analysis of alternative allocation schedules. Local personal income impact measures the change in wages, salaries, proprietary income, and profits that people will receive within a region or community. NEV measures the value of the allocation from a national income perspective, while local personal income impacts measure the value from a regional accounting perspective.

#### Summary of Cost Benefit Analysis Results

Certain factors make it difficult to predict with certainty the change in NEVs which will result from adoption of a new allocation schedule.

- The exact extent to which each user group will catch their full quotas and the occurrence of preseason and inseason trades cannot be anticipated.
- Recreational catch rates, season structures, and therefore user days generated, are not completely predictable.
- Alternative 3 proposes a chinook-only recreational season which is outside the assumptions necessary for an accurate analysis by the present economic model.

The analysis focuses on the economic value of the harvest of chinook and coho combined because the species are harvested jointly. For this reason, separate values for the species are not generated. Changes in NEV which are expected to occur in moving from Alternative 1 (status quo) to Alternatives 2 and 3 allocation schedules are shown in Tables B-12 and B-13, respectively, for a broad range of allowable catches.

Examination of the results on Alternative 2 (Table B-12) over the likely range of harvest levels (50,000 to 600,000 coho and 50,000 to 300,000 chinook), show changes in NEVs from -\$247,000 to \$779,000 compared to Alternative 1 (status quo). Negative values are generally found at coho allowable catch levels above 500,000 and below 1,500,000 fish when combined with chinook allowable catch levels below 200,000 fish. The results on Alternative 3 (Table B-13) show NEVs from -\$149,000 to \$710,000, compared to Alternative 1 (status quo). Negative values are generally found at coho allowable catch levels below 100,000 fish when combined with chinook allowable catch levels below 250,000 fish. At these levels, the assumptions of the analysis are violated by a proposed chinook-only recreational season. The impact of this season would be to increase the NEVs generated by Alternative 3 over those estimated in the analysis.

It should also be noted that there is less certainty about the accuracy of the results in areas of the tables where there are apparent negative values. In these areas, the allocation ratios are out of balance with the expected catch

ratios. This may result in uncaught fish or season structures significantly different from those assumed in deriving the values displayed in the tables (see Issue 2, Benefit Cost Analysis Estimation of NEV, Assumptions, Appendix B). In particular, when there are greater numbers of chinook than necessary to catch all the coho, and these chinook are allocated to the recreational fishery, an opportunity for a spring chinook-only fishery is created. While information is not available on the value a recreationalist places on a chinook-only season, as compared to an all-species season, it is apparent that significantly more user days may be supported per fish. With respect to income impacts (see Issue 2, Summary of I/O Model Results, Appendix B) it might be assumed that per day expenditures would be identical regardless of whether they occurred as a result of an all-species or chinook-only recreational fishery. Because the values in the tables are based on the all-species seasons, which have typified the recent fisheries, additional per fish user days generated in a chinook-only season imply an opportunity for greater value and income impacts for the recreational allocation than calculated in the tables.

The analysis results should be evaluated over many seasons. In any one year, allowable chinook and coho harvest levels may occur in combinations for which the results of the analysis indicate apparent negative values associated with the move from the status quo allocation schedule to the alternative. However, that poor performance may be more than offset by relatively better performance in other years. Thus, performance of the alternative should be judged on the basis of the values generated over many seasons.

The following are conclusions from the benefit cost analysis.

- Both Alternatives 2 and 3 show improved NEVs and community impacts over status quo in most of the relevant ranges of the quotas.
- Both options show negative values over different areas of the ranges of quotas considered.
- Neither alternative appears to be clearly superior to the other, or to status quo, over all areas of the relevant ranges. However, at the lower allowable coho harvest levels (under 300,000 coho), the assumptions of the analysis are violated by the chinook-only recreational season proposed in Alternative 3 (the model assumes an all-salmon season). The specific effects of this violation are uncertain, except that the NEVs for Alternative 3 should be higher than those generated by the model. This would act to reduce or eliminate the negative values in Tables B-13 and B-14.

One aspect of the proposals which the economic model does not measure is the provision for user group trades. If fish are traded pre-season, or in-season, deviation of the species allocation ratios from catchable ratios should be reduced and economic values of the allocations increased. Additionally, in-season trades allow fish uncaught due to insufficient numbers left for an additional full day of fishing to be transferred to the other user group. This provides another opportunity to harvest the full economic benefit of the allowable catch. Because the occurrence of species ratio imbalances, unharvestable remainders, and the allocation resulting from the trades will vary between years, it is not possible to make a precise comparison with

status quo. Both user groups have agreed to the inseason trade provisions making the trades appear socially acceptable.

#### Summary of I/O Model Results

In Appendix B, Tables B-14 and B-15 show estimated potential changes in coastal community personal income under Alternative 2 and 3, respectively, compared to Alternative 1. Over the likely range of harvest levels (50,000 to 600,000 coho and 50,000 to 300,000 chinook), the net gains to the coastal communities are expected to run between -\$797,000 and \$1,485,000 for Alternative 2 and between -\$47,000 and \$1,198,000 for Alternative 3.

Over the likely range, total community income impacts from the troll fishing activities are expected to change between -21 and 20 percent under Alternative 2 (Table B-20) and between -26 and 5 percent under Alternative 3 (Table B-21). The same tables indicate expected changes for the salmon sport fishery dependent firms of between -17 and 42 percent under Alternative 2 and between 4 and 25 percent under Alternative 3. These numbers show potential for significant small business impacts for purposes of classification of the action.

#### Other Social Factors for Consideration

There are a variety of other important social factors which should be considered, but for which there is little information.

Dependence and Opportunities for Adjustment - Firms and their employees more fully dependent on the benefits of one or the other of the user group allocations will be more directly impacted by the change in allocation. The degree of impact will depend on their degree of reliance on the north of Cape Falcon fishery and opportunities to adjust.

Social Impacts of Dislocation - Unemployment effects resulting from shifts in the allocation between user groups may have positive or negative impacts on individuals and communities depending on which user group they rely on more. As a result of the reallocation, fishery participants who have family or other social networks in the local communities may be able to stay in the community, or may be forced to separate from it in order to locate new sources of income. The social effects of necessary dissociations with the community impact the individuals and communities from which they depart as well as those to which they relocate.

Stability - The benefit cost analysis, the results of which are described above, does not capture the effects of the distribution of benefits through time within a given year. A certain amount of community economic and social stability may be gained when impacts are spread over a longer season. It is difficult to attach an economic value to this stability; however, it is apparent the recreational fisheries result in a slower and more stable utilization of the fish. Alternatives 2 and 3 both increase the recreational fisheries over much of the range of chinook and coho levels resulting in more seasonal stability.

### Interaction With Other Amendment Issues

There is no interaction between Issue 2 and any of the other issues in this amendment. The need for reporting requirements in Issue 5 is related to the quota management utilized north of Cape Falcon. However, no alternative in Issue 2 proposes to eliminate quotas.

### Council Recommendation

**The Council recommends implementation of Alternative 3 to replace the entire text and table under "Option 5" on pages 3-39 and 3-40 of Section 3.7.1.1. of the final framework amendment of the salmon FMP.**

The present framework amendment allocation has not adequately served the commercial and recreational fisheries north of Cape Falcon at recent allowable harvest levels. These levels are not expected to change significantly in the near future. Based on its review of the proposed amendment alternatives, the Council believes an increase in the recreational harvest allocation for coho and chinook salmon, as provided in Alternative 3, is required to obtain OY north of Cape Falcon.

The failure of the present allocation schedule has (1) required extensive preseason transfers of fish and emergency actions to achieve more optimal commercial and recreational fisheries, resulting in failure to fully attain OY; (2) contributed to the inseason loss of significant percentages of allowable harvest by both fisheries; (3) required extensive use of inseason management changes, particularly in the recreational fishery, to try to achieve reasonable season length and more fully utilize available harvests; and (4) exacerbated negative socio-economic impacts of the reduced seasons on local communities. Both alternatives to status quo address problems one through three in a similar manner and greatly improve the probability of obtaining OY. However, the allocation schedule for Alternative 3 assures the most stable recreational seasons and provides the greatest benefit to local communities which cannot move to other fisheries.

Current commercial and recreational ocean salmon seasons north of Cape Falcon have been greatly shortened from historic averages. This has resulted in significant negative socio-economic impacts on local communities which depend on fishing activities. At the current low levels of total allowable harvest, the increase in the recreational allocation provided by Alternative 3 will increase recreational season length while still maintaining a proportion of available harvest for the commercial fishery. Since the rate at which the recreational fishery utilizes its quota is much slower than the rate for the commercial fishery, the same number of coho harvested by the commercial fishery in one day may provide a week or more of recreational fishing. The transfer to the recreational allocation will thereby result in an extension of the overall period of fishing activity. This should generally distribute the economic benefits over a longer period of time, resulting in more stability in the communities. While the transfer of fish to the recreational fishery is a direct loss to the commercial sector, a portion of that loss is offset by the ability and practice of some commercial fishermen to move to other fishing areas.

Alternative 2 would also provide improvement in overall duration of fishing activity. However, over a significant portion of the allocation schedule, Alternative 2 increases the recreational coho allocation while decreasing the recreational chinook allocation. This significantly increases the probability that the initial recreational allocation will not provide enough chinook to fully harvest the available coho. Also, the greater recreational chinook allocation for Alternative 3 will allow for increased season duration through a chinook-only recreational fishery in years of low allowable coho harvest. Having these factors built into the allocation schedule, rather than dependent on preseason trades, provides additional assurance to the local communities for the base seasons that can be expected. This should further benefit the social, cultural, and economic stability of the region and reduce confusion which can be created by the need for extensive preseason trades.

Alternative 3 decreases the troll share of coho from a range of 31 to 69 percent under status quo to a range of 25 to about 55 percent (the percent increases as coho abundance increases). For chinook, Alternative 3 changes the troll share from a range of 54 to 63 percent under status quo (the percent increases as coho abundance decreases) to a range of 50 to about 65 percent (the percent increases as chinook abundance increases). Alternative 3 reallocates coho and chinook primarily to assure more stable recreational seasons at moderate to low total allowable harvest levels. The primary negative impacts of this reallocation are (1) a greater probability of no commercial all-salmon season rather than the one- or two-day seasons which may occur under the present allocation when troll quotas are in excess of 30,000 coho and (2) a decrease in the troll chinook quota primarily at low allowable harvest levels of both chinook and coho. The reallocation under Alternative 3 diminishes but does not eliminate the commercial fishery. Conversely, it enhances the recreational fishery but still leaves it at levels well below the historical averages. Only a significant increase in total allowable harvest north of Cape Falcon will allow both commercial and recreational fisheries to approach average historical seasons.

The overall positive impacts of selecting either alternative to status quo are primarily the result of gains for the recreational sector versus losses for the commercial sector. In a situation of very scarce resources, the Council chose Alternative 3 as the best approach to meeting its fishery allocation objectives for each fishery while improving the overall socio-economic impacts of the ocean fisheries on the local communities.

### References

#### Literature Cited

Council. 1985. Final Framework Amendment for Managing the Ocean Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1985, October 1984.

Council. 1986a. Review of 1985 Ocean Salmon Fisheries.

\_\_\_\_\_. 1986b. Preseason Report II Analysis of Proposed Regulatory Options for 1986 Ocean Salmon Fisheries.

\_\_\_\_\_. 1987a. Review of 1986 Ocean Salmon Fisheries.



\_\_\_\_\_. 1987b. Non-Indian Ocean Salmon Harvest Allocation North of Cape Falcon, Oregon: page 12.

\_\_\_\_\_. 1988a. Review of 1987 Ocean Salmon Fisheries.

\_\_\_\_\_. 1988b. Preseason Report II Analysis of Proposed Regulatory Options for 1988 Ocean Salmon Fisheries, March 1988.

Council. 1988b. Draft EA for a Proposed Emergency Rule Implementing Non-Indian Ocean Salmon Harvest Allocation North of Cape Falcon, Oregon.

FMP

Section 3.7.1.1., Option 5, Final Framework Amendment for Managing the Ocean Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1985: pages 3-39 through 3-40.

Regulations

50 CFR Part 661, Appendix II.B.2(a)

## AMENDMENT ISSUE 3 - INSEASON NOTICE PROCEDURES

### Purpose and Need for Action

#### Background

Current regulations implementing the framework amendment require that notice of inseason salmon management actions be filed with the OFR prior to becoming effective. This requirement has resulted in untimely implementation of federal inseason salmon management actions, due to the delay between the time a decision is made and OFR filing is accomplished.

Two primary problems result from delays in implementation of inseason actions. First, quotas may be overharvested if fishery closures cannot be made at the time quotas are projected to be achieved. Data projecting quota achievement is often received with very little time before actions need to be effective. During the 1987 ocean salmon season, NMFS, Northwest Region, encountered a situation where it was unable to file a timely Federal Register notice announcing a quota closure and the quota was exceeded. On other occasions during the season, state managers and fishery participants requested inseason adjustments to recreational management measures to slow the harvest of chinook salmon when the fishery was nearing quota. Although both fishermen and managers would have liked to implement the adjustments at midnight the same day the concern was identified, and although the states were capable of such actions, NMFS was unable to implement the action until the following day. These delays in implementing inseason adjustments caused the chinook quota to be reached and the season closed before the majority of the coho quota could be caught.

The second problem arises due to uncertainties relating to precisely when notices will be filed with the OFR, which makes it difficult to provide fishermen adequate prior notice of the actual time an action will become effective. As a consequence, announcement of the action through public media is often initiated at a very late date and is of limited effectiveness. This increases the possibility that fishermen will innocently violate new regulations, subjecting themselves to possible enforcement actions.

Numerous inseason actions are implemented each year under the ocean salmon framework amendment. Although the federal operational guidelines indicate that inseason notices take four days to process, most salmon notices have been implemented in less time. Nevertheless, inseason salmon actions have often taken a minimum of 24 hours to implement, and there is always some uncertainty about when the notice will be filed and become effective. This has resulted in delays in publishing notices of inseason actions in the news media. Conversely, if NMFS announces an inseason action before the notice is actually filed with the OFR, fishermen are misled into believing that a legally enforceable management action has occurred when it has not.

The Assistant Administrator for Fisheries has recently delegated the authority to sign Federal Register notices for inseason actions to the Director of the Office of Fisheries Conservation and Management (Mr. Richard Schaefer). This has significantly improved NMFS' ability to file notices with the OFR with a minimum of delay. To date, during 1988, it has taken less than 24 hours (as little as 1 hour on 1 occasion) to file notices of inseason actions.

Nevertheless, the potential exists for significant delays if the individuals authorized to sign Federal Register notices are not available in Washington, DC, or if it becomes necessary to take action when the OFR is closed, such as during a three-day holiday weekend.

### Identification of Alternatives

The NMFS, Northwest Region, believes it would be worthwhile to explore regulatory options for making inseason management actions effective and enforceable prior to filing with the OFR in specific instances when either insufficient time exists to file a notice with the OFR or delays in filing are expected. This could be accomplished by making actual notice of the action available to fishermen by means of several wide-reaching and commonly used media for disseminating marine information. These information sources would notify fishermen of the exact date and time the action is to take effect and be enforced. Notice of inseason actions would still be filed with the OFR as quickly as possible.

### Proposed Alternatives

#### Alternative 1 - Status Quo

The current procedures under which inseason regulation changes are made effective requires they be filed with the OFR prior to the action being effective.

#### Alternative 2 - Implementation by Actual Notice Accompanied by Filing With OFR

Inseason management actions taken under both the "fixed inseason management provisions" and the "general procedures for flexible inseason management provisions" will become effective by announcement in designated information sources (rather than by filing with the OFR). Notice of inseason actions will still be filed with the OFR as quickly as possible.

The information sources listed below will provide actual notice of inseason management actions to the public. Identification of the sources will be incorporated into the preseason regulations with a requirement that interested persons periodically monitor one or more source.

1. Broadcast by the U.S. Coast Guard on the "Notice to Mariners" broadcast. These broadcasts are announced on Channel 16 VHF-FM and 2182 KHZ at frequent intervals. The announcements designate the channel or frequency over which the "Notice to Mariners" will be immediately broadcast. The channel may vary from place to place. Fishermen would be required to monitor VHF Channel 16 for announcement of the clear channel over which broadcasts are made.
2. State and federal telephone hotline numbers specified in the annual regulations.
3. Filing with the Federal Register.

In addition, all the normal channels of informing the public of regulatory changes used by the state agencies would still be used.

## Impacts

### Biological Impacts

Among other things, inseason management actions must be consistent with ocean escapement goals and conservation of the salmon resource. Alternative 2 could have a positive effect on meeting these two biological criteria by allowing more timely action for (1) closure of the EEZ to prevent a fishery from exceeding its quota and (2) adjustment for an error in the preseason estimates.

### Socio-Economic Impacts

Actual quantitative estimates of the economic benefits from Alternative 2 will depend on the specific instances of the regulation changes and which fisheries are involved. The difference in time of implementation between the alternatives would generally be small (no more than one or two days). In commercial fisheries with significant numbers of trip boats, commercial catch statistics do not reflect the precise day of catch for each fish delivered. Therefore, in the case of exceeding a commercial quota, it would be extremely difficult to estimate exactly how much of the overquota harvest could have been prevented by an earlier closure. In the case of attempting to extend recreational fisheries, any projection for the length of the season without the restrictive actions would require a high degree of speculation. Qualitatively, however, the impact of Alternative 2 should be positive.

Alternative 2 could improve the socio-economic impacts of season regulation by allowing more timely utilization of certain management changes. It could decrease disruption of a fishery by allowing for a quicker rescission of an automatic closure when it was found that a quota had not actually been met as projected. It could provide further positive benefits by allowing more timely utilization of more general inseason management measures to accomplish such things as (1) extending the length of a season through the use of area closures, bag limit restrictions, or daily closures and (2) eliminating restrictions which become unnecessary during the course of a season.

Simultaneous federal and state regulation changes and precise announcement of the effective time of the changes at the earliest opportunity, both made possible under Alternative 2, would help reduce confusion among fishermen, improve enforcement, and allow more efficient planning. Alternative 2 would provide for more types of management actions to be implemented in this manner.

The use of telephone hotlines will impose minor costs to fishermen who use it.

### Administrative Costs

It is unlikely that administrative costs of disseminating notice of inseason management changes would be significantly different under the proposed alternatives. Under either alternative, it is necessary to disseminate notice of inseason actions (in addition to the Federal Register filing) to alert fishermen and provide for reasonable enforcement. In a majority of the cases, management changes are identical to changes in state regulations and notice is

disseminated by both state and federal management entities through their normal notification channels. Currently, NMFS utilizes the "Notice to Mariners" broadcasts to provide actual notice. The states have utilized telephone hotlines, press releases, posted notices at marinas, and the Coastal Fisheries Foundation daily fish bulletin broadcasts.

The information sources proposed for utilization under Alternative 2 are already in existence and the level of inseason notices is well within their capabilities to handle without additional staffing. The sources are already being utilized by state entities or NMFS. Alternative 2 will allow for increased efficiency, elimination of confusion, and improved enforcement because it would reduce the number of instances where federal actions were implemented and effective at a different time than those implemented by the states.

#### Interaction With Other Amendment Issues

There is no interaction between Issue 3 and any of the other five issues in the amendment.

#### Council Recommendation

**The Council recommends implementation of Alternative 2 to replace item three under Section 3.12.6. on page 3-76 of the framework amendment to the salmon FMP.**

Alternative 2 provides for efficient notice to the fishermen, eliminates a source of confusion in determining when an action is effective, and meets concerns expressed by the U.S. Coast Guard (see agency comments in Appendix F).

#### References

##### FMP

Section 3.12.6., Final Framework Amendment for Managing the Ocean Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1985: page 3-76.

##### Regulations

50 CFR 661 Appendix III.B(2)(c)

## AMENDMENT ISSUE 4 - STEELHEAD MANAGEMENT INTENT

### Purpose and Need for Action

#### Background

The States of Washington, Oregon, and California allow the incidental harvest of steelhead by recreational fishermen while prohibiting such harvest by commercial fishermen. Harvest of steelhead in the ocean is rare, particularly by recreational fishermen, and is an insignificant impact on steelhead stocks. Further, many recreational fishermen may not distinguish steelhead from salmon.

Retaining the current prohibition in federal regulations against commercial fishermen possessing steelhead, while modifying the same regulation to allow incidental harvest of steelhead by ocean recreational fishermen, would make the federal regulations consistent with state regulations.

### Proposed Alternatives

#### Alternative 1 - Status Quo

Section 3.8.6.4. on page 3-65 of the framework amendment prohibits persons, other than Indians with judicially-declared rights to do so, from taking and retaining, or possessing steelhead within the EEZ.

The implementing regulations for this prohibition in the framework amendment is found at 50 CFR Part 661.5(a)(8):

It is unlawful for any person to take and retain, or possess any steelhead (Salmon gairdneri) within the fishery management area, unless such take and retention qualifies as treaty Indian fishing as that term is defined in this Subpart A of this part.

#### Alternative 2 - Allowance for Steelhead Harvest by Recreational Fishermen

Modify Section 3.8.6.4. on page 3-65 of the framework amendment to read as follows (additions are in bold print).

Persons, other than Indians with judicially-declared rights to do so **and legally licensed recreational fishermen**, may not take and retain, or possess any steelhead within the EEZ.

### Impacts

#### Biological Impacts

Harvest of steelhead in the ocean recreational fisheries off the coasts of Washington, Oregon, and California is almost nonexistent and results in an insignificant impact on the total steelhead resource. Estimated catches are available for Washington and Oregon. They are as follows.

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Estimated Harvest of Steelhead in Ocean Sport Fisheries

<u>Washington</u>		<u>Oregon</u>	
<u>Year</u>	<u>Steelhead</u>	<u>Year</u>	<u>Steelhead</u>
1976-1977	72		
1977-1978	30	1978	181
1978-1979	44	1979	63
1979-1980	28	1980	228
1980-1981	3	1981	155
1981-1982	0	1982	281
1982-1983	62	1983	240
1983-1984	53	1984	63
1984-1985	50	1985	145
1985-1986	30		
1986-1987	66		

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Allowing the harvest of steelhead by recreational fishermen as provided in Alternative 2 will have no impact on conservation or management of the steelhead resource.

Socio-Economic Impacts

The effect of selecting Alternative 2 would be insignificant, except to reduce confusion over conflicting federal and state regulations.

Interaction With Other Amendment Issues

There is no interaction between Issue 4 and any of the other issues in this amendment.

