MEMORANDUM

TO: Council, SSC and AP Members

FROM: Clarence G. Pautzke
Executive Director

DATE: December 3, 1997

ESTIMATED TIME
14 HOURS
All D-1 Items

SUBJECT: Final Gulf of Alaska Groundfish Specifications for 1998

ACTION REQUIRED

(c) Approve final 1998 GOA Final Stock Assessment and Fishery Evaluation document.
(d) Approve final GOA groundfish and bycatch specifications for 1998.
(e) Halibut discard mortality rates for 1998.

BACKGROUND

At this meeting, the Council sets final recommendations of groundfish and bycatch specifications. The final SAFE report, groundfish ABCs and TACs, and bycatch apportionments and halibut discard mortality rates need to be approved. These final specifications will be used for managing the 1998 groundfish fisheries and will supersede the Council's preliminary specifications.

(c) GOA SAFE Document

The groundfish Plan Teams met in Seattle during November 17-21, to prepare the final GOA SAFE report mailed to you in late November. This SAFE forms the basis for final groundfish specifications for the 1998 fishing year. The final GOA SAFE contains the Plan Team's estimates of biomass, ABCs, and overfishing levels for all groundfish species covered under the FMP and information concerning PSC bycatch to provide guidance to the Council in establishing PSC apportionments. The attached tables from the SAFE list the Plan Team's recommended 1998 ABCs and corresponding OFLs for each of the species or species complexes. Draft minutes of the GOA plan team meeting are attached (Item D-1(c)(1)). Joint team minutes are attached as Item D-1(c)(2).

(d) Preliminary ABCs and TACs

A summary worksheet of Plan Team, SSC, and AP recommendations from this meeting will be provided to the Council. Tables 1-4 from the SAFE summary chapter listing groundfish ABCs and biomass levels are attached as Item D-1(d)(1). The Plan Team's sum of recommended ABCs for 1998 is 550,830 mt, an increase of nearly 58,000 mt (roughly 12%) from the total 1997 ABCs of 493,050 mt.

Overall, the status of the stocks in the Gulf of Alaska continues to appear relatively favorable. ABC recommendations remain essentially unchanged from 1997 for flatfish and rockfish. Pollock increased from 79,980 mt to 131,800 mt (65%) for 1998. Pacific cod dropped from 81,500 to 77,900 mt (4%) for 1998. Sablefish declined by about 6% from 14,520 mt to 14,120 mt for 1998. The demersal shelf rockfish ABC declined from 960 mt to 560 mt for 1998 as a result of new stock assessment methodology. The Atka mackerel ABC declined from 1,000 mt to 600 mt for 1998 to better match bycatch needs.

State Waters Pacific Cod fishery

The BOF initiated state water fisheries for Pacific cod in the GOA at its meeting in October 1996. The BOF action set the 1997 state Pacific cod fishery at 15% of the federal TAC for the Western and Central Gulf and 25% of the Eastern Gulf TAC. The Central Gulf fishery was apportioned: Cook Inlet 15%, Kodiak 50%, and Chignik 35%. These apportionments and equivalent tonnages are shown in Table 1 below. The State Western and Central Gulf fisheries will increase to 20% in 1998 and 25% in 1999, without further BOF action, if state landings meet the harvest guideline in the previous year. For 1997, the Council decreased the federal TAC for GOA P. cod by the state harvest guidelines.

On November 1, 1997, the State of Alaska released 400 mt (900,000 lb) of the Cook Inlet P. cod GHL and 180 mt (400,000 lb) of the Prince William Sound GHL to the federal fishery. NMFS will augment the total allowable catch in the Central and Eastern Gulf of Alaska Pacific cod fisheries, respectively. The fishery for the inshore component in the Central Regulatory area was closed on October 27, 1997. NMFS did not reopen the directed fisheries because of the relatively small size of the releases, the lateness of the fishing year, and the capacity of the fleet to harvest these amounts in about one day.

ADF&G certified in their State fisheries report under Agenda item B-2 that the Kodiak subarea of the Central GOA area and the Alaska Peninsula subarea (Western GOA) will reach their respective guideline harvest level. As a result, the Kodiak subarea will increase from 7.5% to 10% (the Kodiak subarea apportionment increases from 15 to 20%). The Western area will increase from 15% to 20% for 1998. The new apportionments and tonnages (rounded to the nearest 10 mt) are shown in Table 2, using the plan team's recommended ABC/TAC.

Table 1. 1997 Gulf Pacific cod ABC, TAC and State guideline harvest level (mt).

Quota	Western	Central	Eastern	Total
*ABC/TAC	28,500	51,400	1,600	81,500
BOF GHL	4,275	7,710	400	12,385
(%)	15	15	25	15.2
Remaining TAC	24,225	43,690	1,200	69,115
Central area:	Cook Inlet	1,157	2.25%	
	Kodiak	3,855	7.50%	
	Chignik	2,699	5.25%	
		7,710	15%	

Table 2. 1998 Gulf Pacific cod ABC, TAC and State guideline harvest level (mt).

Quota	Western	Central	Eastern	Total
*ABC/TAC	27,260	49,080	1,560	77,900
BOF GHL	5,450	8,590	390	14,430
(%)	**20**	**17.5**	25	**18.5**
Remaining TAC	21,810	40,490	1,170	63,470
Central area:	Cook Inlet	1,100	2.25%	
	Kodiak	4,910	**10.00%**	
	Chignik	2,580	5.25%	
		8,590	**17.50%**	

Initial PSC Limits for Halibut

The PSC limits for halibut in the Gulf of Alaska are set by gear type and may be apportioned seasonally over the fishing year. In recommending seasonal allocations, the Council will consider its objective to promote harvest of as much of the groundfish optimum yield as possible with a given amount of halibut PSC.

Since 1995, the combined halibut PSC limit for all fisheries and gear types has been 2,300 mt. This cap was reduced from 1993 and 1994 levels after the sablefish IFQ fishery was exempted from the halibut PSC requirements. Halibut PSC mortality applies only to the bottom trawl and hook-and-line fisheries. The sablefish hook-and-line fishery, the pot fishery (primarily Pacific cod), and the midwater trawl fishery (primarily pollock) have all been exempted from bycatch-related closures.

Trawl gear			**Hook and Line**		
1st quarter	600 mt	(30%)	1st trimester	250 mt	(86%)
2nd quarter	400 mt	(20%)	2nd trimester	15 mt	(5%)
3rd quarter	600 mt	(30%)	3rd trimester	25 mt	(9%)
4th quarter	400 mt	(20%)	DSR	10 mt	
	2,000 mt			300 mt	

Beginning in 1994, PSC limits for trawl gear were further apportioned by specific fishery. The Council may apportion PSC limits by fishery during the annual specification process. Apportionments of the overall cap may be made to a 'shallow water complex' and a 'deep water complex.' Species in the shallow water complex are: pollock, Pacific cod, shallow water flatfish, Atka mackerel, and other species. Deep water complex species include: deep water flatfish, rockfish, flathead sole, sablefish, and arrowtooth flounder. The following apportionments were made for 1997:

Quarter	Shallow water Complex	Deep water Complex	Total
1	500 mt	100 mt	600 mt
2	100 mt	300 mt	400 mt
3	200 mt	400 mt	600 mt
4	No apportionment		400 mt

Bottom trawling for flatfish in shallow water was prohibited between May 6, when the available data indicated that the first and second quarter allowance of 600 mt had been reached, and July 1, when the fishery opened for the third quarter apportionment. The third quarter closed on August 11. The fourth quarter opened on October 1. Bottom trawling in deep water was closed on March 15 when the first quarter PSC cap was reached. The second quarter opened on April 1 and closed on April 14. The third quarter opened on July 1 and closed on July 20. No fourth quarter apportionment occurs for flatfish.

The hook-and-line fisheries are directed primarily at sablefish and Pacific cod, with minor effort on rockfish. The PSC halibut mortality limit of 300 mt for the hook-and-line fisheries was apportioned seasonally by trimester. The 300 mt allocation included 10 mt for the demersal shelf rockfish fishery in Southeast Alaska. For the first trimester, 250 mt was allocated. For the second trimester, 15 mt was allocated. The remaining 25 mt was allocated to the rest of the fishing year. The sablefish hook-and-line fishery is managed as an IFQ fishery. The season runs from March 15 to November 15, simultaneous with the halibut IFQ fishery. Through November 1, 1997, 215 mt of halibut mortality was estimated for the hook and line fisheries. There were no halibut PSC closures of GOA hook-and-line fisheries.

(e) Halibut Discard Mortality Rates

Pacific halibut bycatch discard mortality rates (DMR) in the Alaskan groundfish fisheries are routinely estimated from viability data collected by NMFS observers. These data are analyzed by IPHC and NMFS staff, which results in recommendations to the Council for managing halibut bycatch in the upcoming season. Item D-1(e)(1) lists the IPHC recommendations for setting discard mortality rates for the 1998 fishery.

GULF OF ALASKA PLAN TEAM MEETING
DRAFT MINUTES
NOVEMBER 17-21, 1997

PLAN TEAM MEMBERS

Sandra Lowe (NMFS), Chairman
Tom Pearson (NMFS)
Jeff Fujioka (NMFS)
Jim Hastie (NMFS)
Jim Ianelli (NMFS)
Farron Wallace (WDF)
Gregg Williams (IPHC)
Jane DiCosimo (NPFMC), Plan Coordinator
John Sease (NMFS)
Lew Haldorsen (UAS)
Jon Heifetz (NMFS)
Tory O'Connell (ADFG)
Bill Bechtol (ADFG)
Dave Jackson (ADFG)

The GOA Plan Team convened Monday afternoon, November 17, 1997, to review the GOA stock assessments and recommend ABC and OFL levels for the 1998 fishing year, halibut discard mortality rates and stock assessment, and research priorities. Given the lack of new information, the Team recommended rolling over ABCs for rex sole, deepwater flatfish, shallow water flatfish, flathead sole, other slope rockfish, northern rockfish, and shortraker/rougheye rockfish.

Pollock The recommended ABC for Gulf of Alaska pollock based on Model E, Option A is 62% higher (131,800 mt) than in 1997. The Plan Team recommended ABC apportionments according to the 1996 bottom trawl survey: 25% in the Shumagin area (30,200 mt), 42% in the Chirikof area (50,740 mt), and 33% in the Kodiak area (39,860 mt). Relative to the 1993 distribution, the current biomass distribution increased in the Kodiak area and decreased in the Shumagin area, but was similar to the 1990 survey distribution. The overfishing mortality rate corresponds to a harvest of 170,500 mt for the Western and Central Gulf of Alaska. The Team has no new information to set an ABC for the Eastern Gulf. Future development of an age-structured analysis similar to that conducted for the W/C area is planned. The recommended Eastern Gulf ABC is 11,000 mt; the overfishing level is 15,600 mt. The Plan Team again expressed interest in continued development of the predation model.

While some public comment at the meeting recommended a reduction in pollock ABC due to Steller sea lion concerns, particularly in the central area, the Team noted that these concerns were more appropriately TAC considerations. The Team recommended that in setting TAC, the Council may wish to consider the relatively low level of pollock total biomass, the dramatic increase in the Central Gulf ABC while the Stellar sea lion population continues to decline in the area, and the effect of below average recruitment of pollock in future years which could result in a rapid decline in the pollock stock. The Team also noted that current information indicates that fishing rates may now be higher than at the peak of the fishery, the spawning potential ratio is the lowest since 1973, and while the high 1998 ABC is driven by the strong 1994 year class, there is no evidence to suggest that the 1995 and 1996 year classes are above average. A regulatory amendment would be required to change the current management allocations for the temporal and spatial distribution of the pollock fishery. In discussing the EGOA area split and trawl ban east of 140°, the Team recommended against allocating the entire Eastern area TAC to the West Yakutat since the EY/SEO allocation is unlikely to be harvested by other gear groups. The Team wished to take the most conservative stance possible and not increase exploitation in that subarea given the current low levels of ABC in the Eastern area.

Bill Bechtol presented ADF&G recommendations for the guideline harvest level for pollock of 1,800 mt in Prince William Sound for 1998. The Team continued its recommendation that this harvest not be deducted off the federal TAC, but that if NMFS continues to do so, harvests would more appropriately be deducted from the central Gulf.

Pacific cod The Team agreed with a risk adverse strategy in the assessment and set ABC equal to 77,900 mt. The ABC apportionments to Western, Central, and Eastern Gulf regions are 27,260 mt, 49,080 mt, and 1,560 mt, respectively. The overfishing level is 141,000 mt. The model will incorporate AD Model Builder in the future. ADFG staff indicated that size at age data from the state fishery in Prince William Sound and Cook Inlet could be provided for the assessment.

Arrowtooth The Team recommended an ABC of 208,340 mt for arrowtooth flounder from an updated stock assessment. Area apportionments result in ABCs of 33,010 mt, 149,640 mt, and 25,690 mt for the Western, Central, and East Gulf areas.

Sablefish The combined stock yield is estimated at 19,000 mt using the Tier 3b adjusted $F_{40\%}$ fishing rate. If recent low recruitment levels continue, the population is projected to continue to decrease and will result in yields of 16,000 mt in 2000 when abundance stabilizes. The authors felt that increasing ABC is inconsistent with a population that appears to be decreasing and below target levels. Rather than increase the ABC in 1998, then reduce thereafter toward the predicted short-term equilibrium, the authors recommended that ABC be incrementally adjusted toward the short-term equilibrium yield. Three annual increments starting from the 1997 ABC value results in an equilibrium adjusted value of 16,800 mt and is the assessment authors' recommended ABC for the combined stock. This strategy also was used for the 1997 ABC.

There was considerable debate by the Plan Teams during their joint meeting over the approach and rationale used to obtain the combined ABC recommendations of 16,800 mt and possible alternatives. There was a concern whether deviating from the adjusted $F_{40\%}$ value of 19,000 mt was justified, particularly since the difference in one year's harvest probably makes only slight difference in the biomass projections. Some members felt that an incremental adjustment toward the short term equilibrium of 16,000 mt should come from the 19,000 mt value, rather than from the 1997 ABC of 17,200 mt used by the authors. This would result in an ABC of 18,000 mt. Maintaining the overall ABC at 17,200 mt was considered as well. Maintaining the same ABC exploitation rate from last year was suggested and would result in an ABC slightly lower than the authors' value. Others felt that the justification for the incremental adjustments toward the $F_{40\%}$ values were solely a TAC consideration. In all, six ABC estimates were reviewed by the Teams.

The 1995 year class, of which only 10% recruited into the 1997 fishery, may prove to be above average. Since the authors use a fifteen year average for estimating projected recruitment it will have a minimal impact on the assessment. A prediction of year class strength cannot reliably be made until three years of occurrence in the fishery can be documented.

The Teams requested that the authors reexamine Japanese longline fishery data prior to 1979 for recruitment strength and biomass estimates. The Teams also requested that the authors expand the description of the weighting scheme and further explain the resultant impacts of weighting. In discussing the EGOA area split, the Team decided that reallocating the 5% Eastern area trawl apportionment to the West Yakutat subarea (so that the 5% trawl allocation to the East Yakutat/Southeast Outside area could be combined with the 5% trawl allocation to the West Yakutat for a total 10% reapportionment to the WY) would not adversely impact the sablefish stock, but that is more appropriately a policy decision by the Council.

Pacific ocean perch Based on a revised assessment, the Team recommends that the POP ABC for 1998 be set at 12,820 mt. Using area apportionments of 14.1% for the Western area, 51.5% for the Central area, and 34.4% for the Eastern area results in recommended ABCs of 1,810 mt for the Western area, 6,600 mt for the Central area, and 4,410 mt for the Eastern area. The over fishing level is 18,090 mt. Overfishing levels by area of 2,550 mt in the Western area, 9,320 mt in the Central area, and 6,220 mt in the Eastern area.

The Team requested that in the future the authors distinguish between results in biomass estimates as a result of modeling changes and data inputs.

There has been a desire to provide increased predictability and stability of TAC levels of slope rockfish to harvesters and processors. The authors provide a brief examination of how stable TAC levels may be for Pacific ocean perch under current assessment methods. One significant cause of variability of TAC is the variability of ABC assessment results. To increase stability it may be desirable to set TAC levels that minimize the variability due to updated ABC recommendations. Depending on the level of stability beneficial to industry, TAC levels, especially for the 1999 fishery, could be modified to minimize year to year variability in TAC.

