North Pacific Fishery Management Council

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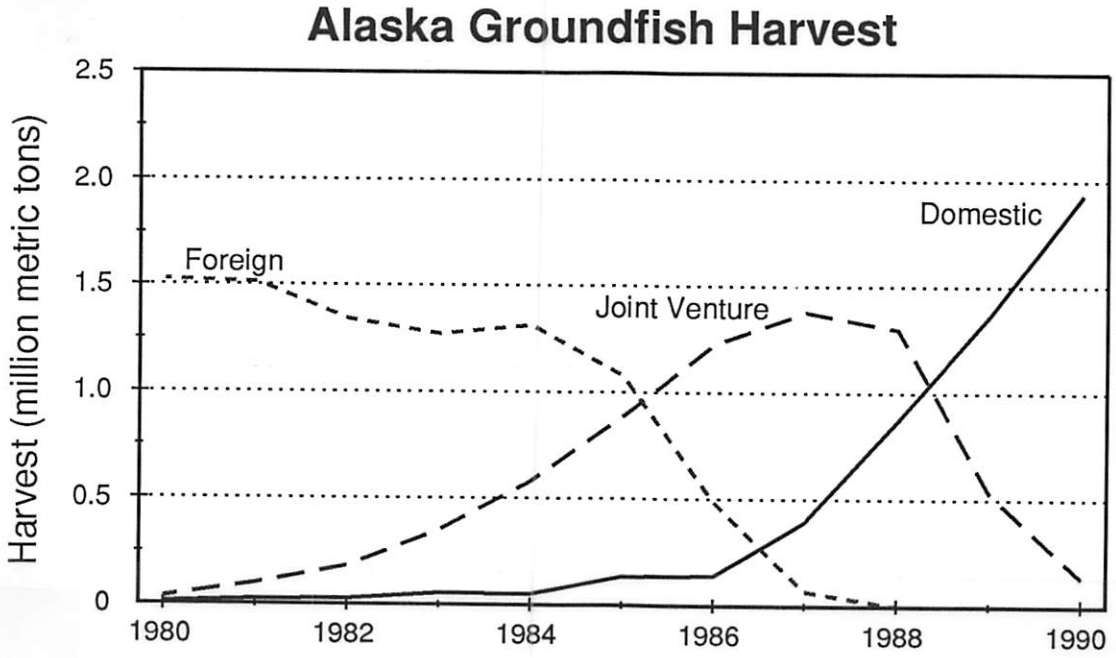
ALASKA GROUNDFISH FISHERIES FULLY AMERICANIZED IN 1991

The North Pacific Fishery Management Council met last week in Anchorage to set groundfish harvest levels, apportionments to U.S. and joint venture fisheries, and bycatch limits and apportionments. U.S. processor requests for groundfish far exceed proposed harvest limits for 1991. Therefore, the Council brought to an end the joint venture era in the groundfish fisheries off Alaska by apportioning all quotas to fully domestic fisheries. Details of these items and all other Council actions at their December meeting are provided in this newsletter.

The Council will meet next the week of January 14, 1991 at the Hilton Hotel in Anchorage.

In This Newsletter



New Advisory Committee Memberships for 1991

Six new members were appointed to the Council's Advisory Panel:

John Bruce	Perfenia Pletnikoff
Loretta Lure	John Roos
Jack Miller	Beth Stewart

Panel members reappointed for another one-year term are:

George Anderson	Kevin Kaldestad	Harold Sparck
Alvin Burch	David Little	Dave Woodruff
Phil Chitwood	Pete Maloney	John Woodruff
David Fraser	Daniel O'Hara	Robert Wurm
Edwin Fuglvog	Jay Skordahl	Lyle Yeck

New Member Added to the Scientific and Statistical Committee

Dr. Marc Miller, a social-anthropologist, was added to the Scientific and Statistical Committee, bringing the committee membership to twelve. Other members, reappointed for another one-year term, are:

William Aron	Larry Hreha	Terrance Quinn
John Burns	Daniel Huppert	Donald Rosenberg
William Clark	Gordon Kruse	Jack Tagart
Douglas Eggers	Richard Marasco	

Bering Sea/Aleutian Islands Groundfish Specifications for 1991

For the first time, the Bering Sea/Aleutian Islands groundfish fishery will be wholly U.S.-utilized in 1991. After consideration of U.S. processor (DAP) requests and public testimony, the Council set Total Allowable Catches (TACs) as shown in Table 1. No allocations were made to joint ventures as DAP requests were more than double the overall two million metric ton optimum yield (OY) cap. Domestic demand for pollock continues to increase: processor requests made to NMFS total over three million metric tons. Requests for other groundfish species also grew substantially over 1990 levels.

Pollock continues to dominate the BSAI fishery; for 1991 the combined BSAI TACs of 1,385,000 mt represent nearly 70% of the total tonnage available. As authorized under Amendment 14 to the BSAI groundfish plan, the Council split the Bering Sea pollock TAC into a roe-season (January 1 - April 15) allowance of 441,500 mt and a non-roe season (June 1 - December 31) allowance of 663,500 mt. The Council opted not to make such a split for the Aleutian Islands TAC. In this area, the full initial TAC will be made available on January 1.

