

MEMORANDUM

TO: Council, SSC and AP Members
FROM: Clarence G. Pautzke
Executive Director
DATE: May 31, 1994
SUBJECT: Groundfish Management

ESTIMATED TIME
5 HOURS

ACTION REQUIRED

- (f) Receive status report on Opilio bycatch.
- (g) Receive report on electronic communications.
- (h) Receive status report on mesh regulations.
- (i) Seamount fisheries restrictions in Gulf of Alaska.

BACKGROUND

(f) Opilio Bycatch

Information on bycatch of C. opilio crab in groundfish and crab fisheries was provided by NMFS and ADF&G at the January Council meeting. Bycatch numbers from the observer program for the 1992 Bering sea C. opilio and C. bairdi Tanner crab fisheries are listed in the attached tables, Item D-2(f)(1). NMFS has provided a report on C. opilio bycatch in the groundfish trawl fisheries Item D-2(f)(2).

Opilio bycatch was an issue on the January agenda, but was never taken up by the Council due to time limitations. However, the SSC reviewed the information and reported the following:

"The SSC received a report from the Council and NMFS staff on C. opilio bycatch in crab and groundfish fisheries. Bycatch in the groundfish fisheries is concentrated in statistical areas 513 and 514; bycatch rate is not indicated to vary significantly with time of year. Size information was not presented in the reports. The SSC cautions that the bycatch numbers presented for the two fisheries are not directly comparable, because the groundfish fisheries likely take smaller, younger C. bairdi and C. opilio crab."

The Council may consider initiating an analysis for a plan amendment to establish PSC caps for C. opilio Tanner crab in the BSAI, or some other program. Existing PSC crab caps for the BSAI trawl fisheries total 200,000 king crab and 4,000,000 C. bairdi Tanner crab. Other alternatives that may have potential to reduce C. opilio bycatch include a vessel incentive program (VIP), fishing season adjustments, or time/area closures for the BSAI and GOA trawl fisheries.

(g) Electronic Communications

NMFS is proposing to implement electronic reporting and recordkeeping requirements. Currently, most industry reports are submitted by fax, and all logbooks are kept on paper. NMFS indicates that electronic communication of reports would greatly improve efficiency and reduce costs associated with report submission and processing. The proposal is to implement electronic reporting and recordkeeping in a two part approach; electronic reporting requirements would be phased in beginning in 1995, and electronic recordkeeping requirements implemented in 1996 at the earliest. A discussion paper, prepared by NMFS, is attached as Item D-2(g)(1).

(h) Mesh Regulations

In April of 1993, the Council reviewed a draft analysis of a proposed regulatory amendment to require a square mesh (90 and 110 mm stretched mesh) top panel in trawl codends used in the BSAI directed pollock fishery to reduce discarding of undersized pollock and bycatch of other species. The Council believed that it was premature to initiate an analysis of mesh regulations before completion of Alaska Fisheries Development Foundation (AFDF) mesh selectivity study, and postponed further consideration of the proposal until 1994.

In June of 1993, as part of the decision on Pacific cod allocation (Amendment 24), the Council directed staff to begin study of a regulatory amendment to require a minimum 8" mesh size requirement for trawl vessels participating in the BSAI trawl cod fishery. This decision was followed up by a proposal submitted by Natural Resources Consultants (NRC) to regulate mesh size in both the pollock and Pacific cod trawl fisheries.

In September of 1993, the Council received a staff report and discussion paper on the proposal to set a minimum codend mesh size in the BSAI cod trawl fishery at 8 inches. The Council voted to move forward with analysis of this proposal subject to the Groundfish Plan Team and Plan Amendment Advisory Group (PAAG) recommendation and ranking. The Plan Teams ranked the proposal a medium at a medium/high difficulty rating. It was noted that information on mesh selectivity and escapement mortality for Pacific cod was lacking. The PAAG and the SSC categorized the proposal under continued research needs. When the Council considered this proposal during staff tasking, it was assigned a low priority status by both staff and Council.

In April 1994, the Advisory Panel recommended that the Council adopt for analysis minimum mesh sizes for top quarter panels of trawl codends. They recommended analysis of a 6.5" mesh for the cod fishery, and 3.25" (knotless) or 4" (knotted) mesh for the pollock fishery. Council member Pereyra has requested mesh restrictions also be evaluated for the rock sole fishery (Item D-2(h)(1)).

Analysis of a regulatory amendment to require minimum codend mesh size could be done this fall, depending on staff availability. Preliminary analysis could be ready for Council review in October, with final action at the December meeting. This schedule would allow incorporation of AFDF's study results regarding selectivity and escapement mortality. Although regulations could be in place during 1995, the AP suggested a phase-in period to allow fishermen to "use up" their existing web. One way to accomplish this would be to make the regulation effective at the start of the 1996 fisheries.

(i) GOA Seamount Restrictions

NMFS staff will present a discussion paper that identifies an enforcement problem that arises when groundfish allegedly taken in International waters (e.g., sablefish harvested on GOA seamounts) are actually illegally taken in the EEZ. To address this issue, NMFS is pursuing a possible regulatory amendment that would prohibit a person from using a vessel that has been issued a Federal permit to fish for groundfish in International waters or from possessing groundfish in the EEZ that were caught in International waters during the fishing year for which the permit was issued.

Catch per unit effort (CPUE) of selected commercially important species during the 1992 Bering Sea C. opilio fishery including total sample catches and estimated total catch in the fishery.

Species	Total pot ^a sample catch	Catch per unit effort	Estimated total ^b fishery catch
<u>C. opilio</u>			
legal male	253,995	208.9	267,767,184
sub-legal male	1,857	1.5	1,922,694
female	3,855	3.2	4,101,747
<u>C. bairdi</u>			
legal male	3,194	2.6	3,332,670 ^c
sub-legal male	9,886	8.1	10,382,548
female	958	.8	1,025,437

^aTotal pot contents derived from 1,216 random samples taken on catcher processors during the fishery.

^bEstimated catch derived from pot sample CPUE x 1,281,796 total reported pot pulls during the fishery.

^cUnknown portion legally retained.

Catch per unit effort (CPUE) of selected commercially important species during the 1992 Bering Sea C. bairdi crab fishery from November 15th to December 31st, 1992, including total sample catches and estimated total catch in the fishery.

Species	Total pot ^a sample catch	Catch per unit effort	Estimated total ^b fishery catch
<u>C. bairdi</u>			
legal male	15,365	29.7	14,629,181
sub-legal male	21,917	42.3	20,835,500
female	5,354	10.4	5,122,676
<u>C. opilio</u>			
legal male	2,754	5.3	2,610,595 ^c
sub-legal male	86	.2	98,513
female	66	.1	49,257

^aTotal pot contents derived from 517 random samples taken on catcher processors between November 15th and December 31st, 1992.