Council Recommendation

**The Council recommends implementation of Alternative 2 to replace the language in Section 3.8.6.4. on page 3-65 of the framework amendment.**

References

FMP

Section 3.8.6.4., Final Framework Amendment for Managing the Ocean Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1985: page 3-65.

Regulations

50 CFR Part 661.5(a)(8)

AMENDMENT ISSUE 5 - RADIO REPORTING REQUIREMENTS FOR  
COMMERCIAL SALMON FISHERMEN

Purpose and Need for Action

Background

The Council adopted preseason management measures in 1987 and 1988 that included two types of reporting requirements for commercial salmon fishermen. NMFS did not implement them, however, because they were not authorized by the regulations implementing the framework amendment. Instead, they were implemented only by state regulations. The two types of reporting requirements adopted by the Council were as follows.

1. Commercial fishing vessels possessing salmon taken in the area north of Cape Falcon, Oregon, and delivering to a port outside the area were required to notify the U.S. Coast Guard and receive acknowledgment of such notification prior to leaving the area. The notification included the name of the vessel, port where delivery would be made, approximate amount of salmon (by species) on board, and estimated time of arrival. Information on notification was to be given to WDF and ODFW and was required for quota assessment.
2. During all closures of 3 days or less duration in designated areas, except for the 12-hour period following closure, no vessel could be underway at sea inside a closed area with salmon on board unless there had been a notification to and acknowledgment from the U.S. Coast Guard through the nearest U.S. Coast Guard station.

These reporting requirements were intended to (1) provide the proper accounting of the commercial salmon catches in each regulatory area for assessing quota attainment and (2) monitor the movement of commercial fishing vessels for the purpose of enforcing prohibitions on fishing in closed areas. Section 3.9.2.1. (Data Needs) of the framework amendment specifically lists the following information as being useful for inseason management: the harvest of each species by each fishery in each fishing area, and the distribution and movement of fishing effort.

The framework amendment implementing regulations at 50 CFR 661.4 recognize that catch and effort data necessary for implementation of the FMP are collected by the state agencies under existing data collection provisions, and that no additional catch reports will be required of fishermen as long as the data collection and reporting systems operated by state agencies continue to provide the Secretary of Commerce with statistical information adequate for management. Current state reporting systems do not regularly collect the specific type of inseason radio report that the Council has requested for inseason management. Although annual state regulations implemented the Council's request in 1988 for the territorial sea (0 to 3 nautical miles of shore), concurrent federal regulations in the EEZ (3 to 200 nautical miles of shore) are desirable in the future for regulatory consistency and enforceability.



## Proposed Alternatives

### Alternative 1 - Status Quo

Section 3.9.2.2. (Methods for Obtaining Inseason Data) of the framework amendment would continue to list only the following methods of collecting inseason management data: sampling of landings, aerial surveys, and telephone interviews.

Section 3.9.4. (Reporting Requirements) of the framework amendment would continue to read as follows.

This plan authorizes the local management authorities to determine the specific reporting requirements for those groups of fishermen under their control and to collect that information under existing state data-collection provisions. No additional catch or effort reports will be required of fishermen or processors as long as the data collection and reporting systems operated by the local authorities continue to provide the Secretary with statistical information adequate for management.

### Alternative 2 - Implement Federal Inseason Radio Reporting Requirements

Section 3.9.2.2. (Methods for Obtaining Inseason Data) of the framework amendment would be amended to include the use of radio reports to obtain inseason data on numbers of salmon caught by area. Section 3.9.4. would be amended to read as follows (additions in bold print).

This plan authorizes the local management authorities to determine the specific reporting requirements for those groups of fishermen under their control and to collect that information under existing state data-collection provisions. **With one exception**, no additional catch or effort reports will be required of fishermen or processors as long as the data collection and reporting systems operated by the local authorities continue to provide the Secretary with statistical information adequate for management. **The one exception would be to meet the need for timely and accurate assessment of inseason management data. In that instance the Council may annually recommend implementation of regulations requiring brief radio reports from commercial salmon fishermen who leave a regulatory area in order to land their catch in another regulatory area open to fishing. The federal or state entities receiving these radio reports would be specified in the annual regulations.**

### Impacts

For the purposes of the following analysis, it is assumed that state regulations would continue to authorize these reporting requirements in the territorial sea upon the Council's recommendation; therefore, many of the impacts appear to be the same for Alternatives 1 and 2. Only under

Alternative 2 would these reporting requirements be extended to include the EEZ.

### Biological Impacts

There should be no negative impacts on salmon stocks or their habitat under Alternatives 1 or 2 since any inseason actions taken would be consistent with ocean escapement goals and conservation objectives. Positive effects on the resource may result for Alternative 2 from more timely and accurate information being available to fishery managers to project quota attainment and assess the need for inseason management action.

### Socio-Economic Impacts

Actual quantitative estimates of the socio-economic benefits from either Alternative 1 or 2 cannot be estimated due to the variability of the annual management measures for the commercial salmon fishery.

For the purposes of the Paperwork Reduction Act, Alternative 2 would impose a collection of information which requires clearance by OMB. The OMB guidelines for this review process require significant documentation that collection of information has practical utility (serves an agency purpose and meets a specific need), minimizes the collection burden on the agency and the public, and is not duplicative of information otherwise accessible to the agency.

If the Council recommends Alternative 2 for the final amendment, consultation with interested agencies and members of the public as well as consideration of their comments are of critical importance to the OMB approval process. Due to the tight review and decision schedules for the final amendment package and the need for full documentation supporting the information collection request, interested parties are urged to comment on Alternative 2 as presented herein regarding the availability of data, the frequency of the collection, the clarity of instructions, the burden to be imposed, and any other concerns. Additional opportunities for public comment will be available.

### Administrative Costs

As the first step in the clearance process, NMFS has estimated the total number of hours required of the public to comply with Alternative 2 and requested an allocation of 50 hours within the Information Collection Budget for fiscal year 1989. Once the Information Collection Budget hours have been allocated, OMB approval must be obtained for the specific collection. The intent of Alternative 2 is to implement uniform reporting requirements across the entire geographic range of the commercial ocean salmon fishery in lieu of relying on each state to independently implement the same exact requirements in the waters off of each state (Washington, Oregon, and California).

Alternative 2 would implement federal regulations affecting the EEZ and would not be duplicative of state regulations because state regulations subsequently would either conform or defer to federal regulations.

Alternatives 1 and 2 both would impose minor administrative costs to the federal or state entities designated to process these radio reports. It is assumed that these costs would be more than compensated for by facilitating enforcement.

### Impacts on Fishermen

Because most fishermen return to the nearest port to land when an area closes to fishing, a small number of commercial salmon fishermen have been impacted by the two types of reporting requirements under Alternative 1. It is likely a smaller number of fishermen would be impacted under Alternative 2, although the exact number would depend on the regulations implemented each year. During the past two years, the reporting requirements have undergone public review during the preseason process prior to the Council's adoption of annual management measures. Therefore, it appears these reporting requirements have general acceptance by commercial salmon fishermen which increases the likelihood of their enforceability.

It is estimated that the public reporting burden for this collection of information would vary from 10 to 20 minutes per response, with an average of 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This estimate of about 4 reports being collected an hour combined with an estimate of a maximum of about 200 reports collected in a season brings the total public reporting burden to a maximum of about 50 hours each year.

Alternatives 1 and 2 could provide socio-economic benefits to commercial salmon fishermen whose home ports lie outside of the regulatory area by allowing them to land their catches in their home ports instead of requiring them to land within the regulatory area.

Alternative 2 would reduce the potential for fishermen being confused by some regulations governing the fishery being implemented by federal regulations and others by state regulations. Alternative 2 would allow federal regulations to be more comprehensive.

Alternative 1 or 2 would not result in any significant change in the conduct or practices of fishing which would adversely affect vessel and crew safety.

### Interaction With Other Amendment Issues

There is no interaction between Issue 5 and any of the other issues in this amendment.

### Council Recommendation

**The Council recommends implementation of Alternative 2 to amend the text in Section 3.9.2.2. (Methods for Obtaining Inseason Data) and Section 3.9.4. (Reporting Requirements) on pages 3-67 and 3-69 of the framework amendment to the salmon FMP.** The language under Alternative 2 has been modified from the version presented in the draft amendment in response to agency comments, particularly those of the U.S. Coast Guard (Appendix F). The proposed alternative does not include a requirement for radio reports from commercial fishermen who transit a closed area with fish on board. Alternative 2 will provide for more efficient notification, implementation, and enforcement of the radio reporting requirement than implementation by state regulations alone. This will allow for improved determinations of inseason landings of salmon by area.

## References

### FMP

Section 3.9.2. Inseason Management and Section 3.9.4. Reporting Requirements, Final Framework Amendment for Managing the Ocean Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1985: pages 3-66, 3-67, and 3-69.

### Regulations

50 CFR 661.4 and 661.20 and the Appendix to Part 661.

## AMENDMENT ISSUE 6 - LIMITATIONS FOR SEASON OPENING AND CLOSING DATES

### Purpose and Need for Action

#### Background

Presently, the salmon FMP contains several prohibitions specifically governing the opening and closing dates for commercial and recreational fisheries. An example is the prohibition against opening a commercial coho fishery north of the Oregon-California border prior to July 1. This prohibition was designed to promote better utilization of the salmon resource by allowing time for the coho to attain a larger size before harvest in the commercial fishery. South of the California border, an earlier opening was allowed since the coho are moving north during the summer and available harvest off California greatly diminishes as the summer progresses. In recent years, with creation of the KMZ (Orford Reef Red Buoy, Oregon to Horse Mountain, California) and the development of all-species fisheries in the KMZ during June, the prohibition against an early coho season north of California has become an issue in the Council's preseason process. In 1988, NMFS used emergency action to allow for a uniform all-species fishery throughout the KMZ in June. Use of the Oregon-California border as a management boundary is incompatible with managing the KMZ as a single unit.

The same section of the framework amendment which prohibits opening a commercial coho season north of the Oregon-California border prior to July 1, also prohibits commercial fisheries after October 31. Oregon has implemented commercial and recreational chinook fisheries after October 31 within territorial waters to target on abundant local salmon stocks. These fisheries have had the approval of the Council.

The two conflicts with specific restrictions on opening and closing dates, which are described above, may be indicative of future additional conflicts. To allow for responsive and equitable management, it may no longer be necessary to maintain the list of prohibitions on opening and closing dates, but rather to allow management to vary within the constraints of meeting the overall fishery objectives of the FMP.

### Proposed Alternatives

#### Alternative 1 - Status Quo

Retain the current prohibitions in Section 3.8.5.2. (Procedures of Calculating Seasons) on page 3-60 of the framework amendment as follows.

Seasons will be calculated using the total allowable ocean harvest determined by procedures described in Section 3.6., and further allocated to the commercial and recreational fishery in accordance with the allocation plan presented in Section 3.7., and after consideration of the estimated amount of effort required to catch the available fish, based on past seasons.

Until stocks have been substantially rebuilt and the long-term escapement goals have been met, the following limitations will guide Council decisions on establishing seasons.

1. No commercial fishing season will open prior to May 1.
2. No recreational fishery season north of the Oregon-California border will open prior to May 1.
3. No commercial coho fishery north of the Oregon-California border will open prior to July 1.
4. No commercial chinook or coho season will extend after October 31.
5. No recreational fishery off California for chinook or coho will open before the Saturday closest to February 15 nor extend after the Sunday closest to November 15.

Within these constraints, recreational seasons will be established with the goal of encompassing Memorial Day and/or Labor Day weekends in the season if feasible. Opening dates will be adjusted to provide reasonable assurance that the recreational fishery can have a continuous fishery, minimizing the possibility of an inseason closure.

#### Alternative 2 - Modify the Limitations on Season Opening and Closing Dates

Section 3.8.5.2. (Procedures for Calculating Seasons) on page 3-60 of the framework amendment would be modified, as provided below, to (1) allow for a commercial coho fishery throughout the KMZ prior to July 1, (2) standardize the regulation language, and (3) recognize current approved management practices within territorial waters. Draft language proposed below covers only paragraph two of the section. Additions are shown in bold and deletions indicated in brackets.

Until stocks have been substantially rebuilt and long-term escapement goals have been met, the following limitations will guide Council decisions on establishing seasons.

1. No commercial fishing season will open prior to May 1.
2. No recreational **fishing** [fishery] season north of the Oregon-California border will open prior to May 1.
3. No commercial coho fishery north of the **KMZ** [Oregon-California border] will open prior to July 1.
4. No commercial [chinook or] coho season will extend after October 31.
5. **No commercial chinook season will extend after October 31, except that targeted chinook fisheries**

**on healthy stocks may occur within state waters (zero to three miles).**

6. No recreational [fishery] **fishing season** off California for chinook or coho will open before the Saturday closest to February 15 nor extend after the Sunday closest to November 15.

### Alternative 3 - Delete All Prohibitions for Season Opening and Closing Dates

Section 3.8.5.2. (Procedures for Calculating Seasons) would be modified by deleting the second paragraph and its list of five prohibitions. The last paragraph would be modified to read as follows (deletions are shown in brackets).

[Within these constraints] Recreational seasons will be established with the goal of encompassing Memorial Day and/or Labor Day weekends in the season if feasible. Opening dates will be adjusted to provide reasonable assurance that the recreational fishery can have a continuous fishery, minimizing the possibility of an inseason closure.

### Impacts

#### Biological Impacts

##### Alternative 2

In comparison to the status quo, Alternative 2 would not endanger the reproductive capability of critical regional natural coho stocks under current ocean troll fishery management regimes allowed in the KMZ. In recent years, ocean all-species troll fisheries in the Oregon portion of the KMZ have been allowed during June (by NMFS emergency order) to facilitate an overall KMZ area targeted chinook fishery. In all cases, expected KMZ June coho impacts (including the Oregon portion from the Oregon-California border to Orford Reef Red Buoy) have been included in the preseason assessment of the impacts of fisheries on critical stocks such as OCN and Washington natural coho stocks. These impacts have included both catch and hooking mortality.

KMZ troll coho catches have decreased markedly from historical levels under current KMZ management strategies. For example, under 1986-1988 KMZ ocean troll harvest regulations, the June coho catch averaged only 20,600 coho; 22.7 percent of the 1976-1980 average catch of 90,700 coho. The Oregon portion of the June KMZ catch averaged 6,000 coho during 1986-1988; 43.8 percent of the 1976-1980 average catch of 13,700 coho.

Additionally, the Council and NMFS have approved "late season" targeted chinook-only fisheries in Oregon state waters after October 31 to harvest healthy late-returning fall chinook stocks. Coho impacts in these single-species fisheries are minor, as most mature adult coho have already escaped to area streams to spawn and immature coho are generally not in the terminal ocean area where these fisheries occur.

### Alternative 3

The biological impacts of fisheries under Alternative 3, compared to the current management regime, could range from minor to significant, depending on the nature of the ocean troll fishery established by the Council for south of Cape Falcon. For example, if the Council maintains the troll season and fishery structure south of Cape Falcon similar to recent years (1986-1988) which results in (1) only minor June KMZ coho catches under a directed chinook fishery and (2) no May ocean coho fishing off California south of the KMZ, then impacts on critical regional natural coho stocks would be minor.

If, however, all-species troll fisheries were adopted for June off Oregon (Cape Falcon south to the KMZ) and a May through June fishery off California south of the KMZ, a significant impact would result from adoption of Alternative 3. Although total stock impacts could be maintained under an overall quota south of Cape Falcon, allowable catches would be affected by (1) possible higher hook and release ("shaker") mortalities on undersized coho available in these time periods and (2) increased harvest impacts on OCN and/or Washington coho stocks.

More precise coho impact data would result from May through June fisheries since more fish would be retained as catch and present coho "shaker" impacts for chinook-only fisheries would be eliminated.

### Overall Considerations

It is not expected in the foreseeable future that the Council will allow unrestricted coho-only or all-species ocean fisheries within the KMZ, given the present Klamath River fall chinook ocean management strategies. Such limitations, while subject to change, are expected to be a continuing consideration in setting management strategies for the zone and will limit coho impacts at well below the 1976-1980 level (see above example for June). If KMZ area regulations are relaxed, however, and significant all-species fisheries develop, coho stock impacts south of Cape Falcon would have to be reassessed.

### Socio-Economic Impacts

Selection of Alternative 2 would do little to alter the socio-economic impacts of the framework amendment. It would have a positive effect for commercial fishermen within the Oregon portion of the KMZ by allowing them to harvest coho while fishing for chinook. Since the coho harvest in the Oregon portion of the KMZ is now only a very small part of the total commercial coho harvest south of Cape Falcon, any positive effect in the KMZ would have nearly insignificant negative impacts outside the KMZ. Providing uniform regulations throughout the KMZ as allowed by Alternatives 2 and 3 should reduce the complexity of the fishing regulations.

The impacts of selecting Alternative 3 are dependent on what actions the Council takes on an annual basis to depart from the current prohibitions. The overall impact of removing the prohibitions would be to allow the Council to be more responsive to annually identified socio-economic needs for altering the season opening and closing dates. This could be a significant positive impact in some cases. In some previous years, fishermen have argued for earlier commercial salmon seasons to take advantage of better prices.



### Administrative Costs

Selection of Alternative 2 might decrease administrative costs by (1) allowing uniform KMZ management without emergency regulations and (2) by decreasing enforcement effort to assure that differential regulations were complied with in the two parts of the KMZ.

Selection of Alternative 3 could increase administrative costs if seasons were extended over a longer period of time than allowed by status quo. The longer seasons would require increased monitoring and enforcement costs.

### Interaction With Other Amendment Issues

Issue 6 is related to Issue 1 (Klamath River fall chinook escapement goal). However, under any of the alternatives considered for Issue 1, a continuance of the KMZ at or near its present boundaries is likely. Therefore, the need would continue for Alternative 2 or 3.

### Council Recommendation

**The Council recommends implementation of Alternative 3 to modify Section 3.8.5.2. on page 3-60 of the framework amendment.**

The selection of Alternative 3, deleting five specific prohibitions for season opening and closing dates, does not indicate that all of the stocks are at or near their long-term escapement goals and thereby allows the Council much more latitude in setting seasons. It reflects increasing sensitivity of the Council's salmon management to consider and blend many biological and socio-economic factors in the selection of a final season.

In optimizing the management of a scarce resource (salmon) in the ocean mixed stock fishery, it is advantageous to shape seasons to avoid impacts on weak stocks while capitalizing on abundant stocks. Additionally, when harvests are restricted it may be advantageous to take that harvest at a time when socio-economic benefits are maximized. Achieving these socio-economic goals while still achieving long-term spawning escapement goals often requires significant flexibility in season opening and closing dates. The current simple specific prohibitions in the framework amendment do not reflect the growing complexity of management needs considered by the Council.

### References

#### FMP

Section 3.8.5.2., Final Framework Amendment for Managing the Ocean Salmon Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1985: page 3-60.

#### Regulations

50 CFR Part 661, Appendix II.B.7.

APPENDIX A

ENVIRONMENTAL ASSESSMENT SUMMARY OF THE NINTH AMENDMENT TO THE  
FISHERY MANAGEMENT PLAN FOR COMMERCIAL AND RECREATIONAL SALMON FISHERIES  
OFF THE COASTS OF WASHINGTON, OREGON, AND CALIFORNIA COMMENCING IN 1978

APPENDIX A  
ENVIRONMENTAL ASSESSMENT SUMMARY OF THE NINTH AMENDMENT TO THE  
FISHERY MANAGEMENT PLAN FOR COMMERCIAL AND RECREATIONAL SALMON FISHERIES  
OFF THE COASTS OF WASHINGTON, OREGON, AND CALIFORNIA COMMENCING IN 1978

Introduction

Shortly after the enactment of the MFCMA, the Council prepared the first ocean salmon FMP/EIS which was approved and implemented in 1977. A new FMP/EIS was developed for the 1978 season. Since that time, the 1978 FMP has been amended eight times.

From 1979 to 1983, the FMP was amended annually to establish management measures for each year's fishery and a SEIS was prepared for each amendment. In 1984, a framework amendment was implemented and was accompanied by another SEIS. The framework amendment established a mechanism to implement preseason and inseason regulatory adjustments without an FMP amendment.

Development of a ninth amendment to the 1978 FMP began with a formal scoping session in September 1987. At that time, Issues 1, 2, and 4 of this amendment package were identified. The remaining issues in this package resulted from agency and public input at subsequent reviews of the amendment issues at various Council meetings prior to July 1988.

The EA for this amendment has been prepared according to 40 CFR 1501.3, and 1508.9, and NOAA Directive 02-10 in order to determine whether an EIS is required by Section 102(2)(C) of the NEPA. An EIS normally is required for any major action that will have a significant impact on the quality of the human environment. An EIS is not required if the EA concludes that there is no significant impact.

An analysis of the environmental impacts of each of the six issues in the amendment is provided in the main body of this amendment document under each separate issue. Table A-1 identifies the pages of the amendment which discuss the need for action and analyze the potential environmental impacts of the alternatives for each issue. Thus, this appendix either contains or references the information required for a "structurally complete" EA.

Summary of Impacts

The actions proposed by this amendment will have no significant or adverse effect on flood plains or wetlands and trails and rivers listed or eligible for listing on the National Trails and Nationwide Inventory of Rivers.

Productive Capability of the Resource

Only Issue 1, Klamath River fall chinook escapement goal, is directly related to impacting the productive capability of the resource. Under status quo, an actual spawning escapement is not established until after 1998. Without a specific spawning escapement goal, there is a high likelihood for overfishing this resource as inriver harvest occurs following the ocean fishery. The alternatives to status quo, including Alternative 3, the Council's recommended approach, identify either specific spawning escapement floors or a goal and a floor. There is little likelihood of jeopardizing the productive capability of the stock under these alternatives.

Table A-1. Page references for requirements of an EA under NEPA for issues in the "Ninth Amendment to the FMP for Commercial and Recreational Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1978."

Issue	Title	Need for		Impacts			Council Recommendation
		Action	Alternatives	Biological	Socio-Economic	Interaction	
1	Klamath River Fall Chinook Salmon Escapement Goal	2	4	8	10	12	12
2	Harvest Allocation for Non-Indian Fisheries North of Cape Falcon	14	18	22	22	30	30
3	Inseason Notice Procedures	33	34	35	35	36	36
4	Steelhead Management Intent	37	37	37	38	38	38
5	Radio Reporting Requirements for Commercial Salmon Fishermen	39	40	41	41	42	42
6	Limitations for Season Opening and Closing Dates	44	44	46	47	48	48

### Ocean and Coastal Habitats

None of the issues considered in this FMP amendment has any direct or significant indirect impacts on ocean and coastal habitats.

