

North Pacific Fishery Management Council

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MINUTES

Scientific and Statistical Committee
September 25-27, 1988
Anchorage, AK

The Scientific and Statistical Committee of the North Pacific Fishery Management Council met September 25, 26 and 27 at the Sheraton Hotel in Anchorage, Alaska. Members present were:

Richard Marasco, Chairman
Don Rosenberg
Larry Hreha
Don Bevan
Dana Schmidt

Doug Eggers, Vice Chairman
Bill Clark
Terry Quinn
John Burns
Bill Aron

C-2 Halibut Management

The SSC members on the Halibut RAAG briefly reviewed recommendations on the 21 regulatory proposals received.

C-3 Sablefish Management

The SSC reviewed the EA/RIR/IRFA for Sablefish Management in the Gulf of Alaska and the Bering Sea/Aleutian Islands. We find that the document does not adequately describe the seven identified problems. The SSC feels that the document should be improved before it is forwarded to the Secretary of Commerce for implementation. We have provided the staff with specific comments in this regard.

The SSC found that the document provides information on how effective the various alternatives address the identified problems, possible impacts of each alternative, and the mechanics of implementation and operation.

Results of the staff's analysis are summarized in Section 8. A table containing a summary of this information was provided to the SSC. The SSC notes that of the alternatives considered, the one that addresses all of the identified problems is an IFQ management system.

The SSC recommends that after the Council's final selection of the preferred alternative the document be carefully reviewed and improved to insure that the

selected management program is fully described. For example, the IFQ alternative does not contain at this time a statement on the restriction required to meet the National Standard regarding excessive rights. Further, there is a need to develop information that allows examination of the potential benefits and costs associated with each alternative.

C-5 Domestic Observer Program

In the past the SSC has expressed concern regarding the erosion of the scientific data base resulting from the Americanization of the fleet. This loss of information, which in the past has been provided by the foreign observer program, will lead to ineffective management and possible concern for some of the resources managed by the Council.

Bycatch management proposals that impose the least restriction on the target fisheries while insuring minimum bycatch are impossible without data on bycatch amounts and rates. Likewise, discard amounts are unknown and therefore the analysis of impacts on the resource not determined. Even our ability to project the status of the resource is becoming impaired.

The SSC sees erosion of this data base to be one of the most serious management problems facing the Council. Without information on bycatch, discards, catch per unit of effort, age structure of the harvest, and so forth, effective management will become impossible. This will lead to the Council either becoming very conservative in its management strategies or in possible damage to the resource.

The SSC believes action must be taken to correct this problem within the next few years and therefore has developed a proposed plan amendment for consideration during the coming annual amendment cycle. This proposed amendment has been provided by the SSC to the Council in accordance with the call for proposals.

C-7 Habitat Policy

The SSC endorses development and acceptance of a habitat policy by the NPFMC. The proposed habitat policy, though not entirely appropriate for marine and coastal habitats adjacent to Alaska, provides a useful framework from which a Council policy can be crafted.

The proposed policy, as written, is predicated on the reality of severe habitat degradation and loss from anthropogenic sources within the jurisdictions of several Councils. Therefore, it encourages and promotes intervention to "develop" habitats (see policy), and to "create and develop productive habitats where increased fishery productivity will benefit society" (see objective #3). Though such a policy and objective may be desirable in circumstances where significant habitat losses have already occurred, such manipulation in more-or-less pristine habitats is not desirable and should be discouraged.

The guiding principle of "no net habitat loss" (see objective #1) should be tempered to focus on losses caused by man. Additionally, that principle should be tempered on the basis of some threshold level of significant loss as well as the costs and benefits of remedial actions. Alaska is in the most

active geologic zone in North America. Encouragement of an objective that fosters corrective action to alter or reverse natural change is not necessarily desirable. Every significant adverse habitat alteration by man should not be paired with one engineered to create and develop habitat equal to that lost. Such compounded manipulation may not be desirable.

Several editorial changes are suggested to focus more directly on maintenance rather than creation and development of habitats, on responses to anthropogenic rather than natural habitat alteration and loss, and on protection of natural systems that support fishes rather than the more narrow protection of favored species that are taken for commercial and recreational purposes.

Recommended editorial changes are as follows:

- Page 1, - paragraph 6, change the word "develop" to the word "maintain."
- Page 2, - paragraph 2, change the word "develop" to the word "maintain."
 - policy objective #3
 - change the phrase "create and develop" to the word "maintain." Also, insert the word "natural" between the words "productive habitats."
- Page 6, - all sections, substitute the word "activities" for the word "projects."
 - add, "(5) Activities that result in releases of any toxic wastes."

