M E M O R A N D U M

TO: Council, SSC and AP Members

FROM: Jim H. Branson
Executive Director

DATE: December 6, 1985

SUBJECT: Bering Sea/Aleutian Islands Groundfish FMP

ACTION REQUIRED

1. D-2(c) Determine how to handle Zero-TALFF and Zero-JVP species in 1986.

2. D-2(d) Review separation of TACs for the Bering Sea and Aleutians.

BACKGROUND

D-2(c) Management of Zero-TALFF and Zero-JVP Species

1. Zero-TALFF Species.

The 1986 estimated DAH requirements for the following species exceed the Plan Team recommended TACs:

Bering Sea - POP, Rockfish and Sablefish [see D-2(c-d)(1)]
Aleutians - rockfish, sablefish and probably POP [see D-2(c-d)(2)]
BSAI - Atka mackerel

You need to determine what if any bycatch allowances to make for TALFF. If no bycatch allowances are made for TALFF there would be no foreign fishing. You will therefore need to make some adjustments to DAP at least in the Bering Sea. If the TALFFs are too small, foreign fisheries will experience operational problems because there may not be enough fish to divide among all their vessels. This was the case in 1985. The Plan Team computed the actual 1984 bycatch rates and presented them to the Council for use in 1985, but the foreign nations persuaded the Council to adjust the numbers upwards. They stated that they wouldn't actually catch the fish but needed them on the books. In fact, the 1985 reported catches of the bycatch-only "TALFF species" are well below the approved TALFFs. However, the full amount of those bycatch allowances came out of DAH and caused U.S. harvests to be constrained without apparent benefit.

The Plan Team is prepared to compute bycatch rates and TALFFs for 1986. However, it may be more appropriate to use the 1985 bycatch TALFFs and perhaps adjust them in proportion to changes in target TALFFs.

In the Aleutian Islands the situation is somewhat different. There are potentially foreign fisheries only for pollock, Pacific cod and turbots. The foreign pollock fishery uses midwater gear and has very low bycatch rates of fully utilized species. Foreign cod and turbot fisheries would require bycatch TALFFs, but these fisheries could be moved into the Bering Sea management area through separation of the TACs as discussed in the next section.

Also in the Aleutians the JVP Atka mackerel request greatly exceeds the TACs. Any bycatch TALFF will therefore be deducted from JVP, as was done in 1985. The 1985 TALFF was 100 mt.

2. Zero-JVP species.

JVP bycatch allowances must be made for the same species mentioned above. Table 8 [Agenda D-2(b)(1)] showed the JVP deficits, i.e. the amounts indicated as needed in the NMFS survey. NMFS is preparing a joint venture bycatch report which provides the bycatch rates of each target fishery.

D-2(d) Separation of TACs into Bering Sea and Aleutian Components

The idea of establishing separate TACs for all species in the Aleutians was first discussed seriously in October 1984 when Council staff prepared a series of issues statements on zero-TALFFs. The FMP allows establishment of separate TACs for each species in each of the four subareas covered by the FMP [Agenda D-2(c-d(3)]. The Plan Team has stated that they have no biological evidence (i.e. evidence of separate stocks) to support separation of the TACs other than three of the four already separated. The Team feels there is potential management and socioeconomic justification for the separation and the precedent has been set with Bering Sea/Aleutians sablefish which is considered a single biological stock. Also, in the Gulf of Alaska the separate areas are not based on separate stocks but rather on management concerns.