^bEstimated catch derived from pot sample CPUE x 492,565 total reported pot pulls between November 15th and December 31st, 1992.

^cUnknown portion legally retained.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

AGENDA D-2(f)(2)
JUNE 1994

January 6, 1994

JAN 10 1994

Richard B. Lauber, Chairman
North Pacific Fishery Management Council
P.O. Box 103136
605 West 4th Avenue
Anchorage, Alaska 99501

Dear Rick,

Under Agenda Item D-2(d), the North Pacific Fishery Management Council will review bycatch information for Opilio Tanner crab (Chionoecetes opilio) in all fisheries, including directed groundfish fisheries. We have summarized certain Opilio bycatch information from the 1993 groundfish trawl fisheries in the Gulf of Alaska (GOA) and in the Bering Sea and Aleutian Islands area (BSAI).

Attached are tables that show Opilio bycatches. A total of 5,694 and 14,476,797 Opilio crabs (Table 1) were caught as bycatch in the GOA and BSAI trawl fisheries, respectively. Because most of the bycatch occurs in the BSAI, we focused our review in that management area.

Sixty-four percent of the total BSAI Opilio bycatch occurred in the yellowfin sole fishery, followed by 29 percent occurring in the rock sole/"other flatfish" fishery (Table 1). For each of the target fishery categories, most of the bycatch occurred in reporting areas 513 and 514 (Table 2). Figures also are attached, which summarize this information.

We will be available to discuss this information further during the Council meeting.

Sincerely,

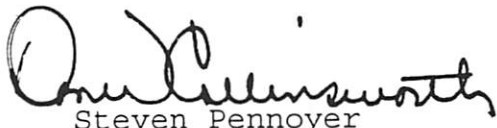

Steven Pennoyer
Director, Alaska Region



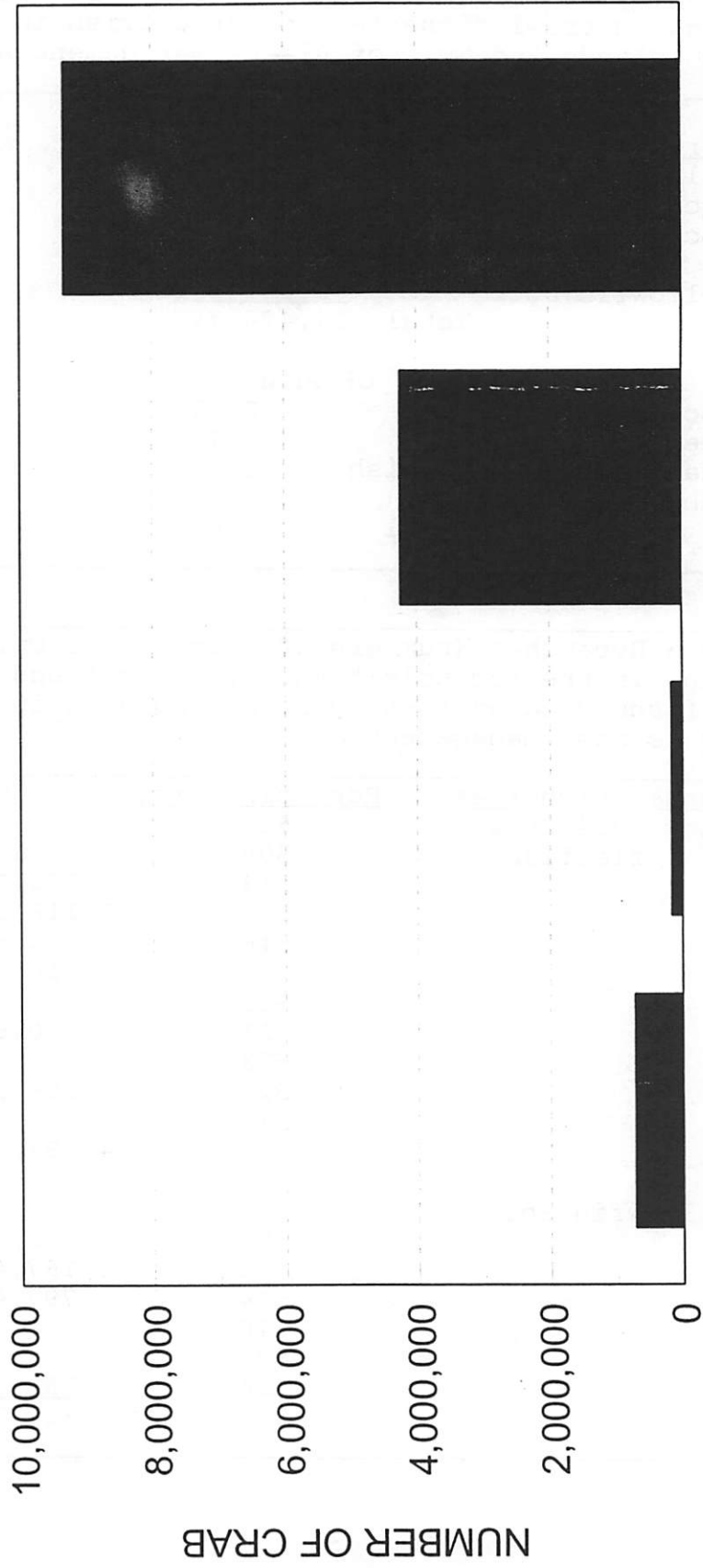
Table 1. 1993 Bycatches (numbers of animals) of Opilio Tanner Crab occurring in trawl fisheries for groundfish in the Bering Sea/Aleutian Islands and Gulf of Alaska Management Areas.

BERING SEA/ALEUTIAN ISLANDS	
<u>Target Fisheries</u>	<u>Number</u>
Pollock	727,177
Pacific cod	165,638
Rock Sole/Other flatfish	4,257,881
Yellowfin sole	<u>9,326,101</u>
Total	14,476,797
GULF OF ALASKA	
Rockfish	2,591
Deep water flatfish	454
Shallow water flatfish	2,571
Sablefish	<u>78</u>
Total	5,694

Table 2. 1993 Bycatches (numbers of animals) of Opilio Tanner Crab occurring in the rocksole/"other flatfish" and yellowfin sole target fishery categories by reporting area in the Bering Sea/Aleutian Islands management area.