The Council has responded to continued expressions of concern for health of the Aleutian Basin pollock stock by setting an upper limit on pollock harvests of 200,000 mt in a newly-defined **Bogoslof subarea** during the roe season. This subarea is defined as that portion of Statistical Area 515 west of 167° W (Figure 1). The Aleutian Basin stock supports the Bering Sea "donut" fishery, and also

a sizeable early-year fishery around Bogoslof Island. This limitation applies only to the roe-season allowance for pollock; later in the year the Aleutian Basin stock is believed to migrate away from the Bogoslof area.

Most BSAI groundfish stocks appear to be healthy; Greenland turbot continues as a notable exception due to repeated recruitment failure. The 1991 TAC of 7,000 mt will discourage additional targeting on this species while allowing a small directed fishery and its retention as bycatch. The ABC level for Pacific cod fell dramatically from 1990, but the stock continues to be at levels in excess of that expected to produce maximum sustainable yield. Consequently, TAC for this species actually increased by 2,000 mt.

The Council also acted to request the Secretary to take emergency action to seasonally apportion the Pacific cod TAC. The Council's request would provide 35% of the TAC in the first quarter, 25% in the second quarter, and the remaining 40% upon expiration of the emergency rule (approximately July 1). Unused TAC from a quarter would roll over into the next quarter.

This emergency action was taken because of concern that the roe pollock quota might be taken very quickly early in the year. The fleet would then be idled because most flatfish fisheries will not commence until May 1. This could lead to intensive effort on Pacific cod early in the year, prematurely exhausting the quota and creating an unsteady supply. The Council also was concerned with intensified effort on spawning concentrations of cod.

Bering Sea PSC Bycatch Apportionments

The Council adopted the Advisory Panel's recommendation for apportionments of Amendment 16 prohibited species (halibut and crab) catch limits among several bottom trawl fisheries. These apportionments are summarized in Table 2. The Council also made seasonal allowances of the halibut PSC apportionment to the DAP "other fishery". Attainment of this apportionment, or a seasonal allowance, will require closure of the directed bottom trawl fishery for pollock and Pacific cod.

The Council made preliminary apportionments of the 1% herring bycatch cap (834 mt based on ADF&G analyses) adopted under Amendment 16a (also included in Table 2). The herring apportionments will be published for public comment in the Federal Register as part of the Amendment 16a review and approval process. While time/area closures resulting from herring bycatch will not occur until Amendment 16a is approved and implemented, NMFS has indicated that it will count herring bycatch in the affected fisheries starting January 1 in anticipation of a mid-year implementation date.

Arrowtooth Flounder Delayed with Bering Sea/Aleutian Islands Flatfish Season

NMFS is preparing a Notice of Final Rulemaking for a regulatory amendment, approved last June by the Council, that will delay the fisheries for yellowfin sole, Greenland turbot, and other flatfish until May 1 each year in the Bering Sea and Aleutians. Arrowtooth flounder was omitted from the rule. Because the regulation is intended to reduce bycatch of prohibited species, and potentially high bycatches of halibut are associated with the harvest of arrowtooth flounder, the Council has requested NMFS to include arrowtooth flounder in the final rulemaking. Of the flatfish species, only rock sole will open in the Bering Sea and Aleutians on January 1 of 1991 and beyond.

TABLE 1. BERING SEA/ALEUTIAN ISLANDS GROUNDFISH

1991 Council Recommendations for Groundfish Specifications (metric tons)

Species	Area		ABC	TAC	Seasons	Area	ITAC*	DAP	JVP
Pollock	EBS		1,676,000	1,300,000	** Roe (Jan 1- Apr 15)	EBS	441,500	441,500	0
	AI		101,460	85,000	***	AI	72,250	72,250	0
					Non-Roe (Jun 1 - Dec 31)	EBS	663,500	663,500	0
						AI			0
									0
Pacific cod			229,000	229,000			194,650	194,650	0
Yellowfin sole			250,600	135,000			114,750	114,750	0
Greenland turbot			7,000	7,000			5,950	5,950	0
Arrowtooth flounder			116,400	20,000			17,000	17,000	0
Rock sole			246,500	90,000			76,500	76,500	0
Other flatfish			219,700	64,675			54,974	54,974	0
Sablefish	EBS		3,100	3,100			2,635	2,635	0
	AI		3,200	3,200			2,720	2,720	0
Pacific ocean perch	EBS	POP	4,570	4,570			3,885	3,885	0
		SR,RE,SC,Nm	1,670	1,670			1,420	1,420	0
	AI	POP	10,775	10,775			9,159	9,159	0
		SR,RE	1,245	1,245			1,058	1,058	0
		SC,Nm	3,440	3,440			2,924	2,924	0
Other rockfish	EBS		400	400			340	340	0
	AI		925	925			786	786	0
Atka mackerel			24,000	24,000			20,400	20,400	0
Squid			3,800	1,000			850	850	0
Other species			28,700	15,000			12,750	12,750	0
BSAI TOTAL			2,932,485	2,000,000			1,700,000	1,700,000	0

