

M E M O R A N D U M

AGENDA D-3(d)
SEPTEMBER 1986

TO: Council, AP and SSC Members

FROM: Jim H. Branson *JMB*
Executive Director

DATE: September 15, 1986

SUBJECT: Bering Sea/Aleutian Islands Groundfish FMP

ACTION REQUIRED

Review Resource Assessment Document (RAD) and forward 1987 TAC recommendations to NMFS and release for public review.

BACKGROUND

The 1986-87 Bering Sea/Aleutians RAD was released for public review by the Plan Team in late July. The RAD provides the Team's appraisal of the status of each groundfish stock and preliminary recommendations for TACs. Item D-3(d)(1) is the Executive Summary of the RAD which summarizes current status and TAC recommendations. Species of special interest include:

- (1) Pollock - stock may have passed through the bottom of a down cycle by 1987 but abundance remains relatively high. EY is 1.1 million mt for the Bering Sea and 100,000 mt for the Aleutians.
- (2) Pacific cod - remains at high abundance, with ABC at 265,000 mt. This catch level would still protect weaker year classes.
- (3) Yellowfin sole - relative high level of abundance with EY equal to 187,000 mt. The Council may wish to reduce TAC to protect depressed red king and Tanner crab stocks.
- (4) Greenland turbot - recruitment remains extremely low and the Plan Team recommends a catch of no more than 5000 mt in order to slow down the population decline. This amount would be primarily for bycatch.
- (5) Pacific ocean perch - the Team again recommends that POP and the other species of red rockfish be managed as a complex (in accordance with the Regulations) and TAC has been increased to reflect this change. Likewise, TAC for the rockfish complex has been reduced. The Team's recommendation to set TAC = EY is a change from your policy to promote rebuilding by keeping TAC below EY.
- (6) Sablefish - stocks are continuing to recover and may be exploited at the EY level of 5,000 mt in both the Bering Sea and Aleutians. In the past you have reduced TAC to promote rebuilding.

A worksheet for setting preliminary TAC recommendations is provided following the RAD summary as Table D-3(d)(2).

RESOURCE ASSESSMENT DOCUMENT FOR BERING SEA-ALEUTIANS GROUND FISH
FOR 1986 AND
RECOMMENDED CATCH LEVELS FOR 1987

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July 1986

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RESOURCE ASSESSMENT DOCUMENT FOR BERING SEA-ALEUTIANS GROUND FISH
FOR 1986 AND RECOMMENDATIONS FOR MANAGEMENT IN 1987

INTRODUCTION

This Resource Assessment Document (RAD) for the Bering Sea-Aleutians groundfish resources is applicable for management of the 1987 fishery under Amendment #1 of the Fishery Management Plan. In this RAD, the rationale and management recommendations are presented mainly from a biological perspective. These recommendations, together with socio-economic considerations, will be used by the North Pacific Fishery Management Council to determine optimum yield and other management strategies for the fishery under the Magnuson Fishery Conservation and Management Act.

NEW INFORMATION

Since the RAD and its supplement for management of the 1986 fishery were issued (NPFMC 1985), the following new sources of data have become available to update the status of stocks:

1. Data from the 1985 summer trawl surveys conducted by the Northwest and Alaska Fisheries Center and those in cooperation with Japan.
2. Data collected by U.S. observers aboard foreign fishing and processing vessels.
3. Data and analyses provided by Japan in documents at the International North Pacific Fisheries Commission in 1985.
4. Data and analyses provided by Japan at a bilateral meeting this year (NWAFC 1986).

Relevant and more detailed information from the updated assessment are described for each species group in Parts I and II of this RAD. These parts describe:

Part I: Species-by-species analyses of resource condition--where the more traditional single species assessment and population dynamics techniques are used. Information such as (a) historical catch trends; (b) biological condition of individual stocks, and (c) estimation of the maximum sustainable yield (MSY), and equilibrium yield (EY), of individual species groups are found in this section of the document.