<u>Target Fisheries</u>	<u>Reporting Area</u>	<u>Number</u>
Rock Sole/Other flatfish	508	0
	509	2731
	513	2,752,190
	514	1,116,592
	516	1,449
	517	16,038
	519	0
	521	110,515
	523	0
	524	258,367
	540	<u>0</u>
	Total	4,257,882
Yellowfin Sole	508	0
	509	8,468
	513	5,167,494
	514	3,797,439
	516	0
	521	0
	524	<u>352,700</u>
	Total	9,326,101

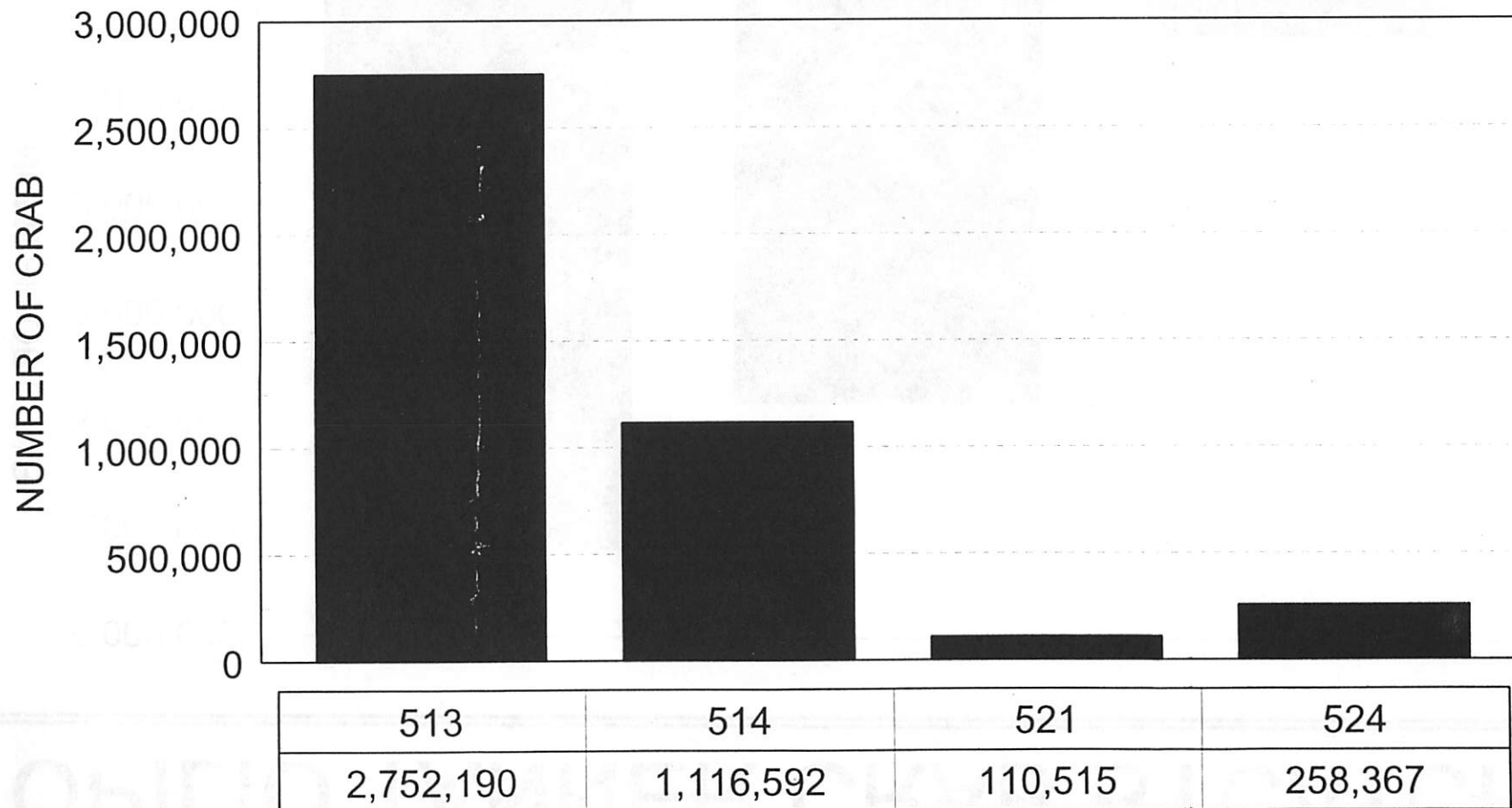
1993 BSAI TRAWL OPILIO TANNER CRAB BYCATCH



PLCK	PCOD	RSOL/OFLT	YSOL
727,177	165,638	4,257,881	9,326,101

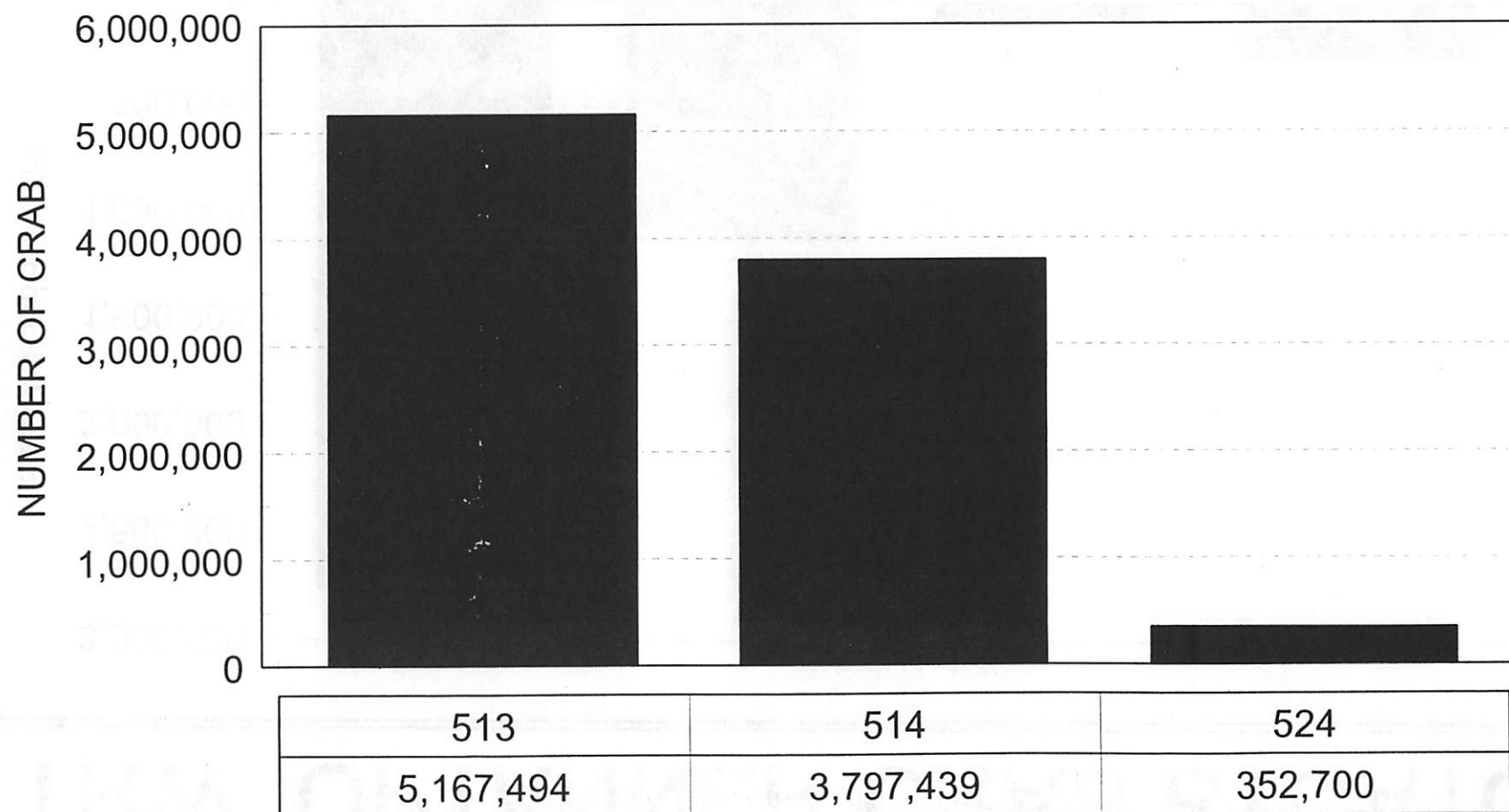
(through 12/31/93)