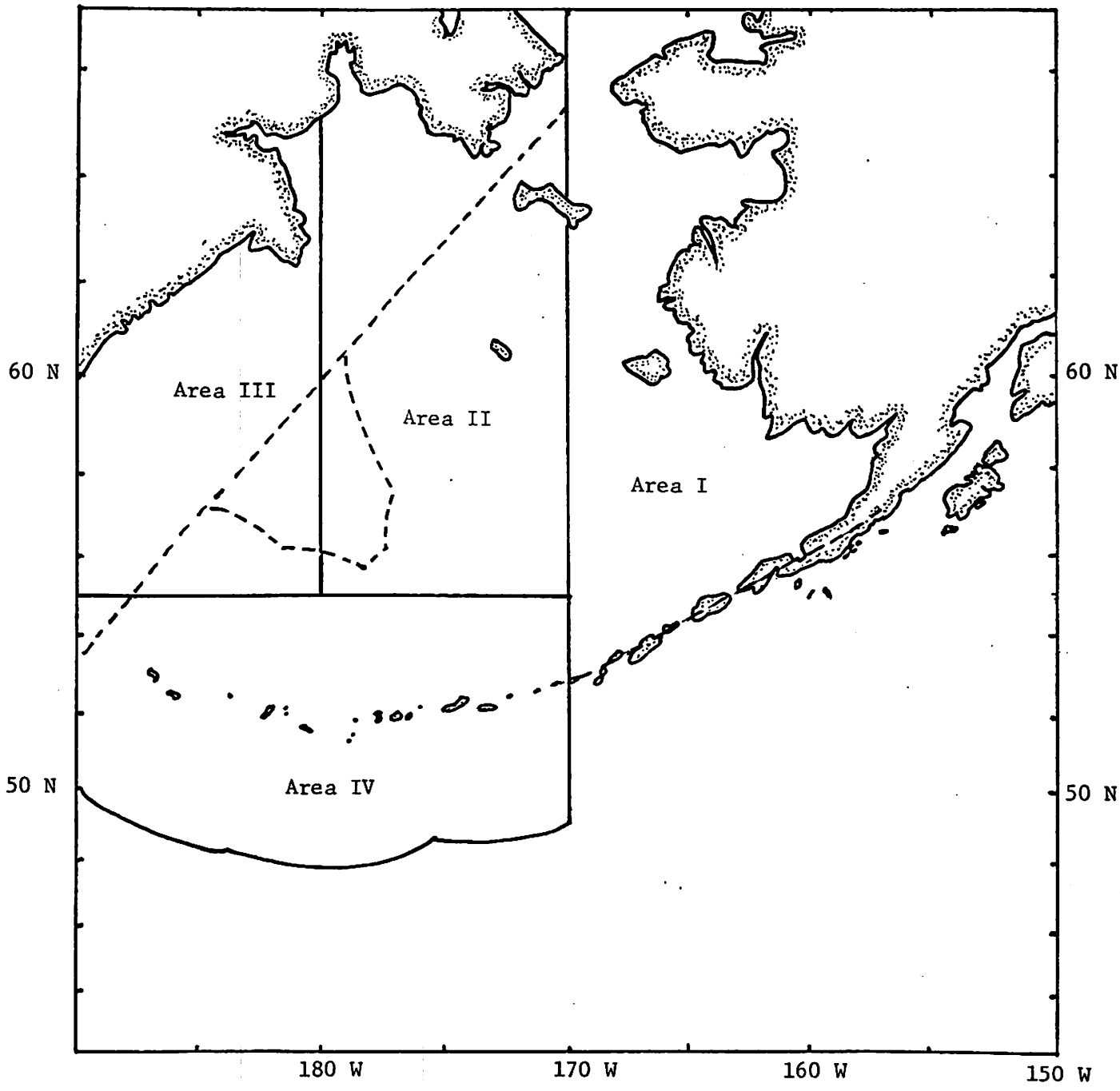
Prior to establishing the final 1986 TACs you need to decide whether to make separate TACs for all or some species in the Aleutians. The primary stocks of concern are turbot and Pacific cod. Agenda item D-2(c-d)(4) is an issues paper by Council staff which discusses some of the advantages and disadvantages of TAC separation. Also, the December 1984 Plan Team report, which contains an in-depth discussion of the issue, is available at the Council office. These reports both indicate that management benefits will occur from separating the TACs into Bering Sea and Aleutians. Additional benefits would accrue from further separation of the Bering Sea into the other 3 subareas, although no analysis of this or species breakdown has been performed yet.

Table 1. Preliminary TACs and Apportionments for Bering Sea Groundfish for 1986 (all in metric tons).