Pelagic shelf rockfish In June 1997, the NPFMC approved Alternative 3 of Amendment 46 to the Gulf of Alaska FMP to remove black and blue rockfishes from the FMP and transfer Gulfwide management authority for these species to the State of Alaska. Pending approval by the Secretary of Commerce, the Team recommends continued management of the pelagic shelf rockfish (PSR) assemblage according to: (1) a nearshore component in the Central area comprised of black and blue rockfishes; and (2) all PSR assemblage species from the Eastern and Western areas combined with the Central area offshore component, comprised of dusky, yellowtail, and widow rockfishes. This results in an ABC of 5,000 mt for the offshore complex, with apportionments of 550 mt to the Western, 3,380 mt to the Central, and 1,070 mt to the Eastern areas. The Gulfwide overfishing level is 8,390 mt.

Since implementation of Amendment 46 will not likely occur prior to publication of the final specifications for 1998, the Team recommends that the ABC for the nearshore component of the Central area continue to be set at 260 mt, with the OFL set at 340 mt. If implementation of the amendment does occur and black and blue rockfishes are removed from federal management, the PSR ABC would be modified to delete black and blue rockfishes. The resulting ABC of 4,880 mt would be apportioned 620 mt for the Western area, 3,260 mt for the Central area and 1,000 mt for the Eastern area.

Demersal shelf rockfish A new line transect survey was conducted in the East Yakutat and Central Southeast Outside sections of the Southeast Outside District in 1997. Density estimates were approximately 13% lower in both areas compared to the 1995 survey. Average weight data was updated for all areas and applied to the new density estimates. Additionally a new approach was taken to estimate biomass in the EYKT section. The ABC was revised to 550 mt and the overfishing level was set at 950 mt.

Atka mackerel The Team supports a conservative harvest policy for GOA Atka mackerel because: 1) there is no reliable estimate of current biomass; 2) there may be some evidence of localized depletion; and 3) the species has exhibited vulnerability to fishing pressure in the past. The Team recommended an ABC of 600 mt enough to satisfy bycatch needs in other fisheries. The ABC of 600 mt is roughly double the 1997 harvest and should be sufficient for an anticipated higher TAC for pollock. The overfishing level is 6,200 mt.

The Team continues to support separate assessments for the GOA and BSAI for Atka mackerel.

Thornyhead rockfish Shortspine thornyheads were assessed using a slightly different model than in the past. The Team accepted the authors recommendation of 2,000 t ABC value with 2,840 t for the overfishing level. This ABC recommendation is based on the $F_{40\%}$ harvest rate assuming that approximately 50% of the catch will be taken by trawl gear with the remainder from longline gear.

Deep-water flatfish The Team recommended that deep-sea sole be included in the deep-water flatfish assemblage.

EGOA area split The Team discussed implementation of the trawl ban east of 140° approved under Amendments 39/41 in 1998 and its impacts on the ABCs and TACs. While insufficient notice was provided to the authors to

have the ABC and necessary OFL estimates for the West Yakutat and East Yakutat/Southeast Outside areas in the SAFE, NMFS staff calculated the necessary subarea allocations in consultation with the stock assessment authors after the Plan Team meeting. These recommendations are attached to the minutes. The Team discussed the impacts on the trawl allocation of 5% of sablefish and potentially unharvested pollock in the EY/SEO area (see those species discussions). A plan amendment will be necessary to reallocate the sablefish trawl allocation.

NMFS assessment reviews Each spring, the REFM Division reviews the assessment for a particular species or species assemblage. The Team requested an expanded presentation on the results of those reviews.

Research Priorities The following research projects were prioritized based on two agency needs: improving stock assessments, and improving ecosystem management. The feasibility of each project is ranked as: easy, moderately difficult, or difficult. These should be added to the current research list.

All Species Studies of the response of fish to survey bottom trawling (catchability/selectivity). (Moderately difficult to difficult)

Pollock The top two research projects that would improve the Gulf of Alaska pollock assessment were:

1. Feasibility study to evaluate the possibility of conducting a Gulfwide hydroacoustic survey in conjunction with the triennial bottom trawl survey. (Moderately difficult)

2. Examination of the response of pollock to survey vessel noise and survey trawling. (Moderately difficult)

The top three research projects that would address ecosystem concerns related to harvesting Gulf of Alaska pollock are:

1. Predator response to varying prey concentrations and seasonal food supply. (Difficult)

2. Collections of food habits, daily ration on seasonal basis. (Easy to moderately difficult)

3. Response of fish to commercial trawling (part of a marine mammal fishery interaction study). (Moderately difficult to difficult)

Demersal Shelf Rockfish. Habitat mapping of the continental shelf and slope is needed to adequately assess species such as DSR, Atka Mackerel and Shortraker/Rougheye that are habitat-specific in there distribution.

Atka Mackerel. Conduct a pilot survey utilizing commercial fishing techniques to explore Atka mackerel school dynamics and behavior and links to prey, tides, and habitat.

Rockfish List the research recommendations in the Rockfish Work Plan.

Others in attendance included Chris Blackburn, Kenneth Stump, Denise Fredette, Fran Bennis, and Beth Stewart.

Table 1. Eastern Gulf of Alaska groundfish 1997 and 1998 ABCs, 1997 TACs, and 1997 catches reported through November 8, 1997.

SPECIES		ABC (mt) 1997	ABC (mt) 1998	TAC 1997	CATCH 1997
Pollock	WYAK		1,510		
	EYAK/SEO		9,490		
	TOTAL	5,580	11,000	5,580	5,906
Pacific Cod	WYAK		230		
	EYAK/SEO		1,330		
	TOTAL	1,600	1,560	1,200	780
Deep water flatfish[1]	WYAK		1,740		
	EYAK/SEO		1,400		
	TOTAL	3,140	3,140	3,140	578
Rex sole	WYAK		850		
	EYAK/SEO		1,620		
	TOTAL	2,470	2,470	2,470	148
Shallow water flatfish[2]	WYAK		250		
	EYAK/SEO		1,070		
	TOTAL	1,320	1,320	2,040	49
Flathead sole	WYAK		1,270		
	EYAK/SEO		770		
	TOTAL	2,040	2,040	1,180	59
Arrowtooth flounder	WYAK		12,720		
	EYAK/SEO		12,970		
	TOTAL	24,000	25,690	5,000	879
Sablefish	WY	2,410	2,290	2,410	1,875
	EY/SEO	3,840	3,670	3,840	3,572
	TOTAL	6,250	5,960	6,250	5,447
Other Slope rockfish	WYAK		460		
	EYAK/SEO		4,130		
	TOTAL	4,590	4,590	1,500	202

(Table 1 continued)

SPECIES		ABC (mt) 1997	ABC (mt) 1998	TAC 1997	CATCH 1997
Northern rockfish	WYAK		10		
	EYAK/SEO		0		
	TOTAL	10	10	10	15
Pacific ocean perch	WYAK		800		
	EYAK/SEO		3,610		
	TOTAL	4,460	4,410	2,366	970
Shortraker/rougheye	WYAK		240		
	EYAK/SEO		220		
	TOTAL	460	460	460	536
Pelagic shelf rockfish[3]	WYAK		610		
	EYAK/SEO		460		
	TOTAL	990	1,070	990	566
Demersal Shelf Rockfish[4]		950	560	950	348
Atka Mackerel	GW	1,000	600	1,000	331
Thornyhead rockfish	WYAK		400		
	EYAK/SEO		640		
	TOTAL		1,040		
Other Species	GW	NA	NA	13,470	5,002
TOTAL		58,860	65,920	47,206	21,816

1/ Deep water flatfish includes dover sole, Greenland turbot and deepsea sole.
2/ "Shallow water flatfish" includes rock sole, yellowfin sole, butter sole, starry flounder, English sole, Alaska plaice, and sand sole.
3/ Plan Team has recommended removal of black and blue rockfishes from the FMP.
4/ Redbabnded rockfish was removed from DSR and combined with other slope rockfish beginning in 1995.
NOTE:
ABCs and TACs are rounded to nearest 10, except for Pacific ocean perch.
GW means Gulfwide.
Catch data source: NMFS Blend Reports.

Draft Minutes of the
Joint GOA and BSAI Groundfish Plan Team Meeting
November 17-21, 1997

Members Present:

Bering Sea/Aleutian Islands Team
Loh-lee Low(NMFS AFSC, Chair)
Grant Thompson (NMFS AFSC)
Rich Ferrero (NMFS MML)
Vivian Mendenhall (USFWS)
Mike Sigler (NMFS-ABL)
Andy Smoker (NMFS-AKRO)
Ivan Vining (ADF&G)
Farron Wallace (WDF)
Gregg Williams (IPHC)
Dave Witherell (NPFMC)
Dave Ackley (ADF&G)

Absent:
Brenda Norcross (UAF)

Gulf of Alaska Team
Sandra Lowe (NMFS-AFSC, Chair)
Bill Bechtol (ADF&G)
Jane DiCosimo (NPFMC)
Jeff Fujioka (NMFS-AB)
Lew Haldorsen (UAF)
Jim Hastie (NMFS-AFSC)
Jon Heifetz (NMFS-AB)
Jim Ianelli (NMFS-AFSC)
Dave Jackson (ADF&G)
Tory O'Connell (ADF&G)
Tom Pearson (NMFS-AKRO)
John Sease (NMFS MML)
Farron Wallace (WDF)
Gregg Williams (IPHC)

Halibut Discard Mortality Rates and Stock Assessment IPHC staff provided additional discussion of the methodology used to calculate the halibut discard mortality rates, estimated a DMR for the GOA trawl arrowtooth fishery of 66 %, and rates for the Gulf trawl flathead sole target fishery for catcher vessels and catcher processors of 53 and 78 %, respectively Pat Sullivan and Ana Parma presented the halibut assessment model and the impacts of the regime shift on the halibut assessment. The Team concurred with the IPHC staff recommendations.

Ecosystem Considerations The Ecosystem chapter in the SAFE has been expanded and includes new information on fishery effects on species composition, impacts of fishing gear, localized depletion, climatic changes, forage fish species, seabird bycatch, and marine mammal trends. Other sections address essential fish habitat, Steller sea lion recovery, ESA considerations, and anecdotal information.

The NMFS marine mammal staff expressed some concern about the potential GOA pollock TAC increase, particularly during the winter seasons in the Central area. Staff and industry will meet to determine an appropriate seasonal split (perhaps 25 % (Jan), 35 % (June), 40 % (Sept)). A regulatory amendment would be required.

Research Priorities A list of new research needs for GOA pollock, demersal shelf rockfish, and Atka mackerel is attached to the GOA Team minutes. Also the research needs in the rockfish work plan are now specifically listed. BSAI research priorities address flatfish, Atka mackerel, Greenland turbot, and Pacific ocean perch. The list is attached to the BSAI Team minutes.

TAC Streamlining The Teams recommended Alternative 2 in the draft EA/RIR for Plan Amendments 48/48 to revise the annual specification process. The Team also suggested an algorithm to allow NMFS to set interim specifications at 25-50% of the annual amounts, given the Council decision in December on final specifications.

Stock assessment authors were strongly in favor of continuing to meet twice each year and noted that convening later in the month of September prior to the now scheduled October Council meetings would aid assessment chapter preparation. The Teams suggested that the preliminary SAFE should also be streamlined to contain basic

assessment information, without estimating an ABC or OFL. The Teams suggested producing a much abbreviated preliminary SAFE of perhaps less than 10 pages, which would allow authors, Team members, and SSC members to focus on the effects of modeling changes. The preliminary SAFE would not necessarily produce individual species/complex ABCs, but would generate generalized biomass estimates. Industry commented that advance notice of general trends in stock abundances was sufficient for business planning. The September meetings would concentrate on model runs, with full chapter updates as available; REFM reviews of assessments; and groundfish proposals. The authors were to provide revised guidelines for the preparation of the preliminary SAFE for SSC and Council review at the December Council meeting.

Other in attendance include: Tamra Faris, Alan Kinsolving, Lowell Fritz, Ken Stump, John Gauvin, Chris Blackburn, Beth Stewart, Denise Fredette, Karl Haflinger, Mike Szymanski, Brent Paine, Dave Fraser, John Henderschedt, and Paul MacGregor.

Table 1. Gulf of Alaska groundfish 1997 and 1998 ABCs, 1997 TACs, and 1997 catches reported through November 8, 1997. MSY is unknown for all species.

SPECIES		ABC (mt) 1997	ABC (mt) 1998	TAC 1997	CATCH 1997
Pollock	W (61)	18,600	30,200	18,600	26,625
	C (62)	31,250	50,740	31,250	32,005
	C (63)	24,550	39,860	24,550	24,778
	E	5,580	11,000	5,580	5,906
	TOTAL	79,980	131,800	79,980	89,314
Pacific Cod	W	28,500	27,260	24,225	24,034
	C	51,400	49,080	43,690	43,416
	E	1,600	1,560	1,200	780
	TOTAL	81,500	77,900	69,115	68,230
Deep water flatfish[1]	W	340	340	340	14
	C	3,690	3,690	3,690	2,586
	E	3,140	3,140	3,140	578
	TOTAL	7,170	7,170	7,170	3,178
Rex sole	W	1,190	1,190	1,190	686
	C	5,490	5,490	5,490	2,336
	E	2,470	2,470	2,470	148
	TOTAL	9,150	9,150	9,150	3,170
Shallow water flatfish[2]	W	22,570	22,570	2,000	470
	C	19,260	19,260	5,000	6,781
	E	1,320	1,320	2,040	49
	TOTAL	43,150	43,150	9,040	7,300
Flathead sole	W	8,440	8,440	4,500	459
	C	15,630	15,630	12,950	1,853
	E	2,040	2,040	1,180	59
	TOTAL	26,110	26,110	18,630	2,371
Arrowtooth flounder	W	31,340	33,010	5,000	2,780
	C	142,100	149,640	25,000	11,710
	E	24,400	25,690	5,000	879
	TOTAL	197,840	208,340	35,000	15,369
Sablefish	W	1,860	1,840	1,860	1,368
	C	6,410	6,320	6,410	6,149
	WY	2,410	2,290	2,410	1,875
	EY/SEO	3,840	3,670	3,840	3,572
	TOTAL	14,520	14,120	14,520	12,964
Other Slope rockfish	W	20	20	20	70
	C	650	650	650	935
	E	4,590	4,590	1,500	202
	TOTAL	5,260	5,260	2,170	1,207

(Table 1 continued)

SPECIES		ABC (mt) 1997	ABC (mt) 1998	TAC 1997	CATCH 1997
Northern rockfish	W	840	840	840	68
	C	4,150	4,150	4,150	2,861
	E	10	10	10	15
	TOTAL	5,000	5,000	5,000	2,944
Pacific ocean perch	W	1,840	1,810	1,472	1,834
	C	6,690	6,600	5,352	6,702
	E	4,460	4,410	2,366	970
	TOTAL	12,990	12,820	9,190	9,506
Shortraker/rougheye	W	160	160	160	138
	C	970	970	970	925
	E	460	460	460	536
	TOTAL	1,590	1,590	1,590	1,599
Pelagic shelf rockfish[3]	W	570	550	570	108
	C offshore	3,320	3,380	3,320	1,767
	C inshore	260	260	260	197
	E	990	1,070	990	566
	TOTAL	5,140	5,260	5,140	2,638
Demersal Shelf Rockfish[4]		950	560	950	348
Atka Mackerel	GW	1,000	600	1,000	331
Thornyhead rockfish	Western	1,700	250	1,700	1,209
	Central		710		
	Eastern		1,040		
	TOTAL		2,000		
Other Species	GW	NA	NA	13,470	5,022
TOTAL		493,050	550,830	282,415	226,700

1/ Deep water flatfish includes dover sole, Greenland turbot and deepsea sole.
2/ "Shallow water flatfish" includes rock sole, yellowfin sole, butter sole, starry flounder, English sole, Alaska plaice, and sand sole.
3/ Plan Team has recommended removal of black and blue rockfishes from the FMP.
4/ Redbanded rockfish was removed from DSR and combined with other slope rockfish beginning in 1995.
NOTE:
ABCs and TACs are rounded to nearest 10, except for Pacific ocean perch.
GW means Gulfwide.
Catch data source: NMFS Blend Reports.