Subject to these changes we recommend that the Council adopt the policy.

C-9 Other Business

1. Arctic Research Commission

The SSC received a presentation by Mayor Fuhs on the actions of the Arctic Research Commission and the proposed interdisciplinary research program entitled, "The Bering Sea as a System". Over the past years members of the SSC have participated in the development of this proposed program. The SSC strongly supports funding and implementation of this program and requests that the Council continue to be involved in the program development.

2. Team Membership

The SSC reviewed resumes for two individuals, Gregg Williams and David W. Carlile, who have been recommended for membership on the Council's two groundfish teams. We recommend that their appointments be approved.

In light of the fact that composition of the plan teams has not been reviewed for a couple of years, the SSC has decided to place this item on its December 1988 agenda. The staff has been asked to contact each of the involved agencies requesting that they review their participation and submit their new nominations to the Council prior to the December meeting.

D-2 Crab FMP

The SSC has reviewed the public comments and has nothing further to offer on this FMP at this time.

D-3 GOA Groundfish FMP

1. Amendment 17a - Sablefish Seasons

The SSC reviewed the EA/RIR/IRFA for the proposed amendment to split the sablefish season. Although data are lacking for determining precise benefits, the analysis prepared suggests that two primary benefits could occur with apportionment to a fall fishery. The first benefit is a reduction in halibut bycatch in the sablefish fishery due to lower estimated bycatch in the fall than in the spring. The second benefit would accrue from harvesting sablefish in the fall when prices historically have been high. To illustrate the potential gains, the SSC summarized information presented in the EA/RIR/IRFA. This information is presented below for the three options considered.

Gain From Split Sablefish Seasons*
(in millions of dollars)

Benefits	Spring/Fall Split		
	75/25	50/50	25/75
Value of halibut savings**	0.9	6.5	7.6
Increased value sablefish caught	2.8	5.6	8.4
Total	3.7	12.1	16.0

* It is noted that the bycatch data for domestic fisheries are limited.

** Does not account for the possibility of fishermen shifting to other fisheries with high halibut bycatch.

Other analyses suggested possible improvements in fish quality and vessel safety depending on the area (in the Central and Western Regulatory Areas, the most favorable weather occurs during June through September). Clearly, the analyses favors a split season with an apportionment of 25/75 between spring/fall. The Council may also consider better coordination with IPHC so that the sablefish season can occur simultaneously with the open halibut periods to avoid bycatch altogether in those periods.

2. Initial Acceptable Biological Catch Recommendations

The SSC reviewed the RAD and made several suggestions regarding clarity of presentation and additional analyses which should be performed and incorporated into the final RAD. These changes could result in different values for ABC at the December Council meeting.

Pollock

The SSC heard the team presentation, received two reports from Peter Craig of ADF&G, and heard testimony from the public. The SSC is concerned about pollock population levels in the Gulf. The spring 1988 hydroacoustic survey resulted in a biomass estimate of 330,000 mt in Shelikof Strait, which is not in accord with previous estimates of biomass from the 1987 bottom trawl survey and analysis of commercial catch-at-age data. The decline in maturity-at-age and length-at-age of pollock in the presence of a declining population is also of concern. Finally, there has been no indication of strong year classes appearing in the fishery in recent years.

Currently, it is hypothesized that the spawning component of pollock returns to Shelikof Strait in the spring of each year. This hypothesis has direct management implications. If true, pollock in the Gulf should be managed as a single unit and concern for pollock in Shelikof Strait translates into concern for pollock Gulfwide. The team suggested that this hypothesis may need to be reevaluated. The SSC has received reports which indicate that spawning occurs in other parts of the Gulf.

It is not clear what an appropriate threshold level for pollock should be. The RAD suggests that a threshold level for pollock may be 585,000 mt to 768,000 mt based on analyses of spawners and recruits. Theoretical population dynamics studies suggest that a threshold at 10% to 25% of unfished biomass may be reasonable. Using the highest observed biomass of 3 million mt (assumed to be an estimate of the unfished biomass), this results in a range of 300,000 mt to 750,000 mt. Some SSC members believe that a threshold level for pollock is not appropriate due to the variable recruitment observed in the population. Further, even if a threshold were established, it is not clear whether the threshold applies only to Shelikof Strait or Gulfwide.