1993 BERING SEA RSOL/OFLT TRW OPTANNER CRAB BYCATCH



(through 12/31/93)

1993 BERING SEA YSOL TRAWL OPIILIO TANNER CRAB BYCATCH



(through 12/31/93)



AGENDA D-2(g)(1)
JUNE 1994
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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668
March 31, 1994

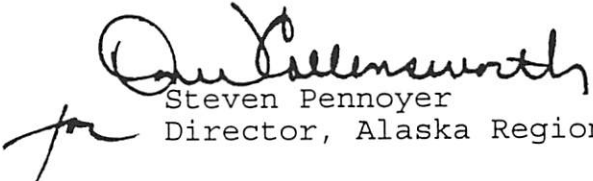
APR - 5 1994

Clarence G. Pautzke
Executive Director
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, Alaska 99510

Dear Clarence,

Attached is a discussion paper on Electronic Reporting and Recordkeeping for Council consideration under agenda item D-3(J) at its April meeting. National Marine Fisheries Service (NMFS) proposes to implement requirements for electronic submission of Weekly Production Reports and Observer reports as well as requirements for electronic maintenance of logbooks. This paper outlines the need for implementation of electronic reporting and recordkeeping. It also outlines a 2-part approach to implementation of electronic reporting and recordkeeping. NMFS proposes to implement electronic reporting as part 1, followed by electronic recordkeeping as part 2.

Sincerely,


Steven Pennoyer
Director, Alaska Region

Enclosure



DISCUSSION PAPER
ELECTRONIC REPORTING and RECORDKEEPING

Purpose of and Need for the Action

Communication between the fishing industry and NMFS is a critical element of successful fisheries management. Industry submits Weekly Production Reports, check-in/check-out reports and transfer logs to NMFS for management purposes. Observers also submit reports of catch and bycatch to the Observer program for use by in-season management. At present, most industry reports are submitted by fax. Transmission and processing of reports is costly, time-consuming and can be inefficient both for NMFS and the Industry. Electronic communication of reports would greatly improve efficiency and reduce the costs associated with report submission and processing. NMFS could require electronic submission of Weekly Production Reports directly to the NMFS region office as well as electronic submission of Observer reports to the Observer Program. NMFS could also require electronic submission of transfer logs and check-in/check-out reports.

Maintenance of logbooks is also a critical element of fisheries management and enforcement. All logbooks are currently kept on paper, which is both costly and time-consuming. Implementation of electronic logbook requirements would improve efficiency and reduce the overall burden and costs associated with recordkeeping. NMFS could require electronic logbooks for all vessels subject to logbook requirements under regulations at §§ 672.5 and 675.5.

Implementation of Electronic Reporting and Recordkeeping

NMFS proposes to implement electronic reporting and electronic recordkeeping in a 2-part approach. NMFS is considering the implementation of electronic reporting requirements as Part 1, to be followed by requirements for the electronic maintenance of logbooks as Part 2. The projected time-frame for beginning the implementation of Part 1 would be sometime in 1995 with Part 2 following, at the earliest, in 1996.

Part 1: Electronic submission of in-season data

Within the scope of Part 1 NMFS would propose requirements for electronic submission of data used to manage groundfish TACs and prohibited species limits. For at-sea vessels this would be in some form of satellite communication capabilities; on-shore processing plants would likely submit data via a modem over the telephone lines. NMFS proposes to phase in requirements for

electronic reporting over a period of time, beginning with requirements for the processor fleet followed by requirements for catcher vessels with 100 percent Observer coverage and finally including those vessels with 30 percent Observer coverage. This would eventually result in electronic report submission by all of the fleet from whom NMFS receives reports, including Observer reports, that are used to manage groundfish catch and prohibited species bycatch. NMFS would propose that Weekly Production Reports and Observer reports, as well as other pertinent data used on an in-season basis to manage the fisheries, be submitted electronically. NMFS proposes to implement electronic reporting requirements for the processor fleet sometime in 1995, followed by the addition of the 100 percent Observer coverage vessels in 1996 and finally the 30 percent Observer coverage vessels in 1997. NMFS will prepare an Environmental Assessment/Regulatory Impact Review(EA/RIR) to analyze the alternatives for implementation. Provided that the scheduling of other regulatory actions permits, a draft EA/RIR could be ready for Council review at its June 1994 meeting. After consideration by the Council, a regulatory amendment would be prepared to implement this proposal.

Presented below are the alternatives for Part 1:

Alternative 1: Status quo. Reports would continue to be sent via fax at a cost to the Industry in time and the burden of paperwork. This alternative does not improve the efficiency of in-season management.

Alternative 2: Implementation of Electronic Reporting requirements. Under this alternative electronic reporting would be implemented in three phases (listed below) to eventually include all vessels that submit reports used to manage groundfish Total Allowable Catch(TAC) and prohibited species limits. This alternative would benefit both the Industry and NMFS. The time and burden associated with maintaining reports on paper would be reduced and the annual cost of report production would be eliminated. Both NMFS and the Industry would benefit from improved efficiency of management of groundfish TACs and prohibited species limits.

Phase 1: All processors- shoreside and at-sea.

Under regulations at §§ 672.5 and 675.5 all processors are required to submit Weekly Production Reports within 48 hours after the end of a week. Most reports are submitted to NMFS via fax. With implementation of phase 1 all processors would be required to submit reports electronically. For processors without access to phone service and a modem, this would require capabilities for satellite

communication. Available information (current to October 13, 1993) indicates that 63 percent of the at-sea processors already have either Standard A (49 percent) or Standard C (14 percent) satellite communication capabilities; therefore, costs associated with implementation of satellite communication capabilities would be incurred by 37 percent of the fleet. All of the fleet would require the appropriate software.