Table 2. Gulf of Alaska 1998 ABCs and overfishing levels, and estimated trends and abundance for Western, Central, Eastern, Gulfwide, West Yakutat, and Southeast Outside regulatory areas.

		1998		
SPECIES		ABC	Overfishing Level	Abundance,[1] Trend
Pollock	W (61)	30,400		Below,
	C (62)	50,700	170,500	Increasing
	C (63)	39,700		
	E	11,000	15,600	
	TOTAL	131,800	186,100	
Pacific Cod	W	27,260		Above,
	C	49,080		Declining
	E	1,560		
	TOTAL	77,900	141,000	
Deep water flatfish	W	340		Unknown,
	C	3,690		Unknown
	E	3,140		
	TOTAL	7,170	9,440	
Rex sole	W	1,190		Unknown,[2]
	C	5,490		Decreasing
	E	2,470		
	TOTAL	9,150	11,920	
Shallow water flatfish	W	22,570		Unknown,[2]
	C	19,260		Stable
	E	1,320		
	TOTAL	43,150	59,540	
Flathead sole	W	8,440		Unknown,[2]
	C	15,630		Stable
	E	2,040		
	TOTAL	26,110	34,010	
Arrowtooth flounder	W	33,010		Above,
	C	149,640		Increasing
	E	25,690		
	TOTAL	208,340	295,970	
Sablefish	W	1,840		Low,
	C	6,320		Declining
	WYK	2,290		
	EY/SEO	3,670		
	TOTAL	14,120	23,450	
Other Slope rockfish	W	20		Unknown,
	C	650		Unknown
	E	4,590		
	TOTAL	5,260	7,560	

(Table 2 continued)

SPECIES		1998 ABC	1998 Overfishing Level	Abundance,[1] Trend
Northern rockfish	W	840		Unknown,
	C	4,150		Unknown
	E	10		
	TOTAL	5,000	9,420	
Pacific ocean perch	W	1,810	2,550	Below,
	C	6,600	9,320	Increasing
	E	4,410	6,220	
	TOTAL	12,820	18,090	
Shortraker/ rougheye	W	160		Unknown,
	C	970		Unknown
	E	460		
	TOTAL	1,590	2,740	
Pelagic shelf rockfish[3]	W	550		Unknown,
	C offshore	3,380		Unknown
	C inshore	260	342	
	E	1,070		
	TOTAL	5,260	8,390	
Demersal shelf rockfish	SEO	560	950	Unknown, Unknown
Atka mackerel	GW	600	6,200	Unkown, Unknown
Thornyhead rockfish	Western	250	2,840	Above,
	Central	710		Stable
	Eastern	1,040		
	Total	2,000		
Other species				TAC = 5% of the sum of TACs.

1/ Abundance relative to target stock size as specified in SAFE documents.
2/ Historically lightly exploited therefore expected to be above the specified reference point.
3/ Plan Team has recommended removal of black and blue rockfishes for the FMP.
NOTE:
ABCs are rounded to nearest 10.
Overfishing is defined Gulf-wide, except for pollock and POP.
Northern rockfish were separated from slope rockfish in 1993.
Rex sole was part of deepwater flatfish until 1994.
Redbanded rockfish removed from DSR beginning in 1995 and combined with other slope rockfish.

Table 3. Summary of fishing mortality rates for the Gulf of Alaska, 1998.

Species	F_{ABC}[1]	Rate	F_{OFL}[2]	Rate
Pollock	0.341	$F_{40\% \text{ adjusted}}$	0.499	$F_{30\% \text{ adjusted}}$
Pacific cod	0.18	F_{ABC}	0.45	$F_{30\%}$
Deepwater flatfish	NA	F_{ABC}[3]	NA	F_{ofl}[4]
Rex sole	0.15	F=.75M	0.20	F=M
Flathead sole	0.15	F=.75M	0.20	F=M
Shallow water flatfish	0.15-0.17	F=.75M, $F_{40\%}$[5]	0.2-0.25	$F_{30\%}$, F=M[6]
Arrowtooth	0.189	$F_{0.40\%}$	0.276	$F_{30\%}$
Sablefish	.085	F_{ABC}	0.145	$F_{30\% \text{adjusted}}$
Pacific ocean perch	0.055	$F_{40\% \text{ adjusted}}$	0.079	$F_{30\% \text{ adjusted}}$
Shortraker/rougheye	0.22/0.025	F=.75M, F=M[7]	0.03/0.046	F=M, $F_{30\%}$[8]
Rockfish (other slope)	0.03-0.75	F=.75M, F=M[9]	0.04-0.10	$F_{30\%}$, F=M[10]
Northern rockfish	0.060	F=M	0.113	$F_{30\%}$
Pelagic Shelf Rockfish	0.09	F=M	0.151	$F_{30\%}$
Demersal Shelf Rockfish	0.020	F=M	0.038	$F_{30\%}$
Thornyhead rockfish	0.080	$F_{40\%}$	0.115	$F_{30\%}$
Atka mackerel	NA	F_{ABC}[11]	NA	F_{OFL}[12]

1/ Fishing mortality rate corresponding to acceptable biological catch.
2/ Maximum fishing mortality rate allowable under overfishing definition.
3/ F_{ABC}=.75M for Dover sole, ABC=.75 x average catch (1978-1995) for other deepwater flatfish.
4/ F=M for Dover sole, average catch (1978-1995) for other deepwater flatfish.
5/ $F_{40\%}$ for rocksole, F=.75M for remaining shallowater flatfish.
6/ $F_{30\%}$ for rocksole, F=M for remaining shallow water flatfish.
7/ F=.75M for shortraker, F=M for rougheye
8/ F=M for shortraker, $F_{30\%}$ for rougheye,.
9/ F=M for sharpchin rockfish, F=.75M for other species
10/ $F_{30\%}$ for sharpchin, F=M for other species.
11/ ABC for Atka mackerel is 600 mt for bycatch in other target fisheries.
12/ OFL for Atka mackerel is equal to average catch from 1978 to 1995.

Table 4. Groundfish landings (metric tons) in the Gulf of Alaska, 1956-1997.

Year	Pollock	Pacific Cod	Flat Fish	Arrowtooth Flounder	Sable Fish	Slope Rock Fish[a]
1956					1,391	
1957					2,759	
1958					797	
1959					1,101	
1960					2,142	
1961					897	16,000
1962					731	65,000
1963					2,809	136,300
1964	1,126	196	1,028		2,457	243,385
1965	2,749	599	4,727		3,458	348,598
1966	8,932	1,376	4,937		5,178	200,749
1967	6,276	2,225	4,552		6,143	120,010
1968	6,164	1,046	3,393		15,049	100,170
1969	17,553	1,335	2,630		19,376	72,439
1970	9,343	1,805	3,772		25,145	44,918
1971	9,458	523	2,370		25,630	77,777
1972	34,081	3,513	8,954		37,502	74,718
1973	36,836	5,963	20,013		28,693	52,973
1974	61,880	5,182	9,766		28,335	47,980
1975	59,512	6,745	5,532		26,095	44,131
1976	86,527	6,764	6,089		27,733	46,968
1977	112,089	2,267	16,722		17,140	23,453
1978	90,822	12,190	15,198		8,866	8,176
1979	98,508	14,904	13,928		10,350	9,921
1980	110,100	35,345	15,846		8,543	12,471
1981	139,168	36,131	14,864		9,917	12,184
1982	168,693	29,465	9,278		8,556	7,991
1983	215,567	36,540	12,662		9,002	7,405
1984	307,400	23,896	6,914		10,230	4,452
1985	284,823	14,428	3,078		12,479	1,087
1986	93,567	25,012	2,551		21,614	2,981
1987	69,536	32,939	9,925		26,325	4,981
1988	65,625	33,802	10,275		29,903	13,779
1989	78,220	43,293	11,111		29,842	19,002
1990	90,490	72,517	15,411		25,701	21,114
1991	107,500	76,997	20,068		19,580	13,994
1992	93,904	80,100	28,009		20,451	16,910
1993	108,591	55,994	37,853		22,671	14,240
1994	110,891	47,985	29,958		21,338	11,266
1995	73,248	69,053	32,273		18,631	15,023
1996	50,206	67,966	19,838	22,183	15,826	14,288
1997[b]	89,314	68,230	16,019 [1]	15,369	12,964	15,256

Table 4. (continued)

Year	Pelagic Shelf Rockfish	Demersal Shelf Rockfish[b]	Thorny Heads[c]	Atka Mackerel[e]	Other Species[d]	Total All Species
1956						1,391
1957						2,759
1958						797
1959						1,101
1960						2,142
1961						16,897
1962						65,731
1963						139,109
1964						248,192
1965						360,131
1966						221,172
1967						139,206
1968						125,822
1969						113,333
1970						84,983
1971						115,758
1972						158,768
1973						144,478
1974						153,143
1975						142,015
1976						174,081
1977			0	19,455	4,642	195,768
1978			0	19,588	5,990	160,830
1979			0	10,949	4,115	162,675
1980			1,351	13,166	5,604	202,426
1981			1,340	18,727	7,145	239,476
1982		120	788	6,760	2,350	234,001
1983		176	730	12,260	2,646	296,988
1984		563	207	1,153	1,844	356,659
1985		489	81	1,848	2,343	320,656
1986		491	862	4	401	147,483
1987		778	1,965	1	253	146,703
1988	1,086	508	2,786	-	647	158,411
1989	1,739	431	3,055	-	1,560	188,253
1990	1,647	360	1,646	1,416	6,289	236,591
1991	2,342	323	2,018	3,258	1,577	247,657
1992	3,440	511	2,020	13,834	2,515	261,694
1993	3,193	558	1,369	5,146	6,867	256,482
1994	2,990 [f]	540	1,320	3,538	2,752	232,578
1995	2,891	219 [g]	1,113	701	3,433	216,585
1996	2,302	401	1,100	1,580	4,302	199,992
1997	2,638	348	1,209	331	5,022	226,700

a/ Catch defined as follows: (1) 1961-78, Pacific ocean perch (S. alutus) only; (2) 1979-1987, th the Pacific ocean perch complex; 1988-90, the 18 species of the slope rock assemblage; 1991- the 20 species of the slope rockfish assemblage.

b/ Catch from Southeast Outside District.

c/ Thornyheads were included in the other species category, and are foreign catches only.

d/ After numerous changes, the other species category was stablized in 1981 to include sharks, s sculpins, eulachon, capelin (and other smelts in the family Osmeridae and octopus. Atka mackerel and squid were added in 1989. Catch of Atka Mackerel is reported separately for 19 thereafter Atka mackerel was assigned a seperate target species.

e/ Atka mackerel was added to the Other Species category in 1988.

f/ PSR includes light dusky rockfish, black rockfish, yellowtail rockfish, widow rockfish, dark du and blue rockfish.

g/ Does not include at-sea discards.

h/ Catch data reported through November 8, 1997.

i/ Includes all species except arrowtooth.

Recommendations for Preseason Assumed DMRs for monitoring halibut bycatch mortality in 1998.

BSAI Target	Recommendations for 1998	GOA Target	Recommendations for 1998
BSAI Trawl		*GOA Trawl*	
Atka mackerel	83	Atka mackerel	57
Bottom pollock	76	Bottom pollock	73
Pacific cod	71	Pacific cod	67
Other Flatfish	68	Deep water flatfish	64
Rockfish	70	Shallow water flatfish	71
Flathead sole	64	Rockfish	68
Other species	71	Flathead sole	67
Pelagic pollock	81	Other species	67
Rock sole	74	Pelagic pollock	66
Sablefish	23	Sablefish	67
Turbot	73	Arrowtooth flounder	66
Yellowfin sole	77	Rex sole	69
BSAI Pot		*GOA Pot*	
Pacific cod	9	Pacific cod	14
Other species	9	Other species	14
BSAI Longline		*GOA Longline*	
Pacific cod	12	Pacific cod	12
Rockfish	22	Rockfish	9
Other species	12	Other species	12
Sablefish	18	Sablefish	24
Turbot	12		

AGENDA D-1
DECEMBER 1997
SUPPLEMENTAL

Alaska Groundfish Data Bank
P.O. Box 2298 • Kodiak, Alaska 99615

TO: RICK LAUBER, CHAIRMAN
CHAIRMAN, NPFMC

DATE: DECEMBER 3, 1996

SENT BY FAX: 4 PP

RE: GULF OF ALASKA SPECIFICATIONS
Agenda Item D-1(c)

The members of Alaska Groundfish Data Bank have comments on the Gulf specifications for flatfish, rockfish and pollock.

FLATFISH

The recommended 1998 ABC's for several of the flatfish species are far greater than can be taken under the Gulf trawl halibut cap. To avoid encouraging new effort in the flatfish fisheries and to realistically show the probable catch the Advisory Panel has for many years set the TAC's for the various flatfish species as suggested by industry.

For 1998 AGDB suggests the Gulf of Alaska flatfish TAC's be set as shown in the column below labeled "98 TAC."

CENTRAL GULF

SPECIES	98 PT ABC	98 TAC	97 ABC	97 TAC	97 CATCH
DEEP FLT	3690	3690	3690	3690	2572
REX SO	5490	5490	5490	5490	2305
SHLW FLT	19260	12950	19260	12950	6627
FLATHD	15630	5000	15630	5000	1800
ARRWTTH	149640	25000	142100	25000	11324

WESTERN GULF

SPECIES	98 PT ABC	98 TAC	97 ABC	97 TAC	97 CATCH
DEEP FLT	340	340	340	340	13
REX SO	1190	1190	1190	1190	686
SHLW FLT	22570	4500	22570	4500	470
FLATHD	8440	2000	8440	2000	459
ARRWTTH	33010	5000	31340	5000	2774

EASTERN GULF

SPECIES	98 PT ABC	98 TAC	97 ABC	97 TAC	97 CATCH
DEEP FLT	3140	3140	3140	3140	472
REX SO	2470	2470	2470	2470	146
SHLW FLT	1320	1180	1320	1180	49
FLATHD	2040	2040	2040	2040	59
ARRWTTH	25690	5000	24000	5000	749

Chris Blackburn • Director • (907) 486-3033 • FAX (907) 486-3461 • e-mail 7353974@mcimail.com

PACIFIC OCEAN PERCH

1998 is the third year that Pacific Ocean Perch will be harvested by in the Gulf of Alaska by both shorebased and at sea operations. The two groups representing a majority of the effort on Gulf of Alaska Pacific Ocean Perch, Groundfish Forum and Alaska Groundfish Data Bank, met in 1996 prior to the final specification process to discuss ways to avoid going over quota on Pacific Ocean Perch and on trawl sablefish.

At the request of the two organizations the maximum retainable bycatch for trawl sablefish was dropped from 15% to 7%. This measure worked well. As of November 22 there was 347 MT of trawl sablefish remaining in the Western Gulf, 3 MT remaining in the Central Gulf, 53 MT remaining in West Yakutat and 38 MT remaining in Southeast Alaska. There was also shortraker/rougheye left in the Central and Western Gulf as of Nov. 22. Trawl operations closed Nov. 26.

Due to the unexpected early closure of Atka Mackerel in the Aleutians effort on Gulf of Alaska Pacific Ocean Perch was greater than expected and TAC's were exceeded in both the Central and Western Gulf of Alaska. This was a management problem due to sudden shifts in effort from the Bering Sea to the Gulf of Alaska. We do want to point out that the total catch in each area was very close to the ABC.

Groundfish Forum and Alaska Groundfish Data Bank met prior to the September meeting to discuss additional measures to help management track the catch and make appropriate closures. The two groups agreed that "spreading effort" by opening the Bering Sea and Aleutian Pacific Ocean Perch fisheries at the same time the Gulf of Alaska rockfish fisheries opened -- July 1 -- would slow down the fisheries and distribute effort allowing NMFS management to better track the catch. The change in the opening of the Bering Sea rockfish fisheries will done within the specification process by setting July 1 as the date halibut cap is released for the Bering Sea/Aleutian rockfish fisheries.

If NMFS is able to implement the Council's regulatory amendment to require a 48 hour stand down for vessels moving between the Gulf and the Bering Sea as well as the regulatory amendment to require all vessels to register when changing oceans, NMFS ability to accurately manage the rockfish fisheries will be further enhanced.