If current pollock biomass is below the threshold, then ABC is zero. Some SSC members believe that ABC should be set to zero in light of the uncertainties involved. Others believe that ABC could be set to some low level based on a conservative fishing rate and biomass estimate. Others believe that ABC for Shelikof Strait is zero but that ABC outside Shelikof Strait cannot be determined on the basis of available information. A majority of the SSC recommends setting the ABC at zero to indicate concern about this population. Results from further analyses and data should be available in the final RAD.

The SSC believes the hypothesis that the spawning component of pollock return to Shelikof Strait in the spring of each year must be carefully examined. To accomplish this the SSC recommends establishing a TAC of 50,000 mt applicable to the fishery between January 15 and April 15. No more than 5,000 mt of this TAC may be taken in Shelikof Strait during this time period. In light of current population estimates, a removal of this amount of fish is probably not excessive and would provide useful information.

Between April 16 and August 31, no directed pollock fishery should be allowed in the Gulf of Alaska.

After evaluation of data from fisheries inside and outside Shelikof and the 1989 spring hydroacoustic survey, the Council could then recommend at its June meeting whether a fall fishery should take place. In any case, observers

should be used to collect information from both inside and outside fisheries. The SSC recommends that remaining funds in the Council's Domestic Observer Program be used for this purpose.

Pacific Cod

The SSC concurred with the team's choice for ABC of 99,000 mt apportioned among management areas as suggested. The SSC has requested that the team do additional analyses that would allow calculation of the F0.1 exploitation rate prior to the December meeting.

Sablefish

The SSC recommended the mid-point of the range of the team ABCs, or 35,000 mt, with this total apportioned among management areas as suggested.

Flounders

The flounder complex is currently characterized by high abundance and relatively low catches. Arrowtooth flounder, a low value species, comprises 54% of the estimated biomass for the complex. If catches become large, the Council may wish to separate arrowtooth flounder from the flounder complex to prevent adverse impacts on individual species.

The SSC concurs with the team that the natural mortality rates used in the analysis are unrealistically high. The SSC calculated revised ABCs using natural mortality estimates from the Bering Sea of 0.12 for yellowfin sole and 0.2 for other flounder species. Using exploitation rates equivalent to these natural mortality values, the revised ABC for flounders is 345,000 mt. The team's method for apportioning this total among the three management areas was used to disaggregate this total.

Slope Rockfish

The plan team recommended a Gulfwide ABC of 14,100 mt for this rockfish assemblage. The ABC is based on stock reduction analysis using biological parameters from POP and biomass estimates from areas deeper than 100 meters sampled in the 1987 Gulf of Alaska trawl survey. The plan team calculated the ABC by multiplying the estimates of exploitable biomass by $F_{msy} = 0.02$. The plan team believed that this approach would permit rebuilding of the stocks. They also suggested that the Council might wish to consider separate ABCs for shortraker and roughey rockfish to prevent overexploitation by a fishery targeting on these species. Such a separation would result in an ABC of 12,100 mt for the shallow slope rockfish and 2,000 mt for the shortraker and roughey.

The SSC believed that a better estimate of ABC would be based on selecting $F = 0.04$. This would give an ABC of 24,200 mt for shallow slope rockfish and 4,000 mt for the deep slope species. The SSC wishes to note that the absence of an observer program makes enforcement of separate ABCs impossible and therefore recommends a combined ABC of 28,200 mt. The SSC agrees with the plan team that an allowed catch of 14,100 mt would permit some rebuilding of these stocks and lessen the problem associated with a fishery targeting on individual species.

Pelagic Shelf Rockfish

The SSC recommends the same procedure be used to calculate ABC for this group as was used for slope rockfish, applying a fishing mortality rate of 0.04 to the trawl survey estimate of biomass. This produces an ABC of 6,600 mt, or twice the value recommended by the team. We believe the higher ABC to be conservative because biomass is almost certainly underestimated by trawling.

Demersal Shelf Rockfish

The SSC agrees with the plan team that very little is known about this species assemblage and that it is impossible at this time to estimate an ABC. CPUEs have been declining and if management wishes to prevent the continuation of this decline, current harvest levels must be reduced. This group of rockfish is managed under the FMP by ADF&G.

Thornyheads

The SSC accepts the plan team recommendation that the ABC be set equal to the MSY level of 3,750 mt, which is unchanged from 1988, noting that the catches continue to increase and that the 1988 catch was the highest on record.