Part II: Multi-species and ecosystem analyses--where the long-term dynamics of the groundfish complex are evaluated by an ecosystem simulation model.

MANAGEMENT AREA AND SPECIES

The management area lies within the 200 mile U.S. Exclusive Economic Zone (EEZ) of the eastern Bering Sea (EBS) and Aleutian Islands (Fig. 1). International North Pacific Fisheries Commission (INPFC) statistical areas 1 to 5 are also illustrated.

Four categories of finfishes and invertebrates have been designated for management purposes (Table 1). They are (a) prohibited species, (b) target species, (c) other species, and (d) non-specified species. This RAD describes the status of the species in (b) and (c) only.

HISTORICAL CATCH STATISTICS

Historical catch statistics since 1954 are shown for the EBS in Table 2. In this region, the initial target species for Japan and the U.S.S.R. was yellowfin sole. During this early period of the fisheries, total catches of groundfish reached a peak of 674,000 metric tons (t) in 1961. Following a decline in abundance of yellowfin sole, other species were targeted upon, principally pollock, and total catches rose to 2.2 million t in 1972. Catches have since varied from 1.2-1.9 million t as catch restrictions and other management measures were placed on the fishery.

Catches in the Aleutian region (Table 3) have always been much smaller than those in the EBS and target species have generally been different. Pacific ocean perch (POP) was the initial target species and during the early stages of exploitation overall catches of groundfish reached a peak of 112,000 t in 1965. With a decline in abundance of POP, the fishery diversified to other species including turbot, Atka mackerel, Pacific cod, and pollock; and overall catches declined to less than 100,000 t annually through 1979. Starting in 1980, catches of pollock and Atka mackerel increased markedly in the Aleutian region; as a result, the overall catch has again exceeded 100,000 t in recent years.

HISTORICAL OPTIMUM YIELDS

Optimum yields (OY) established by the NPFMC since implementation of extended jurisdiction in 1977 are given in Table 4. The overall OY for all species combined has steadily increased from 1.4 million t in 1977 to 2.0 million t in 1986. Species accounting for the major part of this increase have been pollock, yellowfin sole, and Pacific cod.

HISTORICAL ALLOCATIONS

Table 5 shows allocations to DAP, JVP, Reserve, and TALFF in recent years. Though the NMFS Regional Director is empowered to reapportion at any time, it is done mainly in early April, June, and August. Apportionments to TALFF are then allocated to the various foreign countries fishing in the EEZ. Unallocated TALFF is the portion potentially available for foreign fishing that has not yet been released.