Further, the age composition in the 1993 triennial survey for the Central and Western Gulf shows "good recruitment" for several year classes. (Aging of POP from the 1996 survey has not yet been completed). A copy of the 1998 SAFE document age frequency graph is attached to this letter.

Based on the health of the stock and the efforts taken by industry to slow the Pacific Ocean Perch fishery and spread effort we feel that there is no reason to drop the Gulf Pacific Ocean Perch TAC's below ABC for the 1998 season.

CENTRAL/WESTERN GULF POLLOCK

The Plan Team discussed at length the assessment author's ABC recommendation and agreed that the recommended ABC seemed reasonable. The marine mammal biologists present also said they saw no reason to recommend reductions thru the TAC process.

The 1994 year class continues to make a strong showing; a showing corroborated by the diet of tufted puffins, according to the pollock chapter in the Gulf of Alaska SAFE document. The pollock fishing fleet in the Gulf increased the mesh size in the trawl gear to reduce the catch and mortality on small pollock as well as leaving areas with any substantial showing of small pollock.

The NMFS marine mammal biologists have indicated that they may wish to shift some pollock tonnage from the third to the second trimester to reduce the possibility of localized depletion in the late fall months when young sea lions are looking for food. If the marine mammal biologists feel this is a necessary measure AGDB has no objections.

It should also be noted that the recommended ABC calculates out to an exploitation rate of 10%.

Based on the assessment author's recommendation, the acceptance of the ABC by the Plan Team, including the marine mammal biologists, and the degrees of conservatism built into the model AGDB feels that the 1998 Central/Western TAC should equal ABC.

We appreciate your attention to our comments.

Chris Blackburn, Director
Alaska Groundfish Data Bank

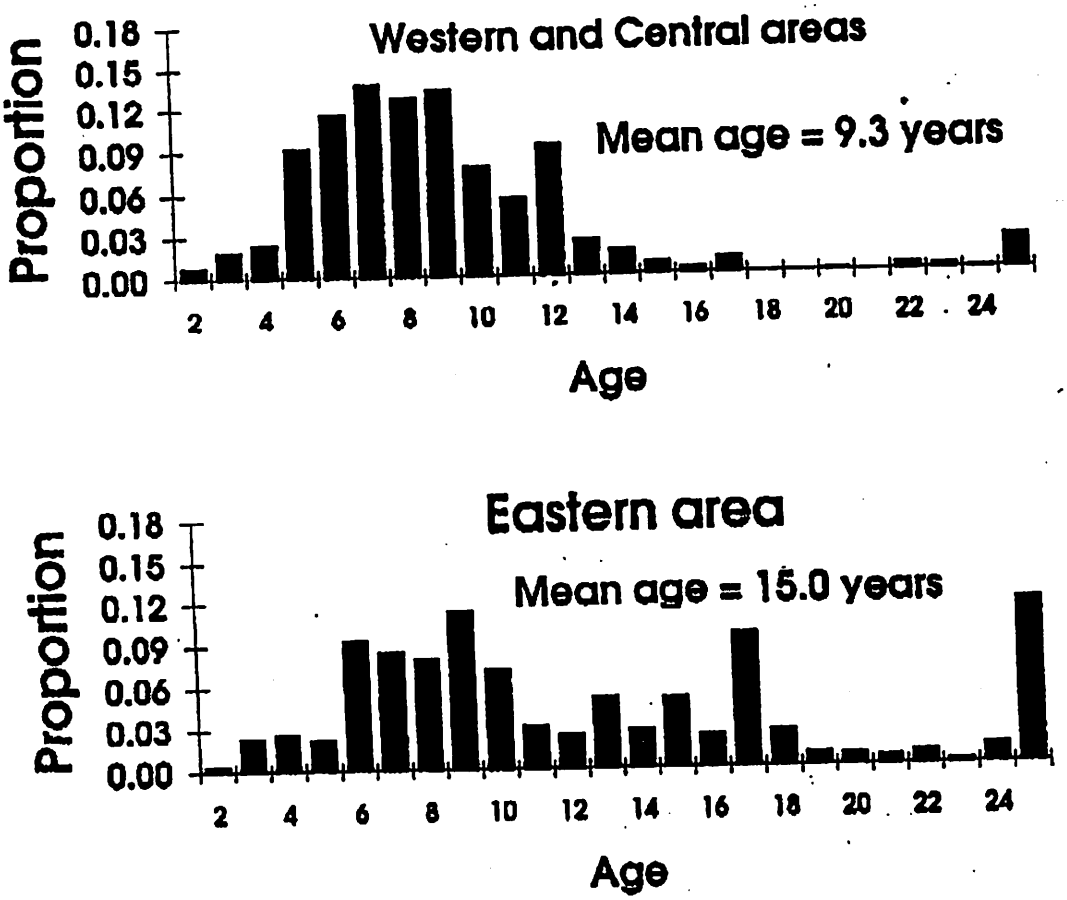


Figure 6-3.-- Age composition of the estimated population of Pacific ocean perch in the Gulf of Alaska based on the 1993 triennial trawl survey

HELEN

(Spalinger presentation)

SUMMARY OF 1997 STATE WATER PACIFIC COD

UPDATED: December 1, 1997

	PWS	COOK INLET/ N. GULF	KODIAK	CHIGNIK	AK. PENINSULA
Jig Fishery					
No. vessels making landings	3	53	77	6	44
No. of landings	4	233	489	18	180
Accum. Harvest (million lbs.)	0.0035	0.55	2.02	0.03	0.36
GHL (million lbs.)	0.32	1.05	4.25		
Status	Open	Open	Open	Open	Open
Pot Fishery					
No. vessels making landings	5	8	38	6	47
No. of landings	23	61	176	56	412
Accum. Harvest (million lbs.)	0.13	0.14	5.24	1.11	8.24
GHL (million lbs.)	0.48	1.05	4.25		
Status	Open	Open	Open	Open	Open
TOTALS					
No. vessels making landings	8	61	115	12	91
No. of landings	27	294	665	74	592
Accum. Harvest (million lbs.)	0.13	0.69	7.26	1.14	8.60
GHL (million lbs.)	0.80	2.10	8.50	5.90	9.40

REVISED DRAFT

GULF OF ALASKA GROUNDFISH ABCs and TACs

Final 1998 North Pacific Fishery Management Council Specifications (mt)

Species	Area	1997 ABC	1997 TAC	1997 Catch*	1998 ABC	1998 TAC	
Pollock	W (61)	18,600	18,600	26,615	29,790	29,790	
	C (62)	31,250	31,250	32,124	50,045	50,045	
	C (63)	24,550	24,550	25,147	39,315	39,315	
	E	5,580	5,580	5,915	10,850	5,580	
	Total	79,980	79,980	89,801	130,000	124,730	
Pacific Cod**	W	28,500	24,225	24,070	27,260	21,810	
	C	51,400	43,690	43,652	49,080	40,490	
	E	1,600	1,200	1,103	1,560	1,170	
	Total	81,500	69,115	68,825	77,900	63,470	
Flatfish, Deep Water	W	340	340	14	340	340	
	C	3,690	3,690	2,652	3,690	3,690	
	E	3,140	3,140	956	3,140	3,140	
	Total	7,170	7,170	3,622	7,170	7,170	
Rex Sole	W	1,190	1,190	686	1,190	1,190	
	C	5,490	5,490	2,424	5,490	5,490	
	E	2,470	2,470	155	2,470	2,470	
	Total	9,150	9,150	3,265	9,150	9,150	
Flatfish, Shallow Water	W	22,570	4,500	470	22,570	4,500	
	C	19,260	12,950	7,170	19,260	12,950	
	E	1,320	1,180	49	1,320	1,180	
	Total	43,150	18,630	7,689	43,150	18,630	
Flathead Sole	W	8,440	2,000	459	8,440	2,000	
	C	15,630	5,000	1,938	15,630	5,000	
	E	2,040	2,040	59	2,040	2,040	
	Total	26,110	9,040	2,456	26,110	9,040	
Arrowtooth	W	31,340	5,000	2,785	33,010	5,000	
	C	142,100	25,000	12,401	149,640	25,000	
	E	24,400	5,000	1,222	25,690	5,000	
	Total	197,840	35,000	16,408	208,340	35,000	
Sablefish	W	1,860	1,860	1,372	1,840	1,840	
	C	6,410	6,410	6,243	6,320	6,320	
	W. Yakutat	2,410	2,410	1,892	2,290	~~2,290~~	2473
	E. Yak./SEO	3,840	3,840	3,708	3,670	~~3,670~~	3487
	Total	14,520	14,520	13,215	14,120	14,120	
Rockfish, Other Slope	W	20	20	70	20	20	
	C	650	650	939	650	650	
	E	4,590	1,500	204	4,590	1,500	adjusted for bycatch fishery
	Total	5,260	2,170	1,213	5,260	2,170	
Rockfish, Northern	W	840	840	68	840	840	
	C	4,150	4,150	2,863	4,150	4,150	
	E	10	10	17	10	10	
	Total	5,000	5,000	2,948	5,000	5,000	
Pacific Ocean Perch	W	1,840	1,472	1,835	1,810	1,810	
	C	6,690	5,352	6,719	6,600	6,600	
	E	4,460	2,366	973	4,410	2,366	
	Total	12,990	9,190	9,527	12,820	10,776	
Shortraker/Rougheye	W	160	160	138	160	160	
	C	970	970	941	970	970	
	E	460	460	540	460	460	
	Total	1,590	1,590	1,619	1,590	1,590	
Rockfish, Pelagic Shelf***	W combined	570	570	109	550	550	
	C offshore	3,320	3,320	1,765	3,380	3,380	
	C nearshore	260	260	199	260	260	
	E combined	990	990	573	1,070	1,070	
	Total	5,140	5,140	2,646	5,260	5,260	
Rockfish, Demersal Shelf	SEO	950	950	391	560	560	
Atka Mackerel	Gulfwide	1,000	1,000	331	600	600	
Thornyhead	W				250	250	
	C				710	710	
	E				1,040	1,040	
	Total	1,700	1,700	1,237	2,000	2,000	
Other Species	Gulfwide	NA	13,470	5,293	NA	15,460	
GULF OF ALASKA	**TOTAL**	493,050	282,815	230,486	549,030	324,726	

*catch through November 8, 1997

** reduced by BOF state fishery apportionment

12/11/97

Hoeg

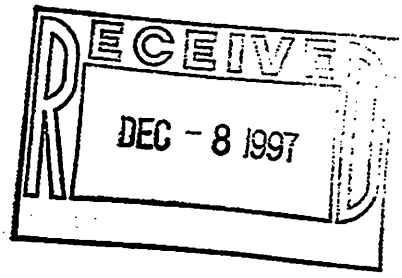
ERRATA

Table 1. Gulf of Alaska groundfish 1997 and 1998 ABCs, 1997 TACs, and 1997 catches reported through November 8, 1997. MSY is unknown for all species.

SPECIES		ABC (mt) 1997	ABC (mt) 1998	TAC 1997	CATCH 1997
Pollock	W (61)	18,600	30,200	18,600	26,625
	C (62)	31,250	50,740	31,250	32,005
	C (63)	24,550	39,860	24,550	24,778
	E	5,580	11,000	5,580	5,906
	TOTAL	79,980	131,800	79,980	89,314
Pacific Cod	W	28,500	27,260	24,225	24,034
	C	51,400	49,080	43,690	43,416
	E	1,600	1,560	1,200	780
	TOTAL	81,500	77,900	69,115	68,230
Deep water flatfish[1]	W	340	340	340	14
	C	3,690	3,690	3,690	2,586
	E	3,140	3,140	3,140	578
	TOTAL	7,170	7,170	7,170	3,178
Rex sole	W	1,190	1,190	1,190	686
	C	5,490	5,490	5,490	2,336
	E	2,470	2,470	2,470	148
	TOTAL	9,150	9,150	9,150	3,170
Shallow water flatfish[2]	W	22,570	22,570	4,500	470
	C	19,260	19,260	12,950	6,781
	E	1,320	1,320	1,180	49
	TOTAL	43,150	43,150	18,630	7,300
Flathead sole	W	8,440	8,440	2,000	459
	C	15,630	15,630	5,000	1,853
	E	2,040	2,040	2,040	59
	TOTAL	26,110	26,110	9,040	2,371
Arrowtooth flounder	W	31,340	33,010	5,000	2,780
	C	142,100	149,640	25,000	11,710
	E	24,400	25,690	5,000	879
	TOTAL	197,840	208,340	35,000	15,369
Sablefish	W	1,860	1,840	1,860	1,368
	C	6,410	6,320	6,410	6,149
	WY	2,410	2,290	2,410	1,875
	EY/SEO	3,840	3,670	3,840	3,572
	TOTAL	14,520	14,120	14,520	12,964
Other Slope rockfish	W	20	20	20	70
	C	650	650	650	935
	E	4,590	4,590	1,500	202
	TOTAL	5,260	5,260	2,170	1,207

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

December 5, 1997



Mr. Richard B. Lauber
Chairman, North Pacific
Fishery Management Council
605 West 4th Avenue
Anchorage, AK 99501-2252

Dear Mr. Lauber:

The North Pacific Fishery Management Council (Council) will be recommending 1998 groundfish specifications at its December 1998 meeting. We have concerns about a potential increase in the Gulf of Alaska pollock harvests given the continued decline of Steller sea lions.

The Gulf of Alaska Plan Team has recommended a combined acceptable biological catch amount for pollock in the Western and Central Regulatory Areas equal to 120,800 mt. This amount reflects a 62 percent increase from the 1997 total allowable catch (TAC) amounts specified for these regulatory areas (74,400 mt). This increase is due to an above average 1994 year class. In spite of the increased pollock biomass projected for 1998, we believe that prudent action is warranted to limit the increase in pollock fishing activity during fall months, a time period when sea lion females are nursing and pups are first attempting to forage on their own.

Current regulations require that the pollock TACs in the Western and Central Regulatory Areas be allocated among three seasons as follows: 25 percent to the first season starting January 20; 25 percent to the second season starting June 1; and 50 percent to the third season starting September 1. These seasons and apportionments are established in regulations and may be changed through regulatory amendments under Amendment 45 to the Fishery Management Plan for Groundfish of the Gulf of Alaska (FMP)(attached). We recommend that for 1998 the Council consider a regulatory amendment to reapportion the pollock TACs so that the harvest during the third season is not increased significantly as a result of the overall TAC increase. We recommend a redistribution of pollock harvest from fall months to summer months, such as a seasonal apportionment of 25, 35, and 40 percent of the TAC across the existing three seasons.

An analysis for a regulatory amendment to change the allocation of pollock TAC among seasons would need to be prepared by NMFS staff and presented to the Council at its February 1998 meeting. This schedule would allow for Council action at that meeting and

implementation by NMFS prior to the second season opening date on June 1, 1998. An expression of Council intent to support this strategy would be desirable during the Council's December meeting so that NMFS could take appropriate action with respect to approval of the 1998 pollock specifications and the development of the regulatory amendments.

In the future, we recommend that the Council consider an FMP amendment that would allow the Council to change GOA pollock TAC allocations among established seasons during the annual specification process instead of having to rely on the regulatory amendment process. This approach would be similar to the process used to establish the allocation of the Bering Sea subarea pollock TAC between the roe and non roe seasons.

NMFS staff will be available at the December Council meeting to provide further information and respond to questions on our recommendations for a regulatory amendment.