POP: Pacific Ocean Perch (Sebastes alutus)
RE: Rougheye rockfish, SR: Shortraker rockfish
SC: Sharpchin rockfish, Nm: Northern rockfish

* Recommended TAC less 15% reserve
** A maximum of 200,000 mt of pollock may be taken from the newly defined Bogoslof subarea (Statistical Area 515 west of 167 degrees W.) to provide limited protecton to the Aleutian Basin pollock stock. This limitation applies only to the roe season; later in the year Aleutian Basin pollock are believed to have migrated out of this area.
*** The Council did not divide the Aleutian Islands pollock TAC into roe and non-roe seasonal allowances.

TABLE 2. 1991 PSC APPORTIONMENTS

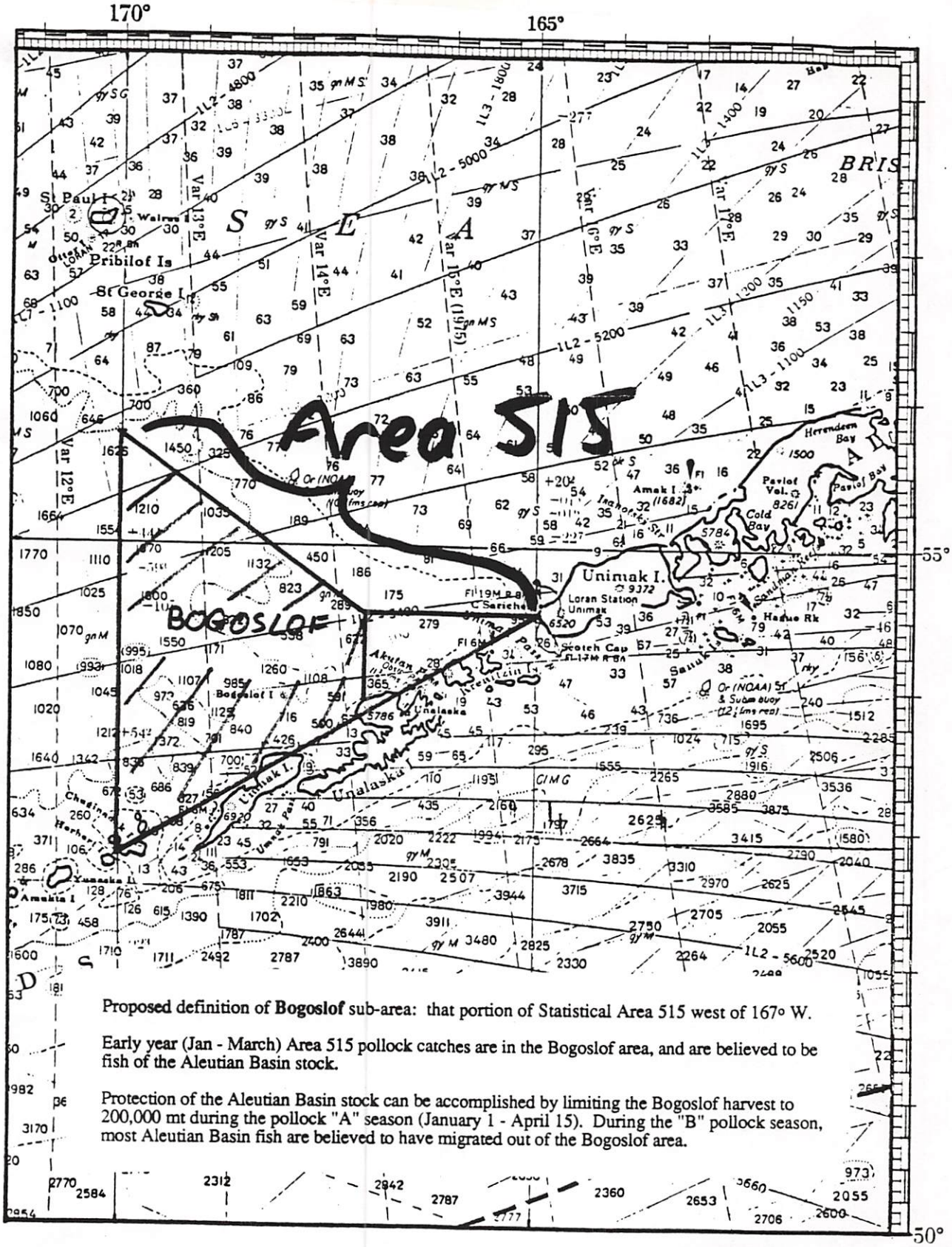
1991 BSAI PSC Apportionments to Trawl Fisheries

Fishery	Halibut (mt)	Herring (mt)	Red King Crab (Zone 1)	C. bairdi (Zone 1)	C. bairdi (Zone 2)
DAP Flatfish	800	83	40,000	100,000	825,000
Rock Sole	1,100	0	150,000	700,000	300,000
DAP Deep	200	8	0	0	50,000
DAP Other	3,233	158	10,000	200,000	1,825,000
MW Pollock	n/a	584	n/a	n/a	n/a
TOTAL	5,333	833	200,000	1,000,000	3,000,000

Quarterly Allowances of Halibut PSC Apportionment to DAP "Other" Fishery

Quarter	Percent	mt
1	45	1,455
2	40	1,293
3, 4	15	485
Total		3,233

Figure 1



Proposed definition of **Bogoslof** sub-area: that portion of Statistical Area 515 west of 167° W.