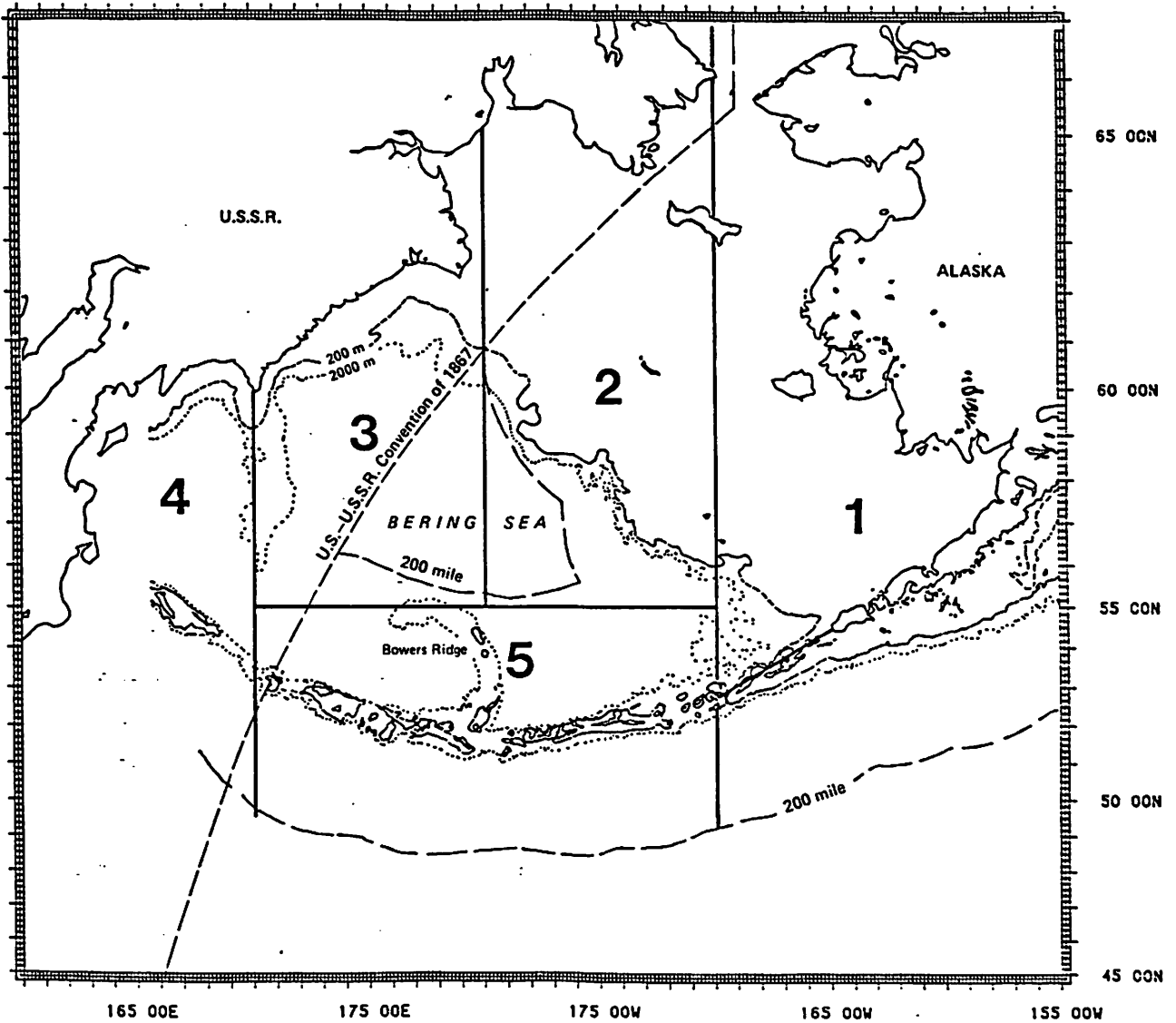


Figure 1.--Bering Sea showing U.S. 200-mile fishery conservation zone and eastern Bering Sea (areas 1 and 2) and Aleutian Islands region (area 5) management areas. Areas 1-5 are International North Pacific Fisheries Commission statistical areas.

Footnote on Area Notations

INPFC Areas	1	2	3	4	5
U.S. Management Areas ...	I	II	III	None	IV

Table 1. --Species categories established for management of Bering Sea-Aleutian groundfish fishery.

Prohibited species ^a	Target species ^b	Other species ^c	Nonspecified species ^d
<u>FINFISHES</u>			
Salmonids	Walleye pollock	Sculpins	Eelpouts (Zoarcidae)
Pacific halibut	Cod	Sharks	Poachers (Agonidae)
	Yellowfin sole	Skates	and alligator fish
	Turbots	Smelts	Snailfish, lumpfishes, lump-
	Other flatfishes		suckers (Cyclopteridae)
	Atka mackerel		Sandfishes (<u>Trichodon</u> sp.)
	Sablefish		Rattails (Macrouridae)
	Pacific ocean perch		Ronquils, searchers
	Other rockfish		(Bathymasteridae)
			Lancetfish (Alepisauridae)
			Pricklebacks, cockscombs,
			warbonnets, shanny
			Prowfish (<u>Zaprora silenus</u>)
			Hagfish (<u>Eptatretus</u> sp.)
			Lampreys (<u>Lampetra</u> sp.)
			Blennys, gunnels, various
			small bottom dwelling
			fishes of the families
			Stichaeidae and Pholidae
<u>INVERTEBRATES</u>			
King crab	Squids	Octopuses	Anemones
Snow (Tanner) crab			Starfishes
Coral			Egg cases
Shrimp			Sea mouse
Clams			Sea slugs
Horsehair crab			Sea potatoes
Lyre crab			Sand dollars
Dungeness crab			Hermit crabs
			Mussels
			Sea urchins
			Sponge-unident.
			Jellyfishes
			Tunicates
			Sea cucumbers
			Sea pens
			Isopods
			Barnacles
			Polychaetes
			Crinoids
			Crabs - unident.
			Misc. - unident.