Sincerely,

Donald J. Berg

For Steven Pennoyer
Administrator, Alaska Region

Attachment

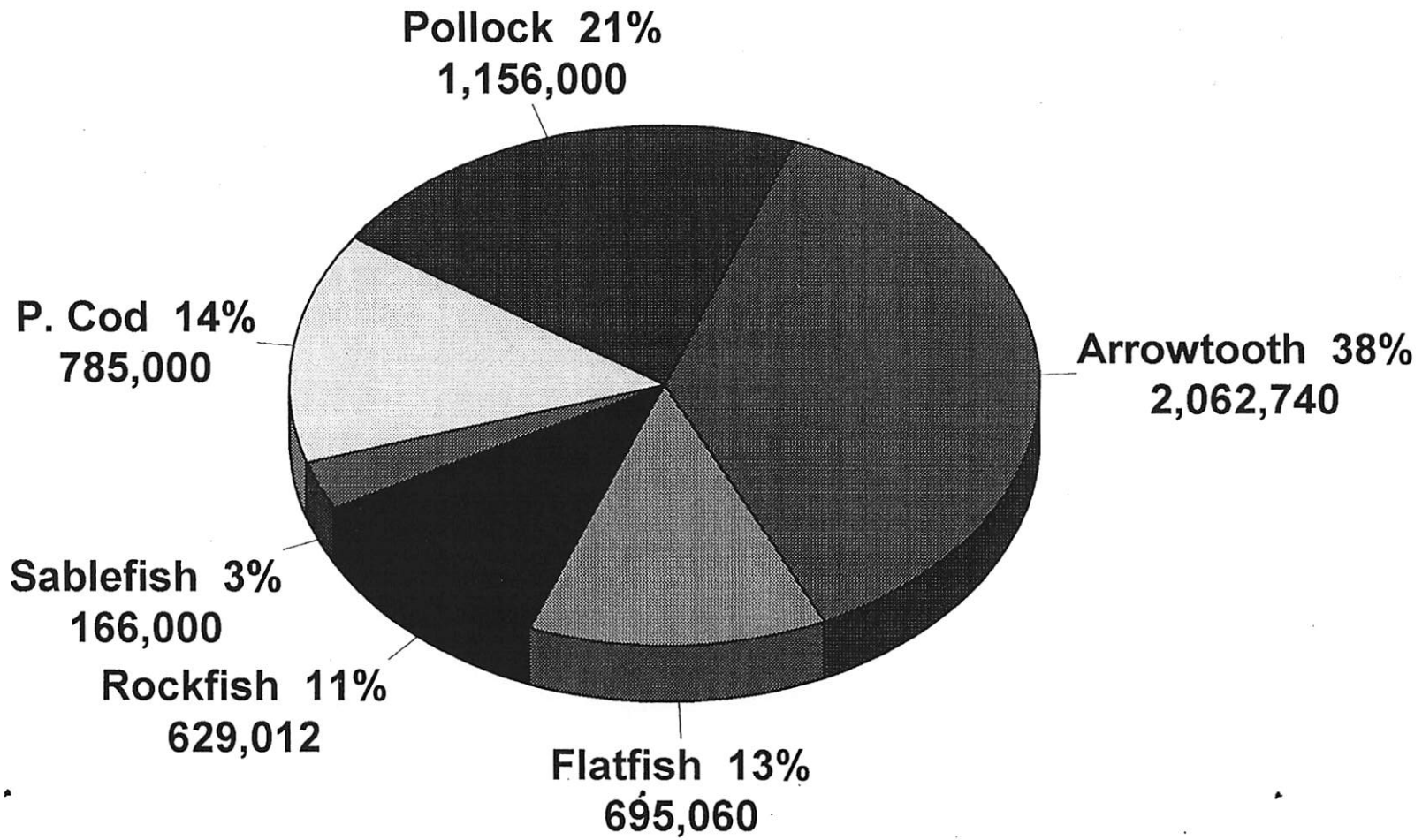
AMENDMENT 45 - TEXT TO AMEND THE FISHERY MANAGEMENT PLAN FOR GROUNDFISH OF THE GULF OF ALASKA

In Chapter 4.0, section entitled "4.2.1 Setting harvest levels", step 3 is amended to read as follows:

(3) The annual TAC established for pollock in the combined Western and Central Regulatory Areas shall be divided into seasonal allowances. Seasonal allowances of the pollock TAC will be established by regulation. The Council will consider the criteria described in Section 4.3.3 when recommending changes in seasonal allowances. Shortfalls or overages in one seasonal allowance shall be proportionately added to, or subtracted from, subsequent seasonal allowances.

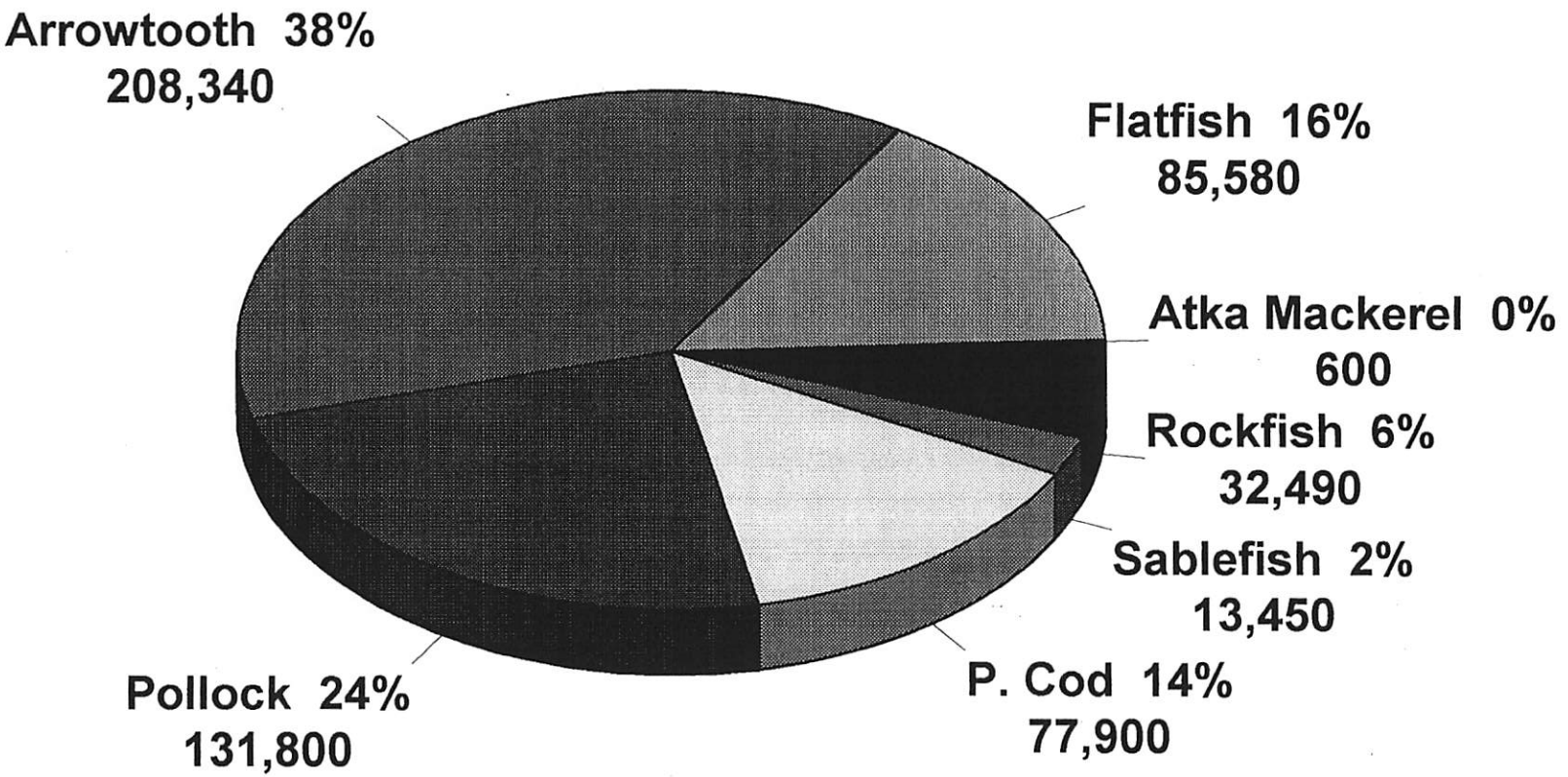
Gulf of Alaska Groundfish

Exploitable Biomass (mt)