Species	Area	1985 TAC	1986 TAC	Initial 1986 TAC	NMFS DAP Survey	JVP Survey	Survey DAH	Initial TALFF	Potential TALFF
Pollock	BS	1,200,000	1,100,000	935,000	141,755	584,666	726,421	208,579	373,579
POP	BS	1,000	1,200	1,020	7,154	5	7,159	0	0
Rockfish	BS	1,120	450	383	6,377	13	6,390	0	0
Sablefish	BS	2,625	2,250	1,913	5,843	13	5,856	0	0
Pacific cod	BS	220,000	150,940	128,299	102,412	26,519	128,931	(632)	22,009
Yellowfin sole	BS	226,900	229,000	194,650	880	122,593	123,473	71,177	105,527
Turbots	BS	42,000	32,000	27,200	3,633	0	3,633	23,567	28,367
Other flatfish	BS	109,900	133,200	113,220	3,638	64,304	67,942	45,278	65,258
Atka mackerel	BS	37,700	800	680	0	0	0	680	800
Squid	BS	10,000	7,500	6,375	0	0	0	6,375	7,500
Other species	BS	37,580	39,400	33,490	50	1,046	1,096	32,394	38,304
TOTAL			1,696,740	1,442,229	271,742	799,159	1,070,901	388,050	641,344

Table 2. Preliminary harvest levels and apportionments for the Aleutian Islands Groundfish for 1986 (all in metric tons).

Species	Area	1985 TAC	1986 TAC	Initial 1986 TAC	NMFS DAP Survey	JVP Survey	Survey DAH	Initial TALFF	Potential TALFF
Pollock	AI	100,000	100,000	85,000	18,039	14,469	30,875	54,125	69,125
POP	AI	3,800	11,250	9,563	8,289	100	8,389	1,174	2,861
Rockfish	AI	5,500	1,425	1,211	7,414	35	7,449	0	0
Sablefish	AI	1,875	4,200	3,570	5,106	0	5,106	0	0
Pacific cod	AI	******	30,960	26,316	17,982	2,690	19,175	7,141	11,785
Yellowfin sole	AI	******	1,000	850	150	0	150	700	850
Turbots	AI	******	10,000	8,500	1,771	0	1,771	6,729	8,229
Other flatfish	AI	******	3,800	3,230	554	0	554	2,676	3,246
Atka mackerel	AI	******	30,000	25,500	0	50,166	50,166	0	0
Squid	AI	******	2,500	2,125	0	0	0	2,125	2,500
Other species	AI	******	11,800	10,030	60	25	85	9,945	11,715
TOTAL			206,935	175,895	56,235	67,485	123,720	84,615	110,311



Fishing areas in the Bering Sea and Aleutians.

ISSUES STATEMENT 85-1

The Benefits and Costs of Setting Separate TACs for the Bering Sea and Aleutian Islands Management Areas and the Elimination of TALFF in the Aleutian Islands

December 6, 1985

SUMMARY

The potential costs and benefits of setting separate TACs for the Bering Sea and Aleutian Islands management areas for all groundfish species are examined. Separation of the TACs for the two areas gives the council the ability to eliminate TALFF in the Aleutian Islands without eliminating all foreign effort in the Bering Sea. The current plan separately assigns TACs for pollock, P.O.P., Rockfish, and Sablefish in the two areas. This analysis considers a scenario in which the separation occurs for all groundfish species. There is ample precedent for the establishment of geographical management subareas and there are biological and management benefits from such a separation. These benefits stem primarily from increased management flexibility. The biological and management costs of the separation seem inconsequential.

Under the current management regime the council may set the TALFFs for pollock, P.O.P., rockfish, and sablefish in the Aleutians to zero. If the council were to decide to eliminate TALFF in the Aleutian Islands for the species already separated an exvessel benefit of $4.8 million could result. If, in addition, the council were to decide to separate TACs for all other species and subsequently to eliminate the TALFF for Pacific cod in the Aleutian Islands subarea additional economic benefits at the exvessel level of approximately $2.2 million could potentially be realized. These benefits are calculated using the following assumptions: 1) the entire amount of the released TALFF would be harvested by either DAP or JVP; 2) price paid at the exvessel level will be the same as that paid in 1985 for all species except rockfish and P.O.P.; 3) for the latter two species a price increase of $0.11 per pound at the exvessel level is predicted due to US processors passing along part of a price increase caused by firmer foreign markets. The price increase for rockfish and P.O.P was estimated using information collected from a pilot survey of Alaskan processors. The estimate is preliminary and is based on subjective responses. Nevertheless, independent evidence from US export data and from Japanese fishery news summaries corroborates this price effect, at least qualitatively. The increase in price for rockfish and P.O.P contributes about $1 million to the total effect of $7.0 million.