^aMust be returned to the sea.

^bOptimum yield established for each species.

^cAggregate optimum yield established for the group as a whole.

^dList not exclusive; includes any species not listed under Prohibited, Target, or "Other" categories.

Table 2.--Groundfish and squid catches (metric tons) in the eastern Bering Sea, 1954-85^a.

Year	Pollock	Pacific cod	Sablefish	Pacific ocean perch	Other rockfish	Yellowfin sole	Turbots	Other flatfish	Atka mackerel	Squid	Other species	Total all species
1954						12,562						12,562
1955						14,690						14,690
1956						24,697						24,697
1957						24,145						24,145
1958	6,924	171	6			44,153					147	51,401
1959	32,793	2,864	289			185,321					380	222,647
1960			1,861	6,100		456,103	36,843					500,907
1961			15,627	47,000		553,742	57,348					673,717
1962			25,989	19,900		420,703	58,226					524,818
1963			13,706	24,500		85,810	31,565	35,643				191,224
1964	174,792	13,408	3,545	25,900		111,177	33,729	30,604			736	393,891
1965	230,551	14,719	4,838	16,800		53,810	9,747	11,686			2,218	344,369
1966	261,678	18,200	9,505	20,200		102,353	13,042	24,864			2,239	452,081
1967	550,362	32,064	11,698	19,600		162,228	23,869	32,109			4,378	836,308
1968	702,181	57,902	14,374	31,500		84,189	35,232	29,647			22,058	977,083
1969	862,789	50,351	16,009	14,500		167,134	36,029	34,749			10,459	1,192,020
1970	1,256,565	70,094	11,737	9,900		133,079	32,289	64,690			15,295	1,593,649
1971	1,743,763	43,054	15,106	9,800		160,399	59,256	92,452			33,496	2,157,326
1972	1,874,534	42,905	12,758	5,700		47,856	77,633	76,813			110,893	2,249,092
1973	1,758,919	53,386	5,957	3,700		78,240	64,497	43,919			55,826	2,064,444
1974	1,588,390	62,462	4,250	14,000		42,235	91,127	37,357			60,263	1,900,092
1975	1,356,736	51,551	2,766	8,600		64,690	85,651	20,393			54,845	1,645,232
1976	1,177,822	50,481	2,923	14,900		56,221	78,329	21,746			26,143	1,428,575
1977	978,370	33,335	2,718	6,600	1,678	58,373	37,162	14,393		4,926	35,902	1,182,666
1978	979,431	42,543	1,192	2,200	12,222	138,433	45,781	21,040		6,886	61,537	1,334,004
1979	913,881	33,761	1,376	1,700	10,097	99,017	42,919	19,724	832	4,286	38,767	1,183,910
1980	958,279	45,861	2,206	800	1,367	87,391	62,618	20,406	4,697	4,040	33,949	1,221,665
1981	573,505	51,996	2,604	1,200	1,110	97,301	66,394	23,428	3,028	4,179	35,551	1,260,296
1982	955,964	55,040	3,184	600	862	95,712	54,908	32,666	328	3,837	18,200	1,221,301
1983	982,363	83,212	2,695	200	461	108,385	53,659	35,239	116	3,455	11,062	1,280,847
1984	1,092,403	110,944	2,793	461	137	159,526	29,709	43,110	57	2,798	7,349	1,449,287
1985	1,179,786	132,735	2,248	721	205	227,713	21,713	71,354	4	1,616	11,522	1,649,287

^aSee individual species sections of this report for details of the catch statistics.