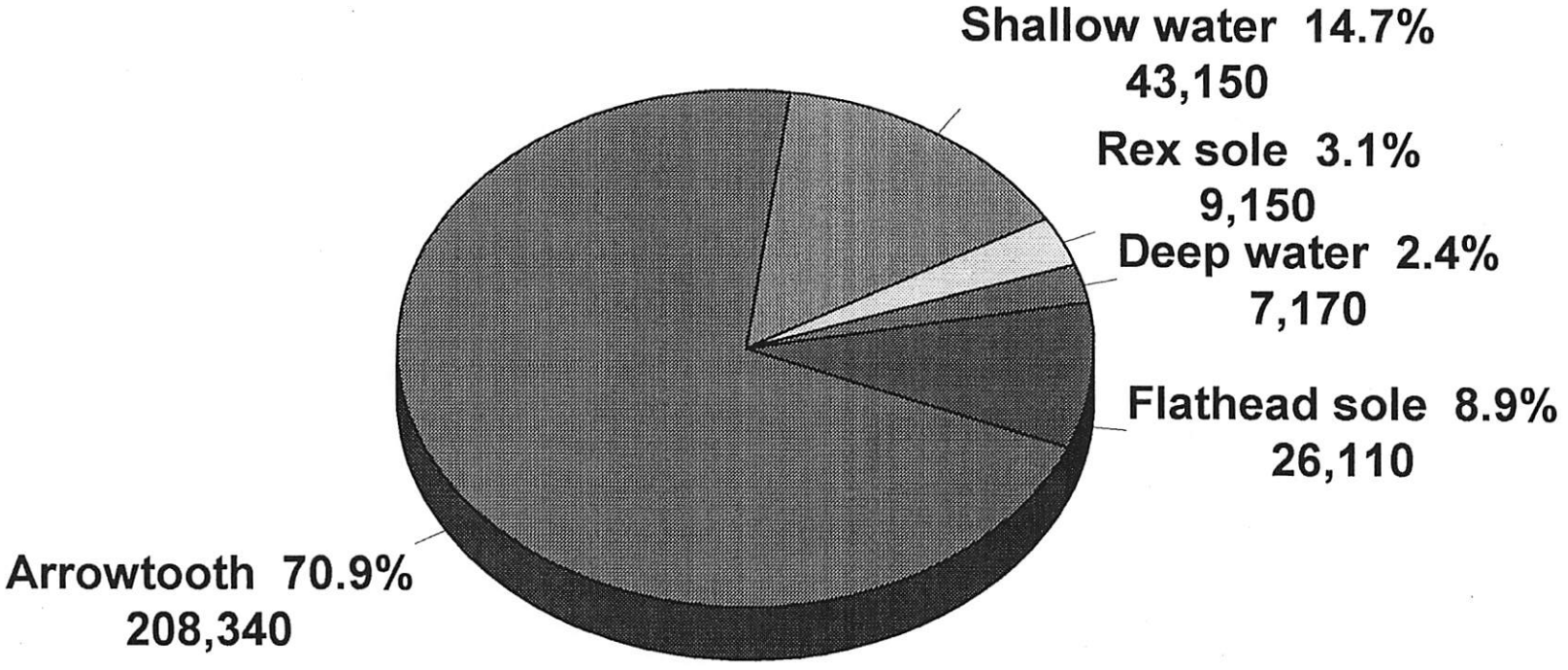
Gulf of Alaska Groundfish

Plan Team ABC Recommendations

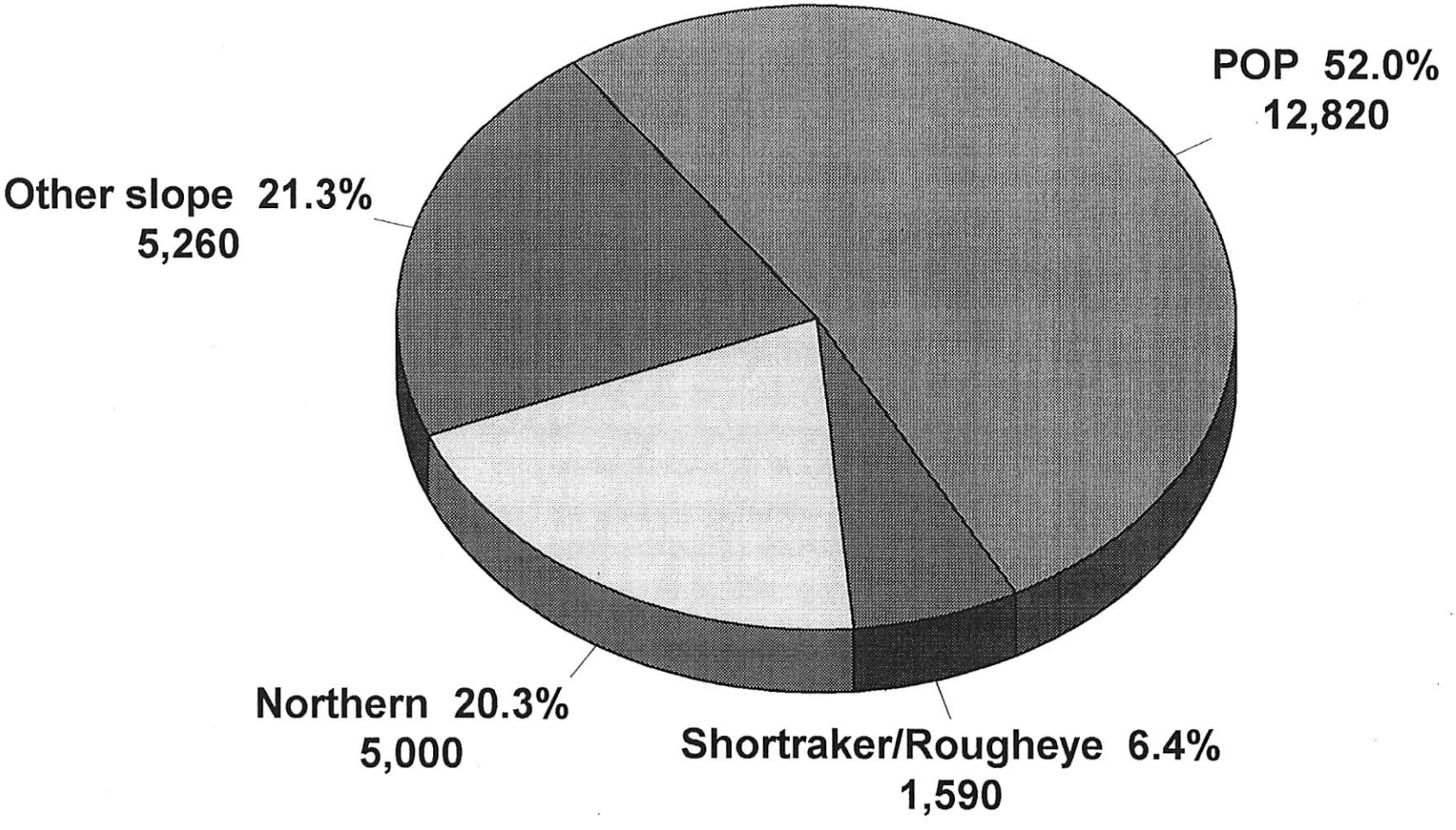


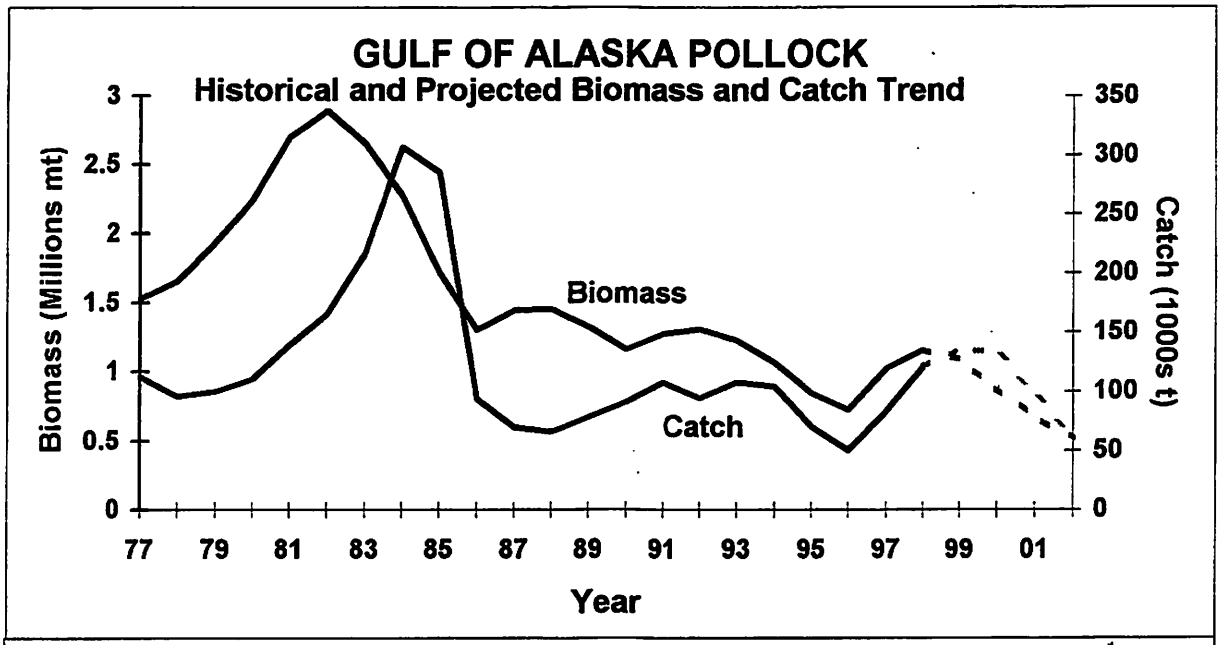
FLATFISH

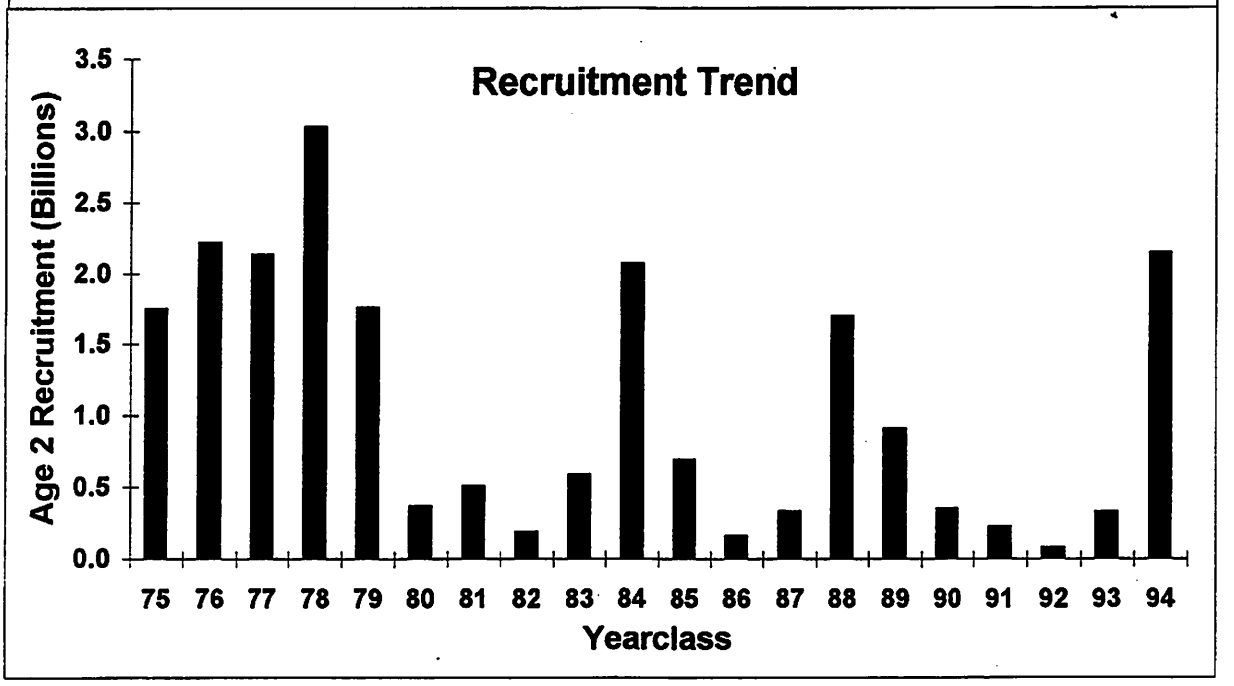
Plan Team ABC Recommendations

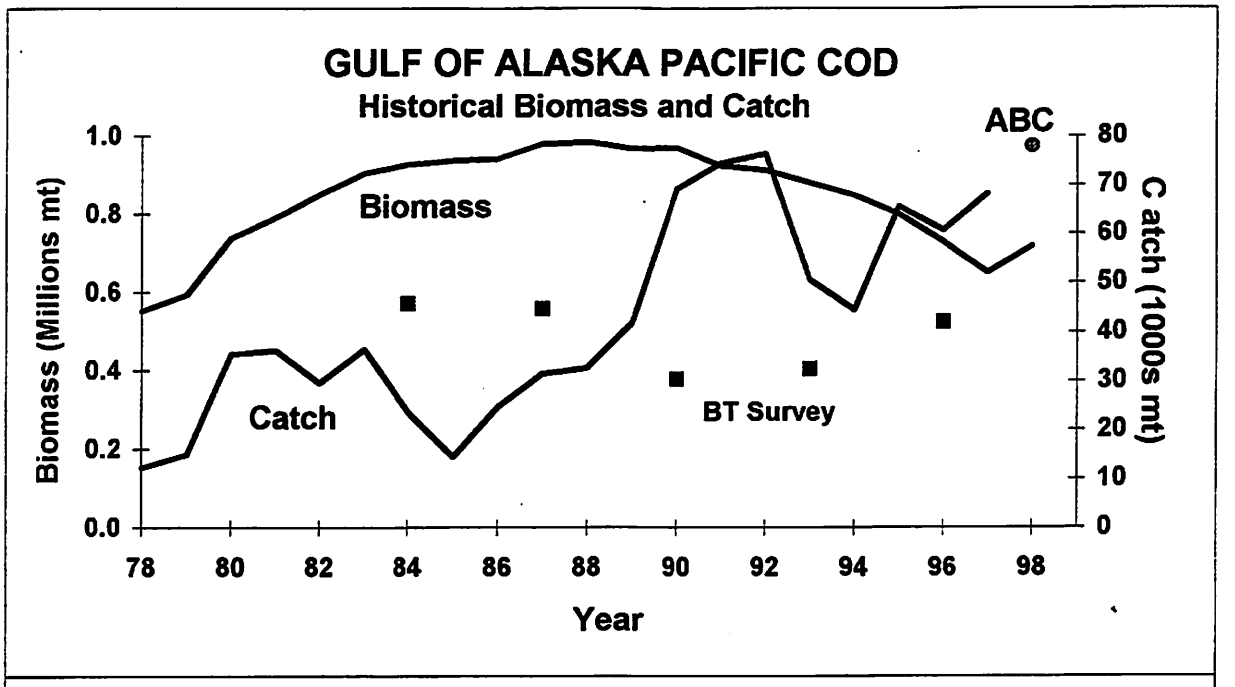


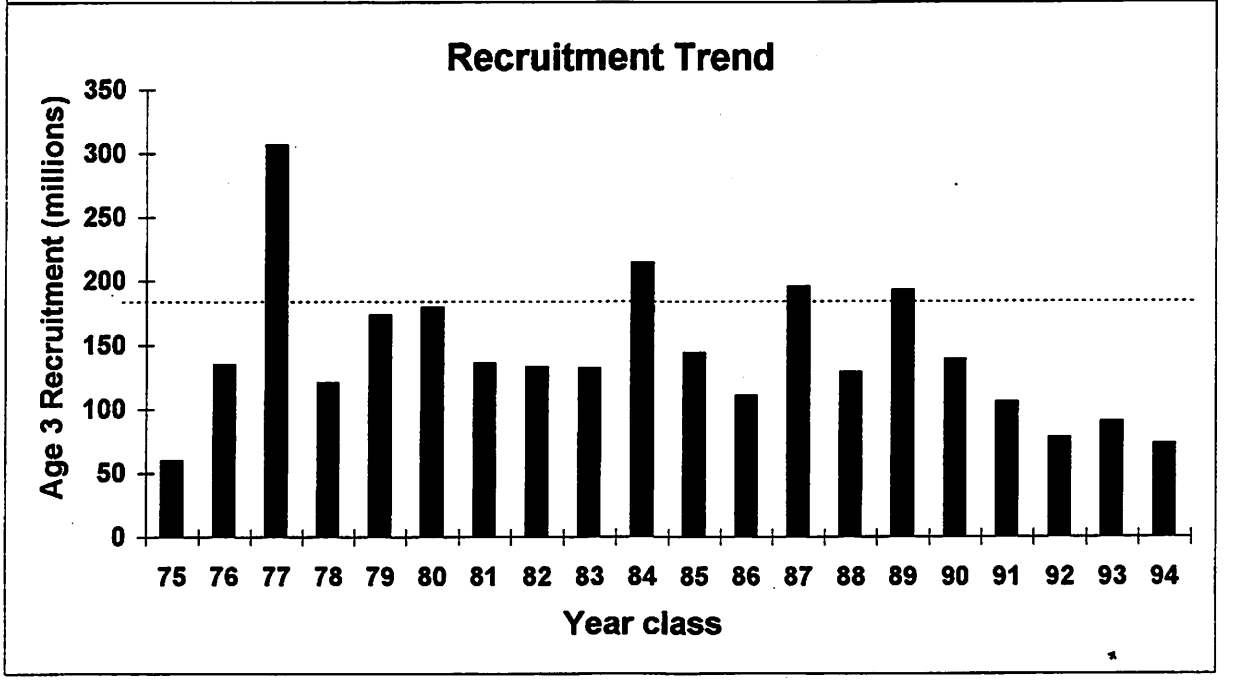
SLOPE ROCKFISH

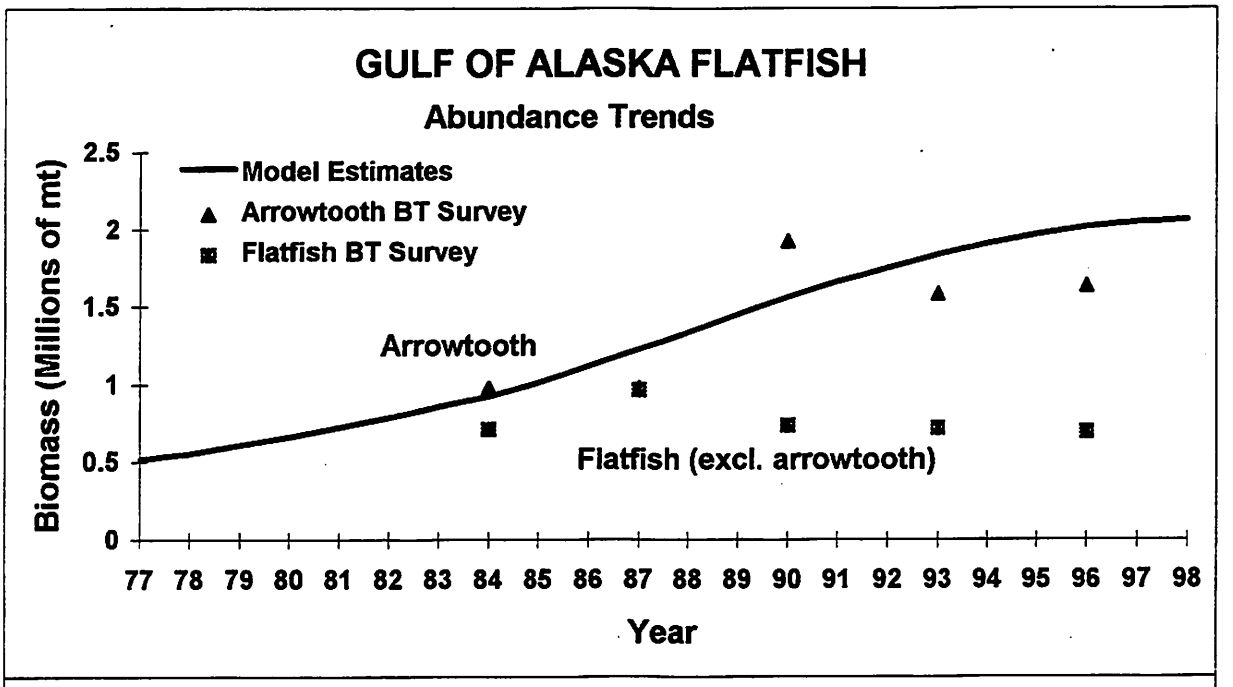


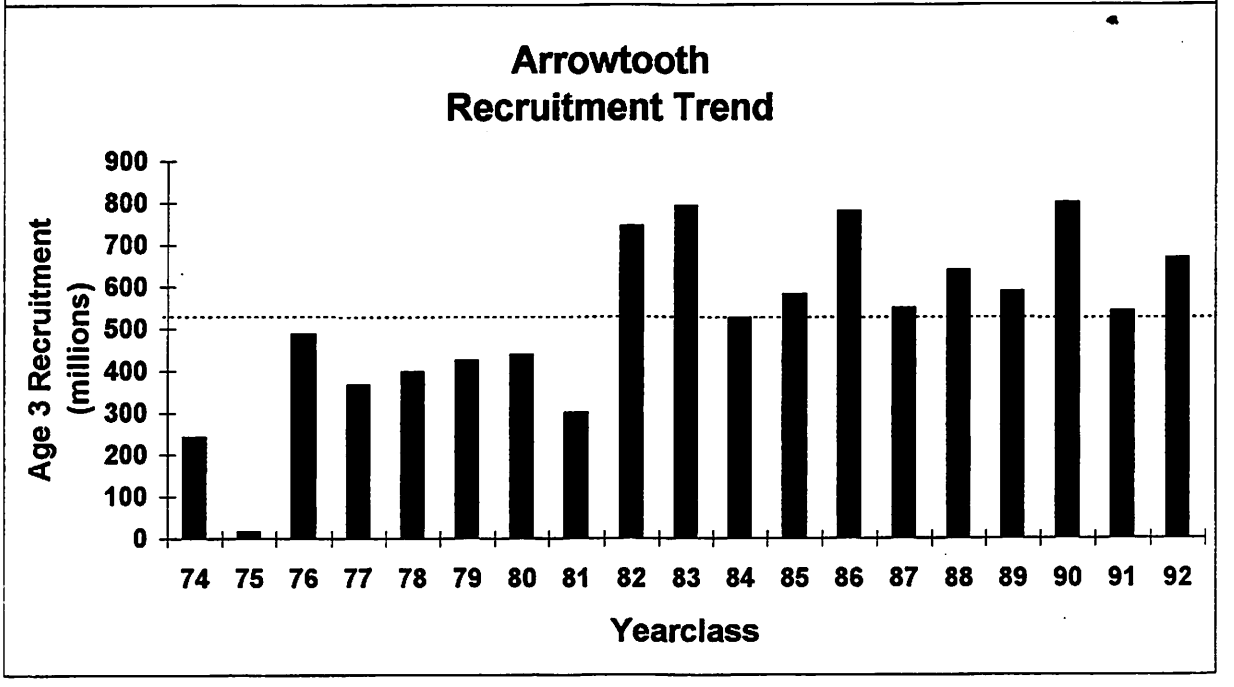

GULF OF ALASKA POLLOCK
Historical and Projected Biomass and Catch Trend
Biomass (Millions mt)
Catch (1000s t)
Biomass
Catch
Year
0
0.5
1
1.5
2
2.5
3
0
50
100
150
200
250
300
350
77
79
81
83
85
87
89
91
93
95
97
99
01