Early year (Jan - March) Area 515 pollock catches are in the Bogoslof area, and are believed to be fish of the Aleutian Basin stock.

Protection of the Aleutian Basin stock can be accomplished by limiting the Bogoslof harvest to 200,000 mt during the pollock "A" season (January 1 - April 15). During the "B" pollock season, most Aleutian Basin fish are believed to have migrated out of the Bogoslof area.

Gulf of Alaska Groundfish Specifications for 1991

Groundfish Quotas

The Council recommended Total Allowable Catch (TAC) limits for each groundfish species or species complex for the 1991 fishing year as shown in Table 3. Pollock TAC has been set at 133,400 mt, a considerable increase from last year's TAC of 73,400 mt. The stock synthesis model used to estimate pollock biomass shows a much higher abundance than previously believed when tuned to the results of the 1990 triennial bottom trawl survey. However, when the stock synthesis model is used to hindcast last year's biomass estimate, it shows an even higher biomass estimate for 1989 than in 1990. Therefore, the stock is actually in a slightly declining state, even though the TAC recommendation for 1991 is considerably higher than in 1990. TAC for pollock in the Western/Central areas will be apportioned on an equal quarterly basis.

The second quarter pollock TAC will be made available to the fishery on June 1. The Council took this emergency action in hopes of avoiding a large influx of effort to the Gulf after the roe fishery ends in the Bering Sea. Without the delay, effort would have intensified on Gulf pollock spawning stocks in April.

Pacific cod stocks continue to decline in abundance. The Council recommends a TAC of 77,900 mt for 1991, down from 90,000 mt in 1990.

All flatfish categories slightly declined in abundance, except for arrowtooth flounder which has increased significantly in overall biomass based on the 1990 triennial trawl survey. Flatfish species are still considered to be in excellent shape and lightly exploited. A notable difference in this year's TAC recommendations is that the Council, based on a recommendation from the Plan Team, separated flathead sole from the deepwater flatfish category and assigned the species a separate TAC. All flatfish TACs were set well below the level of Acceptable Biological Catch (ABC) to discourage expanded fisheries on these species because of bycatch concerns.

Sablefish exploitable biomass appears to have decreased. Therefore the Council lowered the TAC to 22,500 mt for 1991, down from the 26,000 mt in 1990.

A concern for the shortraker and rougheye components of the slope rockfish assemblage prompted the Council to break up this assemblage and establish separate ABCs and TACs for three components: (1) Pacific ocean perch only (Sebastes alutus) with a 1991 TAC of 5,800 mt, (2) shortraker and rougheye combined with a 1991 TAC of 2,000 mt, and (3) all other slope rockfish with a 1991 TAC of 10,100 mt. Estimates of biomass for both the pelagic shelf rockfish complex and thornyheads show a significant decrease from previous year's estimates. The TACs for 1991 have been set at 4,800 mt and 1,398 mt respectively. TAC for the demersal shelf rockfish has been set at 445 mt.

Halibut Bycatch Limits

For 1991, the Council returned to the framework procedure for setting halibut bycatch limits for Gulf of Alaska groundfish fisheries. Under the framework procedure, the Council may set bycatch limits by gear type, seasonally within each gear type, and by regulatory area. The Council is recommending to the Secretary that the overall halibut bycatch limit for the Gulf of Alaska be set at 2,750 mt for the 1991 fishing year (Table 4). Within this total, the Council set limits of 2,000 mt and 750 mt for the bottom trawl fisheries and hook and line fisheries, respectively. The Council recommends an exemption for pot gear in 1991 pending further collection of bycatch and mortality rate data.

The Council did not elect to apportion the limits by regulatory area but did make the following recommendations to the Secretary for seasonal apportionments: (1) Trawl gear limit would be apportioned quarterly on a 30%, 30%, 20%, 20% basis (2) Hook and line gear limit would be apportioned on a trimester basis with 200 mt in the first trimester, 500 mt in the second trimester, and 50 mt in the third trimester. The second trimester would begin on May 15, concurrent with the sablefish season opening date, and end August 31. Any unused bycatch from one quarter or trimester would be rolled over into next, or, conversely, deducted from the subsequent period in the event of an overage.