D-4 Bering Sea/Aleutian Islands Groundfish FMP

1. Amendment 12A - Bycatch Controls

The SSC continues to express concern about the lack of observer coverage necessary to insure accounting of bycatch or the establishment of bycatch rates to be used in the future.

The halibut fixed mortality limit may present future problems if the biomass of the halibut stock fluctuates causing a higher or lower percentage removal from the stock. The team explained that the lack of a biomass estimate for the juvenile part of the halibut stock, and out-migration limited the options available.

A bycatch of 1% or less of the surveyed crab numbers cannot be detected by changes in the resource base by use of survey or catch statistics. The SSC believes that accounting of bycatch mortality and subsequent controls are necessary for conservation purposes. Although we cannot measure the impact of removals of 1%, we believe a limit of removals at this level can assure that bycatch has no measurable negative impact upon the reproductive potential of the crab population.

2. Initial Allowable Biological Catch Recommendations

The SSC wishes to note that during the 1988 eastern Bering Sea trawl survey it was determined that the opening of the net was 2 meters less than assumed. This means that the area swept was less than expected and changes indicated in biomass from 1987 to 1988 might not reflect true increases or decreases in abundance. Therefore, care is warranted in comparing 1988 biomass estimates with those developed for previous years. The SSC recommends that historical biomass estimates be adjusted to reflect this new information.

Pollock

The SSC gave long and careful consideration to stock divisions in the Bering Sea and the possible effect of Donut Hole catches on productivity. There appears to be two major stock components in the U.S., EEZ--a shelf group in the eastern Bering Sea and a basin group to the west, but they are probably not distinct stocks.

The SSC believes that the cohort analysis and survey estimates provide an adequate assessment of the shelf pollock in the eastern Bering Sea, even if there is some dispersion of fish from this group into the basin group. We therefore support the team's recommendation of an ABC of 1.34 million mt for the eastern Bering Sea shelf component.

For the basin area, there is insufficient information to estimate biomass and knowledge of stock divisions to estimate the rate of exploitation. Since the fish in Area 515 (Bogoslof Island) are tentatively regarded as being part of the basin group and since data are not available to estimate ABC for the Basin, we do not support the team's recommendation that an ABC be calculated for Area 515 and added to the ABC of shelf pollock in the eastern Bering Sea.

The SSC recommends that until additional information is available, the ABC for the Aleutian Islands management area be calculated as in the past. Therefore, the SSC's ABC for 1989 is 160,000 mt.

The SSC advises caution in allowing any increase in catch from the basin group of fish. However, a plan amendment would be required to control the harvest of basin and shelf groups of fish separately.

Pacific Cod

The SSC reviewed the assessment model that has been developed and refined to estimate stock size and forecast production. The SSC supports the ABC recommendation based on the model results (370,600 mt).

Yellowfin Sole

The SSC recommends approval of the team's recommendation of 241,000 mt.

Greenland Turbot

The SSC recommends the ABC remain at 14,100 mt as a preliminary number until the team reexamines the analysis contained in the RAD. The SSC had questions concerning how the results of the SRA were used to arrive at the team's ABC recommendations.

Arrowtooth Flounder

The SSC accepted the team's procedure for calculating the current exploitable biomass for arrowtooth flounders, but later noted that a four-year averaging process was adopted to estimate biomass for other flatfish species. The SSC suggests that the team evaluate whether or not the same averaging process would improve the estimate of current biomass.

Regarding the exploitation rate, the SSC noted that the Fmax rate used by the team to derive ABC may not be sustainable. Therefore, a more conservative F0.1 rate is recommended. This results in an ABC estimate of 82,900 mt.

Rock Sole

To calculate an ABC, the team used the exploitable biomass of 1,071,000 mt, obtained by averaging the 1984, 1986 and 1987 biomass, multiplied by the Fmsy exploitation rate developed from a biomass based production model. This model gives an exploitation rate of 0.13. The natural mortality for rock sole is estimated to be 0.2. Therefore, the SSC feels that the exploitation rate used by the team is low. We believe a more appropriate rate is the F0.1 derived from a yield-per-recruit analysis. That rate is 0.18.

The SSC believes that the exploitable biomass is better represented by including the 1988 survey results in the calculation. By including data from 1988 we start to make an adjustment for the area swept calculation. This results in an exploitable biomass of 1,277,900 mt.