The separation of all TACs in the Bering Sea is not likely to lead to increased management and enforcement costs but the US government will experience a shortfall in revenue of $5.0 million due to elimination of TALFF and, hence, the foreign poundage fees.

INTRODUCTION

This paper investigates the effects of separating the Total Allowable Catches (TACs) of all commercial harvested species or species groups in the Bering Sea management area into two separate TACs; one for the Bering Sea subarea and one for the Aleutian Islands subarea. The Aleutian subarea is that part of the FCZ seaward of the Aleutians south of 55 degrees N. latitude and west of 170 degrees W. longitude (Figure 1). The separation of TACs would affect the way in which the fisheries are managed by giving greater management flexibility to the North Pacific Fishery Management Council (NPFMC). This increased management flexibility yields biological, logistical and economic benefits.

Given the separation, an analysis of the potential economic costs and benefits of eliminating TALFF in the Aleutian Islands management area is presented. Potential benefits are due to increases in exvessel revenues while costs stem primarily from a loss of foreign fishing fee revenues. Novel to this analysis is an examination of indirect economic benefits due to price increases in the foreign markets which purchase the US product.

BACKGROUND

The council must decide at the December meeting whether to specify separate Bering Sea and Aleutian Islands management area TACs for species that have traditionally been managed with one TAC throughout the whole plan area. The following are obvious benefits of managing all species by separate areas:

1. Management measures can be customized to accommodate seasonal patterns of abundance and distribution which may or may not be age related. For example, the young of a species which tend to aggregate in shallow waters near the Aleutians could be protected by a lowered TAC while still allowing a major fishery on older fish in the deeper waters of the Bering Sea.

2. Fishery closures triggered by reaching the harvest limit for a fully utilized species would be less extensive.

3. The TACs and allocations to JVP and DAP could be adjusted more easily to create a totally American zone for US fishermen. This would result in lower operating costs, safer seasons, higher CPUEs and, possibly, lowered insurance premiums, at least until the area became saturated with effort. However, there are also direct and indirect economic benefits which could be realized by adopting area management. Direct benefits are calculated by assuming that the Aleutian TALFFs for 1985 for pollock, sablefish, rockfish, P.O.P, Atka mackerel and Pacific Cod would be taken by US fishermen. Exvessel value to the US would increase by $6.1 million (Table 1). An indirect economic benefit due to an additional increase in revenue of $1 million is predicted from estimating an increase in the price paid to US processors of rockfish and P.O.P. This price effect is caused by the reduction in foreign supplies.

Direct Benefits

The direct economic benefit of dividing the Bering Sea/Aleutian Islands TACs into separate TACs is computed under the assumption that the Aleutian Islands TALFFs for pollock, sablefish, rockfish, P.O.P. and Atka mackerel could be fully utilized by American fishermen. Of these species all but pollock are currently fully utilized. Additionally, the TALFF for Pacific cod which is not currently managed by separate area could be fully utilized in 1986. The assumption of full utilization of pollock and cod is based on the fact that the Aleutian TACs would be small relative to the Bering Sea TACs and that current DAP and JVP requests and the implied rate of growth in domestic capacity implied by those requests suggest that full utilization could occur as early as 1986.

For the species currently separated by area only pollock has a directed TALFF. If the entire 1985 TALFF for the Aleutians were taken by domestic harvesters the US will realize an increase in exvessel value of $6.7 million (Table 1). For the species not currently managed by separate area only Pacific cod has a significant foreign catch in 1985. Benefits would accrue to domestic harvesters if the TALFF for cod were separated into a Bering Sea TALFF and Aleutians TALFF and if the Aleutians TALFF were harvested by US vessels. Assuming that the 1985 TALFF were apportioned to the Aleutian management area in the same way as recommended for 1986, 11,423 mt would be set aside for domestic harvesters. The fishermen would realize an exvessel value of about $2.2 million (Table 1).