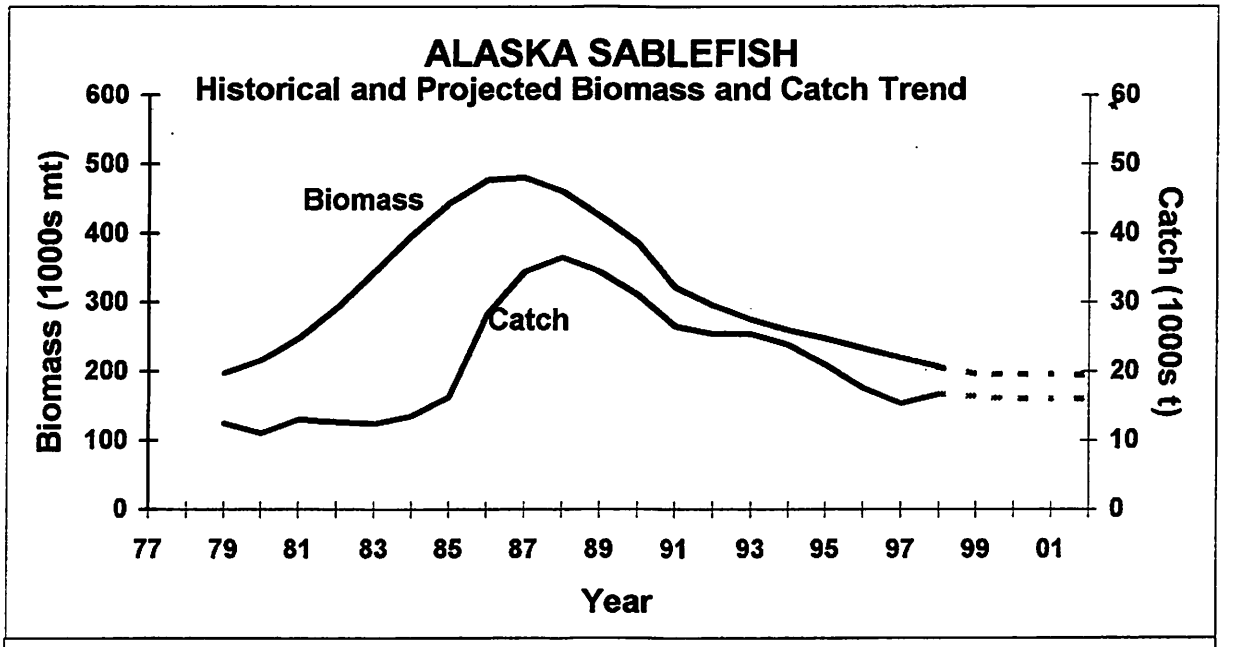

Recruitment Trend
Age 2 Recruitment (Billions)
Yearclass
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94

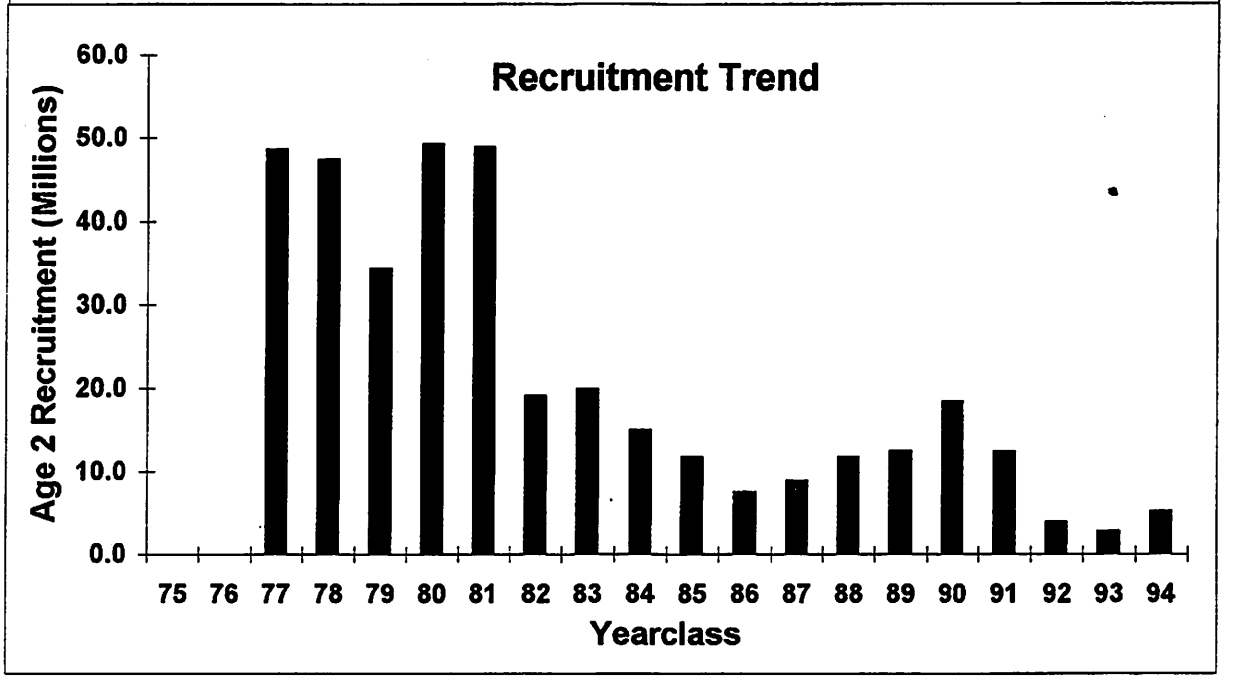

GULF OF ALASKA PACIFIC COD
Historical Biomass and Catch
ABC
Biomass
Catch
BT Survey
Biomass (Millions mt)
Catch (1000s mt)
Year
1.0
0.8
0.6
0.4
0.2
0.0
80
70
60
50
40
30
20
10
0
78
80
82
84
86
88
90
92
94
96
98

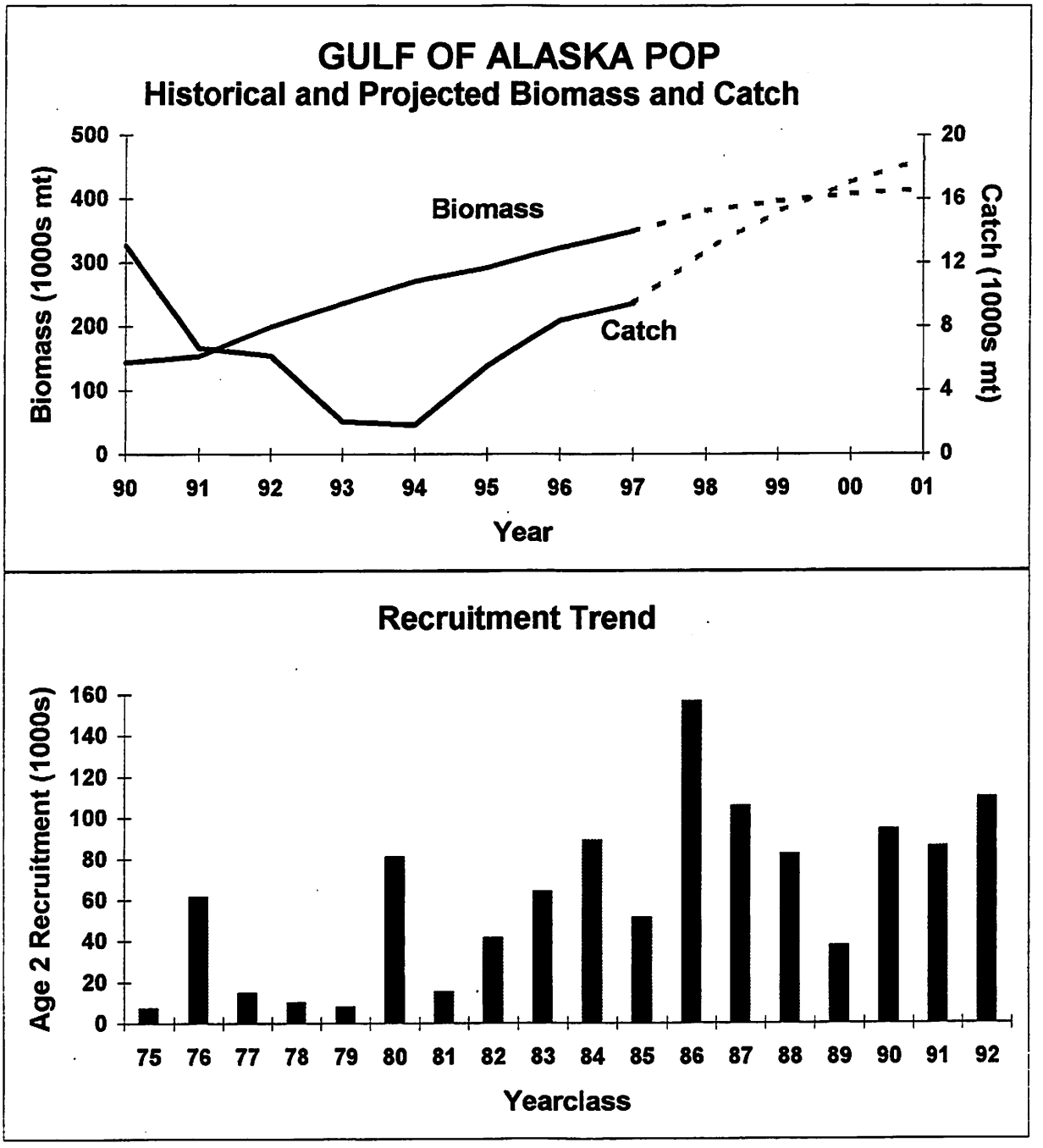

Recruitment Trend
Age 3 Recruitment (millions)
Year class
350
300
250
200
150
100
50
0
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94

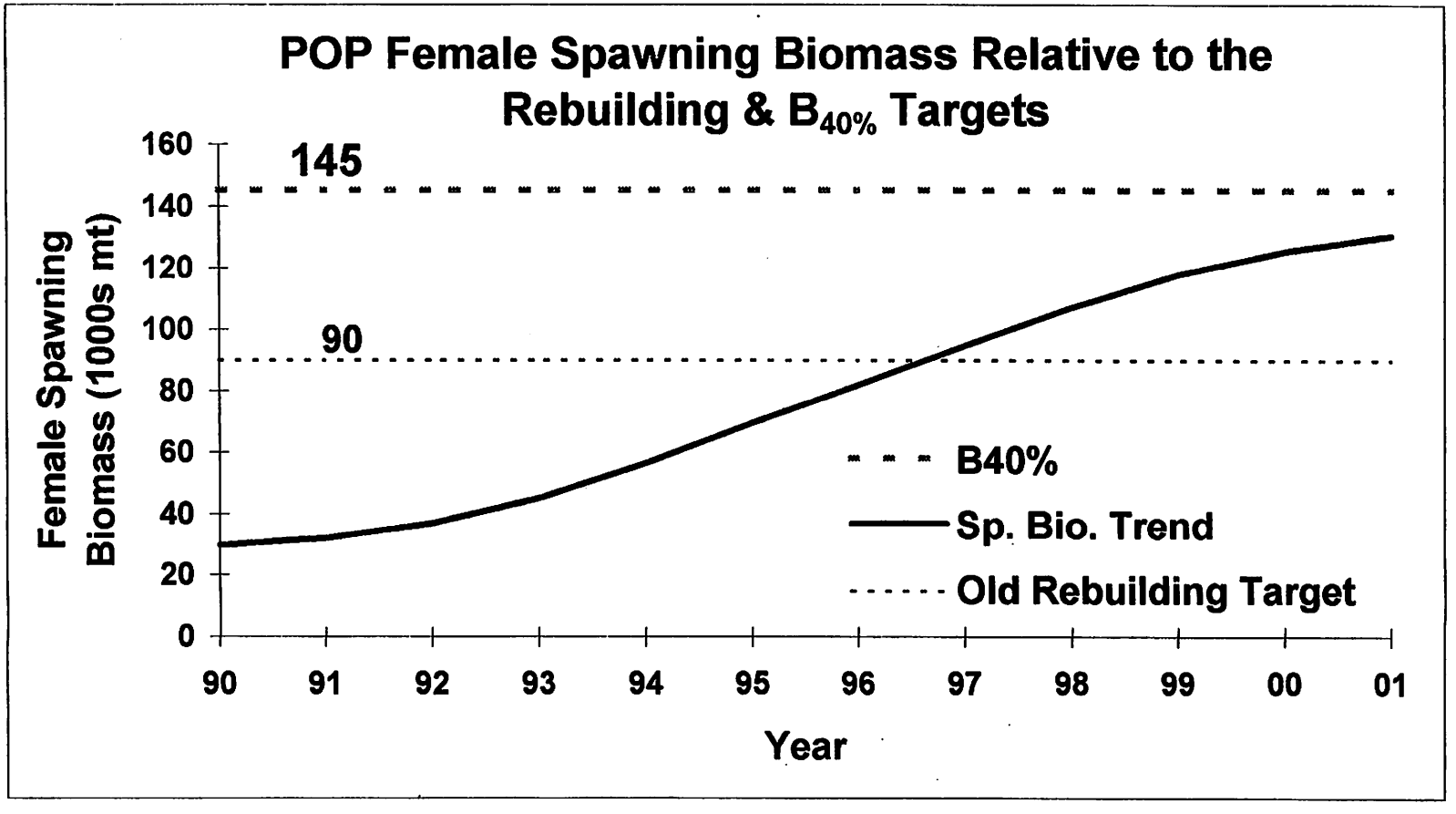

GULF OF ALASKA FLATFISH
Abundance Trends
Biomass (Millions of mt)
2.5
2
1.5
1
0.5
0
Model Estimates
Arrowtooth BT Survey
Flatfish BT Survey
Arrowtooth
Flatfish (excl. arrowtooth)
77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98
Year

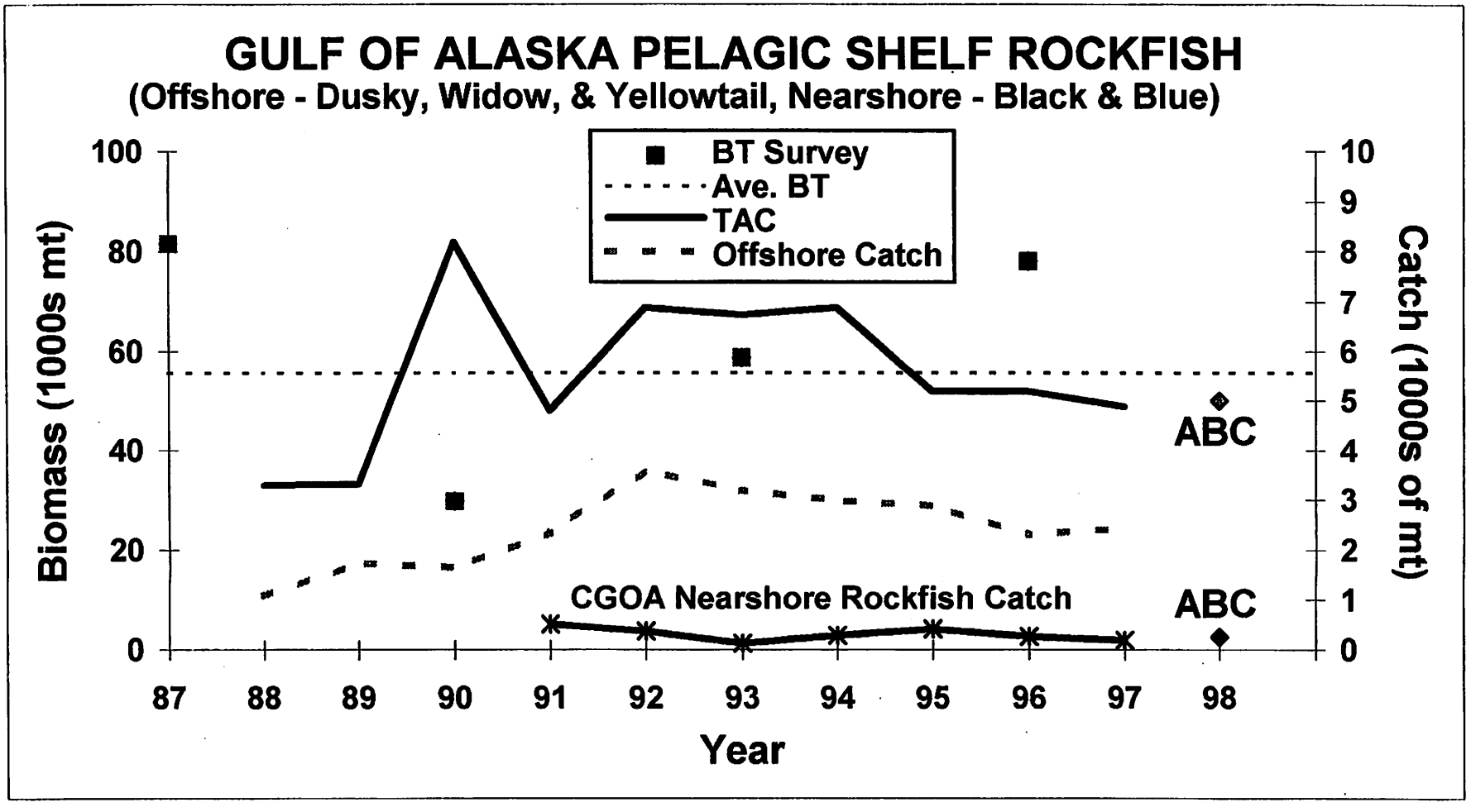

Arrowtooth
Recruitment Trend
Age 3 Recruitment (millions)
900
800
700
600
500
400
300
200
100
0
74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92
Yearclass