### Public Health and Safety

Fishing in the ocean can be hazardous. The MFCMA and the salmon FMP require the Council to consider whether an FMP amendment will result in the need for temporary adjustments for access to the fishery for vessels prevented from harvesting due to weather or other oceanic conditions affecting the safety of the vessels. The Council reviewed this issue in adopting the eighth amendment to the FMP.

None of the issues considered in this FMP amendment has any direct or anticipated indirect impacts on public health and safety. None of the issues are anticipated to result in an increased or decreased need for allowing fishery access (due to unsafe weather) beyond that already existing under the present FMP.

### Endangered or Threatened Species and Marine Mammals

None of the issues considered in this FMP amendment has any direct or anticipated indirect impacts on an endangered or threatened species or a marine mammal population that was not considered in the SEIS for the framework amendment. Incidental involvements with marine mammals should be about the same under all alternatives. NMFS has determined that populations of endangered-threatened species under NMFS purview are not likely to be adversely affected by the proposed actions.

### Cumulative and Controversial Impacts

None of the issues considered in this FMP amendment has any direct or anticipated indirect cumulative impacts that are in addition to the impacts already discussed in this document.

Some controversy surrounds the choice of a spawning escapement goal for Issue 1, due primarily to uncertainty in establishing the MSY escapement level. All of the alternatives require annual projections of stock abundance and fishery impacts. The precision of these estimates varies and has been a source of controversy in the past. Fishery regulations developed under Alternative 3 might rely more heavily on the precision of these estimates than the other alternatives.

The choice of a harvest allocation schedule in Issue 2 is a controversial issue. This is due to its direct impact on season length and structure for commercial and recreational fisheries and the difficulty in accurately and precisely quantifying the socio-economic impacts of the allocation alternatives. The Council's choice of Alternative 3 should assist in achievement of OY by establishing allocations which provide for a longer period of fishing activity in the area north of Cape Falcon when total allowable harvests are at low levels. This is accomplished by significantly increased stability and duration of the recreational season while incurring significantly smaller losses in season duration for the commercial fishery. These changes should

improve the socio-economic stability of the local communities which have historically depended on and supported the activities generated by the ocean salmon fishing seasons. Without annual emergency deviations, use of the present framework schedule will result in a higher frequency of shorter overall fishing seasons and is more likely to result in incomplete utilization of the allowable harvest quotas without the flexibility of inseason transfers provided in the alternatives to status quo.

#### Agencies and Persons Consulted

Representatives of the following agencies were consulted in formulating the proposed action, considering alternatives, and preparing this EA.

California Department of Fish and Game  
Oregon Department of Fish and Wildlife  
National Marine Fisheries Service  
Pacific Fishery Management Council  
Washington Department of Fisheries  
U.S. Coast Guard  
U.S. Fish and Wildlife Service

#### Finding of No Significant Environmental Impact

For the reasons discussed and referenced above, it is determined that neither approval nor disapproval of any alternative presented in the ninth amendment would significantly affect the quality of the human environment in a way that has not already been contemplated in the SEIS for the FMP. Accordingly, preparation of a SEIS on these issues is not required by Section 102(2)(C) of the NEPA or its implementing regulations.

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Assistant Administrator for Fisheries, NOAA

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Date

APPENDIX B

SUPPLEMENTAL INFORMATION FOR THE REGULATORY IMPACT REVIEW/  
INITIAL REGULATORY FLEXIBILITY ANALYSIS

APPENDIX B  
SUPPLEMENTAL INFORMATION FOR THE REGULATORY IMPACT REVIEW/  
INITIAL REGULATORY FLEXIBILITY ANALYSIS

The background and options for the proposed 1989 salmon FMP amendment are described in the body of this report. The additional information provided here serves to complete the requirements for an RIR/IRFA.

AMENDMENT ISSUE 1 - KLAMATH RIVER FALL CHINOOK ESCAPEMENT GOAL

Description of the Fishery

Klamath River fall chinook spawn in the Klamath and Trinity river drainages. They are harvested by commercial and recreational ocean fishermen, inriver Indian gillnet fishermen, and recreational fishermen. The stocks are harvested throughout the Council's management area in a mixed stock ocean fishery, but primarily south of Cape Falcon, and most intensely in the KMZ. The Klamath River inside fisheries rely on spring and summer chinook runs and coho runs in addition to the fall chinook runs.

Because they have the highest impacts on Klamath River chinook, trollers and recreationalists active in the KMZ will be most directly affected by harvest cutbacks and shutdowns intended to preserve the runs. However, trollers operating south of Cape Falcon, but outside the KMZ, may also have their catch quotas impacted by the regulations necessary to meet escapement goals for Klamath River chinook. The structure of the California and Oregon commercial fleets are shown in Table B-1. The commercial troll fleet is mobile, and commercial vessels from Washington are also active in the California and Oregon fisheries (Table B-2). Larger trip boats are generally perceived to be more mobile than smaller day boats. The distribution of catch among different size categories of vessels in the California portion of the KMZ is shown in Table B-3.

Information on the number of charter and private recreational salmon fishing vessels in California is not available. However, Table B-4 shows the number of trips taken on these types of vessels in California and Oregon. Table B-5 shows the number of charter vessels licensed in Oregon.

The catches of the Klamath River inside fisheries are shown in Table B-6. In 1987, the reservation-wide Indian gillnet harvest was purchased by two processors. A McKinleyville processor purchased the roe and a Crescent City processor the carcasses. Four hundred and forty fishermen made 2,653 landings, delivering for sale 29,043 fish. Total revenues were \$936,024. A subsistence fishery occurred concurrent with the commercial fishery (Pierce 1987).

The 1981-1987 troll, sport, and total catches of chinook south of Cape Falcon and in the KMZ are shown in Table B-7. Average annual harvests between 1981 and 1987 were 166,000 chinook in the KMZ and 513,000 chinook south of Cape Falcon. Recent local community income impacts related to the ocean salmon fisheries which utilize these stocks are shown in Table B-8 (KMZ and south of Cape Falcon). Average annual income impacts related to all ocean salmon harvests from 1984-1987 were \$7,702,000 in the KMZ and \$56,927,000 south of Cape Falcon.



Table B-1. Salmon troll catch statistics in pounds of fish landed by boat size category for California, Oregon, and Washington, 1987.

Year <sup>a/</sup> Catch	Length Category (feet)	Vessels		Poundage	
		Number <sup>b/</sup>	Percentage	Number	Percentage
<u>CALIFORNIA</u>					
1987 <sup>c/</sup>	<20	265	11	299,133	3
	21-25	582	24	879,923	10
	26-30	430	18	1,122,489	12
	31-35	282	12	1,151,424	12
	36-40	403	17	2,335,890	25
	41-45	216	9	1,680,788	18
	46-50	160	7	1,126,181	12
	51-55	41	2	312,266	3
	56-60	34	1	198,872	2
	>60	13	1	75,210	1
	Unknown	3	<1	50,023	1
Totals		2,429		9,232,200	
<u>OREGON</u>					
1987 <sup>c/</sup>	<20	44	2	37,953	1
	20-29	1,024	49	1,657,469	23
	30-39	552	26	2,702,410	38
	40-49	352	17	2,263,017	32
	>50	115	6	480,846	7
	No length given	0	0	0	0
Totals		2,087		7,141,695	
<u>WASHINGTON</u>					
1987 <sup>c/</sup>	<25	375	43	131,629	17
	25-36	224	25	184,442	24
	>36	212	24	396,937	52
	Unknown	72	8	49,866	7
Totals		883		762,874	

a/ Derived from vessel registrations and fish landings tickets.

b/ Number of boats include only those recording pounds greater than zero.

c/ Preliminary.

Table B-2. Interstate troller activity for 1985. Number of vessels landing in each state and combination of states.<sup>a/</sup>

State(s) of Landing	Salmon Trollers <sup>b/</sup>
Washington Only	972
Oregon Only	1,446
California Only	1,780
Washington and Oregon Only	120
Washington and California Only	2
Oregon and California Only	85
Washington, Oregon, and California Only	<u>10</u>
TOTAL	4,415

a/ Excerpt from Korson and Thomson 1987.

b/ If vessel used troll during the year and most of the vessel's revenue came from coho or chinook salmon, the vessel is called a salmon troller.

Table B-3. Salmon landings and ex-vessel values by vessel size categories for Klamath River management area California ports, 1987.

Port	Vessel Length (feet)	Number of Deliveries	Total Pounds Landed	Total Ex-vessel Value	Percent Total Ex-vessel Value Landed in Port
Crescent City	<26	274	9,920	\$ 29,861	3
	26-36	483	54,013	157,507	15
	>36	642	280,617	847,618	82
	Unknown	2	30	76	<1
Trinidad	<26	447	14,604	40,106	61
	26-36	140	8,901	24,867	38
	>36	3	360	1,007	2
	Unknown	1	31	95	<1
Eureka	<26	357	16,420	43,998	2
	26-36	560	122,771	344,979	18
	>36	1,070	550,000	1,536,564	80
	Unknown	13	2,262	4,093	<1

Table B-4. California and Oregon ocean recreational salmon catch in thousands of fish and effort in thousands of angler trips by boat type, 1981-1987.

Year	Angler Trips		Chinook Catch		Coho Catch	
	Charter	Skiff	Charter	Skiff	Charter	Skiff
CALIFORNIA <sup>a/</sup>						
1981	61.1	66.9	59.6	24.2	0.2	9.5
1982	80.4	90.1	102.0	47.2	1.6	22.8
1983	46.2	65.4	44.8	17.3	0.2	26.7
1984	57.6	66.0	69.7	19.6	0.2	18.2
1985	87.9	97.7	96.8	63.8	0.9	14.4
1986	67.7	113.2	72.5	61.2	0.2	16.5
1987	96.8	161.0	117.8	73.2	3.0	43.0
OREGON <sup>b/</sup>						
1981	65.4	242.6	6.6	22.2	64.5	135.3
1982	43.3	182.7	8.2	30.6	48.5	126.7
1983	41.9	184.1	4.7	20.0	39.7	107.2
1984	24.3	128.7	2.2	14.8	27.3	96.1
1985	53.4	198.2	9.2	46.6	60.2	122.8
1986 <sup>c/d/</sup>	43.7	142.8	4.0	18.4	71.1	140.5
1987 <sup>e/</sup>	64.7	232.2	15.7	56.1	62.9	130.1
Ocean <sup>f/d/</sup>	60.9	194.1	14.1	44.5	60.7	116.8

a/ Includes only San Francisco area charter boats from 1981-1986.

b/ Salmon data from surveyed ports only. In the period 1981-1984, Pacific City and Florence were also surveyed.

c/ In 1986, 33,118 boat trips were made on the Buoy 10 fishery. Data was not broken down into charter and pleasure boat categories. Also, complete data was not collected during the extended coho season, weeks 42 through 45. During this period, it is estimated that 4,000 trips were made and 0 chinook and 5,400 coho were caught.

d/ Excludes Buoy 10.

e/ Preliminary.

f/ There were an additional 3,884 trips made to fish the Buoy 10 fishery from the bank. The total catch was 41 chinook and 203 coho.

Table B-5. Numbers of charter boats licensed in Oregon, 1980-1987.

Year	Total Number Licensed Charter Boats	Licensed by Oregon Residents	Licensed by Washington Residents	Licensed by Residents of Other States
1980	194	192	2	0
1981	248	213	34	1
1982	253	212	40	1
1983	255	206	47	2
1984	218	185	31	2
1985	226	198	25	3
1986	247	216	26	5
1987 <sup>a/</sup>	254	226	23	5

a/ Preliminary.

Table B-6. Klamath River adult inriver fall chinook run size, spawning escapement, sport catch, and Indian net harvest in numbers and percent of the total inriver run size, 1978-1987.

Year	Spawning Escapement		Inriver Sport Catch		Indian Net Catch		Inriver Run Size Numbers
	Numbers	Percent	Numbers	Percent	Numbers	Percent	
1978	71,500	78	1,700	2	18,200	20	91,300
1979	34,300	68	2,100	4	13,700	27	50,100
1980	28,000	63	4,500	10	12,000	27	44,500
1981	38,300	49	6,000	8	33,000	43	77,300
1982	42,400	65	8,300	13	14,500	22	65,200
1983	45,700	79	4,300	7	7,900	14	57,900
1984	22,700	52	2,100	5	18,500	43	43,300
1985 <sup>a/</sup>	44,000	74	3,800	6	11,600	20	59,300
1986 <sup>a/</sup>	144,300	77	16,900	9	25,100	13	186,300
1987 <sup>a/</sup>	129,300	65	16,500	8	53,100	27	199,000

a/ Preliminary.

Table B-7. Ocean catches of all chinook stocks in the KMZ and south of Cape Falcon (in thousands of fish).

Year	Troll	Sport	Total
<u>KMZ</u>			
1981	267.5	17.3	284.8
1982	239.1	28.8	267.9
1983	81.9	21.6	103.5
1984	53.0	17.1	70.1
1985	10.8	79.9	90.7
1986	117.8	26.2	144.0
1987	147.9	56.1	204.0
<u>SOUTH OF CAPE FALCON</u>			
1981	651.6	100.0	751.6
1982	574.4	174.8	749.2
1983	373.4	84.5	457.9
1984	47.0	105.6	152.6
1985	54.9	212.9	267.8
1986	428.1	154.2	582.3
1987	383.9	246.3	630.2

Table B-8. Ocean salmon fishery related community income impact in the KMZ and south of Cape Falcon for recent years (thousands of 1987 dollars).

Year	Troll	Sport	Total
<u>KMZ</u>			
1984	2,823	5,508	8,331
1985	500	5,050	5,550
1986	4,902	4,227	9,129
1987	8,609	6,893	15,502
<u>SOUTH OF CAPE FALCON</u>			
1984	24,217	14,034	38,251
1985	43,573	22,473	66,046
1986	52,780	19,620	72,400
1987	80,664	27,272	107,936



Additional details are presented in the "Review of 1987 Ocean Salmon Fisheries" (Council 1988).

### Approach to Analysis

There are three issues addressed by the alternatives: (1) the appropriate natural spawner escapement goal, (2) the escapement floor, and (3) the change from an ocean escapement to a spawning escapement goal. The economic effect of the four alternatives will occur through the numbers of Klamath River fall chinook available in any given year for harvest by all user groups (see Description of the Fishery). Division of the harvest among different user groups and the value the fish may have when harvested by different user groups are issues separate from those addressed or affected by the current alternatives. Therefore, no assumptions about the value of the fish need to be made for the analysis, except they have an economic value.

The analysis of the alternatives was made on the basis of four criteria.

- The expected numbers of fish provided for harvest
- The returns to investment through escapement floors (both returns and investment in terms of numbers of fish)
- Stability of the harvest
- Risk

### Analysis

#### Expected Harvests

Projections for expected harvests under a 115,000 total hatchery and natural spawner average escapement goal (Alternative 1), and the harvest rate approach (Alternative 3) are shown in Table B-9. These results are from a time series model which simulated fall chinook runs to the Klamath River Basin over a 40 year period. Essential elements of the model were the Klamath River fall chinook life history and the selectivities of ocean and river fisheries under recent years' regulations (KRTT 1986); a stochastic element was also incorporated to generate the results described here.

The results provided in Table B-9 are from simulations run by CDFG. The harvest rate approach is expected to result in MSY regardless of Klamath River Basin capacity. If Klamath River Basin capacity is low (41,000 natural spawners), the harvest rate approach (Alternative 3) performs significantly better than the 115,000 average escapement goal (Alternative 1), expected harvest yields of 49,900 and 26,100 chinook, respectively. If Klamath River Basin capacity is high (106,000 natural spawners), the 2 alternatives perform about the same in terms of expected harvest yields, 129,900 and 128,700 chinook for Alternatives 1 and 3, respectively.

The results are not available on the effects of the floor on the expected harvests resulting from the fixed escapement goal approach (Alternatives 2A and 2B). In general, CDFG reports little difference in expected harvests in comparisons of Alternatives 2A with 2B. If the Klamath River Basin capacity is 41,000 natural spawners, expected harvests may be depressed during rebuilding because escapement goals would be above MSY (29,000 for a 41,000 Klamath River Basin carrying capacity). Without additional results from the

Table B-9. Comparison of average annual fishery yield and escapement with the current inriver ocean harvest agreement in place, over a 40 year time series for three escapement goal scenarios in thousands of fish.

Alternative	Escapement Goal Scenario	Fishery Yield					
		41,000 Adults		106,000 Adults		Minimum	Minimum
		Average	Maximum	Minimum	Average		
1	115,000	26.1	70	2.0	129.9	283.3	7.3
-	Harvest Rate Without 35,000 Floor	51.2	88.2	5.7	126.7	225.2	14.9
3	Harvest Rate With 35,000 Floor	49.9	93.1	0	128.7	225.2	0

model, the effects of escapement goals in the presence of high Klamath River Basin capacity cannot be assessed.

The harvest of KMZ chinook is necessary for the harvest of coho and other ocean chinook stocks. Low yields and therefore low allowable harvests of KMZ chinook could result in restriction on many other salmon fisheries along the coast. Thus, the economic effect of low allowable harvest of KMZ chinook may be larger than would be indicated by the absolute changes in the allowable KMZ chinook harvest. The magnitude of the KMZ and south of Cape Falcon ocean fisheries is described in "Description of Fishery." Given the range of expected harvests levels under the different alternatives there may be significant small business impacts from this action, especially in the KMZ area.

#### Returns from Escapement Floors

Alternatives 2A and 2B escapement floors will only be used during rebuilding years. After the rebuilding years are finished, the target becomes 115,000 total (97,500 natural) spawners. Therefore, the effect of the floors will be limited to the rebuilding years and only in the event of disastrous returns, or in the event the Council gets ahead in rebuilding. Because of the present averaging method used for calculating rebuilding target escapements, it is possible for allowable escapement for a specific year to be very low. The escapement floor would prevent the Council from allowing ocean harvests which would severely curtail natural spawner escapement but still meet average escapement goals.

As discussed above, if the Klamath River Basin capacity is low, harvest levels could be restricted because the escapement floors of Alternatives 2A and 2B could be above MSY escapement levels.

The effects escapement floors might have in the presence of high Klamath River Basin capacity have been difficult to assess because of their limited duration and the hypothetical circumstances in which they would have to be applied. However, CDFG has done some simulations which demonstrate the effect the Alternative 3 floor might have. An application of the time series model showed that the floor might increase average harvests by about 2,000 fish (Table B-9). In the simulations, an artificial "disaster" was created in 1996. With the floor in place, a harvest of 14,900 fish was foregone. As a result, 3 and 4 years later there were 25,500 and 18,500 more fish available for harvest (Table B-10). When a 10 percent discount rate (OMB's suggested rate) was applied, using fish as the currency of trade, the present value of the future returns would be over 32,500 fish. This results in net benefits of 17,600 fish. (It is assumed that real prices of fish and costs of harvest remain stable over the period analyzed.)

#### Stability of the Harvest

Time series model simulations run by the KRTT showed deviations around the expected values to be much lower under the harvest rate approach (Alternative 3) compared to the status quo harvest goal approach (Alternative 1). For simulations which showed similar harvest yields (132,000 fish), the standard deviations were 73,000 and 34,000 fish, respectively. The lower deviations also appear in the minimum and maximum values of the simulations provided by

Table B-10. The effects of a harvest floor on harvest rate management. A 1 year artificial disaster was imposed in a 40 year simulation model in which the harvest rate management approach was used.

Year	Allowable Ocean Harvest Without 35,000 Fish Floor	Allowable Ocean Harvest With 35,000 Fish Floor	Difference
1996	14,900	0	-14,900
1997	92,600	92,600	
1998	138,200	138,200	
1999	90,700	116,200	25,500
2000	89,300	107,800	18,500
2001	183,600	184,600	800

Foregone Harvest: 14,900 fish  
 Present "Value" of Future Harvest:<sup>a/</sup> 32,500 fish

a/ Present value is in terms of numbers of fish. The 10 percent discount rate suggested by OMB is used.

CDFG (Table B-9). This stability in the harvest would be expected to provide additional stability for the local coastal economies.

### Risk

The concerns which stimulated the development of the alternatives (Identification of Alternatives, page 3) bring out three factors involving risk, (1) uncertainty about the accuracy of the assessment of Klamath River Basin capacity, (2) management for spawning escapement as opposed to river escapement, and (3) the possibility of lost harvest with or without escapement floors.

Concerns over the accuracy of assessment of Klamath River Basin capacity are addressed by Alternative 3 which should result in the ability to harvest at MSY regardless of Klamath River Basin carrying capacity. With Alternatives 1, 2A, and 2B, the simulation models show that opportunities to harvest up to MSY will be lost if Klamath River Basin capacity is below the spawner escapement goals (Table B-8). Thus, Alternative 3 reduces the risks associated with the uncertainty about actual basin carrying capacity, by reducing the importance of carrying capacity estimates in achieving opportunity for MSY harvests.

The imposition of natural spawner escapement floors under Alternatives 2A, 2B, and 3 requires the Council take into account the effects of inriver harvest on spawner escapement while setting ocean harvest levels. Under Alternatives 2A and 2B, once the floor is met for a given year, inriver harvest is not a factor in determining whether average spawner escapement targets are being met. Alternative 1, does not specifically consider the affects of inriver harvest on spawner escapement. Risk is greater when inriver harvest is not taken into account in determining an appropriate ocean escapement level.

If escapement floors are beneficial in terms of the discounted future returns, not mandating the floor by FMP amendment risks the loss of these returns. Alternatives 2A and 2B incorporate floors during the rebuilding period and Alternative 3 incorporates a floor indefinitely. The value of the harvest floors under fixed target escapement alternatives (2A and 2B) have not been modeled. For low Klamath River Basin capacities (41,000 fish), CDFG has reported the escapement floors may be above MSY producing escapement levels. This situation would result in depressed expected harvests. However, if Klamath River Basin capacity is low the floors will be above MSY escapement levels and their is a risk harvests will be depressed.