Gulf Longline Season for Sablefish Changed to May 15

A regulatory amendment was prepared by the NMFS staff to analyze potential changes in the season opening dates for sablefish. The Council chose to recommend to the Secretary a delay from the current April 1 opening to an opening date of May 15 for all regulatory areas in the Gulf of Alaska. This delay could reduce halibut bycatch rates in the sablefish longline fishery because the halibut will have migrated to shallower depths. Additionally, if the first directed halibut fishery is held in early May, it will reduce the numbers of halibut on the grounds and their bycatch in the later sablefish fishery. Weather-related safety problems also would be less of a concern.

IFQs To Be Considered in Both Sablefish and Halibut Fisheries

The Council has referred further development of an individual fishing quota (IFQ) system for the fixed gear sablefish fishery to the Fishery Planning Committee. Final action may be taken by the Council in June 1991. A similar system may be developed for halibut. If approved in time, the new management systems could be implemented for the 1993 fishery.

Prohibition of Longlining of Groundfish Pots

The Council reviewed an analysis of a proposed prohibition on longlining of groundfish pots, and recommended to the Secretary that the prohibition be applied to the Gulf of Alaska and the Bering Sea. The Aleutian Islands Regulatory Area (west of 170° W) would be exempted from the single line requirement. The Council requested concurrent emergency action so the regulation could take effect in early 1991. The National Marine Fisheries Service was requested to accommodate, if possible, the longline pot fishery for octopus.

Salmon Overfishing Definition

At its September meeting, the Council requested the Secretary of Commerce to waive the requirement for an overfishing definition in the salmon plan because the State of Alaska and Pacific Salmon Commission primarily were responsible for managing the fisheries. This request was denied and the Council therefore adopted an overfishing definition based on the policies and definitions of overfishing promulgated by the State of Alaska and the Pacific Salmon Commission. These proposed definitions have been forwarded for Secretarial approval.