Table 3.--Groundfish and squid catches (metric tons) in the Aleutian Islands region, 1962-85.^a

Year	Pollock	Pacific cod	Sablefish	Pacific ocean perch	Other rockfish	Turbots	Atka mackerel	Squid	Other species	Total all species
1962			-	200						200
1963			664	20,800		7				21,471
1964		241	1,541	90,300		504			66	92,652
1965		451	1,249	109,100		300			768	111,868
1966		154	1,341	85,900		63			131	87,589
1967		293	1,652	55,900		394			8,542	66,781
1968		289	1,673	44,900		213			8,948	56,023
1969		220	1,673	38,800		228			3,088	44,009
1970		283	1,248	66,900		559	949		10,671	80,610
1971		2,078	2,936	21,800		2,331			2,973	32,118
1972		435	3,531	33,200		14,197	5,907		22,447	79,717
1973		977	2,902	11,800		12,371	1,712		4,244	34,006
1974		1,379	2,477	22,400		11,983	1,377		9,724	49,340
1975		2,838	1,747	16,600		3,754	13,326		8,288	46,553
1976		4,190	1,659	14,000		3,437	13,126		7,053	43,465
1977	7,625	3,262	1,897	5,900	9,587	4,488	20,975	1,808	16,170	71,712
1978	6,282	3,295	821	5,300	8,737	6,548	23,418	2,085	12,436	68,922
1979	9,504	5,593	782	5,500	14,543	12,847	21,279	2,252	12,934	85,234
1980	58,156	5,788	274	3,700	1,366	8,299	15,793	2,332	13,004	109,707
1981	55,516	10,462	533	3,500	1,394	8,040	16,661	1,762	7,274	105,245
1982	57,978	11,526	955	1,500	2,792	8,732	19,546	1,201	5,167	109,397
1983	59,026	9,955	673	600	1,140	7,869	11,610	524	3,193	94,586
1984	77,595	22,216	1,043	823	98	3,130	35,998	335	733	142,704
1985	58,692	12,690	2,089	97	544	140	37,856	9	2,319	114,436

^aSee individual species sections of this report for details of the catch statistics.

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Table 4.--Optimum yields (t) for groundfish of the eastern Bering Sea and Aleutian Islands region 1977-1986.

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
<u>Eastern Bering Sea^a</u>										
Walleye pollock	950,000	950,000	950,000	1,000,000	1,000,000	1,000,000	1,000,000	1,200,000	1,200,000	1,200,000
Yellowfin sole	106,000	126,000	126,000	117,000	117,000	117,000	117,000	230,000	226,900	209,500
Turbots	-	-	-	90,000	90,000	90,000	90,000	59,610	42,000	53,000
Other flounders ^b	100,000	159,000	159,000	61,000	61,000	61,000	61,000	111,490	109,900	124,200
Pacific cod	58,000	70,500	70,500	70,700	78,700	78,700	120,000	210,000	220,000	229,000
Sablefish	5,000	3,000	3,000	3,500	3,500	3,500	3,500	3,740	2,625	2,250
Pacific ocean perch	6,500	6,500	6,500	3,250	3,250	3,250	3,250	1,780	1,000	825
Other rockfish	-	-	-	7,727	7,727	7,727	7,727	1,550	1,120	825
Herring	21,000	18,670	18,670	- ^c	-	-	-	-	-	-
Squid	10,000	10,800	10,000	10,000	10,000	10,000	10,000	8,900	10,000	5,000
Other species	59,600	66,600	66,600	74,249	74,249	74,249	77,314	40,000	37,580	27,800
<u>Aleutians^a</u>										
Walleye pollock	-	-	-	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Sablefish	2,400	1,500	1,500	1,500	1,500	1,500	1,500	1,600	1,875	4,200
Pacific ocean perch	15,000	15,000	15,000	7,500	7,500	7,500	7,500	2,700	3,800	6,800
Other rockfish	-	-	-	-	-	-	-	5,500	5,500	5,800
Atka mackerel	-	24,800	24,800	24,800	24,800	24,800	24,800	23,130	37,700	30,800
Other species	34,000	34,000	34,000	-	-	-	-	-	-	-
Total all areas	1,367,500	1,486,370	1,485,570	1,571,226	1,579,226	1,579,226	1,623,591	2,000,000	2,000,000	2,000,000