### Summary of Results

Allowable landing for different levels of Klamath River fall chinook ocean abundances are shown in Table 1. Table 2 shows recent ocean Klamath River chinook stock abundances for comparison. Table 1 demonstrates that under harvest rate management (Alternative 3) there would be higher allowable landings at lower ocean abundances and lower allowable landings at higher abundances than under a 115,000 fixed escapement goal (Alternatives 1, 2A, and 2B). Thus, with Alternative 3, more stability in the fishery and less risk are traded for less upside potential. However, since the escapement and harvest rates may be modified with appropriate justification each year during the preseason regulation development process, a higher harvest rate may be allowable in a year of particularly high abundance. It should also be noted

that times of high ocean abundance, shown in Table 1, will be achieved less frequently the lower the actual Klamath River Basin capacity. Thus, if basin capacity is low expected situations in which Alternative 3 performed less well than the other alternatives would be fewer.

AMENDMENT ISSUE 2 - HARVEST ALLOCATION OF  
NON-INDIAN FISHERIES NORTH OF CAPE FALCON

Description of the Fishery

The commercial troll fleet is mobile but vessels fishing north of Cape Falcon are primarily from Washington and Oregon. The structure of the Washington commercial fleet is shown in Table B-1. A breakdown showing the portion of the fleet making landings in Oregon north of Cape Falcon is not presently available, but less than one percent of the Oregon 1987 commercial troll deliveries were made north of Cape Falcon.

Many commercial fishermen also maintain multiple state licenses. The most recent data available on salmon trolling activity comes from a report on the 1985 PacFIN research data base (Korson and Thomson 1987). The 1985 data (Table B-2) shows for vessels acquiring more of their income from salmon trolling than any other Washington, Oregon, and California fishery that 1,104 participated in the Washington fishery. Of these, 12 percent also participated in Oregon and California. The number of vessels participating in Washington and also participating in Alaska is not available. Additional details are presented in the "Review of 1987 Ocean Salmon Fisheries" (Council 1988).

Information on the number of charter and private recreational salmon fishing vessels is not as detailed as the data on the commercial fleet. For the years between 1975 and 1987, the number of Washington licensed charter vessels declined from a 1977 peak of 569 down to a low 272 in 1987 (Table B-11). Washington has a moratorium in place on the issuance of licenses and has just completed the buy-back program responsible for bringing these numbers down. Some of these Washington vessels may operate within Puget Sound or the Columbia River areas. No breakdown is available but with respect to the Columbia River area 84 percent of the ocean and Columbia River charter trips actually take place on the ocean. Many of the vessels operating in the ocean also operate in the Columbia River. For these vessels, any percent change in the ocean harvest will result in a smaller proportional change in their gross receipts.

Reliable estimates of the number of private recreational vessels engaged in ocean sport salmon fishing are also not available. It is known that 47 percent of the 101,000 1987 Washington ocean angler trips were taken on private pleasure craft.

There is no detailed data presently available for vessels taking part in the Oregon recreational fishery north of Cape Falcon. Table B-5 presents the numbers of licensed charter vessels for 1976-1987. Seven percent of the 255,000 1987 Oregon ocean angler trips took place north of Cape Falcon.

Table B-11. Numbers of charter boats licensed in Washington, 1975-1987.

Year	Number of Licenses Issued
1975	404
1976	427
1977 <sup>a/</sup>	569
1978	535
1979	516
1980	510
1981	478
1982	414
1983	363
1984	355 <sup>b/c/</sup>
1985	316 <sup>d/</sup>
1986	298 <sup>e/</sup>
1987	272

a/ First year moratorium in effect.

b/ Vessel license refund program participated in by 85 boats in 1984.

c/ Buy-back program purchased 21 percent of the 355 total licenses issued during 1984.

d/ Buy-back program purchased 19 licenses of the total 316 issued during 1985.

e/ Buy-back program purchased 14 licenses of the total 298 issued during 1986.

## Approach to Analysis

The economic and social concerns in Issue 2 are the effects of the allocation schedules on individuals, the user groups, the local communities, and the national economy. In addition to the allocation issues, the economic effects of preseason and inseason trades are discussed at the end of the summary on the benefit cost analysis results. Dependence and other social factors are also discussed.

Two basic concepts, NEV and local personal income impact, are used to estimate the economic effects of the alternative north of Cape Falcon allocation schedules. NEV refers to the "difference between the gross value of an economic activity and the costs (properly defined and measured) of carrying out that activity" (Rettig 1984) and are used here to generate a cost benefit analysis of alternative allocation schedules. Local personal income impact measures the change in wages, salaries, proprietary income, and profits that people will receive within a region or community. NEV measures the value of the allocation from a national income perspective, while local personal income impacts measure the value from a regional accounting perspective.

### Benefit Cost Analysis Estimation of NEV

#### Recreational Methodology

##### Valuation of a User Day

Because recreational fishing occurs in public areas, prices for the use of the fishing area play an insignificant role in the valuation process. The opportunity to participate in the ocean recreational fishery is essentially a nonmarket good.

There are three widely used methods for inferring monetary values of nonmarket goods: travel cost, hedonic price, and contingency valuation (CVM). Welsh and Bishop (1986), in a survey of comparisons of these methods, concluded in summary that ". . . comparison studies generally found that different valuation methods provide reasonably similar estimates of value."

The most recent valuation for ocean fisheries located in the north of Cape Falcon area was a study done in 1978 by Crutchfield and Shelle (1979). This study relied on CVM to derive values for participation in the ocean salmon fisheries on the Washington coast. The CVM is based on survey-derived measures of willingness to sell or willingness to pay for the right to use a nonmarket good.

Crutchfield and Shelle (1979) estimate the average NEV per day for ocean salmon fishing to be \$29.63 (adjusted to 1987 dollars) using the willingness-to-pay criteria. A valuation based on willingness to accept compensation was also made; however, in studies cited by Welsh and Bishop (1987) it was generally shown that CVM studies overestimated willingness to accept compensation while more accurately measuring willingness to pay. Therefore, willingness-to-pay criteria will be relied on in this analysis.



## Calculation of User Days Generated

In order to determine a value for changes in the allocation of fish, the number of user days supportable by the allocation must be calculated. There are two methods for making this calculation: (1) the limiting species method and (2) the combined catch rate method.

With the limiting species method, per day species catch rates are used to determine the number of user days which would be supportable by each species, if there are a sufficient number of the other species. The minimum value is then taken as the number of user days which the allocation may support.

With the combined catch rate method, the allocations of both species are summed and divided by the sum of the species catch rates.

The critical assumption of the limiting species method are the catch rates. The catch rates for the individual species imply a ratio in which the species should be allocated to the recreational fisheries. Any fish in excess of the ratio will be given zero value. The model is very rigid in that if the fishery deviates from the species ratio implied by the expected catch rates, the estimates will be in error.

The combined catch rate method has generally been used by the Council in the past. Its advantage is that the ratio of the catch does not matter as long as the combined catch rate does not change. When considering the control over catch ratios, which may be exerted by altering season structures, the combined catch rate method appears to be more appropriate. This method will be used in the analysis of the allocation schedules.

Recreational catch rates are not completely predictable. Management by quota began in 1981. Since 1981, the annual combined catch rates for chinook and coho north of Cape Falcon have varied between 1.24 and 1.81 fish per day. The simple average of these annual catch rates is 1.51 fish per day. This catch rate is taken as the best predictor for future catch rates.

Certain limitations to the combined catch rate method must be recognized. As additional fish of a given species are allocated to the recreational fishery, two other factors are also varying: (1) the assumed species catch rates are changing and (2) the catch ratios are changing. When the limiting species method is used, only the numbers of fish change. The limiting species method may be a better analysis approach in evaluating the effects of specific changes when all other factors are held constant and opportunities to adjust season structure are not significant.

### Assumptions

All of the Allocation Will be Caught - Seasons will be structured and fish targeted so that all fish of both allocated species can be caught. Sufficient demand will be generated to take all the fish allocated.

Season Structures Similar to Recent Seasons Will Prevail - The values presented in the tables are based on recent season structures. As recreational allocations increase and the season is extended into different parts of the year, catch rates may change. If catch rates are lower in other parts of

the year, the changes in economic values attributable to allocations to the sport fishery may increase. More stringent bag limits may also affect catch rates and increase the number of days supported by an allocation (so long as demand is not reduced below that necessary to take the fish).

All-Species Seasons Assumed - All fish are assumed to be allocated to an all-species season. If a certain portion of chinook are to be allocated to a recreational chinook-only season as is done in Alternative 3, the sport related changes in economic values may be different. Lower per day catch rates for chinook, compared to the combined catch rates for chinook and coho, would lead us to calculate a higher number of days generated per fish. However, fishermen's valuation for a day of chinook-only fishing compared to a day of all-species fishing is uncertain, making appropriate valuation of a chinook-only fishery difficult.

Valuation of the Experience Will Not Change With Regulatory Changes - The sport fishermen's valuation of the ocean salmon fishing experience is assumed to be unchanged by any specific regulation (e.g., bag limits).

Important Demographics Will Remain Relatively Constant - Over the life of the allocation and since the 1978 Crutchfield and Shelle (1979) study, population age structures and living habits have not altered preferences for ocean salmon fishing and will not alter them in the future.

#### Commercial Methodology

##### Valuation of a Salmon

To compute the net economic benefits from commercial fishing, the variable costs of harvest (fuel, repairs, etc.) are subtracted from the gross revenues (ex-vessel price) and ex-process margins. In the short run, at low levels of total salmon harvest and with small incremental changes in salmon production, it is often argued that any increase or decrease in harvest will be taken with almost the same amount of variable expenses as before.

The assumption of full employment is implicit in most benefit cost analyses. But unemployment and excess fishing capacity, both transitory and chronic, seem to prevail in many Pacific coastal communities dependent on commercial fishing. Changes in markets or fishing opportunities may make it necessary for people and capital to change employment or locations. Various factors make it difficult for this to happen quickly enough to prevent a period of unemployment and idle capacity. The U.S. Water Resources Council (1983) suggests that when "idle boats" are available, the only incremental costs of increased harvest will be the operating costs.

Since the harvesting and processing sectors of the current fisheries are greatly overcapitalized, it is a plausible assumption that additional capital investment will not occur. With changes in the harvest size, variable costs will not vary much, and with capital costs nearly fixed, gross benefits will be close to net benefits.

Rettig and McCarl (1984) make recommendations on the calculation of commercial fisheries NEVs. Using the most liberal extremes of their recommendations (90 percent of ex-vessel and 90 percent of processor margins), the NEV per

fish can be calculated. The "90 percent rule" has been employed for the purposes of this analysis because the incremental harvest costs appear to be minimal.

It should be noted that as the total salmon harvest increases by significant amounts it would not be appropriate to use higher percentage levels. In a situation where new resources are needed to harvest and process a greater amount of salmon, a more appropriate level might be the 50 percent level (the lower level recommended by Rettig and McCarl).

A simple average of the 1981-1987 annual average dressed weights was used to derive a value for expected weights. Averages of the 1985-1987 real prices were used as the best estimates for expected prices. This more recent time period is anticipated to better reflect expected prices given the current market structure. The marginal NEV per troll coho and chinook are about \$9.65 and \$33.59, respectively.

#### Assumptions

All of the Allocation Will be Caught - Seasons will be structured and fish targeted so that all fish of both allocated species can be caught. Sufficient capacity will be available to take all the fish allocated.

Weights and Prices Similar to Historic Will Prevail - There will not be any long-run shifts in average weights and prices. These would result in changes in economic values and income impacts. Market structures, which could affect prices over the long term, and environmental and ecological factors, which could affect long-run changes in average weights, are assumed to remain stable.

Season Structures Similar to Recent Seasons Will Prevail - Fish are assumed to be allocated in seasons similar to the recent past. If a larger than historic portion of the chinook are allocated to a troll chinook-only season, it is assumed that higher ex-vessel prices, which might result from an earlier presence on the market, will be counterbalanced by lower fish weights. Application of 1981-1987 seasonally adjusted average weights to 1985-1987 seasonally adjusted average prices shows May chinook prices at \$27.46 per fish and July through August chinook prices at \$26.06 per fish.

#### Summary of Cost Benefit Analysis Results

Certain factors make it difficult to predict with certainty the change in NEVs which will result from adoption of a new allocation schedule.

- The exact extent to which each user group will catch their full quotas and the occurrence of preseason and inseason trades cannot be anticipated.
- Recreational catch rates, and therefore user days generated, are not completely predictable.
- Alternative 3 proposes a chinook-only recreational season which is outside the assumptions necessary for an accurate analysis by the present economic model.

Imbalances in the species ratios occur whenever species are allocated in ratios significantly different from that in which they will be caught. If imbalances are not corrected, fish will remain uncaught. Whenever the proposals increase the imbalances compared to imbalances present under status quo, the values in the analysis will overestimate values of the proposals. Whenever imbalances are reduced by the allocation proposals, the net benefits will actually be greater than those estimated by the economic model. When the imbalances are the same under status quo as they are under the proposal, they have little effect on the accuracy of the analysis. Species ratios are shown in Table 6.

Another factor that leads to uncaught fish is the necessity for sufficient numbers of fish to complete an additional day's harvest. This problem is particularly acute for the troll all-species season. During this season, fewer than 30,000 coho are not believed sufficient for the completion of an additional day of fishing. When there are less than 30,000 fish available in the troll allocation for an additional day, an unharvested remainder may result.

These factors must be kept in mind while considering the following results.

The analysis focuses on the economic value of the harvest of chinook and coho combined because the species are harvested jointly. For this reason, separate values for the species are not generated. Changes in NEV which are expected to occur in moving from Alternative 1 (status quo) to Alternatives 2 and 3 allocation schedules are shown in Tables B-12 and B-13, respectively, for a broad range of allowable catches.

Examination of the results on Alternative 2 (Table B-12) over the likely range of harvest levels (50,000 to 600,000 coho and 50,000 to 300,000 chinook), show changes in NEVs from -\$247,000 to \$779,000 compared to Alternative 1 (status quo). Negative values are generally found at coho allowable catch levels above 500,000 and below 1,500,000 fish when combined with chinook allowable catch levels below 200,000 fish. The results on Alternative 3 (Table B-13) show NEVs from -\$149,000 to \$710,000, compared to Alternative 1 (status quo). Negative values are generally found at coho allowable catch levels below 100,000 fish when combined with chinook allowable catch levels below 250,000 fish.

These results should be evaluated over many seasons. In any one year, allowable chinook and coho harvest levels may occur in combinations for which the results of the analysis indicate apparent negative values associated with the move from the status quo allocation schedule to the alternative. However, poor performance may be more than offset by relatively better performance in other years. Thus, performance of the alternative should be judged on the basis of the values generated when the results of many seasons are totaled.

It should also be noted that there is less certainty about the accuracy of the results in areas of the tables where there are apparent negative values. In these areas, the allocation ratios are out of balance with the expected catch ratios. This may result in uncaught fish or season structures significantly different from those assumed in deriving the values displayed in the tables (see Benefit Cost Analysis Estimation of NEV, Assumptions). In particular, when there are greater numbers of chinook than necessary to catch all the

Table B-12. Total changes in NEV for Alternative 2 allocation schedule in comparison to Alternative 1 (status quo) (in thousands of dollars).<sup>a/</sup>

Thousands of Coho	Thousands of Chinook						
	50	75	100	150	200	250	300
1,500	-38	18	74	46	158	269	381
1,000	-287	-231	-176	-204	-92	20	132
600	-247 <sup>b/</sup>	-192	-136	-164	-52	60	172
500	-98	-48	3	-35	66	167	268
400	51	96	142	93	184	274	365
300	380	420	460	401	481	561	641
200	409	444	479	409	479	549	618
150	596	628	660	585	650	715	779 <sup>b/</sup>
100	399	428	458	378	437	496	556
75	306	334	362	279	336	393	450
50	216	243	270	185	239	293	347

a/ The boxed areas of the table represent allowable harvest combinations which have recreational salmon species ratios within the range occurring over the last 6 years (3 to 7.5 coho per chinook observed between 1983 and 1988) and that are in the likely harvest range (50,000 to 600,000 coho and 50,000 to 300,000 chinook). There is a greater probability that values associated with harvest combinations outside the boxed areas will require adjustment to account for such things as allocation of chinook to a recreational chinook-only fishery, preseason and inseason trades, and unharvested fish.

b/ Maximum and minimum values.

Table B-13. Total changes in NEV for Alternative 3 allocation schedule in comparison to Alternative 1 (status quo) (in thousands of dollars).<sup>a/</sup>

Thousands of Coho	Thousands of Chinook						
	50	75	100	150	200	250	300
1,500	2,366	2,352	2,339	2,380	2,492	2,604	2,716
1,000	1,119	1,105	1,091	1,133	1,245	1,357	1,468
600	361	347	333	375	487	599	710 <sup>b/</sup>
500	311	292	272	304	405	506	608
400	260	236	212	232	323	414	505
300	390	360	330	341	421	501	582
200	170	135	100	100	170	239	309
150	82	45	7	2	66	131	196
100	9	-31	-71	-81	-22	37	97
75	-21	-63	-104	-117	-60	-4	53
50	-48	-91	-134	-149 <sup>b/</sup>	-95	-41	13

a/ The boxed area of the table represent allowable harvest combinations which have recreational salmon species ratios within the range occurring over the last 6 years (3 to 7.5 coho per chinook observed between 1983 and 1988) and that are in the likely harvest range (50,000 to 600,000 coho and 50,000 to 300,000 chinook). There is a greater probability that values associated with harvest combinations outside the boxed areas will require adjustment to account for such things as allocation of chinook to a recreational chinook-only fishery, preseason and inseason trades, and unharvested fish.

b/ Maximum and minimum values.

coho, and these chinook are allocated to the recreational fishery, an opportunity for a spring chinook-only fishery is created. While information is not available on the value a recreationalist places on a chinook-only season, as compared to an all-species season, it is apparent that significantly more user days may be supported per fish. With respect to income impacts (see Summary of I/O Model Results) it might be assumed that per day expenditures would be identical regardless of whether they occurred as a result of an all-species or chinook-only recreational fishery. Because the values in the tables are based on the all-species seasons, which have typified the recent fisheries, additional per fish user days generated in a chinook-only season imply an opportunity for greater value and income impacts for the recreational allocation than calculated in the tables.

The following are conclusions from the benefit cost analysis.

- Both Alternatives 2 and 3 result in improved NEVs and community impacts over status quo in most of the relevant ranges of the quotas.
- Both options show negative values over different areas of the ranges of quotas considered.
- Neither alternative appears to be clearly superior to the other, or to status quo, over all areas of the relevant ranges. However, at the lower allowable coho harvest levels (under 300,000 coho), the assumptions of the analysis are violated by the chinook-only recreational season proposed in Alternative 3 (the model assumes an all-salmon season). The specific effects of this violation are uncertain, except that the NEV values for Alternative 3 should be higher than those generated by the model. This would act to reduce or eliminate the negative values in Tables B-13 and B-14.

One aspect of the proposals which the economic model does not measure is the provision for user group trades. If fish are traded pre-season, or in-season, deviation of the species allocation ratios from catchable ratios should be reduced and economic values of the allocations increased. Additionally, in-season trades allow fish uncaught due to insufficient numbers left for an additional full day of fishing to be transferred to the other user group. This provides another opportunity to harvest the full economic benefit of the allowable catch. Because the occurrence of species ratio imbalances, unharvestable remainders, and the allocation resulting from the trades will vary between years, it is not possible to make a precise comparison with status quo. Both user groups have agreed to the in-season trade provisions making the trades appear socially acceptable.

#### Methodology for Estimating Impacts on Community Income

##### I/O Model

The amount that a commercial fisherman spends to prepare a consumer-ready product for market or a recreationalist spends to take part in ocean fishing has an important impact on the local and regional economy. In addition, purchases made by the harvester, processor, or tourist-related businesses will cause suppliers to purchase additional inputs in the form of labor, inventory,

Table B-14. Total changes in income impacts for Alternative 3 allocation schedule (in thousands of dollars).

Thousands of Coho	Thousands of Chinook						
	50	75	100	150	200	250	300
1,500	5,844	5,833	5,823	5,854	5,937	6,020	6,103
1,000	2,789	2,779	2,769	2,800	2,883	2,965	3,048
600	932	922	911	943	1,025	1,108	1,191
500	827	812	798	822	897	972	1,047
400	721	703	685	700	768	835	903
300	1,056	1,033	1,011	1,019	1,079	1,138	1,198 <sup>a/</sup>
200	535	509	483	483	535	586	638
150	329	301	273	270	317	365	413
100	160	131	101	93	137	181	225
75	90	59	28	18	61	103	145
50	28	-4	-35	-47 <sup>a/</sup>	-7	33	73

a/ Maximum and minimum values.



and other items. As workers and entrepreneurs receive wages, salaries, and profits from these activities, they spend money in the local area for a variety of goods and services. The total effect on the local economy depends upon the the original dollar expenditures and the amount which is spent for subsequent purchases within the local economy. Economic I/O models are often used to estimate the impact of resource changes on the local economy. It should be recognized that the impact on the community area being studied may be at the expense of communities outside the area.

The U.S. Forest Service has developed a computer program called IMPLAN which can be used to construct county or multicounty I/O models for any region in the U.S. I/O models have been constructed for many of the Pacific coast communities that are dependent on commercial and recreational fishing. Representative budgets from the fish harvesting and processing sectors and impact assessment models are taken from studies developed by Radtke and Jensen (1987). The budgets used in these reports reflect the expenditure patterns of salmon fishermen who harvest the majority of the fish. These expenditures determine the economic impacts that the commercial fishery has on the community.

An average of the 1985-1987 recreational user day impacts was used to estimate expected impacts. It was assumed that, over the long run, composition of firms in the community and proportion of recreationalists using charter vessels will not deviate from the averages of this period. As with the commercial NEV estimates above, 1985-1987 average prices and 1981-1987 average weights were used to estimate expected values for use in the I/O model. The assumptions specified for the calculation of NEVs generally apply to the I/O model results as well.

The changes in coastal community income the model will associate with a change in the allocation for each user group are as follows. A coho will be calculated to generate an average of \$36.94 if harvested recreationally and \$12.51 if harvested commercially. A chinook will be calculated to generate \$36.94 if harvested recreationally and \$47.30 if harvested commercially. The recreational values should **not** be interpreted as per fish values but as the change in total fishery related income impacts as fish, catch rates, and catch ratios shift simultaneously.

#### Summary of I/O Model Results

Tables B-14 and B-15 show estimated potential changes in coastal community personal income under Alternative 2 and 3, respectively, compared to Alternative 1. Over the likely range of harvest levels (50,000 to 600,000 coho and 50,000 to 300,000 chinook), the net gains to the coastal communities are expected to run between -\$797,000 and \$1,485,000 for Alternative 2 and between -\$47,000 and \$1,198,000 for Alternative 3.