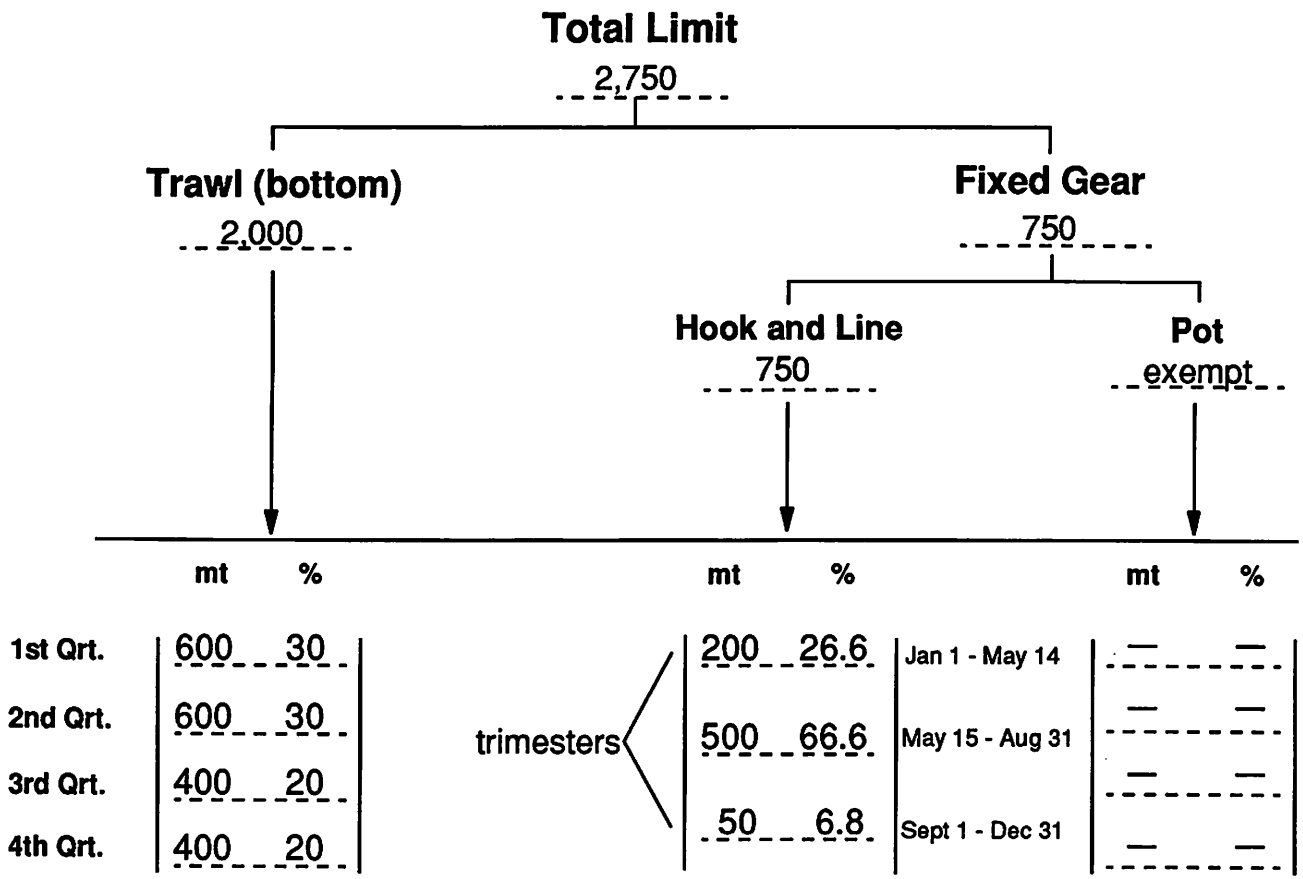
TABLE 3. GULF OF ALASKA GROUNDFISH

1991 Council Recommendations for Groundfish Specifications (metric tons)

Species	Area	ABC	TAC	DAP	JVP
Pollock*	W/C	123,750	123,750	123,750	0
	Shelikof	6,250	6,250	6,250	0
	E	3,400	3,400	3,400	0
	Total	133,400	133,400	133,400	0
Pacific Cod	W	30,000	30,000	30,000	0
	C	45,000	45,000	45,000	0
	E	2,900	2,900	2,900	0
	Total	77,900	77,900	77,900	0
Flatfish, Deep	W	2,000	2,000	2,000	0
	C	38,900	10,000	10,000	0
	E	9,600	3,000	3,000	0
	Total	50,500	15,000	15,000	0
Flathead sole	W	12,600	2,000	2,000	0
	C	32,700	5,000	5,000	0
	E	5,000	3,000	3,000	0
	Total	50,300	10,000	10,000	0
Flatfish, Shallow	W	48,800	3,000	3,000	0
	C	22,200	7,000	7,000	0
	E	3,000	2,000	2,000	0
	Total	74,000	12,000	12,000	0
Arrowtooth	W	40,800	5,000	5,000	0
	C	272,100	10,000	10,000	0
	E	27,200	5,000	5,000	0
	Total	340,100	20,000	20,000	0
Sablefish	W	2,925	2,925	2,925	0
	C	10,575	10,575	10,575	0
	W. Yakutat	4,050	4,050	4,050	0
	E. Yak./S.E. Out.	4,950	4,950	4,950	0
	Total	22,500	22,500	22,500	0
Pacific Ocean Perch	W	1,624	1,624	1,624	0
	C	1,798	1,798	1,798	0
	E	2,378	2,378	2,378	0
	Total	5,800	5,800	5,800	0
Shortraker/Rougheye	W	100	100	100	0
	C	1,320	1,320	1,320	0
	E	580	580	580	0
	Total	2,000	2,000	2,000	0
Other Slope	W	1,212	1,212	1,212	0
	C	5,454	5,454	5,454	0
	E	3,434	3,434	3,434	0
	Total	10,100	10,100	10,100	0
Rockfish (Pelagic Shelf)	W	800	800	800	0
	C	3,100	3,100	3,100	0
	E	900	900	900	0
	Total	4,800	4,800	4,800	0
Rockfish (Demersal Shelf)	S.E. Out.	445	425	425	0
Thornyhead	G W	1,798	1,398	1,398	0
Other Species	G W	0	15,766	15,766	0
GULF OF ALASKA TOTAL		773,643	331,091	331,091	0

* W/C pollock TAC will be apportioned equally by quarters

Table 4. Gulf of Alaska Halibut PSC Limits for 1991



Bycatch Incentive Program for 1991

The "vessel penalty box" incentive program to reduce prohibited species bycatch rates, adopted by the Council last June, was disapproved by the Secretary of Commerce for two reasons. First, a vessel's bycatch data, collected by observers, may require up to six months to be verified. Therefore, the data cannot be used immediately inseason to support placing a vessel in the penalty box, as originally intended by the Council. Second, the observer data are highly variable, making it very difficult to establish bycatch standards inseason based on the fleet's overall performance.

Anticipating the disapproval, the Council adopted a revised incentive program during a conference call on November 15 and submitted it to the Secretary for review on November 30. It will address halibut bycatch in the Gulf of Alaska (GOA) and Bering Sea/Aleutian Islands (BSAI) Pacific cod trawl fisheries, halibut bycatch in the GOA rockfish trawl fishery, and red king crab and halibut bycatch in the BSAI yellowfin sole, other flatfish, and rock sole fisheries. Bycatch rates of vessels with observers will be compared monthly with bycatch rate standards published in the Federal Register. The standards will be published at least twice annually by NMFS, and more often as warranted by fleet performance data. Vessels whose bycatch rates exceed the standards will be subject to prosecution and civil penalties, most likely after the season. NMFS also will have authority to publish bycatch rates of individual vessels. The Council intends to expand the program to other fisheries and prohibited species as experience is gained and NMFS enhances its ability to monitor the fisheries.

In December the Council studied bycatch rates, took public testimony, and recommended the standards below for the first two quarters.