In this phase, Observer reports from processor vessels and plants could be submitted electronically; however, Observer reports from catcher vessels would not necessarily be available via electronic communication.

Phase 2: All catcher vessels with 100 percent observer coverage.

Implementation of this phase would include all catcher vessels subject to 100 percent observer coverage (i.e. all vessels 125 feet and over, under regulations at §§ 672.27 and 675.25). These vessels would be required to submit Observer reports electronically, via satellite communication. Catcher vessels with 30 percent observer coverage (i.e. those vessels 60-124 feet), however, would not be required to have electronic communication capabilities at this time. Costs associated with the acquisition of satellite communication capabilities would be incurred by 68 percent (that portion of the fleet that does not currently have satellite communication capabilities) of the catcher boats 125 feet and over. All processors and all catcher vessels subject to 100 percent Observer coverage would incur costs associated with software acquisition.

Phase 3: All catcher vessels with 30 percent observer coverage.

By the time that this phase is implemented all processors and all vessels with 100 percent Observer coverage would already be submitting Weekly Production Reports and Observer reports electronically. This phase would include those vessels subject to 30 percent Observer coverage (i.e. vessels 60-124 feet). Costs associated with implementation of satellite communication capabilities would be incurred by 90 percent (that portion of the fleet that does not currently possess satellite communication capabilities) of the catcher vessels 60 feet and over. Software acquisition costs would also be incurred.

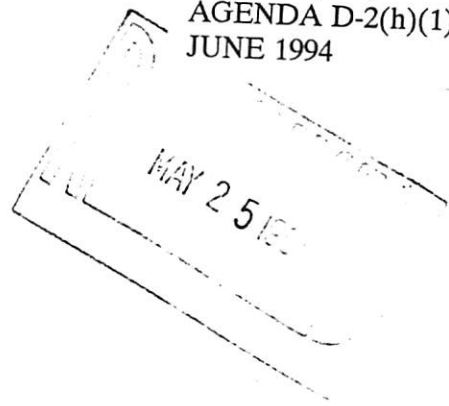
Part 2: Electronic logbooks

All vessels and shoreside processors would be subject to requirements for maintenance of electronic logbooks. This would not necessarily require vessels to have the ability to electronically transmit logbook information. The logbook information could be stored on a disk and sent in the mail on a quarterly basis. Costs associated with this option would be in the acquisition of the appropriate hardware and software. Maintenance of electronic logbooks would greatly reduce the burden in time and expense associated with production, maintenance and processing of logbooks.

NMFS is currently exploring the details of implementing electronic logbooks. An Environmental Assessment/Regulatory Impact Review would be prepared to analyze this phase and a regulatory amendment would implement these requirements.



AGENDA D-2(h)(1)
JUNE 1994



May 19, 1994

Dr. Clarence Pautzke
North Pacific Fishery Management Council
Post Office Box 103136
Anchorage, Alaska 99501

RE: Council Meeting Agenda

Dear Clarence:

In regards to the draft agenda for the June meeting, I tried to reach you today to discuss my comments but was unsuccessful. Following are my specific comments which I would like to discuss with you tomorrow.

1. C-4 Comprehensive Rationalization.

I am concerned that only two hours are being set aside for this important issue. Although your plans at this time are only to present a status report and the moratorium proposed rule, both of these issues should result in considerable discussion at the council level and undoubtedly will solicit an abundance of commentary from the general public. As a minimum I think you should expect at least four hours and possibly six hours of time being spent on CRP discussions.

2. D-2 Groundfish Management
E Trawl Mesh Restrictions

Although I understand that this item will be mainly focused on the cod mesh restrictions, I feel we need to broaden the discussion to include possible measures which might meaningfully reduce the discard rate in the rock sole fishery. It seems to me that given the differential in the size of male and female rocksole, it would not be unreasonable to expect a mesh size restriction to result in significant reduction in discards.

Another approach might be to set some nominal discard rate and then allow the industry to adjust to this discard rate by either altering the mesh size or fishing practices, or increasing utilization of the less desirable male and smaller rock sole.

In any case given the considerable public and council concern regarding discards, I think it is incumbent upon us to seriously look at this issue rather than just shutting down the fishery which in my mind is tantamount to "throwing the baby out with the bath water".

I will give you call today to discuss these issues further.

Sincerely,


Walter T. Pereyra

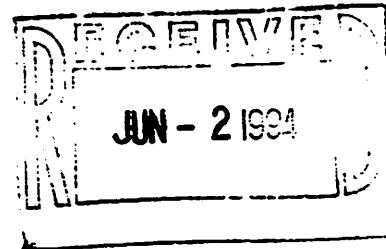




UNITED STATES DEPARTMENT OF
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Alaska Fisheries Science Center
7600 Sand Point Way NE
BIN C15700, Building 4
Seattle, Washington 98115-0070

JUN -2 1994

Clarence Pautzke
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99510



Dear Clarence,

In response to your May 9th letter requesting the Center to prepare a biological and economic analysis of the impacts of pollock and cod mesh size regulations, I must inform you that there is little we can provide in the way of new information or analysis at this time. The Center Staff has already provided what we can in the way of information and analysis. This information is contained in the draft review of proposed minimum mesh sizes for pollock, April 9, 1993, and for cod in an April 13, 1994 letter to you with an accompanying memorandum.

We have little direct observation of the selectivity properties of different trawl configurations and mesh sizes. Center personnel are currently examining observer data for different trawls with regard to selectivity. We also are awaiting the final results of the AFDF studies of mesh selectivity in the pollock fishery.

Information that we have does not give much encouragement toward obtaining a clear-cut answer as to an optimum mesh size in either the pollock or cod trawl fishery. Observations in hand suggest that selectivity is a complicated, multi-faceted problem that needs close scrutiny. For instance, data for vessels delivering to a mothership showed that vessels fishing smaller mesh with multiple layers caught fewer small pollock than those using single layer, larger mesh. The results of last year's AFDF study also found that selectivity differed greatly between vessels fishing the same gear.

With regard to pollock, the analysis presented in the trawl mesh-size review indicates that 3.25-4" mesh may have selectivity properties somewhere between the current gear employed in the fishery and those of a 100 mm mesh. The 110 mm square-mesh codend would have a selectivity that corresponds with the maturation ogive of eastern Bering Sea pollock and reduce the retention of immature fish. However, the absolute maximum yield per recruit occurs at a slightly smaller size.