#### Distributional Effects

Tables B-16 and B-17 show the changes in NEV expected from each user group's allocation for Alternatives 2 and 3, respectively, compared to Alternative 1 (status quo). Tables B-18 and B-19 show the changes in income impacts associated with each user group's allocation for Alternatives 2 and 3 respectively, compared to Alternative 1.

Table B-15. Total changes in income impacts for Alternative 2 allocation schedule (in thousands of dollars).

Thousands of Coho	Thousands of Chinook						
	50	75	100	150	200	250	300
1,500	-284	-242	-201	-221	-139	-56	27
1,000	-894	-853	-812	-832	-749	-667	-584
600	-797 <sup>a/</sup>	-755	-714	-735	-652	-569	-486
500	-414	-376	-338	-367	-292	-217	-142
400	-30	3	37	1	68	135	203
300	793	822	852	808	868	927	987
200	883	908	934	883	934	986	1,038
150	1,349	1,373	1,397	1,341	1,389	1,437	1,485 <sup>a/</sup>
100	875	897	919	859	903	947	991
75	651	672	694	632	674	716	758
50	437	457	477	414	454	494	534

a/ Maximum and minimum values.

Table B-16. Changes in NEV by user group for Alternative 2 allocation schedule in comparison to Alternative 1 (status quo) (in thousands of dollars).

Thousands of Coho	Thousands of Chinook													
	50		75		100		150		200		250		300	
	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport
1,500	413	-451	548	-530	682	-608	615	-569	884	-726	1,152	-883	1,421	-1,040
1,000	654	-942	789	-1,020	923	-1,099	856	-1,060	1,125	-1,217	1,394	-1,374	1,662	-1,531
600	616	-863	750	-942	885	-1,020	818	-981	1,086	-1,138	1,355	-1,295	1,624 <sup>a/</sup>	-1,452 <sup>a/</sup>
500	436	-535	558	-606	680	-677	587	-623	831	-765	1,075	-908	1,318	-1,050
400	257	-206	366	-270	475	-334	358	-265	576	-392	794	-520	1,013	-648
300	-96	476	0	419	97	363	-46	446	147	334	340	221	534	108
200	-160	569	-76	520	8	471	-160	569	8	471	176	373	344	275
150	-358	954	-281	909	-203	863	-383 <sup>a/</sup>	969 <sup>a/</sup>	-228	878	-73	787	83	697
100	-185	584	-114	542	-42	500	-236	613	-93	530	50	446	193	363
75	-104	410	-36	370	32	330	-167	446	-31	367	106	287	242	207
50	-27	243	38	205	104	167	-102	287	28	211	158	135	288	59

a/ Maximum and minimum values.

Table B-17. Changes in NEV by user group for Alternative 3 allocation schedule in comparison to Alternative 1 (status quo) (in thousands of dollars).

Thousands of Coho	Thousands of Chinook													
	50		75		100		150		200		250		300	
	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport
1,500	-2,382	4,749	-2,416	4,768	-2,449	4,788	-2,349	4,729	-2,080	4,572	-1,811	4,415	-1,543	4,258
1,000	-1,176	2,296	-1,210	2,316	-1,244	2,335	-1,143	2,276	-874	2,119	-606	1,962	-337	1,805
600	-443	804	-477	824	-511	844	-410	785	-141	628	128	471	396 <sup>a/</sup>	314
500	-430	741	-476	768	-522	795	-447	751	-203	608	40	466	284	324
400	-417	677	-475	711	-534	746	-484	716	-265	589	-47	461	171	334
300	-577	966	-648	1,008	-720 <sup>a/</sup>	1,050 <sup>a/</sup>	-694	1,035	-501	922	-308	809	-115	697
200	-399	569	-483	618	-567	667	-567	667	-399	569	-232	471	-64	373
150	-332	415	-423	467	-513	520	-526	527	-370	437	-215	346	-60	255
100	-280	289	-377	346	-473	402	-498	417	-356	334	-213	250	-70	167
75	-259	238	-359	296	-459	354	-490	373	-354	293	-217	213	-81	134
50	-242	194	-345	254	-448	314	-485	336	-355	260	-225	184	-95	108 <sup>a/</sup>

<sup>a/</sup> Maximum and minimum values.

Table B-18. Changes in income impacts by user group for Alternative 2 allocation schedule (in thousands of dollars).

Thousands of Coho	Thousands of Chinook													
	50		75		100		150		200		250		300	
	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport
1,500	566	-850	755	-998	945	-1,145	850	-1,071	1,228	-1,367	1,607	-1,663	1,985	-1,958
1,000	879	-1,773	1,068	-1,921	1,257	-2,069	1,163	-1,995	1,541	-2,291	-1,920	-2,586	2,298	-2,882
600	829	-1,626	1,018	-1,773	1,207	-1,921	1,113	-1,847	1,491	-2,143	1,870	-2,439	2,248 <sup>a/</sup>	-2,734 <sup>a/</sup>
500	593	-1,007	765	-1,141	936	-1,275	806	-1,173	1,149	-1,441	1,492	-1,709	1,835	-1,977
400	358	-388	511	-508	665	-628	499	-499	807	-739	1,114	-979	1,422	-1,219
300	-103	896	33	790	169	684	-32	841	240	628	512	416	784	203
200	-189	1,071	-71	979	48	887	-189	1,071	48	887	284	702	521	517
150	-447	1,797	-338	1,711	-229	1,626	-483 <sup>a/</sup>	1,824 <sup>a/</sup>	-264	1,653	-45	1,482	173	1,312
100	-224	1,099	-124	1,021	-23	942	-295	1,155	-94	998	107	841	308	684
75	-120	771	-24	696	72	621	-209	841	-16	690	176	540	368	390
50	-20	457	72	386	163	314	-126	540	57	397	240	254	424	111

a/ Maximum and minimum values.

Table B-19. Changes in income impacts by user group for Alternative 3 allocation schedule (in thousands of dollars).

Thousands of Coho	Thousands of Chinook													
	50		75		100		150		200		250		300	
	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport
1,500	-3,098	8,941	-3,145	8,978	-3,192	9,015	-3,050	8,904	-2,672	8,609	-2,293	8,313	-1,915	8,018
1,000	-1,534	4,323	-1,581	4,360	-1,628	4,397	-1,486	4,286	-1,108	3,990	-729	3,695	-351	3,399
600	-583	1,515	-630	1,552	-677	1,589	-535	1,478	-157	1,182	222	887	600 <sup>a/</sup>	591
500	-568	1,395	-633	1,446	-698	1,496	-592	1,413	-249	1,145	94	877	437	610
400	-553	1,275	-636	1,339	-719	1,404	-648	1,349	-341	1,108	-33	868	274	628
300	-764	1,820	-865	1,898	-965 <sup>a/</sup>	1,977 <sup>a/</sup>	-930	1,949	-658	1,737	-386	1,524	-114	1,312
200	-537	1,071	-655	1,164	-773	1,256	-773	1,256	-537	1,071	-300	887	-64	702
150	-451	781	-578	880	-706	979	-723	993	-505	822	-286	651	-67	480
100	-385	545	-521	651	-657	757	-692	785	-491	628	-290	471	-89	314
75	-358	448	-499	558	-639	667	-684	702	-491	552	-299	402	-107	252
50	-337	365	-482	478	-626	591	-680	633	-496	490	-313	346	-130	203 <sup>a/</sup>

a/ Maximum and minimum values.

The changes in NEV (Tables B-16 and B-17) closely parallel the changes that each user group, and in the case of the troll fishery the commercial processors, are likely to experience. The expected changes for salmon trollers and commercial processors, over the likely range of harvest levels (50,000 to 600,000 coho and 50,000 to 300,000 chinook), are between -\$383,000 and \$1,624,000 under Alternative 2 (Table B-16) and between -\$720,000 and \$396,000 under Alternative 3 (Table B-17). The same tables indicate expected changes for the salmon sport fishery participants of between -\$1,452,000 and \$969,000 under Alternative 2 and between \$108,000 and \$1,050,000 under Alternative 3.

The expected changes for the salmon troll dependent firms over the likely range of harvest levels are between -\$483,000 and \$2,248,000 under Alternative 2 (Table B-18), and between -\$965,000 and \$600,000 under Alternative 3 (Table B-19). The same tables indicate expected changes for the salmon sport fishery dependent firms of between -\$2,734,000 and \$1,824,000 under Alternative 2 and between \$203,000 and \$1,977,000 under Alternative 3. It must be emphasized that some of the sectors or individual businesses experiencing the losses related to one user group will be the same ones to experience the gains related to the other user group.

Over the likely range, total community income impacts from the troll fishing activities are expected to change between -21 and 20 percent under Alternative 2 (Table B-20) and between -26 and 5 percent under Alternative 3 (Table B-21). The same tables indicate expected changes for the salmon sport fishery dependent firms of between -17 and 42 percent under Alternative 2 and between 4 and 25 percent under Alternative 3. These numbers show potential for significant small business impacts for purposes of classification of the action with respect to the Regulatory Flexibility Act.

Firms in the retail sector and support industries will be at least partially affected by both the changes associated with the troll fishery and those with the sport fishery. These firms will be benefited or hurt depending on their mix of goods and services and their clientele. Over a longer run, they may be able to recover losses through market repositioning or by adjusting their product mix and targeted customers.

#### Other Social Factors for Consideration

There are a variety of other important social factors which should be considered, but for which there is little information.

#### Dependence and Opportunities for Adjustment

Firms and their employees more fully dependent on the benefits of one or the other of the user group allocations will be more directly impacted by the change in allocation. The degree of impact will depend on their degree of reliance on the north of Cape Falcon fishery and opportunities to adjust. Processors handle multiple products and may be able to get products from outside the area, commercial vessels can fish other species and, if licensed in other areas (see Description of the Fishery), move into other salmon fisheries on the coast. Firms such as commercial gear suppliers and recreational businesses seem to be more location dependent.

Table B-20. Percent change, compared to status quo, in the expected troll and sport related income impacts for Alternative 2 allocation schedule.

Thousands of Coho	Thousands of Chinook													
	50		75		100		150		200		250		300	
	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport
1,500	4	-5	5	-5	6	-6	5	-5	7	-7	8	-8	10	-9
1,000	10	-12	11	-12	12	-13	10	-12	12	-13	14	-14	15	-15
600	17	-13	18	-14	19	-15	15	-13	17	-15	19	-16	20 <sup>a/</sup>	-17 <sup>a/</sup>
500	14	9	16	-10	17	-11	12	-9	14	-11	16	-12	17	-13
400	10	-4	12	-5	14	-6	8	-5	11	-6	13	-8	14	-9
300	-4	12	1	10	4	8	-1	9	3	6	6	4	8	2
200	-8	20	-2	17	1	14	-4	16	1	12	4	8	6	6
150	-21 <sup>a/</sup>	42 <sup>a/</sup>	-12	37	-6	32	-10	32	-4	26	-1	21	2	17
100	-12	35	-5	29	-1	24	-6	25	-2	19	1	14	3	10
75	-7	30	-1	24	2	19	-4	21	0	15	2	10	4	6
50	-1	24	3	17	5	12	-3	16	1	10	3	5	5	2

a/ Maximum and minimum values.



Table B-21. Percent change, compared to status quo, in the expected troll and sport related income impacts for Alternative 3 allocation schedule.

Thousands of Coho	Thousands of Chinook													
	50		75		100		150		200		250		300	
	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport
1,500	-22	50	-21	49	-21	48	-18	45	-15	42	-12	39	-9	36
1,000	-17	28	-17	28	-16	27	-13	25	-9	22	-5	20	-2	17
600	-12	12	-11	12	-11	12	-7	11	-2	8	2	6	5 <sup>a/</sup>	4 <sup>a/</sup>
500	-14	13	-13	13	-13	13	-9	11	-3	9	1	6	4	4 <sup>a/</sup>
400	-16	14	-16	14	-15	14	-11	12	-5	9	0	7	3	5
300	-26 <sup>a/</sup>	25 <sup>a/</sup>	-24	24	-23	24	-16	22	-9	18	-5	15	-1	12
200	-23	20	-21	20	-21	20	-15	18	-8	14	-4	11	-1	8
150	-21	18	-21	19	-20	19	-15	17	-8	13	-4	9	-1	6
100	-20	17	-20	19	-20	20	-14	17	-8	12	-4	8	-1	5
75	-20	18	-20	19	-20	20	-15	18	-8	12	-4	7	-1	4 <sup>a/</sup>
50	-20	19	-20	21	-20	22	-15	19	-8	12	-4	7	-1	4 <sup>a/</sup>

a/ Maximum and minimum values.

## Social Impacts of Dislocation

Unemployment effects resulting from shifts in the allocation between user groups may have positive or negative social impacts on individuals and the communities depending on which user group they rely on more. As a result of the reallocation, fishery participants who have family or other social networks in the local communities may be able to stay in the community, or may be forced to separate from it in order to locate new sources of income. The social effects of necessary dissociations with the community impact the individuals and communities from which they depart, as well as those to which they relocate.

Information on the affected individuals' length of time in the community and participation in the occupation would be useful in assessing ability to take up new occupations and the effects of dislocation on their social support structures. However, such information and studies are not readily available at this time.

Stability - The benefit cost analysis, the results of which are described above, does not capture the effects of the distribution of benefits through time within a given year. A certain amount of community economic and social stability may be gained when impacts are spread over a longer season. It is difficult to attach an economic value to this stability; however, it is apparent the recreational fisheries result in a slower and more stable utilization of the fish. Alternatives 2 and 3 both increase the recreational fisheries over much of the range of chinook and coho levels resulting in more seasonal stability.

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### ISSUE 3 - INSEASON NOTICE PROCEDURES

The objective of inseason management actions to adjust fishing patterns and harvest levels is to facilitate obtaining the maximum socio-economic benefits from the available harvest without jeopardizing the needed escapement. Maximizing the return to fishermen and related businesses in the coastal communities is of importance to the Council. In order to realize this goal, fishery managers must be able to shape fisheries to best protect weak stocks while allowing for the greatest possible harvest of healthy stocks and to adjust for under or overharvest between and during openings.

#### Socio-Economic Impacts

Actual quantitative estimates of the economic benefits of Alternative 2 will depend on the specific instances of the regulation changes and which fisheries are involved. The difference in time of implementation between the alternatives would generally be small (no more than one or two days). In commercial fisheries with significant numbers of trip boats, commercial catch statistics do not reflect the precise day of catch for each fish delivered. Therefore, in the case of exceeding a commercial quota, it would be extremely difficult to estimate exactly how much of the overquota harvest could have been prevented by an earlier closure. In the case of attempting to extend recreational fisheries, any projection for the length of the season without the restrictive actions would require a high degree of speculation. Qualitatively, however, the impact of Alternative 2 should be positive.

Alternative 2 could improve the socio-economic impacts of season regulation by allowing more timely utilization of certain management changes. It could decrease disruption of a fishery by allowing for a quicker rescission of an automatic closure when it was found that a quota had not actually been met as projected. It could provide further positive benefits by allowing more timely utilization of more general inseason management measures to accomplish such things as (1) extending the length of a season through the use of area closures, bag limit restrictions, or daily closures and (2) eliminating restrictions which become unnecessary during the course of a season.

Simultaneous federal and state regulation changes and precise announcement of the effective time of the changes at the earliest opportunity, both made

possible under Alternative 2, would help reduce confusion among fishermen, improve enforcement, and allow more efficient planning.

Additionally, more actual notice would be provided under Alternative 2 as fishermen would have more readily available and certain sources for their information on regulatory actions, whereas Federal Register notice is not likely to be seen by most fishermen. Alternative 2 would provide for more types of management actions to be implemented in this manner.

Overall this regulation will probably reduce regulatory burden.

#### ISSUE 4 - CLARIFICATION OF STEELHEAD MANAGEMENT INTENT

The impacts of this action will be minor. It is expected to reduce conflict between state and federal regulations by making the recreational harvest of steelhead legal in both state and federal waters. Problems of compliance and enforcement which occur when regulations vary between federal and state waters will be reduced. The recreational ocean harvest of steelhead is minor and is not anticipated to have any impact on the conservation and management of the resource (see table on page 38). Given this situation, there may be a slight increase in the value of the marine recreational fishing experience as sportsmen would be allowed to retain their catch.

#### AMENDMENT ISSUE 5 - REPORTING REQUIREMENTS FOR THE COMMERCIAL SALMON FISHERMEN

Actual quantitative estimates of the socio-economic benefits from either Alternative 2 cannot be estimated due to the variability of the annual management measures for the commercial salmon fishery and the scope of reporting requirements that would be specified each year. Reports are likely to occur during time in transit when the opportunity cost to the fishermen will be low.

Because most fishermen return to the nearest port to land when an area closes to fishing, a small number of commercial salmon fishermen have been impacted by the two types of reporting requirements under Alternative 1. It is likely a similar small number of fishermen would be impacted under Alternative 2, although the exact number would depend on the specific reporting requirements implemented each year. During the past two years, the reporting requirements have undergone public review during the preseason process prior to the Council's adoption of annual management measures. It appears these reporting requirements have general acceptance by commercial salmon fishermen which increases the likelihood of their enforceability.

Alternative 2 could provide socio-economic benefits to commercial salmon fishermen whose home ports lie outside of the regulatory area by allowing them to land their catches in their home ports instead of requiring them to land within the regulatory area.

Alternative 2 would reduce the potential for fishermen becoming confused by some regulations governing the fishery being implemented by federal regulations and others by state regulations. Alternative 2 would allow federal regulations to be more comprehensive.

Alternative 2 would not result in any significant change in the conduct or practices of fishing which would adversely affect vessel and crew safety.

#### AMENDMENT ISSUE 6 - LIMITATIONS FOR SEASON OPENING AND CLOSING DATES

Selection of Alternative 2 would do little to alter the socio-economic impacts of the framework amendment. It would have a positive effect for commercial fishermen within the Oregon portion of the KMZ by allowing them to harvest coho while fishing for chinook. Since the coho harvest in the Oregon portion of the KMZ is now only a very small part of the total commercial coho harvest south of Cape Falcon, any positive effect in the KMZ would have nearly insignificant negative impacts outside the KMZ. Providing uniform regulations throughout the KMZ as allowed by Alternatives 2 and 3 should reduce the complexity of the fishing regulations (see Issue 1, Description of Fishery.)

The impacts of selecting Alternative 3 are dependent on what actions the Council takes on an annual basis to depart from the current prohibitions. The overall impact of removing the prohibitions would be to allow the Council to be more responsive to annually identified socio-economic needs for altering the season opening and closing dates. This could be a significant positive impact in some cases. In some previous years, fishermen have argued for earlier commercial salmon seasons to take advantage of better prices.

APPENDIX C

CONSISTENCY WITH FEDERAL AND STATE COASTAL ZONE MANAGEMENT PROGRAMS

APPENDIX C  
CONSISTENCY WITH FEDERAL AND STATE COASTAL ZONE MANAGEMENT PROGRAMS

Coastal Zone Management Act

The CZMA of 1972 specifies at Section 307(c)(1) that:

Each federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs.

The MFCMA specifies at Section 303(b) that:

Any FMP which is prepared by any council or by the Secretary, with respect to any fishery, may . . .  
(5) incorporate (consistent with the national standards, the other provisions of MFCMA, and any other applicable law) the relevant fishery conservation and management measures of the coastal states nearest to the fishery.

Both the CZMA and the MFCMA establish policies that affect the conservation and management of fishery resources.

NOAA administers both the MFCMA and the CZMA. Moreover, it is NOAA's policy that the two statutes are fundamentally compatible and should be administered in a manner to give maximum effect to both laws. It is also NOAA's policy that most FMPs (and amendments to FMPs) constitute a federal activity that "directly affects" the coastal zone of a state with an approved coastal zone management program. NOAA recognizes that fisheries constitute one of the key resources of the coastal zone and that the preparation and implementation of FMPs to regulate fisheries in the EEZ could have a direct effect on the state's coastal zone because of the division of the fishery resources between the EEZ and state territorial and internal waters.

The CZMA and MFCMA establish time frames for consistency review and approval of FMPs and amendments that are approximately equal. However, these time frames may, on occasion, cause procedural problems in coordinating consistency review and approval of FMPs or amendments.

NOAA regulations require that consistency determinations be provided to states with approved programs "at least 90 days before final approval of the federal activity unless both the federal agency and the state agency agree to an alternative notification schedule" (15 CFR 930.54[b]). Similarly, NOAA regulations encourage federal agencies to provide consistency determinations "at the earliest practical time" in the planning of an activity, "before the federal agency reaches a significant point of decision making in its review process" (15 CFR 930.54[b]). A state must indicate its agreement or disagreement with the consistency determination within 45 days. If the state fails to respond within 45 days, the state's agreement may be presumed. However, the state may request one 15-day extension before the expiration of the 45-day period and the federal agency must comply. Longer extensions may be granted by the federal agency (15 CFR 930.41)

The MFCMA requires the Secretary of Commerce review an FMP or amendment prepared by a regional fishery management council and notify such regional fishery management council of approval, disapproval, or partial approval within 95 days after the FMP or amendment is received (P.L. 97-453).

The sections that follow summarize those portions of the Washington, Oregon, and California coastal zone management programs that may be relevant to the ninth amendment to the Pacific coast salmon FMP.

#### Washington State Coastal Zone Management Program

The Washington DOE is the lead state agency for implementation of the WCZMP. The coastal zone boundary embodies a two-tier concept. The first or primary tier, bounded by the "resource boundary," encompasses all of the state's marine waters and their associated wetlands, including, at a minimum, all upland area 200 feet landward from the ordinary high-water mark. The second tier, bounded by the "planning and administrative boundary," is composed of the area within the 15 coastal counties which front on saltwater. The second tier is intended to be the maximum extent of the coastal zone and, as such, is the context within which coastal policy planning is accomplished through the WCZMP.

Management of the coastal zone is subject to the Shoreline Management Act and implementing regulations, federal and state Clean Air Act requirements, and energy facility siting laws. Together, these authorities establish priorities for permissibility of uses and provide guidance as to the conduct of uses of Washington's coastal zone. The emphasis of the program includes not only Washington's coastal waters but the shoreline jurisdiction throughout the 15 coastal counties.

The WCZMP provides a consistency review mechanism for federal activities affecting the coastal zone based on specific policies and standards. For federal activities requiring no permits but having coastwide implications (such as FMPs), the policies and standards addressed in the Shoreline Management Act of 1971 (RCW 90.58) and the Final Guidelines (WAC 173-16) provide the basis for determining consistency.