Fishery	Quarter	Rate
		Halibut wt as % of groundfish catch
BSAI Cod	1	1.35%
Trawl fisheries	2	1.85%
BSAI Flatfish	1	1.31%
Trawl fisheries	2	0.30%
GOA Cod	1	3.31%
Trawl fisheries	2	4.13%
GOA Rockfish	1	4.00%
Trawl fisheries	2	4.00%
		Red king crab numbers/mt groundfish
BSAI Flatfish	1	2.88/mt
Trawl fisheries	2	1.50/mt

Standards for the second half of 1991 will be determined in April based on observer data. By emergency action, the program should be in place in early January. An analysis of the revised program is available upon request from the Council offices.

Observers and Recordkeeping

The Council requested emergency action to expedite implementation of 1991 changes to the NMFS Observer Plan, logbooks, and reporting requirements approved last September. The emergency rule will assure that these changes are in effect by January 1, 1991. The changes include:

(1) Delete the 1,000 to 10,000 mt and the 10,000 mt and over annual thresholds for requiring observers in shorebased processing plants, but retain the monthly thresholds of 500 mt for 30% coverage and 1,000 mt for 100% coverage.
(2) Extend observer requirements of shorebased processors to mothers/hip processors and floating processors.
(3) Require vessel operators in the groundfish fishery to allow their vessel's observed bycatch rates of prohibited species to be released publicly.
(4) Extension of observer contractor agreements through 1991.
(5) Submission of a daily product report at the request of the Regional Director.
(6) Shoreside processing facilities would be required to submit a check-out report to notify the Regional Director of the date the facility ceases to receive groundfish.
(7) Improvements to the logbook format at the request of industry.

Foreign Vessels Restricted for 1991

The Council reviewed permit applications for foreign vessels to operate off Alaska in 1991. Foreign vessels applied to receive joint venture fish and to tranship fish products originating in the Donut Hole outside the U.S. 200-mile zone in the Bering Sea. As for 1989 and 1990, the Council continued to recommend that foreign vessels only be permitted to support U.S. operations, not to use U.S. loading zones to tranship fish caught in the Donut. If the Secretary of Commerce issues permits for transhipments, the Council urges that the recipient vessels be required to carry observers when operating in the donut.

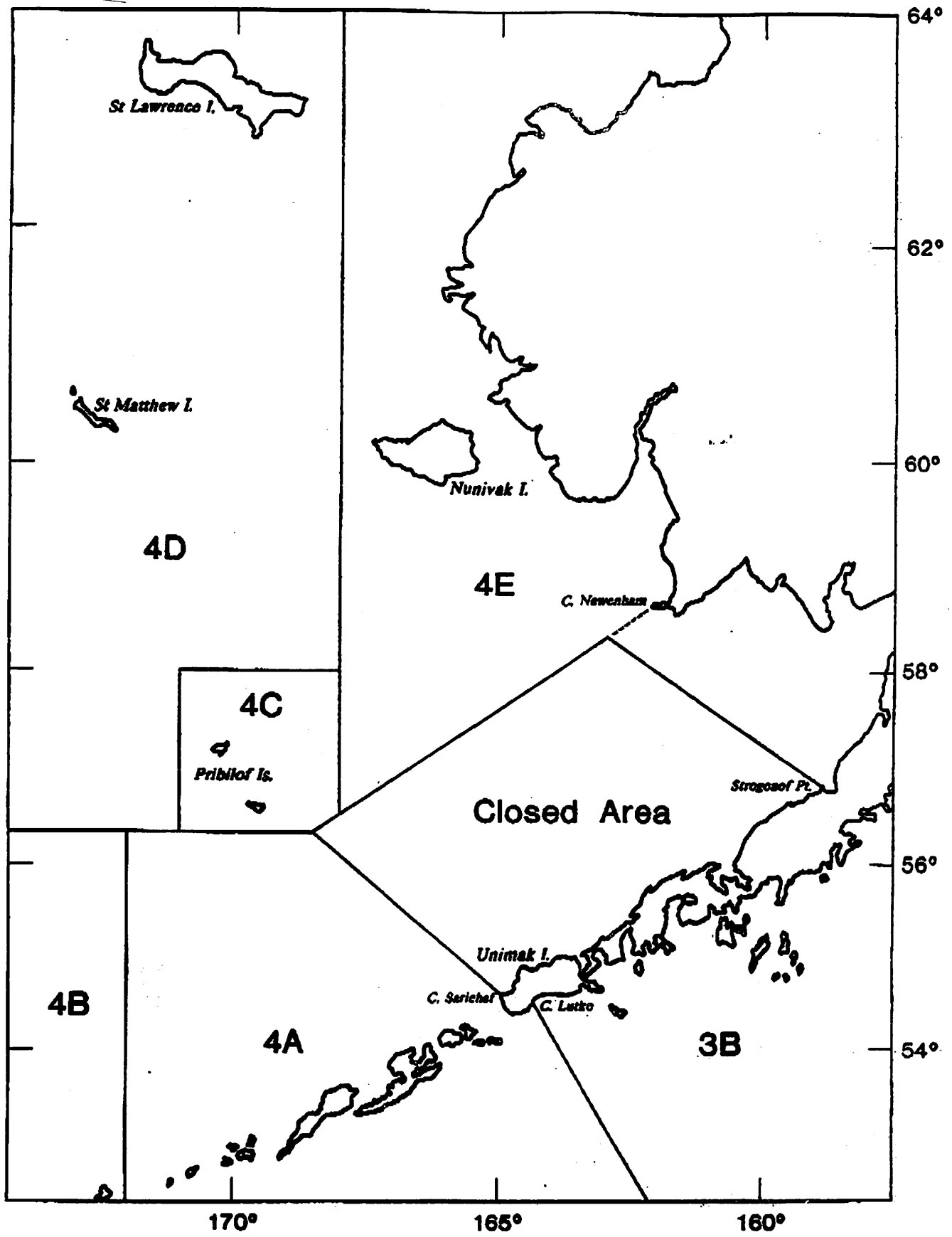
The Council also tightened down on violators. Not only should serious violators, brought to the attention of NOAA General Counsel, be denied operating privileges, but all companies owning such vessels should be barred from operations with the 200-mile zone off Alaska in 1991.