Therefore, the SSC recommends that ABC for the eastern Bering Sea be 230,000 mt (1,277,900 x 0.18). In order to account for the Aleutian Islands ABC, the SSC used the team procedure, resulting in a final ABC of 236,900 mt.

Other Flatfish

As in the case of rock sole, the SSC recommends that the four-year averaging technique to estimate the current exploitable biomass and the F0.1 exploitation rate derived from the yield-per-recruit analysis. This results in a new estimate of 222,600 mt.

Sablefish

The SSC notes that the relative abundance index (RPW) for the eastern Bering Sea declined by about 60%. The size of the reduction from 1986 to 1987 is considered uncharacteristic for this species. It was indicated in the RAD that killer whales could have had some effect on the survey. Nevertheless, the decline suggests that caution is warranted in the development of ABC for this species. In the case of the Aleutian Islands, the same index has remained relatively stable for the last four years.

The biomass estimates (16,900 mt and 96,800 mt for the eastern Bering Sea and Aleutian Islands, respectively) provided in the RAD are considered the best available information for use in developing ABCs. Given the magnitude of the RPW decline and uncertainty associated with its interpretation, the SSC recommends that the ABC for the eastern Bering Sea be based on a F = 0.10 (exploitation rate of 9.1%). Applying this rate to the projected biomass gives an ABC of 1,538 mt for the eastern Bering Sea. It is recommended that the ABC for the Aleutian Islands be held constant at the 1988 level (5,800 mt).

Pacific Ocean Perch

The SSC recommends approval of the team's recommendation of 6,000 mt and 16,600 mt for the eastern Bering Sea and Aleutian Islands, respectively.

Other Rockfish

The SSC recommends approval of the team's recommendation of 400 mt and 1,100 mt for the eastern Bering Sea and Aleutian Islands, respectively.

Atka Mackerel

The SSC recommends approval of the team's recommendation of 21,000 mt.

Squid

The SSC recommends approval of the team's recommendation of 10,000 mt.

Other Species

The SSC recommends approval of the team's recommendation of 59,000 mt.

3. Sablefish Targeting Proposal

The proposal to amend the sablefish regulatory regime focuses on several possible alternatives to define "targeting". The SSC believes that this does not properly reflect the real decision before the Council on allocation among gear groups. The Council may define targeting but the definition may not control discards. If the targeting definition is set too high, it will result in a de facto allocation to trawls of the sablefish. If the definition of targeting is set too low, it will result in additional discards which will not be measured. Even with an observer program, it is the SSC's view that any definition of targeting will, in some cases, not meet legitimate bycatch requirements, and may constrain a directed fishery. Conversely, in other cases, the bycatch allocation may exceed that required by the directed fishery. Without a means to measure discards it is impossible to enforce an allocation of the bycatch of these discards.

SSC GULF OF ALASKA ABC RECOMMENDATIONS 1989

SPECIES		ABC (mt)	TAC (mt)	
Pollock	Western	0	50,000	
	Central			
	Jan 15 - April 15	---		50,000 (no more than 5,000 may be taken in Shelikof Strait)
	April 16 - Aug 31	No directed fishing		
	Sept 1 - Dec 31	To be determined		
	Eastern	3,375		
Pacific cod	Western	18,810		
	Central	73,260		
	Eastern	6,930		
	Total	99,000		
Flounders	Western	69,000		
	Central	239,000		
	Eastern	37,000		
	Total	345,000		
Sablefish	Western	5,075		
	Central	15,500		
	Eastern	14,425		
	Total	35,000		
Slope rockfish	Western	6,800		
	Central	12,200		
	Eastern	9,200		
	Total	28,200		
Pelagic Shelf	Western	1,100		
	Central	4,700		
	Eastern	800		
	Total	6,600		
Demersal Shelf		---		
Thornyhead rockfish		3,750		
Other Species		---		

SSC BERING SEA AND ALEUTIAN ABC RECOMMENDATIONS 1989

SPECIES		ABC (mt)	TAC (mt)
Pollock	EBS	1,340,000	
	515	---	
	Aleutians	160,000	
Pacific Cod		370,600	
Yellowfin Sole		241,000	
Greenland Turbot		14,100	
Arrowtooth Flounder		83,000	
Rock Sole		236,900	
Other Flatfish		222,600	
Sablefish	EBS	1,538	
	Aleutians	5,800	
POP	EBS	6,000	
	Aleutians	16,000	
Other Rockfish	EBS	400	
	Aleutians	1,100	
Atka Mackerel		21,000	
Squid		10,000	
Other Species		59,000	