There are additional benefits from gains in exvessel revenue for those species fully utilized by the domestic fishery for which a foreign bycatch allowance is made. These stocks currently have separate TACs in the Aleutians. If the Council were to set these allowances (TALFF) for sablefish, rockfish, P.O.P, and Atka mackerel to 0 for the Aleutian Islands subarea the domestic fleet would gain an exvessel revenue of $2.1 million (Table 1). As a potential future benefit, establishing separate TACs for each area would allow the council to eliminate TALFF as a bycatch allowance for any species which were to become fully utilized.

Indirect Benefits

The other economic benefits that follow from the elimination of TALFFs in the Aleutian Islands are indirect benefits. These benefits are realized through price effects in foreign and domestic markets due to decreased foreign supplies. Recent marketing trends were examined in the fall of 1985 through a survey of domestic processors. The survey involved personal interviews with domestic processors in Seattle, Sitka, and Kodiak. The processors were asked if they had seen any recent (1984-1985) atypical price or quantity effects for the fish they marketed. If they answered yes, they were asked, what, in their opinion, had caused the price and/or quantity change. Their answers, although subjective, give insight into the effects that restrictions in foreign supply would have on prices paid to processors and in the amount they would be able to market. Confidentiality of the data prevents a quantitative summary of the processor's responses, nevertheless all respondents reported substantial changes in the markets for their products in 1984- 1985. They, for the most part, believe the observed market effects are caused by two phenomena.

The first is a strengthening of their overseas markets for sablefish due to the fact that sablefish fishery in the Gulf of Alaska became fully utilized by domestic harvesters in 1985. The second phenomenon is a voluntary removal of effort by the foreign harvesters in an area within 20 miles of the Aleutian Islands. Both of these effects imply a reduction in the amount of fish available to the foreign harvesters and processors and hence a reduction in foreign supply.

It is not possible to separate the two effects using the survey responses. It is, however, possible to examine the foreign supply changes over 1985 using 1984 and 1985 landing statistics. Table 2 compares the foreign harvests for all Alaskan waters, and for the Bering Sea and Aleutian areas by weight and by value for the years 1984 and 1985. The 1985 harvests are year-to-date (through November) therefore to allow comparison with 1984 the 1984 foreign harvests are presented for the same period.

It is clear that there have been substantial decreases in the amount harvested by foreign vessels in the last year. Overall, there has been a 21% reduction in foreign harvest (by weight). For the entire Bering Sea the reduction has been approximately 20% and for the Aleutian Islands the change in foreign harvest from 1984 to 1985 is a reduction of about 67%. In absolute numbers the decrease in Alaskan groundfish to foreign harvesters is some 241 thousand mt while the absolute decrease in foreign harvest in the Aleutians is 51 thousand mt. Thus the Aleutians accounted for some 21% of the reduction in foreign supply.

On a species basis the reductions in foreign harvests in the Aleutians relative to the total foreign harvest reductions in all of Alaska range from 11% for the other rockfish group to 24.9% for pollock. Alaskan waters do not, of course, provide 100% of the demand in the foreign markets. It is clear, however, from information collected by the processor surveys that domestic wholesalers currently have no difficulty in selling their product in overseas markets, primarily Japan. All processors interviewed reported increases in the price received for sablefish, rockfish and P.O.P. and the ability to sell 100% of their product overseas. Examination of trends in the export of sablefish provides additional evidence to support the correspondence of losses in foreign supply with increases in US exports. The decline in sablefish allocations to Japan between 1983 and 1985 is 3,935 mt in dressed weight (using a conversion factor of whole to dressed of 0.68) while the increase in exports of sablefish to Japan is 5,685 mt. Unfortunately the import-export database does not include information on rockfish and P.O.P. exports.