There is some speculation that the large volume of pollock entering the net in the Bering Sea fishery may impair codend mesh selectivity. If high catch rates impair mesh selectivity, one



can expect higher codend retention of small pollock when strong year-classes occur similar to what has been observed in recent years.

We cannot as yet estimate the survival rate of pollock passing through the mesh. For management this is an important question. If immature fish passing through the codend do not survive there is little sense in instituting mesh regulations. This problem will be difficult to address, as studies of the survival of other species, such as haddock, show mixed results.

With regard to Pacific cod, we cannot offer any additional information beyond that provided in my April 13 letter to you. Although the proposed mesh size has since been reduced from 8" to 6.5", this size is still larger than that currently used in the Bering Sea cod fishery. Most vessels currently employ 4-5.5" mesh codends. However, we do not have the data to extrapolate the biological and economic effects of a mesh size regulation. Increasing mesh size will shift the catch to the harvest of larger cod and will also likely extend the time required to harvest the TAC. The direct effect on the bycatch of other species cannot be determined without performance studies. At the present time, we do not believe that there is a strong biological need to institute a mesh size regulation for Bering Sea cod.

Sincerely yours,



William Aron
Science and Research Director
Alaska Region

cc: Steven Pennoyer



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Alaska Fisheries Science Center
7600 Sand Point Way NE.
BIN C15700, Building 4
Seattle, WA 98115

FAX CONFIRMATION
Sent _____ Rec'd _____

APR 13 1994

Dr. Clarence Pautzke
Executive Director
North Pacific Fishery
Management Council
P.O. Box 103136
Anchorage, Alaska 99519

Dear Clarence,

The enclosed memorandum contains information prepared by Center staff on the mesh size issue raised in your February 23, 1994 letter. Please let me know if any questions arise.

Sincerely yours,

William Aron
Science and Research Director
Alaska Region

Enclosure





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

Alaska Fisheries Science Center
Resource Ecology and Fisheries
Management Division
BIN C15700; Building 4
7600 Sand Point Way NE
Seattle, Washington 98115-0070

March 11, 1994

F/AKC2

MEMORANDUM FOR: Richard Marasco
FROM: *RM* Richard Methot, *GT* Grant Thompson, *VW* Vidar Westpestad
SUBJECT: Comments on proposed cod mesh regulations

We reviewed the proposal and background material provided by the Council staff. In addition, we reviewed size frequency data from the recent surveys and fishery, and performed some simple analyses to evaluate the effect of knife-edge selectivity at 61 cm (size of 50% maturity) on stock size and yield.

We cannot offer any guidance on the actual effect of instituting an 8" minimum mesh size regulation, since there has not been any observation of this size mesh. The current fishery is primarily conducted with 4.0" to 5.5" mesh. Mike Guttormsen provided the following distribution, from a sampling of 13 vessels, of codend mesh size from the 1993 Bering Sea cod fishery:

Mesh Size in inches	Percent usage
4.0	31
4.5	23
5.0	31
5.5	15

Figure 1 shows the size frequency of cod harvested in 1990 to 1993. It can be seen that the frequency of small cod increased in 1992 and 1993. This corresponds to the increased abundance of cod of this size due to strong recruitment (Figure 3). Figure 2 shows the cumulative length frequency of the cod catch for 1990-1993. The length of 50% maturity, 61 cm, is marked by the vertical dashed line. Comparison of cumulative length frequency with the length of



50% maturity indicates that approximately 30% of the cod harvested in 1990-91 were below the 50% maturity length. In 1992 and 1993 the cumulative percentage of immature cod in the harvest increased. If the length of 50% maturity is lower than 61 cm, then immature cod would comprise a smaller fraction of the catch. Collections are currently being made by observers in order to re-estimate this parameter.

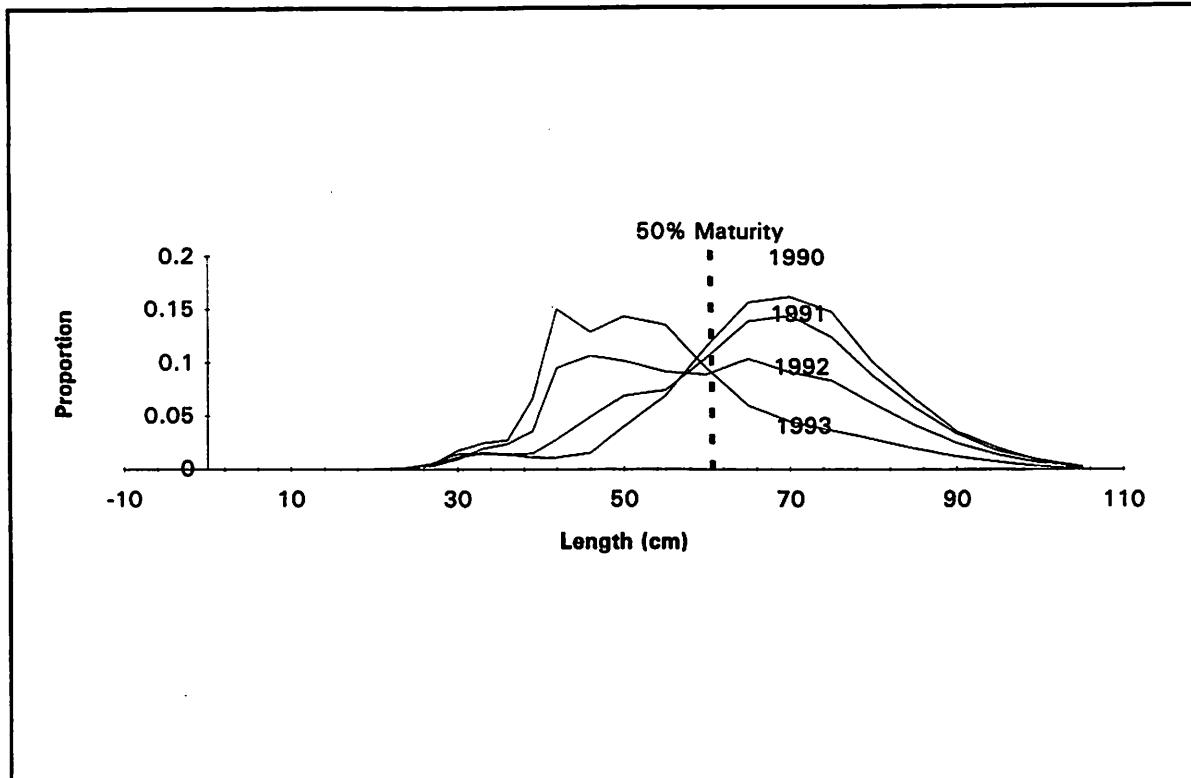


Figure 1. Length frequency of Pacific cod in the Bering Sea trawl fishery, 1990-1993.