^aOptimum yields are for the eastern Bering Sea and Aleutian Islands areas combined for pollock in 1977-79, other rockfish in 1980-83, other species in 1980-85, and in all years for yellowfin sole, turbot, other flounders, Pacific cod and squid.

^bExcludes halibut but includes turbot until 1980.

^cAfter 1979 herring no longer included with groundfish.

Table 5.--Bering Sea-Aleutian Islands groundfish apportionments and foreign allocations in metric tons, 1984-86.

	Final 1984	Final 1985	Jan. 1986 ^a	July 1986 ^d
EY	-	2,149,330	1,981,210	1,981,210
TAC	2,000,000	2,000,000	2,000,000	2,000,000
DAP	111,105	137,210	325,119	286,749
JVP	431,210	697,850	1,014,083	1,123,763
Reserve	0	1,345	270,143	21,641
TALFF	1,457,685	1,163,595	390,675	567,847
Japan	1,019,891	861,332	44,013 ^b	371,998
ROK	264,160	239,872	33,462	96,169
West Germany	27,995	0	0	0
Portugal	6,815	600	0	0
Poland	55,556	35,295	984	7,043
USSR	30,000	10,782	0 ^c	0
China	0	0	984	3,963
Taiwan	0	0	1,575	3,685
Unallocated	53,268	15,714	309,657	84,989

^aCouncil recommended TAC, DAP, JVP, Reserve and TALFF.

^bInitially Japan received 10,000 mt. Another 34,000 mt was released on February 5, 1986.

^cSoviets did not accept their initial allocation.

^dApportionments were published on July 31, 1986 in Federal Register (51 FR 27412).

RECOMMENDED CATCH LEVELS FOR 1987

Amendment #1 to the Bering Sea-Aleutians groundfish FMP provides the framework to manage the resources as a complex. The MSY of the complex ranges from 1.8 to 2.4 million t. The OY is set at 85% of the MSY range, or 1.4 to 2.0 million t. The updated status of stocks analyses (Part I) of this RAD shows that the EY or ABC for the groundfish complex for 1987 would be almost 2 million t (Table 6, EY or ABC = 1,955,450 t). The multispecies/ecosystem analyses (Part II) shows that the long-term sustainable catch level is about 1.8 million t. Since the ecosystem simulations assume a substantially lower biomass for the flatfish and cod components than are presently the case, it is determined that present catch level can exceed 1.8 million t. Therefore, the 1987 catch level for the groundfish complex can be set at the EY or ABC level of 1,955,450 t. Table 7 summarizes a proposed combination of species catch levels for 1987. A species-by-species discussion follows:

Pollock: Part I shows that EY equals 1.1 million t in the eastern Bering Sea (EBS) and 100,000 in the Aleutians. The ecosystem model (Part II) also shows a sustainable catch of 1.1 million t, and pollock abundance may have passed the trough of a down cycle by 1987. Since the status of stock analysis (Part I) shows that overall pollock abundance is still relatively high, it is proposed that the catch levels be held at EY. These proposed catch levels are 1,100,000 t for the EBS and 100,000 t for the Aleutian region.

Pacific cod: Pacific cod was at a historic high level of abundance in 1984 and is projected to be still relatively high in abundance. The ABC for 1987 is projected to be 265,000. It is proposed that the catch level be set the same because the TAC is already derived to take maximum advantage of strong year classes while protecting weaker ones.