To calculate the possible price effects of further reductions in foreign supply caused by elimination of TALFF in the Aleutians for sablefish, rockfish and P.O.P. we did the following: 1) used the survey responses to estimate the mean reported 1984-1985 price change at the wholesale level; 2) calculated the 1984-1985 foreign supply changes for sablefish, rockfish and P.O.P. using 1984 and 1985 landings statistics (Table 2); 3) estimated, in the foreign market, the relation between the price increase and the supply change (using 1) and 2)). This number is called the price elasticity of demand. 4) predicted a price change in the foreign market from a further reduction in supply using this price-quantity relationship; 5) converted this predicted price difference to a

predicted change at the exvessel level by assuming constant mark up proportions;

Using this approach the expected price change due to the elimination of the TALFF in the Aleutians for sablefish and rockfish-P.O.P. (150 mt and 3,845 mt, respectively, using 1985 TALFFs) is less than a penny for sablefish and $0.11 for rockfish and P.O.P. The elimination of TALFF for these two species in the Aleutians for 1986 is probable given the results of the NMFS DAH survey. This price change estimate should be viewed as preliminary as it is based on a small sample of processors and has not been verified by an independently determined price series.

We are now able to reevaluate the exvessel value increases shown above using these price effects. We predict no exvessel price increase for pollock, cod, and no significant increase for sablefish and Atka mackerel. Thus the total exvessel value of the foreign bycatch in the Aleutians would increase from $2.1 million to $3.0 million where the increase is entirely due to accounting for the higher price received for rockfish and P.O.P..

Summing the increases in exvessel revenue due to total domestic harvest of the Aleutian portion of the catch of pollock, Pacific cod, sablefish, P.O.P., rockfish, and Atka mackerel yields a total value increase of $7.0 million. This amount may overestimate the effect of a reduction in TALFF for two reasons. Firstly, the domestic fleet may not be able to harvest the entire TALFF in 1986. Thus the total change reported here may be more realistic for 1987 or 1988 rather than 1986. Secondly, the analysis assumes that the foreign markets will not find other sources of supply for these species and also assumes that the foreign consumer will not choose to buy other, less expensive fish. Substitution of alternate supplies and different species will certainly occur over the long run, nevertheless, over the run of the analysis presented here, the predicted impacts seem likely.

It is important to realize, however, that the estimate of a total economic effect of $11.6 million at the exvessel level understates the total effect to the United States economy. This is because if the fish are harvested by domestic vessels and sold by domestic processors benefits will be obtained in the processing sector as well as the harvesting sector. We can not quantify these benefits without knowledge of the cost structure for the processing sector. Nevertheless, these benefits are certainly greater than zero and may be substantial.

We can conclude, therefore, that the quantifiable total gross economic benefit to the United States economy in 1986 due to separation of the TACs in the Bering Sea and the subsequent setting of 0 TALFFs in the Aleutians for pollock, Pacific cod, sablefish, P.O.P. and rockfish might be in the order of $7 million. Net benefits which are gross benefits (total revenues) minus costs would also be increased probably in greater proportion than the increase in gross benefits. This is because separation of the TACs will reduce domestic harvesting costs for the reasons given in the introduction. Additionally, whatever biological and management benefits follow from the separation of TACs in the Bering Sea will also be realized regardless of the levels of TALFF in the Aleutians.

Having explored the positive effects of a change in fisheries management for the Bering Sea, we complete the analysis in the next section by examining the costs of such a management change.

Costs

There may be management or regulatory costs associated with the separation of TACs in the Bering Sea. The fisheries management technical staff: the plan teams, and the supporting staff for the teams would need to produce six additional TACs for the six species or species groups which would be separated by subarea. The plan teams, council staff, and council would also be burdened with six more numbers which need to be presented, discussed and agreed to. It would seem that this would be an inconsequential additional burden given the amount of data that these groups routinely need to deal with.

The increase in regulatory costs due to the management change would most likely be insignificant. The regional office would need to monitor the harvests of the six additional species separately for each area and the region might need more inseason management rule related changes than is currently the case.

Separating the Bering Sea into two regulatory areas also suggests that enforcement costs may increase. This seems unlikely as the Coast Guard indicated during the preparation of the R.I.R. for Amendment 9 to the Bering Sea plan that a 20 mile closure in the Aleutians would not increase their operational costs.

There may be increased costs to the industry due to the proposed change. Separate subarea management implies that there may be more closures of portions of the Bering Sea area. However, subarea management implies little likelihood of total closure of the area. On balance, subarea management and 0 TALFF in the Aleutians guarantees the availability of fish year round to domestic harvesters and processors thereby reducing operational uncertainty.