#### Shoreline Management Act

The management goals in the Shoreline Management Act emphasize a balance between conservation and use of the shorelines. More specific priorities were given to "shorelines of statewide significance" encompassing an area including Washington ocean waters and shoreline from Cape Disappointment on the south to Cape Flattery on the north, including harbors, bays, estuaries, and inlets.

Only Issues 2 through 5 of the ninth amendment are pertinent to salmon management off the coast of Washington. The alternatives to status quo considered for these five issues are consistent with the following directives contained in the WCZMP concerning shoreline management.



(a) Recognize and Protect the Statewide Interest Over Local Interest

The current FMP and five pertinent issues in this amendment have been developed to provide efficient and beneficial management of the salmon resource on a regional basis. This perspective is in keeping with the intent of this directive toward serving statewide rather than local interest.

(b) Preserve the Natural Character of the Shoreline

None of the five pertinent issues in this amendment would have a direct impact on the basic character of the ocean shoreline. Issue 2 could increase the salmon harvest allocation to the recreational fishery. However, at the low levels of harvest at which this change occurs, impacts from recreational fishing would be well below those envisioned in the SEIS of the framework amendment.

(c) Result in Long-term Over Short-term Benefit

The FMP requires the annual consideration of long-term resource needs and long- and short-term social and economic impacts. The determination of OY balances these competing demands. None of the amendment issues would change this aspect of the FMP. Issue 2, harvest allocation, examines alternatives which may improve the overall long-term socio-economic impacts of the salmon fishery off Washington.

(d) Protect the Resources and Ecology of the Shoreline

A primary purpose of the FMP and subsequent amendments is to conserve and protect the salmon resource for current and future use. The FMP amendment does not compromise this goal. In addressing timely reporting of management information from commercial fishermen, Issue 5 may assist in more closely attaining harvest quotas.

(e) Increase Public Access to Publicly-owned Areas of the Shoreline

The amendment to the FMP will not have any direct or indirect affect on public access to publicly-owned areas along the coastal zone.

(f) Increase Recreational Opportunities for the Public in the Shoreline

Issue 2, harvest allocation, may enhance ocean recreational salmon fishing opportunities at low total allowable harvest levels.

DOE Final Guidelines

The concept of preferred shoreline uses has been incorporated in the DOE's final guidelines, with water-dependent uses clearly a priority over water-oriented or nonwater-oriented uses. The guidelines address uses compatible with (1) the natural environment, (2) the conservancy environment, (3) the rural environment, and (4) the urban environment. Of the 21 individual development policies in the final guidelines, 3 have relevance or potential relevance to the federal activity proposed in this amendment to the FMP.

- (a) Commercial Development - Shoreline-dependent commercial development and developments which will provide shoreline enjoyment for a large number of people shall be preferred. New commercial activities shall locate in urbanized areas.
- (b) Ports and Water-related Industry - Industry which requires frontage on navigable waters should be given priority over other industrial uses. Prior to allocating shorelines for port uses, regional and statewide needs for such uses should be considered.
- (c) Recreation - Priority will be given to developments which provide recreational uses and other improvements facilitating public access to shorelines. Water-oriented recreation is a preferred use along the shorelines, but it should be located and conducted in a way which is compatible with the environment.

This amendment does not specifically address development of water-related coastal industry nor change the consistency of the current FMP with respect to commercial and water-related development.

#### Oregon State Coastal Zone Management Program

The Oregon program calls for a consistency review of activities directly affecting the coastal zone, including air, water, scenic, living, economic, cultural, and/or mineral resources of the coastal zone.

The basis for the Oregon program is the 1973 Oregon Land Use Act, ORS 197. Oregon's program relies on the combined authority of state and local governments to regulate uses and activities in the coastal zone. The principal components of Oregon's program are (1) 19 statewide planning goals and supporting guidelines adopted by LCDC, the state's coastal zone agency; (2) coordinated comprehensive local plans prepared by local governments and approved by the LCDC; and (3) selected state statutes implemented by various state agencies. Local and state planning decisions must comply with the statewide planning goals, which serve as the program's overriding standards until local comprehensive plans are developed and acknowledged by LCDC. Once acknowledged, the comprehensive plans supersede the goals as standards for state and federal planning and activities in the coastal zone. Coastal zone boundaries are generally defined to extend to the state's seaward limit (three nautical miles offshore) and inland to the crest of the coastal mountain range.

The Oregon Coastal Management Program was approved by the Secretary of Commerce on May 6, 1977 with the LCDC as the implementing agency. The term "consistent" is interpreted by federal regulations as not requiring the management of salmon within the 197-mile federal EEZ to be the same as the state management within the 3-mile territorial sea and inland waters. Rather, the term "consistent" requires federal management to be compatible with state management. However, federal management may be more restrictive than state management when more restrictive management is necessary to meet the standards of the federal MFCMA as amended. Federal management will be consistent with state management if enough adult salmon escape capture in the EEZ to allow for

state managed ocean and inland salmon fisheries and sufficient spawning escapements. Spawning escapements will be sufficient if the natural spawning escapement goals are met and if Oregon hatcheries meet their egg needs.

Table C-1 lists the statewide planning goals and state regulations that were examined to determine the consistency of the framework amendment, categorized according to their particular relevance. The consistency of this proposed amendment with each pertinent goal is described below.

(a) Goal 19 - Ocean Resources

The current salmon FMP has been determined to be consistent with Goal 19, the most pertinent aspect of the Oregon Coastal Zone Program relating to salmon management. The overall statement of Goal 19 is:

To conserve the long-term value, benefits, and natural resources of the nearshore ocean and continental shelf. All local, state, and federal plans, projects and activities which affect the territorial sea shall be developed, managed and conducted to maintain, and where appropriate, enhance and restore, long-term benefits derived from the nearshore oceanic resources of Oregon. Since renewable ocean resources and uses, such as food production, water purity, navigation, recreation and aesthetic enjoyment will provide greater long-term benefits than will nonrenewable resources, such plans and activities shall give clear priority to the proper management and protection of renewable resources.

Guidelines for Goal 19 reflect concerns for awareness of impacts upon fishing resources, biological habitat, navigation and ports, aesthetic uses, recreation and other issues.

Goal 19 is administered by the LCDC. The LCDC identified the following components of Goal 19, Implementation Requirement 2 as directly applicable to the framework amendment.

- The requirement to determine the impact of the proposed action.
- The requirement to develop scientific information on the stocks of commercially, recreationally, and ecologically important species of fish.
- The requirement to designate and enforce fishing regulations to obtain an optimum sustainable yield while protecting the natural marine ecosystem.
- The requirement to identify and protect important feeding areas, spawning areas, nurseries, migratory routes, or other biologically important areas of commercially and recreationally important fish and shellfish.
- The requirement to identify, maintain, and enhance the diversity, quality, and quantity of recreational opportunities over Oregon's continental shelf.

Table C-1. Oregon coastal zone management planning goals and state regulations.

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Category 1. Applicable Issues and Statutes

Goal No. 1	Citizen Involvement in Planning
Goal No. 5	Preservation of Open Space . . . and Natural Resources
Goal No. 8	Recreational Needs
Goal No. 16	Estuarine Resources
Goal No. 19	Ocean Resources
ORS 496.012	Wildlife Policy
ORS 506.109	Foodfish Management
ORS 506.201- 506.211	Oregon Fish and Wildlife Management Planning

Category 2. Potentially Applicable Goals and Statutes

Goal No. 2	Land-use Planning; Acknowledged, Local, Comprehensive Plans and Land Use Regulations
Goal No. 9	Economy of the State
Goal No. 17	Coastal Shorelands
ORS 184.033	Economic Development
ORS 777.835	Ports Planning

Category 3. Goals Relatively Inapplicable to the Proposed Action

Goal No. 3	Agricultural Lands
Goal No. 4	Forest Lands
Goal No. 6	Air, Water, and Land Resources Quality
Goal No. 7	Areas Subject to Natural Disasters
Goal No. 10	Housing
Goal No. 11	Public Facilities and Services
Goal No. 12	Transportation
Goal No. 13	Energy Conservation
Goal No. 14	Urbanization
Goal No. 18	Beaches and Dunes

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Goal 19 is closely linked with ORS 506.109 which is administered by the Oregon Fish and Wildlife Commission. The Oregon Fish and Wildlife Commission identified the following components of ORS 506.109 as directly applicable to the framework amendment.

- o The requirement to maintain all species of food fish at an optimum level in all waters of the state and to prevent the extinction of any indigenous species.
- o The requirement to develop and manage the lands and waters of the state in a manner that will optimize the production, utilization, and public enjoyment of food fish.
- o The requirement to regulate food fish populations and the use and public enjoyment of food fish in a manner that is compatible with other uses of the lands and waters of the state, and to provide the optimum commercial and public recreational benefits.
- o The requirement to preserve the economic contribution of the sports and commercial fishing industries in a manner consistent with sound food fish management practices.

The issues considered in this proposed amendment could enhance the consistency of the salmon FMP with the objectives of Goal 19 and ORS 506.109. Issue 1, Klamath River fall chinook escapement goal, seeks to assure establishment of a spawning escapement goals which will help insure annual achievement of OY. Issue 2, harvest allocation north of Cape Falcon, could result in a more efficient allocation of the allowable ocean salmon harvest between commercial and recreational fishermen. Issues 3 through 6 seek to assure efficient regulation of the fisheries, eliminate inconsistency between state and federal regulations, and allow season openings and closings to be more responsive to socio-economic needs.

(b) Goal 5 - Preservation of Open Space . . . and Natural Resources

Goal 5 also addresses the issue of conservation of natural resources. The guidelines call for fish and wildlife areas and habitats to be protected and managed in accordance with the Oregon Fish and Wildlife Commission's management plans. The FMP was found consistent with the management objectives for salmon stocks off Oregon that were developed by the ODFW and adopted by the Oregon Fish and Wildlife Commission. None of the issues in this proposed amendment has a direct or indirect effect on Goal 5.

(c) Goal 16 - Estuarine Resources

Goal 16 addresses the protection of estuarine resources. This goal emphasizes the need for protection, maintenance, development, and appropriate restoration of long-term environmental, economic, and social values; diversity and benefits of Oregon's estuaries. Comprehensive plans and activities affecting estuaries must protect the estuarine ecosystem including its biological productivity, habitat, diversity, unique features, and water quality. However, Goal 16 underscores the need to

classify Oregon estuaries and to specify "the most intensive level of development or alteration which may be allowed to occur within each estuary." None of the issues in this proposed amendment has a direct or indirect affect on development or alteration of the estuarine environment.

(d) Goal 8 - Recreational Needs

Goal 8 refers to existing and future demand by citizens and visitors for recreational facilities and opportunities. Planning guidelines recommend that inventories of recreational opportunities be based on adequate research and analysis of the resource, and where multiple uses of the resource exist, provision be made for recreational users. Issue 2, harvest allocation, is consistent with this goal in that it recognizes a need to provide adequate and stable recreational fishing seasons. Issue 4, steelhead management, could eliminate inconsistencies between federal and state sport fishing regulations. Issue 6, season opening and closing dates, could allow for recreational seasons which are more responsive to socio-economic needs. No other issues have a direct or indirect impact on Goal 8.

(e) Goal 1 - Citizen Involvement in Planning

Goal 1 calls for the coordination of state, regional, and federal planning with the affected governing bodies and citizenry. Guidelines address communication methods, provision of technical information, and feedback mechanisms to assure the opportunity for citizen involvement in planning processes. The FMP process provides for close collaboration and coordination between state and federal management entities and assures citizen involvement in decision making through the forum of the Council and through a series of public hearings that are convened before the Council adopts any fishery management measures.

Lastly, insofar as FMPs and amendments have the potential to indirectly affect the coastal zone by stimulating private development of new markets or development of fish handling and processing facilities, or otherwise influence land-use planning, this proposed amendment is consistent with Goals 2, 9, and 17.

California State Coastal Zone Management Plan and San Francisco Bay Plan

The federally approved Coastal Zone Management Program for California is made up of two segments, one administered by the Commission for San Francisco Bay and the other administered by the California Coastal Commission for the remainder of the California coast.

Coastal Plan

The California State Coastal Zone Management Plan is based upon the California Coastal Act of 1976, Division 20, California Public Resources Code, Section 30000, et seq.; the California Urban and Coastal Park Bond Act of 1976, Division 5, CPRC 5096.777 et seq.; and the California Coastal Commission Regulations, California Administrative Code, Title 14.

The California Coastal Act establishes a structure for state approval of local coastal programs (Section 30050). The California Coastal Commission is the state's coastal zone agency (Section 30300). The coastal zone boundaries are generally the seaward limit of state jurisdiction, and inland to 1,000 yards from the mean high tide line.

The general provisions of the California plan that address issues significant to this analysis concern the protection of the ocean's resources, including marine fish and the natural environment. The plan also calls for the balanced utilization of coastal zone resources, taking into account the social and economic needs of the people of the state. Specific coastal zone policies developed to achieve these general goals and which are applicable or potentially applicable to the regulatory measures proposed in the amendment to the FMP have been identified as follows.

- (a) Section 30210 - ". . . recreational opportunities shall be provided for all the people consistent with the need to protect natural resource areas from overuse."

This goal was found to be consistent with the FMP which seeks to provide recreational fishing opportunities consistent with the needs of other user groups and the need to protect the resource. Nothing in the proposed FMP amendment will alter this consistency. Issue 1, Klamath River fall chinook escapement goal, and Issue 6, season opening and closing dates, relate indirectly to this section. These issues will not diminish recreational opportunities under the current FMP and may enhance them.

- (b) Section 30231 - "The biological productivity and quality of coastal waters, streams, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained, and, where feasible, restored . . ."

Issue 1, Klamath River fall chinook escapement goal, is concerned with maintaining the long-term productivity of the Klamath River fall chinook stock while allowing adequate annual harvest. None of the other issues in this amendment will impact the objectives of this goal.

- (c) Section 30230 - "Uses of the marine environment shall be carried out in a manner . . . that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational scientific, and educational purposes."

Issue 1, Klamath River fall chinook escapement goal, is concerned with maintaining the long-term productivity of the Klamath River fall chinook stock while allowing adequate annual harvest. None of the other issues in this amendment will impact the objectives of this goal.

- (d) Section 30234 - "Facilities serving the commercial fishing and recreational boating industries shall be protected, and where feasible, upgraded."

This amendment does not specifically address the development of shoreside facilities that serve the commercial and recreational fishing industries. However, in that the amendment improves ocean fishery management

and better serves the needs of the fishing industry, it should help lend stability to the fisheries and benefit shoreside industry.

- (e) Section 30260 - "Coastal-dependent industrial facilities (such as fishing support) shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with the MFCMA."
- (f) Section 30708 - "All port-related developments shall be located . . . so as to . . . give highest priority to the use of existing land space within harbors for port purposes including . . . necessary (commercial fishing) support and access facilities."

The amendment does not address the location of coastal-dependent industry or ports.

- (g) Section 30411 - "CDFG and the Fish and Game Commission are the state agencies responsible for the establishment and control of wildlife and fishery management programs."

The director of CDFG is a voting member of the Council. A representative from CDFG participates on the Council's STT and helped develop the FMP and its amendment. The MFCMA mandated that all interested individuals, including state fishery management personnel, would have the opportunity to participate in the preparation of FMPs and amendments. This action is consistent with the provisions of Section 30411 because CDFG has been involved in the planning process for those parts of the amendment that pertain to the management of California and coastwide fisheries.

#### San Francisco Bay Plan

The San Francisco Bay Conservation and Development Commission has jurisdiction over the San Francisco Bay itself, as well as any river, stream, tributary, creek, flood control, or drainage channel that flows into the San Francisco Bay.

The San Francisco Bay Plan was approved by the California legislature in 1969. Part II of the plan describes the Commission's objectives as follows:

1. protect the bay as a great natural resource for the benefit of present and future generations
2. develop the San Francisco Bay and its shoreline to their highest potential with a minimum of bay filling

Part III of the San Francisco Bay Plan describes the findings and policies of the Commission including fish and wildlife policies for the San Francisco Bay. The adopted policies state:

1. The benefits of fish and wildlife in the bay should be insured for present and future generations of Californians. Therefore, to the greatest extent feasible, the remaining marshes and mudflats around



the bay, the remaining water volume and surface area of the bay, and adequate fresh water inflow into the bay should be maintained.

2. specific habitats that are needed to prevent the extinction of any species, or to maintain or increase any species that would provide substantial public benefits, should be protected, whether in the bay or on the shoreline behind dikes . . .

Part IV of the San Francisco Bay Plan presents the findings and policies concerning the development of the bay and the adjacent shoreline. Emphasis is given to the consideration of construction projects on filled lands and the controls over filling and dredging in the San Francisco Bay.

None of the issues in this proposed amendment has a direct or indirect impact on activities within the San Francisco Bay.

#### Consistency Determination

The amendment document, including its appendices, describe the issues considered in the ninth amendment to the FMP and evaluates the likely impacts of various actions that are to be taken. The EA and RIR/IRFA (incorporated in the issue description and Appendices A and B) compare the expected impacts of the amendment from environmental, social, and economic perspectives. Actions recommended in this amendment have been determined to have no significant impact under the NEPA, Executive Order 12991, and the Regulatory Flexibility Act.

Based on the above discussions and supported by these determinations, the Council finds the actions likely to result from the ninth amendment to the FMP are consistent, to the maximum extent practicable, with the approved Washington, Oregon, California, and San Francisco Bay coastal zone management plans.

APPENDIX D

OTHER APPLICABLE LAW

APPENDIX D  
OTHER APPLICABLE LAW

Endangered Species Act of 1973

The purposes of the ESA are to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved, to provide a program for the conservation of such endangered and threatened species, and to take such steps as may be appropriate to achieve the objectives of the treaties and conventions created for these purposes. The Council and NMFS determined that the conservation and management measures in the framework amendment and subsequent amendments had no adverse impact on any threatened or endangered species in the Council's fishery management area (jurisdiction) and did not jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of any such species.

None of the alternatives to status quo considered for the six issues in this amendment will have a direct or indirect affect on achieving the purposes of the ESA that is different than contemplated in the SEIS of the framework amendment. NMFS has determined that populations of endangered/threatened species under NMFS purview are not likely to be adversely affected by the proposed actions.

Marine Mammal Protection Act of 1972

The purpose of the MMPA is to protect marine mammals and to prevent certain marine mammal species and stocks from falling below their optimum sustainable population which is defined in Section 3(8) as:

. . . the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.

Recreational and commercial salmon fishermen occasionally will have an incidental involvement with marine mammals. Any commercial fishermen who may expect to become involved with marine mammals incidental to normal fishing operations should apply to NMFS for a free Certificate of Inclusion under the appropriate MMPA General Permit. The Certificate of Inclusion provides for the incidental take of marine mammals as authorized by the MMPA General Permit and applicable federal regulations (50 CFR 216.24). MMPA General Permits that provide for the incidental take of marine mammals during commercial salmon fishing operations off the west coast have been issued by NMFS for a five-year period ending December 31, 1988.

Commercial fishing under the ninth amendment to the FMP will not be any different than what was anticipated and provided for in the issuance of the MMPA General Permit.

## Pacific Northwest Electric Power Planning and Conservation Act of 1980

There are two major fishery resource conservation purposes of the NPPA. The first is to protect, mitigate, and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries, particularly anadromous fish which are of importance to the social and economic well-being of the Pacific Northwest. This purpose is addressed by the Columbia Basin Fish and Wildlife Program, and adopted by the Northwest Power Planning Council on November 15, 1982 and as amended October 10, 1984 and February 11, 1987.

The second purpose is to protect, mitigate, and enhance the fish and wildlife, including related spawning grounds and habitat throughout the northwest, and including provision of "sufficient quantities and qualities of flows for successful migration, survival, and propagation of anadromous fish." This purpose is addressed in the fish wildlife program and the Regional Energy Plan adopted in April 1983.

The Council, NMFS, and treaty Indian tribes have participated with the Northwest Power Planning Council (established by the NPPA) in developing and carrying out the fishery provisions of the NPPA. The objectives of these fishery related activities were found to be consistent and compatible with the conservation and management goals of the salmon FMP.

None of the six issues considered in the ninth amendment will alter the basic consistency of the present salmon FMP with regard to the NPPA and the fish and wildlife program adopted by the Northwest Power Planning Council.

## Pacific Salmon Treaty Act of 1985

The PSTA was established to implement the Pacific Salmon Treaty between the U.S. and Canada. The treaty provides for bilateral cooperation in salmon management, research, and enhancement by establishing a bilateral commission with coastwide responsibilities for management of "intercepting" salmon fisheries. The PSTA provides for coordination with the Council-managed fisheries by requiring that at least one representative to the Pacific Salmon Commission's southern panel be a voting member of the Council and by requiring consultation with the Council in the promulgation of regulations necessary to carry out the obligations under the treaty. Nothing in the current salmon FMP has been identified as inconsistent with the PSTA, and the FMP amendment issues do not provide for a change to the harvest rates on any intercepted stocks.

## Paperwork Reduction Act of 1980

The major purposes of the Paperwork Reduction Act of 1980 are (1) to minimize the federal paperwork burden for individuals, small businesses, state, and local governments; (2) to minimize the cost to the federal government of collecting, maintaining, using, and disseminating information; and (3) to ensure that the collection, maintenance, use and dissemination of information by the federal government is consistent with applicable laws relating to confidentiality. The Council has determined that neither the FMP amendment nor the regulations that will implement the amendment will involve any federal government collection of information that would violate the purposes and requirements of the Paperwork Reduction Act. Implementation of Alternative 2

for Issue 5, reporting requirements, would impose a collection of information which requires clearance by OMB. If this alternative is selected, documentation will be provided to meet the requirements of the Paperwork Reduction Act.

Executive Order 12612 (Federalism)

Executive Order 12612 of October 26, 1987, provides federal agencies with guidance on the formulation and implementation of policies that have federalism implications. Federal agencies are to examine the constitutional and statutory authority supporting any federal action that would limit the policy-making discretion of the states. The six issues in the ninth amendment either have no relevance to state policy-making authority, or support it by allowing more consistency between state and federal regulatory actions. Therefore, the Council has determined that the FMP amendment does not have sufficient federalism implications to require the preparation of a federalism assessment.