Yellowfin sole: Yellowfin sole is still at a relatively high level of abundance and catch levels can be set equal to EY (187,000 t).

Turbot: One of the two species (Greenland turbot) in the group has been declining in abundance, and it is not desirable to have an intensive fishery for the species. The impact to future population biomass as a result of four different levels of catch (0 to 15,000 t) for 1987-89 has been simulated using a Stock Reduction Analysis Model. The results show that the setting of the 1987 ABC level is more of a socio-economic determination than a biological determination. The Team has, however, recommended that the ABC for Greenland turbot be set at 5,500 t to slow down the population decline. The arrowtooth flounder component of the turbot complex is in excellent stock condition and the catch level can be set equal to EY (33,400 t).

Other flatfish: The other flatfish category, just like yellowfin sole, is still relatively high in abundance. This group can be exploited at the EY level. In 1987, however, the rock sole component should be separated out for management because of special targetting on the species. Therefore the catch level for rock sole is set at 70,500 t while the rest of the flatfish complex is set at 89,200 t.

Pacific ocean perch: The stocks in both the EBS and Aleutian region have remained stable but low for many years. Although the stocks have in the past been substantially higher in abundance, there are doubts whether the stock biomass could be rebuilt to those levels even if catch levels are set lower than EY. Therefore catch levels should be set at EY or 3,000 t in the EBS and 11,900 t in the Aleutians.

Other rockfish: The other rockfish group is relatively stable in abundance. The 1987 catch level can be set equal to EY in the EBS (550 t) and the Aleutian region (1,900).

Sablefish: Sablefish stocks are continuing to recover from the low abundance levels during 1977-80 and may be exploited at the EY level of 5,000 t in both the EBS and Aleutians region in 1987.

Atka mackerel: Abundance of Atka mackerel is declining as strong year classes pass through the fishery. Equilibrium yield for 1987 is assumed to be the same as in 1986--30,800 t.

Squid: The 1985 catch level for squid is conservatively set at 10,000 t. The resource is believed to be large.

Other groundfish: The other groundfish group may be exploited at the estimated EY level of 36,700 t.

Low 4a.12.1

Table 6.--Estimates of maximum sustainable yields (MSYs) and comparisons of equilibrium yields (EYs) for 1985 and 1987 with remarks on current condition of the resources for the eastern Bering Sea (EBS) and Aleutians.

Species/Region	MSY (t)	EY (t)		Condition of Stocks
		1985	1987	
Pollock	Relatively high but declining due to recent poor year classes.
EBS	1,500,000	1,100,000	1,100,000	
Aleutians	150,000	100,000	100,000	
Pacific cod ^a	59,000	249,300	265,000	Relatively high.
EBS	50,000	...	230,000	
Aleutians	9,000	...	35,000	
Yellowfin sole	150,000	230,000	187,000	Relatively high.
Greenland turbot ^a	44,000	35,000	5,500	Depressed with no prospect of appreciable recruitment through 1990.
EBS	...	...	5,000
Aleutians	...	...	500
Arrowtooth flounder	22,400	20,000	33,400	High in abundance.
EBS	...	...	23,400
Aleutians	...	...	10,000
Rock sole	39,000	...	70,500	Relatively high and stable.
EBS	...	...	67,800
Aleutians	...	...	2,700
Other flatfish (excluding rock sole)	86,100	137,500	89,200	At high levels of abundance.
EBS	...	...	87,400
Aleutians	...	...	1,800
Sablefish	Abundance increased, but still substantially below historical highs in EBS.
EBS	13,000	3,000	5,000	
Aleutians	2,100	4,200	5,000	
Pacific ocean perch	13,200	Abundance stable.
EBS	...	1,600	3,000	
Aleutians	...	15,000	11,900	
Other rockfish	Abundance stable.
EBS	2,100	600	550	
Aleutians	6,900	1,900	1,900	
Atka mackerel ^a	38,700	30,800	30,800	Abundance declining rapidly as strong year classes pass through peak.
EBS	...	800	800	
Aleutians	...	30,000	30,000	
Squid	>10,000	10,000	10,000	Lacking information but estimates are conservative.
EBS	...	...	7,500
Aleutians	...	...	2,500
Other species	67,200	35,900	...	Abundance at average levels.
EBS	...	...	28,300
Aleutians	...	...	8,400
Total groundfish	2,203,700	1,974,800	1,955,450	Overall abundance declined from 1984 due largely to declines in pollock and most flatfish resources.