Obviously, most of the costs of the separation of TACs in the Bering Sea and the subsequent zeroing of TALFFs in the Aleutians are borne by the foreign fleet. Accounting for these costs is unnecessary under the MFCMA which suggests that benefits shall be examined from the perspective of the economy of the United States. Nevertheless, there may be domestic economic losses due to removal of foreign effort in the Aleutians.

The first effect is a loss of revenue caused by foreign retaliation. It is possible, although unlikely due to the small percentage decline in total fishery supplies, that foreign trading partners may raise tariffs, impose import restrictions, or impede free trade in other ways. These trade barriers could occur in foreign fishery markets or in unrelated markets.

Foreign trading nations may also limit their exports of product to the United States negatively impacting the consumer by by leading to a decrease in available supplies an increase in retail price or both. However, conversely, a reduction in imports may lead to increased demand for a

wholly domestic product. There is also, of course, the possibility that the foreign fishing nations may wish to discontinue joint venture operations as a result of the proposed regulatory action. This would seem unlikely, at least in the short run, as termination of joint venture contracts would negatively impact the ability to secure directed fishery allocations and because the foreign domestic markets would still need fish.

These kinds of losses are not quantifiable but the loss in foreign fishing fees is easily calculated. Using the 1986 fee schedule proposed by NMFS and assuming that all TALFF for the species discussed earlier is eliminated in the Aleutians in 1986 the United States government would experience a decline in revenue of $5.0 million.

In sum, then, the United States economy, particularly the fishing industry and the processing sector would benefit from separation of the TACs in the Bering Sea such that separate allocations are set for the Bering Sea proper and for the Aleutian Islands. If the TALFFs for pollock, Pacific cod, sablefish, rockfish, P.O.P. and Atka mackerel were set to zero quantifiable benefits, all to the harvesting sector, would be $7.0 million. Additional benefits which we are presently unable to quantify would most likely result.

Under the same scenario insignificant increases in management and enforcement costs are predicted. Foreign retaliation may have substantial negative economic impact on the US economy but this is deemed improbable. The loss in revenue to the United States government from elimination of foreign poundage fees would be $5.0 million.