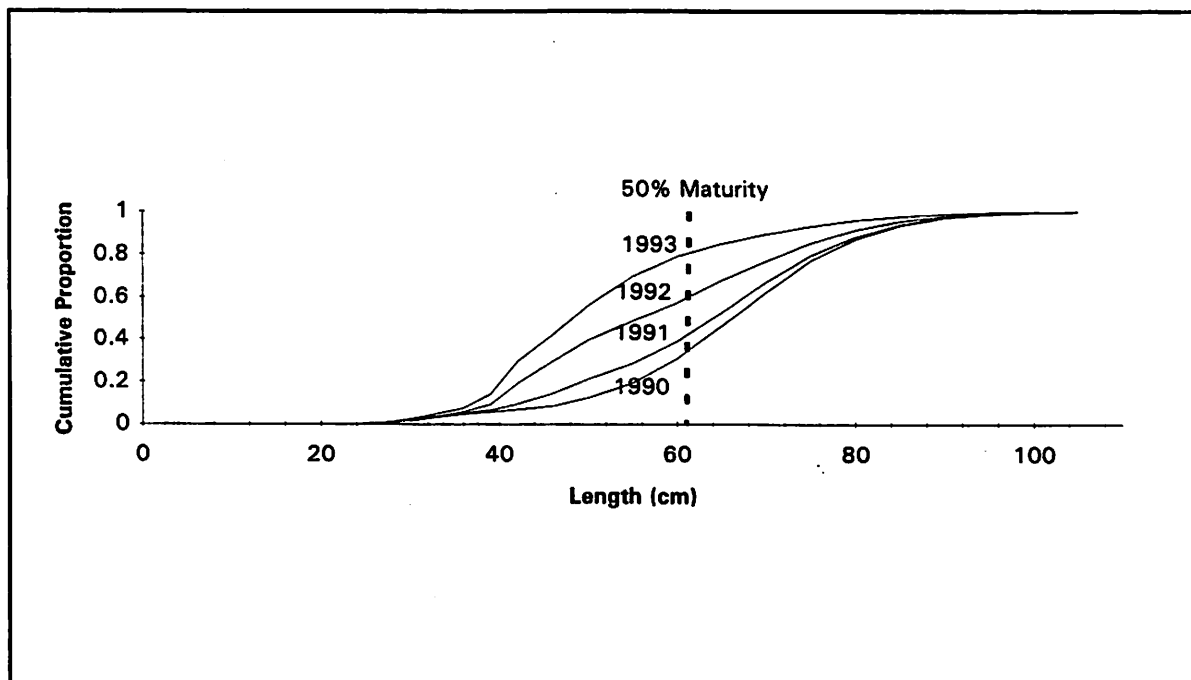


Figure 2. Cumulative length frequency of Pacific cod in the Bering Sea trawl fishery, 1990-1993.

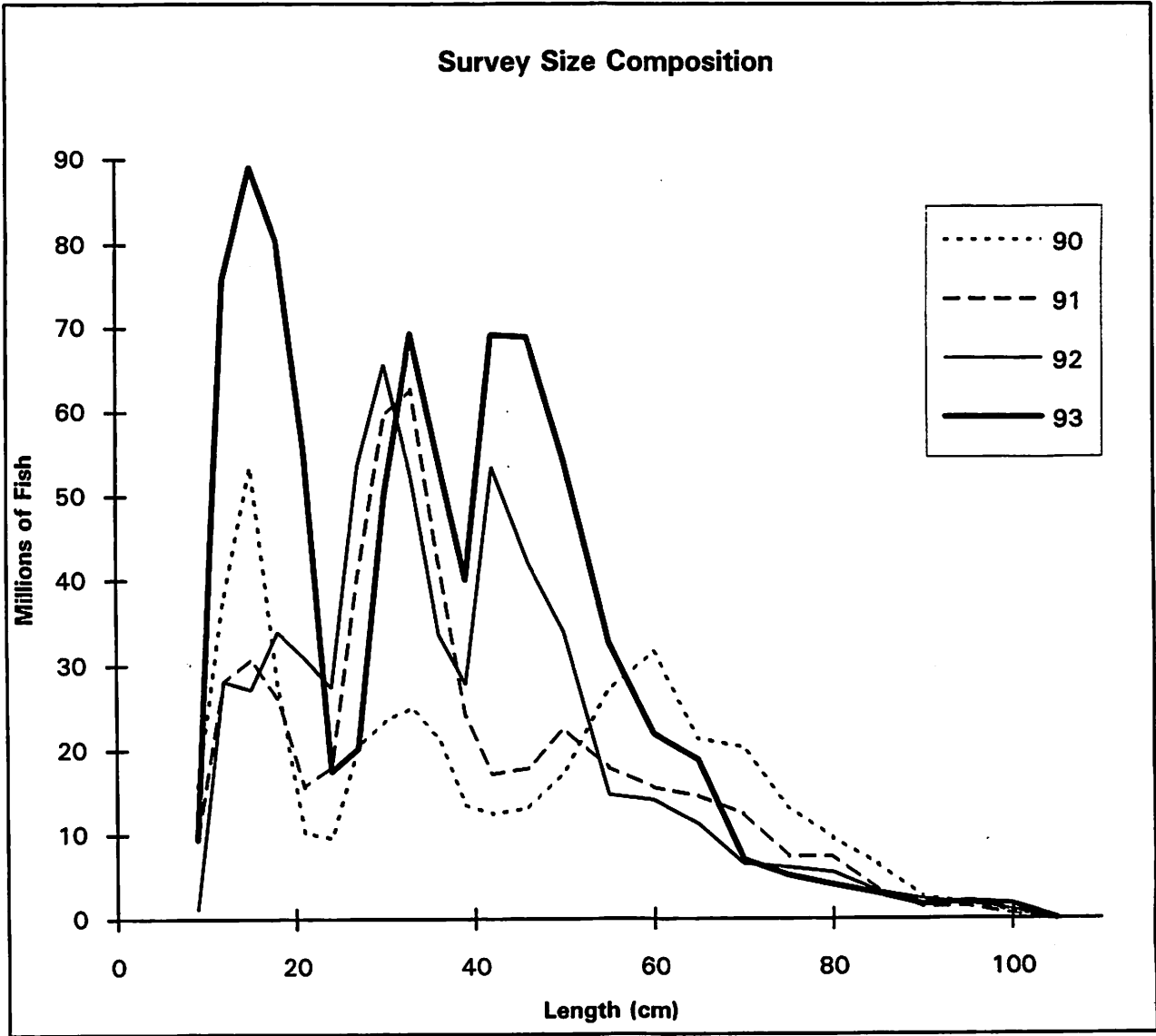


Figure 3. Population numbers at size as observed in the Eastern Bering Sea bottom trawl survey.