^aEstimates are ABC instead of EY as stocks are declining.

Table 7.--Recommended catch levels (t) for 1987 for the groundfish complex in the eastern Bering Sea (EBS) and Aleutian region; and comparisons to their estimated equilibrium yields for 1987 and total allowable catches (TAC) in 1986.

Species/Region	1986 TAC	(Part I) 1987 EY	Part II Ecosystem Long-term Catch	Recommended 1987 Catch Levels
Pollock	...	...	1,100,000	...
EBS	1,200,000	1,100,000	...	1,100,000
Aleutians	100,000	100,000	...	100,000
Pacific cod	229,000	265,000	100,000	265,000
Yellowfin sole	209,500	187,000	130,000	187,000
Turbots	53,000	38,900	85,000	38,900
Greenland turbot	...	5,500	...	5,500
Arrowtooth flounder	...	33,400	...	33,400
Other flatfish	124,200	159,700	120,000	159,700
Rock sole	...	70,500	...	70,500
Other flatfish (excluding rock sole)	...	89,200	...	89,200
Sablefish	...	...	9,000	...
EBS	2,250	5,000	...	5,000
Aleutians	4,200	5,000	...	5,000
Pacific ocean perch	...	...	12,000	...
EBS	825	3,000	...	3,000
Aleutians	6,800	11,900	...	11,900
Other rockfish	...	...	14,100	...
EBS	825	550	...	550
Aleutians	5,800	1,900	...	1,900
Atka mackerel	30,800	30,800	>28,000	30,800
EBS	...	800	...	800
Aleutians	...	30,000	...	30,000
Squid	5,000	...	...	10,000
EBS	...	7,500	...	...
Aleutians	...	2,500	...	...
Other species	...	...	...	...
EBS	27,800	28,300	...	28,300
Aleutians	30,800	8,400	...	8,400
Total groundfish	2,000,000	1,955,450	1,800,000	1,955,450

Table D-3(d)(2). 1986 TACs and 1987 TACs proposed by the Plan Team
in the July 1986 RAD. 12-Sep-86

Species		1986	Proposed 1987	Council
Pollock	BS	1,200,000	1,100,000	-----
	AI	100,000	100,000	-----
Pacific	BS	825	3,000	-----
ocean perch 1/	AI	6,800	11,900	-----
Rockfish 1/	BS	825	550	-----
	AI	5,800	1,900	-----
Sablefish	BS	2,250	5,000	-----
	AI	4,200	5,000	-----
Pacific cod	BSAI	229,000	265,000	-----
Yellowfin sole	BSAI	209,500	187,000	-----
Turbots-Greenland	BSAI	33,000	5,500	-----
Arrowtooth	BSAI	20,000	33,400	-----
Other flatfish	BSAI	124,200	159,700	-----
Rock sole	BSAI	**** 2/	70,500	-----
Other flatfish	BSAI	**** 2/	89,200	-----
Atka mackerel	BSAI	30,800	30,800	-----
Squid	BSAI	5,000	10,000	-----
Other species	BSAI	27,800	36,700	-----
		-----	-----	-----
TOTAL		2,000,000	1,955,450	-----

- NOTES:
1. POP has been changed to POP complex in 1987, showing an apparent (but not real) increase in TAC. *Rockfish has been reduced by subtracting out the four red rockfish species.
 2. The Plan Team has proposed creating a new rock sole category in 1987.