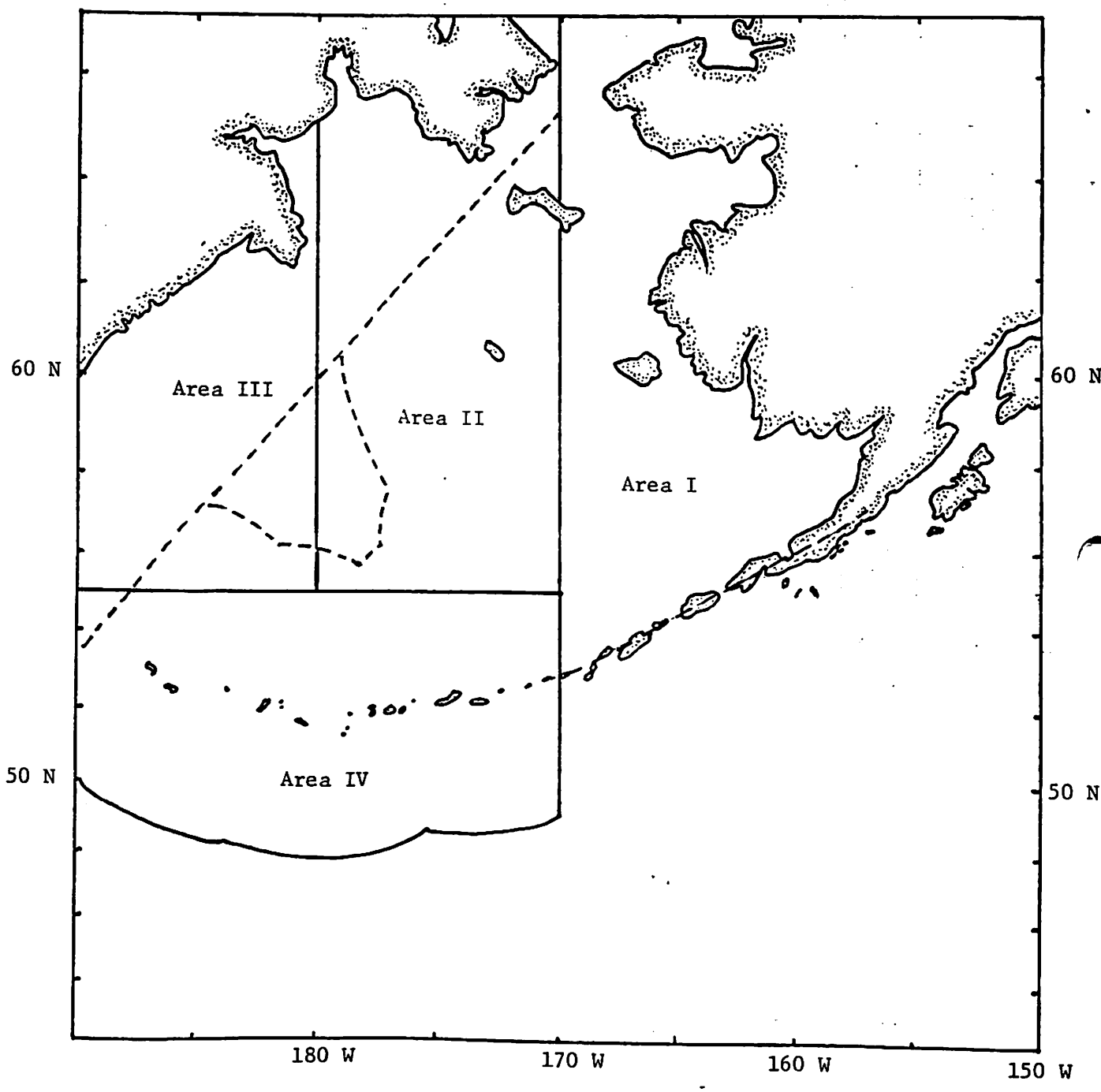


Figure 1. Fishing areas in the Bering Sea and Aleutians.

TABLE 1. Value to U.S. Harvesters of 1985 TALFF, Aleutian Islands Management Area

Species	1985 TALFF(mt)	Price ($/pound)	Value ($1,000)
Pollock	75,494	0.011	1,831
Pacific cod	11,423	0.086	2,166
Sablefish	150	0.599	198
POP Complex	160	0.600	212
Rockfish	3,685	0.200	1,625
Atka Mackerel	100	0.091	20
TOTAL			6,052

Notes: Prices are domestic prices taken from PACFIN price report, 1985 year-to-date; rockfish prices are weighted averages; no Atka mackerel were priced, prices determined from exvessel value used for 1985 fee determination.

TABLE 2. Exvessel Value of 1984 and 1985 Foreign Catch, Bering Sea Groundfish

Area	Species	Foreign Catch Through 11/84 (mt)	Foreign Catch Through 11/85 (mt)
Bering Sea	Turbots		19,515
	Yellowfin sole	103,465	89,554
	Other flatfish	51,164	22,408
	POP Complex		91
	Rockfish, except POP	410	35
	Atka mackerel	16	1
	Pacific cod	92,453	43,684
	Sablefish	844	171
	Pollock	816,234	674,034
Aleutian Islands	Turbots		31
	Other flatfish	3,449	0
	Rockfish, except POP	442	0
	Atka mackerel	67	0
	Pacific cod	990	1
	Sablefish	553	14
	Pollock	62,041	21,688
TOTAL Bering Sea/Aleutians		1,082,128	871,227
All Alaska	Turbots	0	19,547
	Yellowfin sole	103,465	89,554
	Other flatfish	57,451	22,572
	POP Complex	0	91
	Rockfish, except POP	4,042	39
	Atka mackerel	384	6
	Pacific cod	59,292	52,806
	Sablefish	2,489	222
	Pollock	926,800	721,636
GRAND TOTAL		1,153,923	906,473

Table 3. Revenue Loss Due to Elimination of Foreign Fees, Aleutian Islands Subarea, 1986.

Species	Decrease in Harvest (mt)	Proposed 1986 Fee ($/mt)	Revenue Decline ($1,000s)
Pollock	75,494	43	3,246
Pacific cod	11,423	101	1,154
Sablefish	150	136	20
Rockfish	3,685	163	601
POP complex	160	141	23
Atka mackerel	100	65	7
TOTAL			$ 5,051