At present the spawning stock is large and increasing, management is directed toward maintaining a safe level of spawning biomass per recruit, and harvest practices, including expected removals of small fish, are accounted for in establishment of annual ABC values.

The projection of catch and biomass under knife-edge recruitment at age 5 (no harvest of cod smaller than 59cm) indicates that the ABC in 1994 would have been reduced by only 1,000 t and 1995 biomass would have been essentially unchanged.

BSAI Amendment 24, Appendix E reports the result of examination of selectivity among trawl, longline and pots. The size at 50% selectivity by year and gear were:

Years	1978-1983	1984-1985	1986-1989	1990-1992
Trawl (Jan-May)	56 cm	56 cm	56 cm	52 cm
Trawl (Jun-Dec)	64 cm	39 cm	59 cm	54 cm
Longline	64 cm	55 cm	55 cm	54 cm
Pot				64 cm

Pots select for larger cod than do trawls and longline, which for the most part appear to have similar 50% selectivity lengths. The summer and autumn trawl fishery appears to harvest a higher proportion of small cod (Thompson and Methot 1993). This is believed to reflect the fishery's respond to variation in the abundance of newly recruiting cod. This is what apparently happened in the 1992 and 1993 fishery (Figure 1). Small cod abundance has increased, due to strong 1989 and 1990 year-classes. Therefore the proportion of small cod in the catch has increased, similar to what has been observed in the pollock fishery with the strong 1989 pollock year-class. High incidence of small cod in the fishery is expected to continue for at least two more years as the survey indicates strong recruitment of the 1991 and, especially, the 1992 year-classes.

This cursory analysis of the available data does not indicate a biological need to institute a mesh size regulation for Bering Sea cod. Implementing an 8" mesh size will definitely shift the catch curve to the right, and will also likely extend the time required to harvest the TAC. The effect on the by-catch of other species can not be determined without a performance study of trawls employing 8" mesh codend.

Reference

Thompson, G and R. Methot. Pacific cod. In: Stock assessment and fishery evaluation report for the groundfish resources of the Bering Sea/Aleutian Islands regions as projected for 1994. North Pac. Fish. Mgmt. Council, Anchorage, AK, pp 2:1-28.

Agenda Item D-2(f)

National Marine Fisheries Service
Alaska Region
Juneau, Alaska
June 10, 1994

1993 Opilio Tanner crab bycatch estimated in BSAI trawl flatfish fisheries

TARGET	ZONE	GROUND FISH TONS	NUMBER OF CRAB	RATE (CRAB/MT)
Other	508	57	18	0.3
flatfish	509	697	1,478	2.1
	513	7,600	957,509	126.0
	514	4,661	782,688	167.9
	517	1,768	1,274	0.7
	519	30	0	0.0
	521	774	13,418	17.3
	523	11	0	0.0
	524	2,592	103,964	40.1
Rock sole	509	34,600	1,250	0.04
	513	21,756	1,794,678	82.5
	514	1,509	333,886	221.3
	516	14,188	1,449	0.1
	517	2,462	14,716	6.0
	519	74	0	0.0
	521	2,487	97,055	39.0
	523	23	0	0.0
	524	4,261	154,239	36.2
	540	2	0	0.0
yellowfin sole	508	134	0	0.0
	509	4,792	22,637	4.7
	513	69,764	5,296,972	75.9
	514	57,163	3,796,975	66.4
	516	222	0	0.0
	521	9	0	0.0
	524	1,774	352,293	198.6



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

National Marine Fisheries Service

P.O. Box 21668

Juneau, Alaska 99802-1668

AGENDA D-2(i)

JUNE 1994

June 3, 1994

Clarence G. Pautzke
Executive Director
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, Alaska 99510

Dear Mr. *Clarence* Pautzke:

Attached is a discussion paper on seamount fisheries restrictions in the Gulf of Alaska for Council consideration under agenda item D-2(i) at its June meeting. To prevent situations concerning inaccurate and illegal reporting of fish caught inside the Exclusive Economic zone (EEZ), NMFS proposed to restrict the fishing activities of vessels with a Federal groundfish permit. These vessels would be restricted from fishing in International waters or possessing groundfish in the EEZ that were harvested in International waters.

Sincerely,

Steven Pennoyer
Director, Alaska Region



DISCUSSION PAPER
Fishing on the Seamounts

Purpose of and Need for the Action

The National Marine Fisheries Service (NMFS) has the authority to regulate vessels fishing in the Exclusive Economic Zone (EEZ) off Alaska. NMFS does not have the authority to regulate fish harvested outside the EEZ. In International waters, these fish are not counted against any quota. A certain incentive exists, therefore, to harvest fish outside the EEZ and avoid restrictions associated with Federal management of the groundfish quotas. An enforcement problem arises when groundfish that are actually caught inside the EEZ are claimed to have been caught outside the EEZ. Two situations arise in which an incentive exists for the origin of the fish to be inaccurately reported: 1) when a Federal fishing closure is in effect inside the EEZ vessels might continue to harvest fish inside the EEZ but claim to have harvested this fish outside the EEZ; and 2) under the IFQ system being implemented in 1995, fish that is caught seaward of the EEZ would not be counted toward an IFQ limit. An incentive exists, therefore, to claim that the IFQ fish were caught outside the EEZ.

Under either circumstance the result of inaccurate and illegal reporting of groundfish could lead to overharvest of the various quotas. This could potentially lead to a groundfish conservation problem inside the EEZ.

Under these two different situations NMFS Enforcement would have difficulty determining definitively the origin of the groundfish onboard permitted vessels. To avoid potential discrepancies concerning the origin of the groundfish when a Federal groundfish closure is in effect or under an IFQ system, NMFS is proposing to restrict the fishing activities of Federally permitted vessels.

Alternatives Considered

1. Status quo. With the exception of the Donut Hole, Federally permitted vessels would continue to be unrestricted from fishing in, or possessing groundfish harvested from, International waters.

2. Federally permitted vessels would be prohibited from fishing for groundfish in International waters or possessing groundfish in the EEZ that were caught in International waters.

Proposed regulatory language would be as follows:

No person may use a Federally permitted vessel to fish in International waters or to possess groundfish in the EEZ that were caught in International waters, during the fishing year for which the permit is issued.

Options: Federally permitted vessels could fish for groundfish in International waters if they had onboard the vessel at the time they were fishing in International waters a transponder and an observer (paid for by the vessel). Available transponders are integrated units that are linked to a vessel's navigational system. An enforcement officer on shore would be able to query the transponder as to vessel location at any time interval.

Potential legal issues:

Some vessels may choose not to obtain their Federal permit at the beginning of the year and may choose to fish outside the EEZ prior to obtaining a Federal permit later in the year. Legal questions may arise as to whether NMFS can deny a permit to a vessel based on that vessel's activities prior to applying for a Federal groundfish permit.