APPENDIX E

TECHNICAL REFERENCES AND SUPPORTING DOCUMENTS

FORMULAS USED IN ISSUE 1 CALCULATIONS

$$u = \frac{N_3m_3 + N_4m_4 - E}{N_3m_3s_3 + N_4m_4s_4}$$

Where:

u = harvest rate to achieve 115,000 escapement under Alternative 1.  
N = age-specific ocean stock size  
m = age-specific maturation probability (0.43 age-3, 0.89 age-4)  
s = age-specific fishery selectivity factor (age-3 = 0.75, age-4 = 1.00)  
E = inriver run size goal (escapement plus inriver fishery impact)

Note: A six percent drop-off rate assumed for the inriver fisheries.

$$C = N_3u(s - 0.05) + N_4u(s)$$

Where:

c = ocean fishery catch allowance  
N = age-specific ocean stock size  
u = allowable ocean harvest rate (from equation 1)  
s = age-specific fishery selectivity factor (the 0.05 adjustment for age-3 fish is for shaker losses)

SPDT COMMENTS REGARDING KLAMATH ESCAPEMENT POLICY  
April 7, 1986

The SPDT has reviewed the spawning escapement policy recommended by the KRSMG. Most of the SPDT concurs that the implementation of a harvest rate approach is an appropriate means of managing fisheries under circumstances where there is uncertainty regarding the escapement level which produces the maximum sustainable harvest and where socio-economic considerations preclude the acquisition of necessary data through more direct means. The SPDT agrees with the general approach of managing the fisheries using quotas based on stock productivity, separation of natural and hatchery stocks escapement goals, and the necessity for a spawning escapement floor to protect the productive potential of the natural stock.

While the SPDT concurs with the general approach recommended by the KRSMG, there are several specific areas of concern.

1. The SPDT considers the escapement floor to be too low. There is some technical justification for the selection of a floor escapement level of 43,000 naturally spawning adults, but the 35,000 floor specified in the proposal is arbitrary. The establishment of a floor escapement for Klamath River stocks will require the capacity to annually forecast abundance for the coming and subsequent season to determine if sufficient numbers of adults will be available. The SPDT emphasizes that success of the constant harvest rate approach mandates adherence to the escapement floor and the provision of large escapements when stock abundance permits.
2. The SPDT believes that all parameters critical to the harvest rate policy (particularly the stock productivity value alpha) be subjected to continuing review should this policy be implemented.
3. While the pursuit of additional information on stock production response to different escapement levels resulting from application of the harvest rate policy is an important consideration, it should be recognized at the outset that this is a long-term management approach which is unlikely to produce definitive results in the short term. Since there are more efficient means of obtaining stock-recruitment information, the Council should be aware that the decision to minimize disruption of fishing opportunities and economic dislocation through implementation of a harvest rate strategy will likely result in considerable loss in production and overall yield from the resource.
4. The absence of definitive criteria for evaluation of the approach results in an open-ended management system. Implementation of the approach should be accompanied by established criteria to evaluate the validity of underlying assumptions and the determination of whether or not the harvest rate policy will consistently produce spawning escapements associated with maximum sustainable harvests.

The SPDT commends the efforts of the KRSMG for recognizing the need for an overall allocation agreement in order to manage this stock on a responsible basis.



KRTT RESPONSE TO THE SPDT COMMENTS ON ESCAPEMENT FLOOR  
March 6, 1987

The KRTT has reexamined its escapement floor recommendation for naturally spawning fall chinook in the Klamath River and continues to agree **by consensus** that the floor should be held at 35,000 naturally spawning adults. The KRSMG has considered this input, and that of the (SPDT), and concurs that available information does not support the adoption at this time of an escapement floor in excess of 35,000 adult fish.

The points raised by the KRTT are as follows.

1. The two stock recruitment curves used in developing Option 2 in its management policy recommendation (43,000 fixed goal for natural spawners) were "soft," at best. Development of escapement goals based on the sum of biologists' judgments about the spawning capacity of individual spawning areas does not take into account the interaction of juvenile chinook salmon in main stem rearing areas. The KRTT does not place great confidence in the approach used to construct the two CDFG stock recruitment curves for assessing basin spawning capacity, nor does it agree that such an approach is appropriate for setting the stock's escapement floor.
2. Placing the floor at 35,000 adult spawners, or at 43,000 as suggested by the SPDT, will not greatly assist the achievement of significantly higher escapement levels needed to assess basin spawning capacity. These needed higher escapement levels will be made possible by periods of above average survival of juvenile fish. The small difference in escapement between 35,000 and 43,000 spawners would provide biological information for only a very small range (8,000) in escapements.
3. The 35,000 escapement floor recommendation was (prior to 1986) a higher escapement level than for any year since 1978, and was about 30 percent higher than the 1979-1985 average. The KRTT concurs that the capacity of the basin has not been nearly reached in recent years, but there is currently a wide range of opinion regarding the shortfall in natural escapement levels.

While the KRTT does not agree with placing the floor at 43,000 naturally spawning adults, it does agree that the floor should be reevaluated as significant new information on stock productivity becomes available. At that time, the escapement floor could be adjusted upward, downward, or even eliminated, if the data supported the adoption of a single number escapement goal for the stock.

In closing, the KRTT continues to support an escapement floor for fall-run chinook in the Klamath River Basin of 35,000 naturally spawning adults, and recommend the Council adopt the figure as part of the framework amendment addressing Klamath River chinook management.

FRAMEWORK AMENDMENT ALLOCATION NORTH OF CAPE FALCON

Option 5: (Council Adopted Coho/Chinook Plan Proposed by Ocean Fishermen)

This option was developed and agreed to by both commercial and recreational fishermen from the area.

The allocation plan for this area is to be based on the following criteria to be applied annually during the pre-season modification of management measures:

1. Allocation will be based on the following schedule which establishes allocation on the basis of variances in relative abundance.

Allowable Non-Treaty Ocean Coho Harvest (thousands of fish)	Coho Harvest Percentages*		Chinook Harvest Percentages*	
	Commercial Percentage	Recreational Percentage	Commercial Percentage	Recreational Percentage
≥1,500	69	31	54	46
1,400	69	31	54	46
1,300	69	31	54	46
1,200	67	33	54	46
1,100	64	36	54	46
1,000	61	39	54	46
900	58	42	54	46
800	55	45	54	46
700	52	48	54	46
600	49	51	54	46
500	46	54	55.5	44.5
400	43	57	57	43
300	40	60	58.5	41.5
200	37	63	60	40
100	34	66	61.5	38.5
0	31	69	63	37

\* For allowable coho harvests between the numbers shown, the allocations shall be interpolated linearly. Species substitutions made at ocean harvest levels between 0 and 600,000 coho are intended to approximate an exchange ratio of four coho to one chinook, assuming a chinook harvest level of 182,000.

2. The Council shall seek to maximize total allowable ocean harvest to the extent possible and subject to the following provisions. Allocations shall be consistent with treaty obligations, inside fishery requirements, and spawning escapement needs.
3. If total allowable non-treaty ocean catch of coho for the area is less than 600,000, the Council may use species substitutions (chinook and coho) to minimize hardship to either troll or recreational fisheries. Chinook equivalency for species substitution will be based upon an exchange ratio of four coho to one chinook. The Council shall make every effort to establish seasons and gear requirements which provide troll and recreational fleets a reasonable opportunity to catch the available harvest. In no event shall species substitution exceed 25 percent of the allocations tabulated above.
4. The percentages presented above are averages for the entire area between Cape Falcon and the U.S./Canada border. These percentages can be varied by major sub-areas if there is need to do so to protect the weak stocks. These deviations will be avoided where possible and will be held to the minimum necessary to protect the stocks. In all cases, each major sub-area (for example north of Leadbetter and south of Leadbetter) shall retain at least 50 percent of the allocation that would have been established in the absence of transfer.

APPENDIX F

AGENCY COMMENTS



Commander  
Pacific Area  
U. S. Coast Guard

Coast Guard Island  
Alameda, CA 94501 5100  
Staff Symbol: Po  
Phone: (415) 437-3492

16214  
10 November 1988

Mr. Robert Fletcher, Chairman  
Pacific Fishery Management Council  
Metro Center, Suite 420  
2000 SW First Avenue  
Portland, Oregon 97201

Dear Mr. Fletcher:

The Coast Guard has conducted a thorough review of the Draft Ninth Amendment to the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California. The following comments are provided.

ISSUE 1 - KLAMATH RIVER FALL CHINOOK ESCAPEMENT GOAL.

This issue does not impact the Coast Guard.

ISSUE 2 - HARVEST ALLOCATION FOR NON-INDIAN FISHERIES NORTH OF CAPE FALCON.

This issue does not impact the Coast Guard.

ISSUE 3 - INSEASON NOTICE PROCEDURES.

Both alternatives are acceptable to the Coast Guard, however Alternative 2 is preferred. Currently, under Alternative 1 (status quo) we issue a "proposed" notice of action and then an "actual" notice after the inseason action notice has been filed with the OFR. Alternative 2 would apparently involve only one notice of action which will actually reduce the number of Notice to Mariners (NTM) issued during the season.

If Alternative 2 is selected, we would prefer that the FMP describe the Coast Guard's Notice to Mariners in more general terms. Notice to Mariners are broadcast at different intervals along the coast, at different times during the year. Therefore, I recommend you do not specify how frequently the broadcast will be made. Also, the broadcast is announced over 2182 KHZ in addition to Channel 16 VHF-FM. Therefore, I recommend your FMP amendment (page 30 of amendment package) state, "Broadcast by the U. S. Coast Guard on the "notice to mariners" broadcast. These broadcasts are announced on Channel 16 VHF-FM and 2182 KHZ at frequent intervals. The announcements designate the channel or

frequency over which the "Notice to Mariners" will be immediately broadcast and may vary from place to place."

#### ISSUE 4 - STEELHEAD MANAGEMENT INTENT.

This issue does not impact the Coast Guard.

#### ISSUE 5 - REPORTING REQUIREMENTS FOR COMMERCIAL SALMON FISHERIES.

The Coast Guard proposes changes to the alternatives provided in this issue. The two reporting requirements used in the 1988 Ocean Salmon Fisheries Season tasked fishermen with reporting catch data and vessel movements to the nearest Coast Guard station in order to provide data to state fisheries agencies for inseason management decisions and to facilitate state and federal enforcement efforts. Based on the 1988 reporting data collected from Coast Guard stations and discussions with other state and federal enforcement officers the following recommendations are provided:

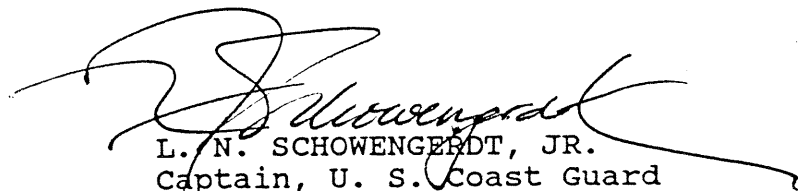
(1) The reports required of commercial salmon fishermen who leave a regulatory area in order to land their catch in another regulatory area can be accommodated by the Coast Guard on the west coast. There were roughly 89 reports received last year off the coasts of Washington and Oregon. (Most of these reports were catch data information relevant to this regulation.) The Coast Guard will receive these reports on a regular basis in future management years providing the quantity of reports does not appreciably increase or begin to interfere with distress traffic. Also, as an additional suggestion, if the fishermen are required to make these reports for the purpose of timely quota counts, I recommend all applicable State quota managers provide a 24-hour point of contact to receive this information.

(2) The reports requiring vessels to notify the Coast Guard of their transits through closed areas when salmon is onboard are not effective from an enforcement point of view. There were roughly 156 reports received last year off the northern California coast. (Most of these reports were vessel movement information relevant to this regulation.)

Enforcement efforts are not facilitated by this regulation due to (a) the administrative workload involved in receiving these reports, (b) the complex correlation of information received with enforcement action taken, and (c) the difficulties involved in proving illegal retention using information gathered by this type of regulation.

I recommend the Council omit this requirement from the regulations and only state that "in those areas closed to salmon fishing, it is unlawful for a vessel which has been issued an ocean salmon fishing permit by any state to have troll gear in the water."

I appreciate the opportunity to comment on your proposed amendment and encourage the Council's favorable consideration of the above input.



L. N. SCHOWENGERDT, JR.  
Captain, U. S. Coast Guard  
Chief, Operations Division  
By direction of the Area Commander

Copy: COMDT (G-OLE)  
CCDGTHIRTEEN (ole)  
CCGDELEVEN (ole)



16207.2

Mr. Joe P. Clem  
Chief, Fisheries Management  
Division  
National Marine Fisheries Service  
Washington, D.C. 20235

Dear Mr. Clem:

I have reviewed draft Amendment 9 to the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the coasts of Washington, Oregon, and California. Issues 3 and 5 are the only issues that will have an impact on the Coast Guard and I would like to comment on these.

I do not oppose the requirements that would be placed on the Coast Guard by this amendment. The number of reports and notifications that will be required in this fishery will not be a significant burden on the Coast Guard. I do not feel that requiring vessels transiting a closed area with salmon on board to report to the Coast Guard will eliminate the need for enforcement. We will still need to maintain some presence at sea to ensure that vessels are complying with the requirement.

I am concerned that an increasing number of fishery management plans will require that fishing vessel reports be made through the Coast Guard. We are closely monitoring the impacts these requirements have on our communications resources. We can accept this burden on a small scale, but we do not have the resources to meet unlimited expansion of reporting needs. The Coast Guard will support domestic fishing vessel reporting needs on a case by case basis. However, we feel that in developing future reporting requirements other communications resources should be sought.

The foreign fishing vessel reporting requirement alone has caused a significant burden to the Coast Guard's communications stations. The Coast Guard feels that only commercial resources should be authorized for relaying foreign fisheries information to the fisheries managers. Federal regulations allow foreign fishing vessels to deliver reports via the Coast Guard communications system, only after first attempting to deliver the reports via private or commercial means. The Coast Guard suspects that few foreign fishing vessels actually attempt to transmit fishery reports via commercial means, finding it more to their advantage to shift the burden to the Coast Guard communications system--the savings to these foreign fishing vessels comes at the expense of the American taxpayers.

Thank you for the opportunity to comment on this proposed amendment. If there are any questions, please contact LTJG COX (267-1155)

Sincerely,

A handwritten signature in black ink, appearing to read "S. J. Dennis".

S. J. DENNIS  
Captain, U.S. Coast Guard  
Chief, Operational Law Enforcement  
Division  
By direction of the Commandant





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE

Northwest Region  
7600 Sand Point Way N.E.  
BIN C15700, Building 1  
Seattle, WA 98115

**NOV 15 1988**

F/NWR3:1504-13-SAL-OB-010 mt

Mr. Robert Fletcher, Chairman  
Pacific Fishery Management Council  
Metro Center, Suite 420  
2000 S.W. First Avenue  
Portland, OR 97201

Dear Bob,

We have reviewed the draft Ninth Amendment to the FMP for Commercial and Recreational Salmon Fisheries Off the Coasts of Washington, Oregon, and California. In order to help the Council prepare a final amendment for submission to the Secretary of Commerce for review and approval, we offer the following comments and suggestions. Our comments were developed in conjunction with Doug Ancona's office. Comments by the NMFS Washington office are also enclosed for your information.

Issue 1 - Klamath River Fall Chinook Escapement Goal

It is not clear if Alternative 3 (harvest rate management) includes consideration of the escapement floor of 43,000 naturally spawning adults as recommended by the Salmon Technical Team. Because the 43,000 fish floor is a sub-alternative to the status quo alternative, it should also be considered as an alternative to the 35,000 fish floor contained in Alternative 3. The Council should clarify at the November meeting the status of the 43,000 fish floor relative to Alternative 3 and solicit public comment on both the 35,000 and 43,000 fish floors.

Given that the Salmon Technical Team has recommended a minimum escapement of 43,000 naturally spawning adults, if the Council chooses an option with a floor of 35,000 fish, the Council should clearly state its rationale for selecting the lower floor. Whichever floor is chosen should be accompanied by an analysis which concludes that it is based on the best scientific information available.

Table 1 indicates that at higher ocean abundances of Klamath River fall chinook (500,000 fish and above), Alternatives 1, 2A, and 2B yield higher ocean landings than Alternative 3. This does not seem consistent with the text at page 10 entitled "Approach to Analysis" which appears to disclaim any allocation effects of the various alternatives. An explanation of why Alternative 1 shows potentially greater ocean harvests should be included.



Further, the comparative allocation effects of each option should be analyzed. Regardless of which alternative is chosen, the rationale in support of it should be clearly stated.

The Council should clarify at the November meeting the description of Alternative 3 (harvest rate management) on a number of issues so that informed public comment can take place. For example, the amendment does not state which ocean fisheries or which ocean areas will be subject to harvest rate management. It does not say whether the intent is to manage only the Klamath River Management Zone (KMZ) by harvest rate, or areas to the north and south which also contain large numbers of Klamath River fall chinook. If the intent is to manage only the KMZ, then the zone should be defined and the rationale should be explained.

The description of Alternative 3 seems to imply that it is a framework provision that proposes to begin with a set of initial harvest rates for ocean and inriver fisheries, but provides for modification by the Council during the normal annual methodology review cycle. The Council should clarify this framework at the November meeting if such a provision is intended. Except for a brief reference in Appendix E, the amendment does not state what the initial harvest rates will be nor how they were or will be derived. This information should be clearly stated in the text of the amendment. We do not agree that the methodology review process is the appropriate process for revising harvest rates. The selection of harvest rates establishes allocations between inriver and ocean users and any proposals to change the allocation balance should be subject to the full analysis of options and public review process inherent in establishing annual preseason regulations. If the Council intends the harvest rate alternative to truly be a framework, then much more detail relating to the specific process by which changes can be made is necessary. The fishery model upon which the Klamath River escapement objective is based should be made available for STT and public review and comment if it has not been already.

In summary, more clarity and analysis is needed throughout Issue 1.

#### Issue 2 - Harvest Allocation of Non-Indian Fisheries North of Cape Falcon

The Background section to this part of the amendment expresses the benefits of modifying the present allocation as one of "more productive use of the available harvest for both [commercial and recreational] fisheries." The problem statement focuses on the problem of "incompletely harvesting quotas." No mention is made of the present allocation schedule itself and how it might contribute to the problem. Based on the problem statement, it appears that additional flexibility combined with the new objectives and priorities proposed might satisfactorily resolve

what has been described as the problem without the need to modify the allocation schedule. It would be helpful to have an explanation of how the current schedule contributes to the problem or at least how changing the schedule will improve conditions in the fishery.

Under the provisions which will allow preseason deviations from the allocation schedule (bottom of page 18) it is stated that "[t]he Council will compare the socio-economic impacts of any such recommendation to those of the standard allocation schedule...." This commitment is necessary to establish a clear record that the Council has complied with the requirements of E. O. 12291, the Regulatory Flexibility Act, the National Environmental Policy Act, and the Administrative Procedure Act, and to provide for public comment on the analysis. Thus, we recommend that this provision be revised to make it clear that each year a document will be produced containing the analyses required by these laws and that it will be distributed for public comment, and that public hearings will be held to gather public comment before the Council makes final decisions. All of these requirements are compatible with and can be easily accommodated in the March-April process of developing preseason regulations.

The amendment states at page 20 that any preseason trades shall be based on an exchange ratio of four coho to one chinook. The basis for this conclusion should be stated. The next paragraph limits the scope of deviations within major subareas occasioned by preseason trades to not more than 50% of the allocation of each species which would have been established in the absence of the transfer. This provision needs clarification to indicate what is a "major subarea", the basis for limiting the scope of preseason trades, and the process for setting these limits.

Although an economic analysis is important to show the distribution of costs and benefits and total net benefits of a reallocation from the commercial to the recreational fishery, it does not address all of the factors necessary to satisfy the national standards of the Magnuson Act, 16 U.S.C. 1851. Other issues which should be addressed before recommending a significant reallocation from commercial to recreational fisheries include:

- 1) the extent to which the reallocation achieves the optimum yield from the fishery (National Standard 1); and
- 2) consideration of factors related to fairness and equity (National Standard 4) such as how each option would serve, or at least not run contrary to, a conservation purpose and consideration of whether a particular entity would receive an excessive share as a result of choice of any option.

- 3) consideration of non-economic factors and impacts relevant to or created by the proposal, especially social, ecological, and cultural factors or impacts. It is important to establish that the reallocation is not solely for economic reasons to avoid conflicting with National Standard 5 of the Magnuson Act. Factors considered could include variations between and among the various salmon fisheries, present participation in those fisheries, historical dependence on the salmon fishery, and the capability and opportunity for participation in other fisheries for either salmon or non-salmonid species. Relevant facts should be considered for both the commercial and recreational fisheries.

The text analyzing these factors should be easy to find and identify by the reader. In considering these factors it would be helpful to know how much existing commercial trollers also depend on the southeast Alaska troll fishery, on landings of non-salmonid species (crab, groundfish, halibut), and on salmon fisheries in Oregon and California. Also it would be helpful to know what barriers might exist to participation in other fisheries.

### Issue 3 - Inseason Notice Procedures

We believe the cost of a toll-free hotline would be prohibitively high, especially if areas outside of the State of Washington are included. (Monthly phone charges for the Fraser River all-citizen sockeye fisheries hotline are about \$1000 for five toll-free lines in the 206 area code only). We are still considering the specific requirements for the hotline and the associated costs, but believe the federal hotline will result in a charge to the user similar to the Washington Department of Fisheries hotline. Thus, Alternative 2, if it includes a federal hotline, would impose minor costs to fishermen who use it.

We recommend that Alternative 2 designate the information sources that provide "actual notice" and which fishermen would be required to monitor: 1) the "notice to mariners" broadcast of the U. S. Coast Guard, 2) specified state and federal telephone hotline numbers, and 3) publication in the Federal Register, whichever of these occurs first. In addition, all the normal channels of informing the public of regulatory changes used by the state agencies would still be used. It is important for enforcement purposes that all broadcasts, hotline scripts, etc., be documented to provide evidence of "actual notice."

We do not recommend designating the National Weather Service broadcasts at this time until more firm arrangements can be worked out. According to the Memorandum of Agreement between

NMFS and the National Weather Service, the NOAA Weather Radio broadcasts are "limited to important notices of unanticipated regulatory actions that need to be issued on an emergency, or short-fused basis" and that "[d]uring severe weather events, NMFS announcements will be suspended...until the event is over." Thus, we are not yet assured of the reliability of using the NOAA Weather Radio broadcasts. We will continue discussions with the Weather Service and may propose their inclusion at a later date.

Under Alternative 2, the amendment and implementing regulations should make it clear that: 1) it is the responsibility of the individual fisherman to monitor the information sources specified in the regulations, and 2) the federal and state telephone hotlines in service each year will be specified in the preseason regulations.