Pelagic Trawl Definition

The Council was provided an opportunity to make final comments to the Secretary of Commerce on the pelagic trawl definition adopted in September. They made no changes. Therefore, a pelagic trawl for 1991 will be defined as:

> "a trawl which does not have discs, bobbins, rollers, or other chafe protection gear attached to the foot rope, but which may have weights on the wing tips and (1) which has stretched mesh sizes of at least 64 inches, as measured between knots, starting at all points on the fishing line, head rope, and breast lines and extending aft for a distance of at least 10 meshes from the fishing line, head rope, and breast lines and going around the entire circumference of the trawl and which webbing is tied to the fishing line with no less than 20 inches between knots around the circumference of the net and which contains no inserts or collars or other configurations intended to reduce the mesh size of the forward section, or (2) which has parallel lines spaced no closer than 64 inches, or a combination of parallel lines and meshes with stretched

Figure 2. IPHC Regulatory Areas with Proposed Subdivision of Area 4E



mesh sizes of at least 64 inches, measured as described above, for a distance of at least 33 feet, and starting at all points on the fishing line, head rope, and breast lines and going around the entire circumference of the trawl."

The Council requested NMFS to work with industry and gear experts in the coming year to develop further refinements to the definition.

Halibut Area 4E Subdivided

In September the Council recommended that the International Pacific Halibut Commission (IPHC) divide Area 4E in Western Alaska and assign a separate catch quota to each area. IPHC staff responded that such action, being mainly allocative, was more appropriately done by the Council. Last week the Council reviewed an analysis and recommended that the Secretary of Commerce divide Area 4E at Cape Newenham into north (Nelson/Nunivak Islands) and south (Bristol Bay) subareas (Figure 2). Of the total 4E catch limit (100,000 lbs. in 1990), 70% should be apportioned to the north subarea and 30% to the south, and after August 1, half of any unharvested quota from the north subarea will be transferred to the south subarea. The current 6,000-pound trip limits and vessel clearance requirements will continue for Area 4E.

This regulatory amendment will go directly to the Secretary for review. There will be opportunity for public comment during Secretarial review after a Notice of Proposed Rulemaking is published in the Federal Register, sometime in early 1991. Comments should be sent to Steven Pennoyer, Regional Director, National Marine Fisheries Service, Alaska Region, Juneau, AK 99802.

NOAA Requests Help From Fishermen in Conducting 1991 Pollock Survey

Scientists from the Alaska Fisheries Science Center (AFSC) will conduct an acoustics-midwater trawl survey of Bering Sea pollock from February 10 to March 19, 1991, followed by a survey of the pollock spawning concentration in Shelikof Strait March 20-29. This research will be conducted aboard the R/V MILLER FREEMAN. In the Bering Sea, the area of operations includes the Bogoslof Island region and the eastern shelf from the Aleutians to the US/USSR Convention Line. Preliminary plans are to survey the shelf region north of St. Paul Island (February 20-21), the Bogoslof Island spawning concentrations (February 22 - March 5), and then the shelf region south of St. Paul Island (March 7-19). It would be mutually beneficial to the commercial fleet and AFSC scientists to establish communications between the MILLER FREEMAN and fishing/processing vessels. Information provided by the fleet would help scientists direct their efforts more efficiently. The scientists in turn may be able to provide fishermen with information on potentially productive areas not occupied by the fleet. Information provided by vessels will be treated with the strictest confidence.

The call sign for the MILLER FREEMAN is WTDM. The FAX number is 872-150-4406. the Commanding Officer is Captain David McConaghy. The Chief Scientist for the first leg of the cruise (February 10 - March 5) is Neal Williamson and for the second leg, Jim Traynor (March 7-19) and Bill Karp (March 20-29). The MILLER FREEMAN will be in port in Dutch Harbor on March 6.

For more information, please contact Neal Williamson: Phone, 206-526-6417; FAX, 206-526-4004.