#### Issue 4 - Steelhead Management Intent

The regulatory citations should be changed to 50 CFR 661.5(a)(8) based on a technical amendment (53 FR 24644, June 29, 1988).

Alternative 2 should include amendatory language to Section 3.8.6.4 (Steelhead Prohibition) on page 3-65 of the framework amendment; this section should be cited in the References.

#### Issue 5 - Reporting Requirements

More flexibility may be gained by not specifying the U.S. Coast Guard as receiving the required radio messages, but alternatively specifying "whatever federal or state entity is specified in the preseason regulations."

Page 37 has a proposed addition to the Appendix to 50 CFR Part 661; we suggest it be modified to read as follows:

##### 11. Reporting Requirements

Reporting requirements for commercial salmon fishermen will be established as necessary to facilitate identification of harvest areas and to enforce prohibitions on fishing in closed areas in accordance with § 661.4.

#### Issue 6 - Limitations for Season Opening and Closing Dates

Although the Background section mentions commercial and recreational chinook fisheries occurring after October 31 in Oregon territorial waters, Alternative 2 addresses the commercial fisheries only.

If Alternative 2 is chosen by the Council, the boundaries of the KMZ need to be defined.

The rationale in support of Alternative 3 "[t]o allow for responsive and equitable management" does not adequately address why the limitations stated in the current framework FMP (page 3-60) should be removed. The text of the current FMP states that its five enumerated limitations will guide Council decisions on establishing seasons "[u]ntil stocks have been substantially rebuilt and the long-term escapement goals have been met." Can it be concluded that stocks have been substantially rebuilt and the long-term escapement goals have been met and the limitations are no longer necessary?

#### Appendices

Appendix A (the environmental assessment) would be greatly improved by the addition of the analyses outlined for Issue 2 above relating to factors to be considered to comply with the Magnuson Act.

Appendix D (other applicable law) should include a determination for purposes of Executive Order 12612 (Federalism). A sample paragraph follows.

Executive Order 12612 of October 26, 1987, provides Federal agencies with guidance on the formulation and implementation of policies that have federalism implications. Federal agencies are to examine the constitutional and statutory authority supporting any Federal action that would limit the policymaking discretion of the states. The Council has determined that the FMP amendment does not have sufficient federalism implications to require the preparation of a federalism assessment.

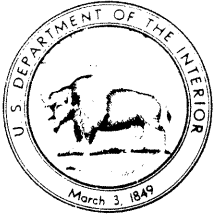
Sincerely,



Rolland A. Schmitten  
Regional Director

#### Enclosures

cc: Douglas Ancona, GCNW  
E. Charles Fullerton, F/SWR  
Richard Schaefer, F/CM  
Eileen Cooney, GC/F



THE SECRETARY OF THE INTERIOR  
WASHINGTON

November 14, 1988

Honorable C. William Verity  
Secretary of Commerce  
Washington, D.C. 20230

Dear Mr. Secretary:

This is in regard to the October 13 request by the Pacific Fisheries Management Council (Council) to review and provide comments on the "Draft Ninth Amendment to the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California Commencing in 1978." The opportunity to address this document is appreciated.

In 1986, Congress enacted the Klamath River Basin Fishery Resources Restoration Act (Act). The Act directs the Secretary of the Interior to establish and implement a 20-year program to restore the anadromous fish populations of the Klamath River Basin. The Act establishes an 11-member Klamath Fishery Management Council responsible for long-term planning and policy development that represents sport and commercial fishing, and tribal, State, and other Federal interests to guide the restoration effort as well as to make recommendations to the Council on harvesting Klamath River fall chinook salmon.

In a July 11, 1988, letter to the Executive Director of the Council, the Chairman of the Klamath Fishery Management Council requested that the Council consider amending the ocean salmon management plan relating to Klamath River fall chinook salmon. The amendment request is now a reality with public hearings being conducted along the West Coast.

The first issue discussed in this document proposes three alternatives that would change the rationale contained in the present framework document for managing ocean harvest of Klamath River origin chinook salmon stocks. The current plan does not recognize an allocation for inriver harvest of adult fall chinook or identify a spawning escapement goal until after 1998. Alternative Number 3 in the proposed amendment recognizes the harvest rate management concept. This concept establishes harvest rate combinations in the offshore and inriver fisheries that will achieve a maximum sustainable yield in ocean commercial and sport harvest, inriver sport, and Indian subsistence and commercial harvest as well as providing specific spawning escapement objectives. All users would share equitably during periods of large numbers of fish and share a portion of the conservation burden during seasons of low fish populations.

Honorable C. William Verity

2

Because of the trust responsibilities I have for Native Americans and for the stewardship that I am entrusted with for this Nation's fishery resources, I urge you not to accept any amendments to the current management plan that do not embody the harvest rate management concept for the Pacific salmon fishery and provide for equitable sharing of inriver interests.

Sincerely,

A handwritten signature in black ink that reads "Ronald Paul Hodel". The signature is written in a cursive style with a large, prominent initial "R".



# *Hoop Valley Business Council*

P.O. Box 1348 • Hoopa, California 95546 • (916) 625-4211

**Wilfred K. Colegrove**  
Chairman

**HOOPA VALLEY TRIBE**

Regular meetings on 1st & 3rd  
Thursdays of each Month

November 8, 1988

Mr. Robert Fletcher, Chairman  
Pacific Fishery Management Council  
Metro Center, Suite 420  
2000 S.W. First Avenue  
Portland, Oregon 97201

Dear Mr. Fletcher:

This letter is submitted on behalf of the Hoopa Valley Business Council, governing body of the Hoopa Valley Tribe, and constitutes the Tribe's formal comments regarding PFMC's salmon plan amendment regarding Klamath River fall chinook escapement.

The Hoopa Tribe wishes to go on record as endorsing alternative three which uses harvest rate management to allow a fixed percentage of spawners to escape. As you are aware, the Hoopa Tribe has been actively involved in management of Klamath Basin fall chinook salmon and wants to see the harvest rate management concept continued.

In the past, the Council has chosen to manage the Klamath system for a fixed escapement goal based on information from the 1960's. The 115,000 spawning escapement goal was adopted in 1978, and has since been amended to reflect the Council's rebuilding schedule. However, neither of these two management alternatives have addressed in-river user needs. In fact; PFMC has chosen to manage for ocean escapement in years prior to 1986. It should be pointed out that neither management method provided adequate escapement prior to 1986 and in fact led to a complete closure of the off shore troll fishery in the Klamath management zone in 1985. Clearly, the fixed escapement goal policy did not work prior to 1986 and for the Council to "go back" to managing for a fixed escapement level will in the Tribe's opinion be a step backwards.



Due in part to the troll closure instituted in 1985, all user groups became involved in the allocation process. This was a unique concept in that the in-river user needs were finally being addressed. As the process evolved, harvest rate management was adopted on recommendation from the Klamath River Technical Team. The initial harvest rates were set to protect naturally spawning Klamath River fall chinook salmon. The combined harvest rates which dictate various users share were negotiated jointly by all users. While all users were not entirely satisfied with the allocation proceedings, the basic needs of each fishery were addressed. In 1986 and 1987; harvest rate management, while not perceived as meeting the needs of all users, increased spawning escapement significantly and allowed for increased ocean and in-river harvest. Clearly the concept needs more refining in order to better serve the needs of all users, but, to abandon this approach to management would be premature at this point.

Management of off-shore troll fisheries in 1988 created a hardship on portions of the troll fleet within the KMZ. However, both offshore and in-river user's had successful seasons. Inequities placed on user's within the KMZ can be addressed, we believe, without throwing out the entire management concept. The Tribe sincerely believes that by using innovative approaches to management, the needs of all users can be addressed.

Indeed; our own concerns have not been fully addressed under this management approach. In the past three years; we have met the agreed upon harvest rate while ocean users have exceeded the harvest rate adopted in the KFMC's five year agreement.

The overages in the ocean harvest have not translated into decreased spawning escapement due in part to increased stock abundance. In-river users, specifically the Indian fishery, were not allowed to share in this abundance because the current methodology does not allow for in-season adjustments. This of course applies to both inside and outside users, but, the fact remains that in-river users cannot share in abundances if the stock projections are wrong. Nevertheless, the Tribe has sought to abide by the agreement and has forgone harvest opportunities. As mentioned, the Hoopa Tribe has forgone harvest opportunities because of ocean overharvest. Overharvest by off shore fisheries translate into reduced spawning escapement in the current year and increased impacts on immature fish. This, in turn, means that the in-river quota will be reduced in the subsequent years. If the rebuilding had been adhered to in 1988, only 43,900 adult fish would have been required for ocean escapement. The KFMC five year agreement called for a in-river harvest of 67,300 adult fish. Consequently, if the rebuilding schedule as specified in the amendment process would have left a spawning escapement of zero fish. This scenario was clearly unacceptable to all user groups. The Tribe feels strongly that we should give precedence to escapement needs.



In summary, we believe that although all user needs have not been met, PFMC should not drop the harvest rate management concept. We are concerned that all user's needs be met, and believe that new approaches to management need to be developed. We believe, the other alternatives will negate the positive attributes of harvest rate management. Our basic needs, while admittedly, have not been fully met, nevertheless, we believe that alternative three gives precedence to spawning escapement which is in the best interest of all our futures.

Sincerely,

*Wilfred K. Colegrove*  
Wilfred K. Colegrove, Chairman



# COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

975 S.E. Sandy Boulevard, Suite 202, Portland, Oregon 97214

Telephone (503) 238-0667

November 11, 1988

Lawrence D. Six, Executive Director  
Pacific Fishery Management Council  
Metro Center, Suite 420  
2000 S.W. First Avenue  
Portland, Oregon 97201

Dear Mr. Six:

We have reviewed the "Draft Ninth Amendment to the Fishery Management Plan for Commercial and Recreational Fisheries Off the Coasts of Washington, Oregon, and California Commencing in 1978" and we offer the following comments.

We have previously commented on Issue 2 - Harvest Allocation for Non-Indian Fisheries North of Cape Falcon in a letter to the Council dated January 8, 1988 and in testimony at the January Council meeting. We would like to restate some of our comments here. It is our understanding that treaty Indian harvest allocation as determined by treaties and in the U.S. v. Oregon and U.S. v. Washington court decisions will not be affected by any of the alternatives presented. In addition, we would oppose any increase in induced fishing mortality due to single-species or ratio fisheries. Such impacts are difficult to determine and increasing induced fishing mortality would be inconsistent with the Pacific Salmon Treaty. Also, any shift in the timing of fisheries under the presented alternatives should be considered in terms of potential increased impact on upper Columbia River spring and summer chinook, which have remained below escapement goals for over ten years. We strongly oppose any increase in harvest on these runs.

The above comments would also pertain to Issue 6 - Limitations for Season Opening and Closing Dates. Under alternative 3 all prohibitions for season opening and closing dates would be deleted. Such action would have the potential for creating shifts in the timing of fisheries and increases in single-species or ratio fisheries. We would support alternative 2 which would allow some modifications to resolve several management conflicts without increasing the potential for shifts in the timing of fisheries.

On Issue 3 - Inseason Notice Procedures and Issue 5 - Reporting Requirements for Commercial Fishermen, we would support any measures that would make quota management more efficient. Such

11/11/88

measures would be beneficial to both managers and fishermen.

On Issue 4 - Steelhead Management Intent, we oppose the retention of steelhead by ocean recreational fishermen because of potential increased impacts on Columbia River naturally spawning summer steelhead. The Columbia River tribes have restrained their harvest of fall chinook to protect the naturally spawning steelhead. This coming year the parties to U.S. v. Oregon will be reviewing the steelhead part of the management plan to evaluate rebuilding and to determine if any action is needed to rebuild naturally spawning steelhead. Even though there has been a large steelhead run into the Columbia River, the majority of this run is hatchery fish. We do not believe this is an appropriate time to change management of steelhead in the ocean fisheries.

We can not stress enough the importance of management of salmon stocks throughout their entire life cycle. We continue to support weak stock management, as this will help coast wide rebuilding of salmon stocks as required by the Pacific Salmon Treaty. Thank you for the opportunity to comment.

Sincerely,



S. Timothy Wapato  
Executive Director



November 9, 1988

Mr. Lawrence D. Six, Executive Director  
Pacific Fishery Management Council  
Metro Center, Suite 420  
2000 SW First Avenue  
Portland, OR. 97201

Dear Mr. Six,

As Chairman of the Fish and Wildlife Committee of the Yakima Indian Nation Tribal Council, I would like to comment briefly on the **"Draft Ninth Amendment to the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California Commencing in 1978."** It is my understanding that none of the issues contained in this document have direct bearing on the Treaty/non-Treaty allocation of harvestable salmon in coastal fisheries. Accordingly, my comments will address the issues only to the extent that they incidentally affect management of the ocean fisheries on salmon bound for the Columbia River.

Concerning Amendment Issue 2, **Harvest Allocation of Non-Indian Fisheries North of Cape Falcon**, the Yakima Nation is generally opposed to single-species or ratio fisheries which increase mortality to the species that must be released. Such fisheries are contrary to the Pacific Salmon Treaty intent to minimize the effects of induced fishing mortality. For this reason we would support a commercial/recreational allocation scheme that minimizes incidental impacts in both fisheries. We encourage the Council to further explore management alternatives, such as pre-season trades or in-season transfers, that reduce the need for single-species or ratio fisheries.

Regarding Amendment Issue 3, **Inseason Notice Procedures**, the Yakima Nation supports any measure that improves the ability of fishery management agencies to respond to changed conditions of the fishery. In view of the tremendous fishing power of the non-Treaty commercial and recreational fleets, timeliness in implementing harvest management actions directly affects the precision with which the fishery can be managed. Alternative 2 provides for real-time implementation of management actions, and we recommend that it be adopted.

I have no comment on Amendment Issue 4, **Steelhead Management Intent**, except that Alternative 2 must include provisions for accurately documenting the retention of steelhead in recreational fisheries. Whether non-Treaty fishermen harvest their share of steelhead in saltwater or freshwater is not our

concern.

Amendment Issue 5, **Reporting Requirements for Commercial Fishermen**, relates to the accuracy of landings information in each regulatory area within PFMC jurisdiction. Data recovered from port sampling programs are vital to assessing the impacts of fishery management actions on salmon stocks in the mixed-stock ocean fisheries. The Yakima Nation supports Alternative 2, which could improve the reliability of coastwide landings statistics.

In closing, I would restate our position that the impacts of all coastal fisheries on salmon must be considered regardless of how the catch may be allocated. We support the concept of "weak stock" management as the most effective means available to rebuild salmon stocks on the U.S. west coast, as required by the Pacific Salmon Treaty. Thank you for the opportunity to comment.

Sincerely,

*for Harvey E Adams*  
Levi George, Chairman  
Fish and Wildlife Committee  
Yakima Nation Tribal Council

JOSEPH R. BLUM  
Director



STATE OF WASHINGTON  
DEPARTMENT OF FISHERIES

115 General Administration Building • Olympia, Washington 98504 • (206) 753-6600 • (SCAN) 234-6600

November 1, 1988

Mr. Larry Six, Executive Director  
Pacific Fisheries Management Council  
Metro Center, Suite 420  
2000 S.W. First Avenue  
Portland, Oregon 97201

Dear Larry:

The Department has been reviewing the Council's Alternatives for allocation between recreational and troll fisheries north of Cape Falcon. In particular, the Department is considering the Alternatives in light of the proposed "fishery objectives" and the "allocation priorities."

The Council's analysis recognizes that any Alternative's success is in part dependent upon allocating chinook and coho to best meet allocation priorities, and to do so in ratios that best will reflect the actual catch so that one or the other is not "left on the table." The average ratio of catch customarily used by the Council has been four coho to one chinook.

Alternative 2 significantly deviates from this 4:1 ratio at reasonably foreseeable levels of abundance. Alternative 3, on the other hand, fails to achieve its own "allocation priority" by requiring a "trade" of chinook for coho at low levels of coho abundance in order to prosecute an all-species recreational fishery of any reasonable duration. When the trade occurs, the coho to chinook ratio exceeds 9:1 at reasonably foreseeable levels of abundance.

The Department believes the Council may benefit from a review of a combination of Alternatives 2 and 3. This "Combined Alternative 2/3" would utilize the coho sharing formula up to 250,000 total coho from Alternative 2 with the coho sharing over 250,000 total coho and the chinook sharing formula from Alternative 3. This combination of the two alternatives may be a more-optimum means of meeting "fishery allocation priorities" because of the following considerations:

- it provides "Alternative 2" coho levels for an all-species recreational fishery at low abundance levels. These levels better meets the "allocation priorities" for either Alternative 2 or Alternative 3 (a "July through Labor Day" or "late June through early September all-species season" respectively).
- At very low coho abundance, it supplements the extremely short all-species recreational fishery with the possibility of a limited chinook-only recreational fishery consistent with the Alternative 3 "allocation priorities."



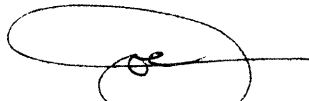
November 1, 1988  
Mr. Larry Six  
Page 2

- Combined with the chinook sharing formula from Alternative 3, the "Combined Alternative 2/3" maintains coho-to-chinook ratios more in line with the 4:1 average at low levels of coho abundance, thereby avoiding "leaving coho on the table" because of achieving chinook quotas.
- it maintains a chinook allocation for the May troll objective, and increases opportunities to effect a "trade" of chinook for coho as was done in 1988.

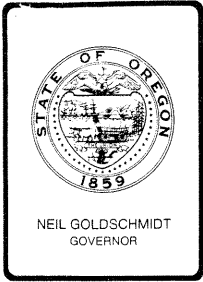
The Department is not now advocating Combined Alternative 2/3. It does believe, however, that an analysis of this "hybrid" may be beneficial and worthy of Council consideration. We would request that Council staff complete whatever level of analysis is reasonable for inclusion in the Council's briefing material.

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Blum', enclosed within a large, loopy oval scribble.

Joseph R. Blum  
Director



## *Executive Department*

155 COTTAGE STREET NE, SALEM, OREGON 97310

November 8, 1988

Pacific Fishery Management Council  
Metro Center, Suite 420  
2000 SW First Avenue  
Portland, OR 97201

Subject: Fishery Management Plan for  
Commercial and Recreational Salem Fisheries  
Coastal Counties  
PNRS# OR881013-020-4

Thank you for submitting your Management Plan for State of Oregon review and comment.

The Department Land Conservation and Development has submitted the attached comments for your consideration.

Sincerely,

INTERGOVERNMENTAL RELATIONS DIVISION

Dolores Streeter  
Clearinghouse Coordinator

Attachments

1665T



OREGON INTERGOVERNMENTAL PROJECT REVIEW

State Clearinghouse
Intergovernmental Relations Division
155 Cottage Street N. E.
Salem, Oregon 97310
373-7652

RECEIVED
OCT 14 1988
SALEM

STATE AGENCY REVIEW

Project Number OR881013-020-4 Return Date: NOV 04 1988

To Agency Addressed: If you intend to comment but cannot respond by the return date, please notify us immediately. If no response is received by the due date, it will be assumed that you have no comment and the file will be closed.

Coastal Counties

NOV 09 1988

PROGRAM REVIEW AND COMMENT

TO STATE CLEARINGHOUSE: We have reviewed the subject Notice and have reached the following conclusions on its relationship to our plans and programs:

- [ ] It has no adverse effect.
[ ] We have no comment.
[ ] Effects, although measurable, would be acceptable.
[ ] It has adverse effects. (Explain in Remarks Section.)
[ ] We are interested but require more information to evaluate the proposal. (Explain in Remarks Section.)
[ ] Additional comments for project improvement. (Attach if necessary.)

11/7 Old Delmas S. - advised sending today w/ comments

REMARKS (Please type or print legibly)

The amendments of concern to the Department are Issues 1 and 6. Issue 1 examines alternatives to the current framework amendment escapement goal for Klamath River fall chinook. The Department's major concern is that regulations for this fishery be established that maintain or obtain optimum sustainable yield and avoid overfishing. It appears that an annual spawning escapement floor for natural spawning areas of 43,000 is more appropriate than 35,000. The

Agency LCDC

BY Patricia Snow

IPR #2

Phone Number 373-0087

Department will make its final consistency review once the amendment alternatives are selected and submitted for our review by the NMFS.

Resources Building  
1416 Ninth Street  
95814  
(916) 445-5656  
TDD (916) 324-0804

GEORGE DEUKMEJIAN  
GOVERNOR OF  
CALIFORNIA



**THE RESOURCES AGENCY OF CALIFORNIA**  
SACRAMENTO, CALIFORNIA

California Conservation Corps  
Department of Boating and Waterways  
Department of Conservation  
Department of Fish and Game  
Department of Forestry  
Department of Parks and Recreation  
Department of Water Resources

Air Resources Board  
California Coastal Commission  
California Tahoe Conservancy  
California Waste Management Board  
Colorado River Board  
Energy Resources Conservation and Development Commission  
San Francisco Bay Conservation and Development Commission  
State Coastal Conservancy  
State Lands Division  
State Reclamation Board  
State Water Resources Control Board  
Regional Water Quality Control Boards

Mr. Lawrence D. Six  
Pacific Fishery  
Management Council  
Metro Center, Suite 420  
2000 S.W. First Avenue  
Portland, OR 97201

October 31, 1988

Dear Mr. Six:

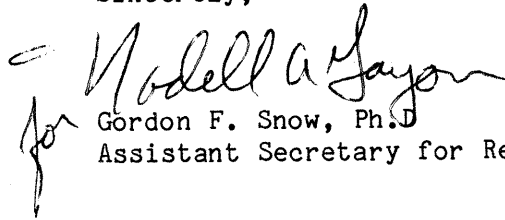
The State has reviewed the Draft Ninth Amendment, Fishery Management Plan for Commercial and Recreational Salmon Fisheries, submitted through the Office of Planning and Research.

We coordinated review of this document with the Coastal Commission, State Lands Commission, San Francisco Bay Commission, and the Departments of Boating and Waterways, Fish and Game, and Parks and Recreation.

None of the above-listed reviewers has provided a comment regarding this project. Consequently, the State will have no comments or recommendations to offer.

We appreciate having been given an opportunity to review this document.

Sincerely,

  
for Gordon F. Snow, Ph.D.  
Assistant Secretary for Resources

cc: Office of Planning and Research  
1400 Tenth Street  
Sacramento, CA 95814

(SCH 88101402)