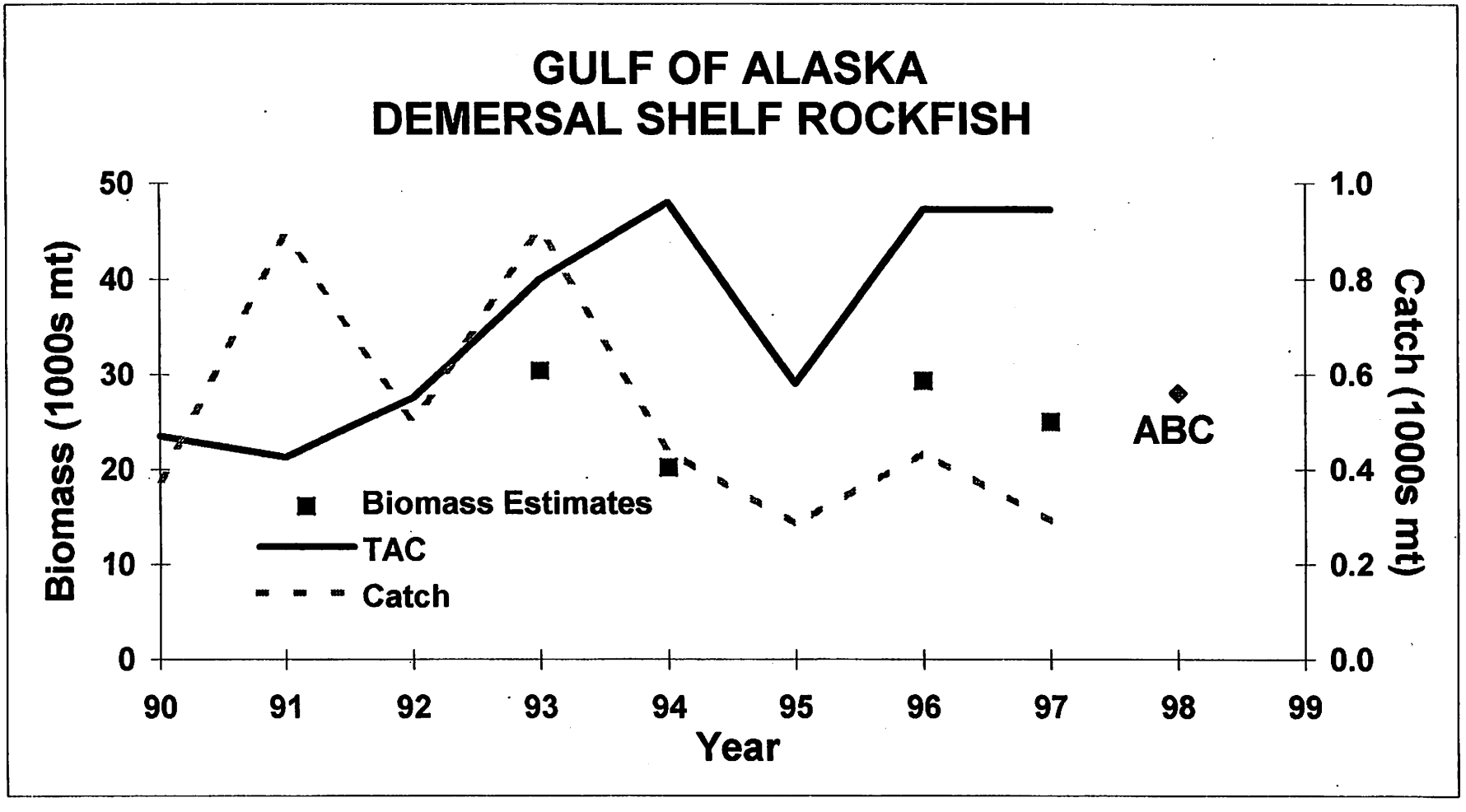

ALASKA SABLEFISH
Historical and Projected Biomass and Catch Trend
Biomass (1000s mt)
Catch (1000s t)
Biomass
Catch
600
500
400
300
200
100
0
60
50
40
30
20
10
0
77 79 81 83 85 87 89 91 93 95 97 99 01
Year

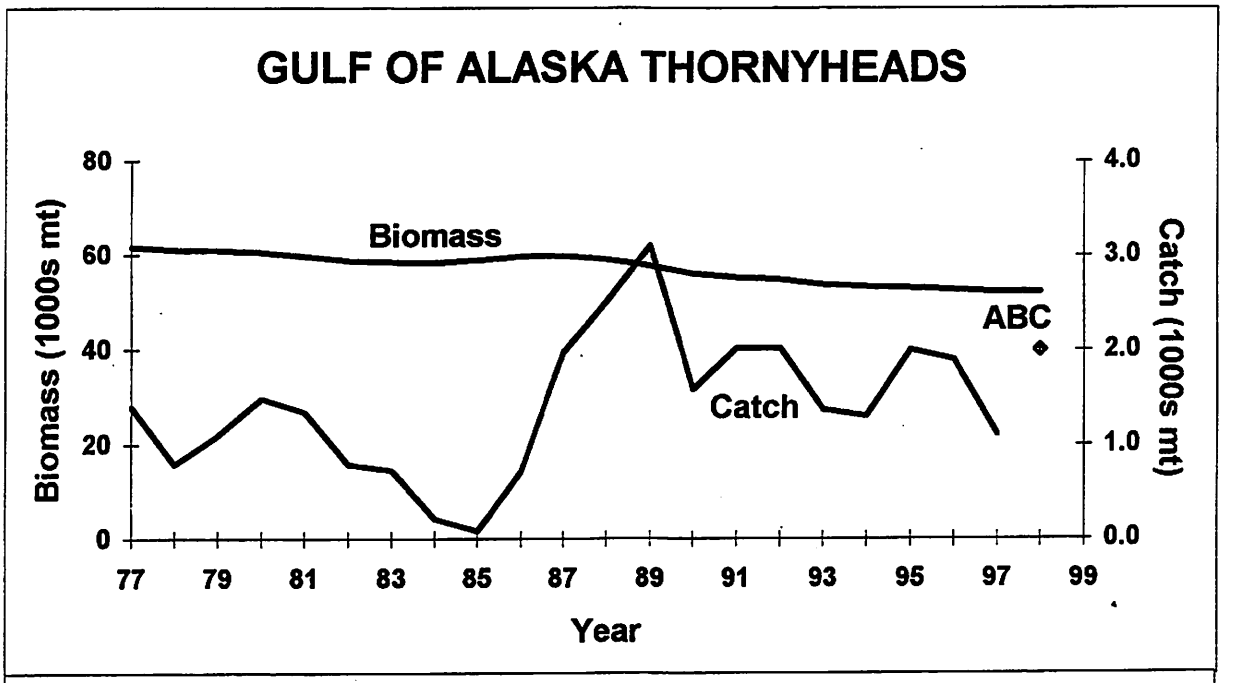

Recruitment Trend
Age 2 Recruitment (Millions)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94
Yearclass

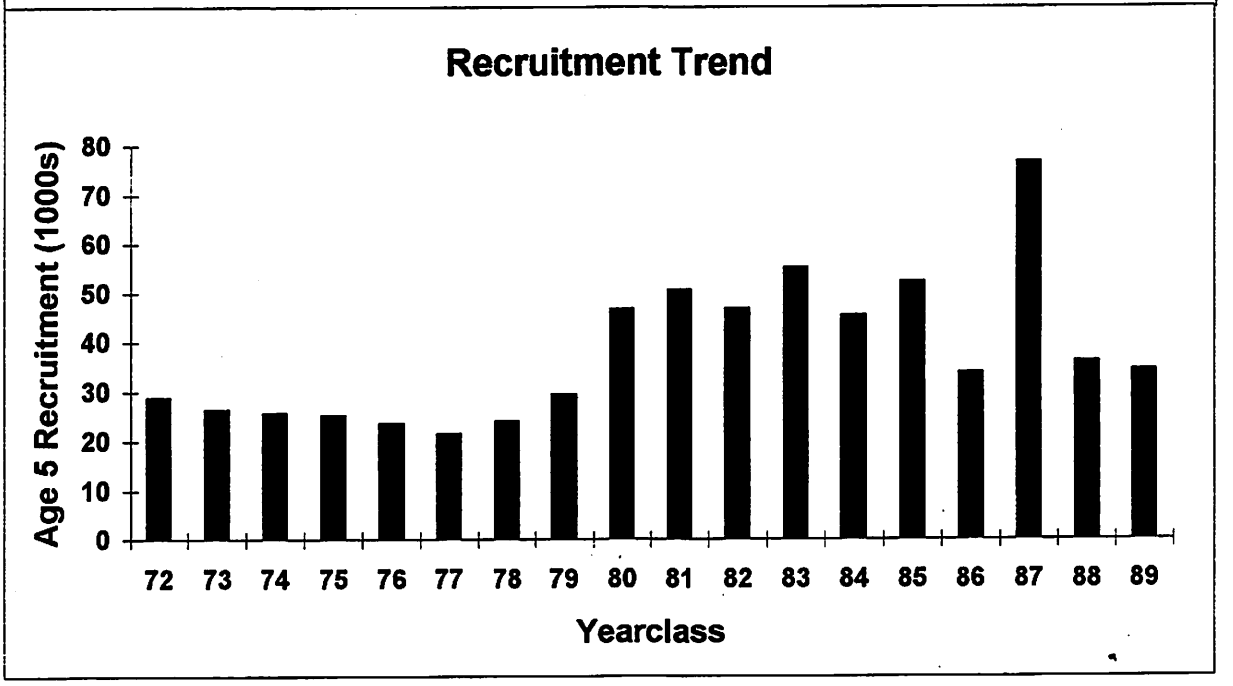

GULF OF ALASKA POP
Historical and Projected Biomass and Catch
Biomass (1000s mt)
500
400
300
200
100
0
Biomass
Catch
20
16
12
8
4
0
Catch (1000s mt)
90
91
92
93
94
95
96
97
98
99
00
01
Year
Recruitment Trend
Age 2 Recruitment (1000s)
160
140
120
100
80
60
40
20
0
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
Yearclass

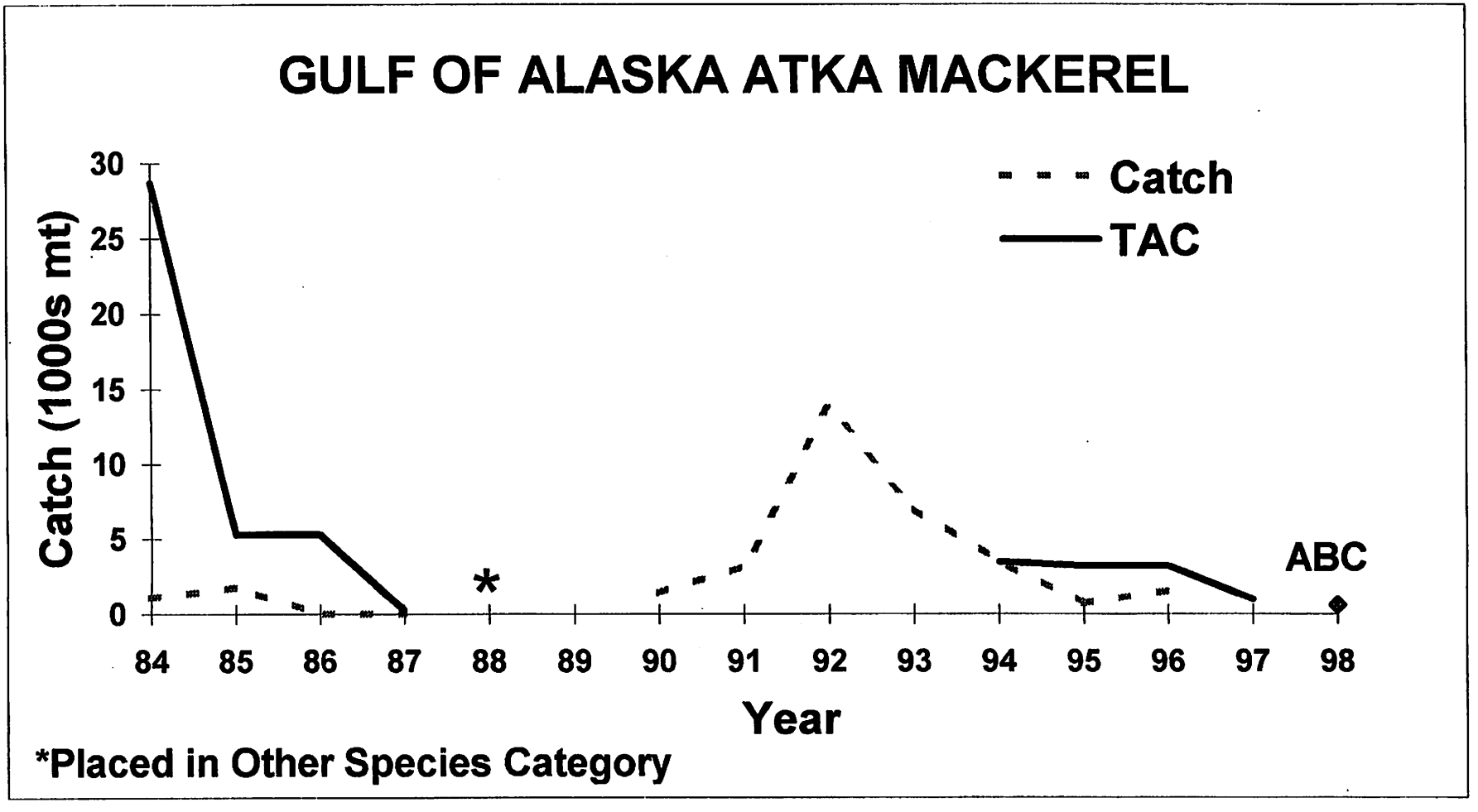

POP Female Spawning Biomass Relative to the Rebuilding & B40% Targets
Female Spawning Biomass (1000s mt)
160
140
120
100
80
60
40
20
0
145
90
B40%
Sp. Bio. Trend
Old Rebuilding Target
90
91
92
93
94
95
96
97
98
99
00
01
Year


GULF OF ALASKA PELAGIC SHELF ROCKFISH
(Offshore - Dusky, Widow, & Yellowtail, Nearshore - Black & Blue)
BT Survey
Ave. BT
TAC
Offshore Catch
ABC
CGOA Nearshore Rockfish Catch
ABC
Biomass (1000s mt)
Catch (1000s of mt)
Year
100
80
60
40
20
0
10
9
8
7
6
5
4
3
2
1
0
87
88
89
90
91
92
93
94
95
96
97
98


GULF OF ALASKA
DEMERSAL SHELF ROCKFISH
Biomass (1000s mt)
Catch (1000s mt)
Year
Biomass Estimates
TAC
Catch
ABC
50
40
30
20
10
0
1.0
0.8
0.6
0.4
0.2
0.0
90
91
92
93
94
95
96
97
98
99


GULF OF ALASKA THORNYHEADS
Biomass (1000s mt)
Catch (1000s mt)
Biomass
ABC
Catch
80
60
40
20
0
4.0
3.0
2.0
1.0
0.0
77
79
81
83
85
87
89
91
93
95
97
99
Year


Recruitment Trend
Age 5 Recruitment (1000s)
80
70
60
50
40
30
20
10
0
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
Yearclass


GULF OF ALASKA ATKA MACKEREL
Catch
TAC
Catch (1000s mt)
30
25
20
15
10
5
0
*
ABC
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
Year
*Placed in Other Species Category

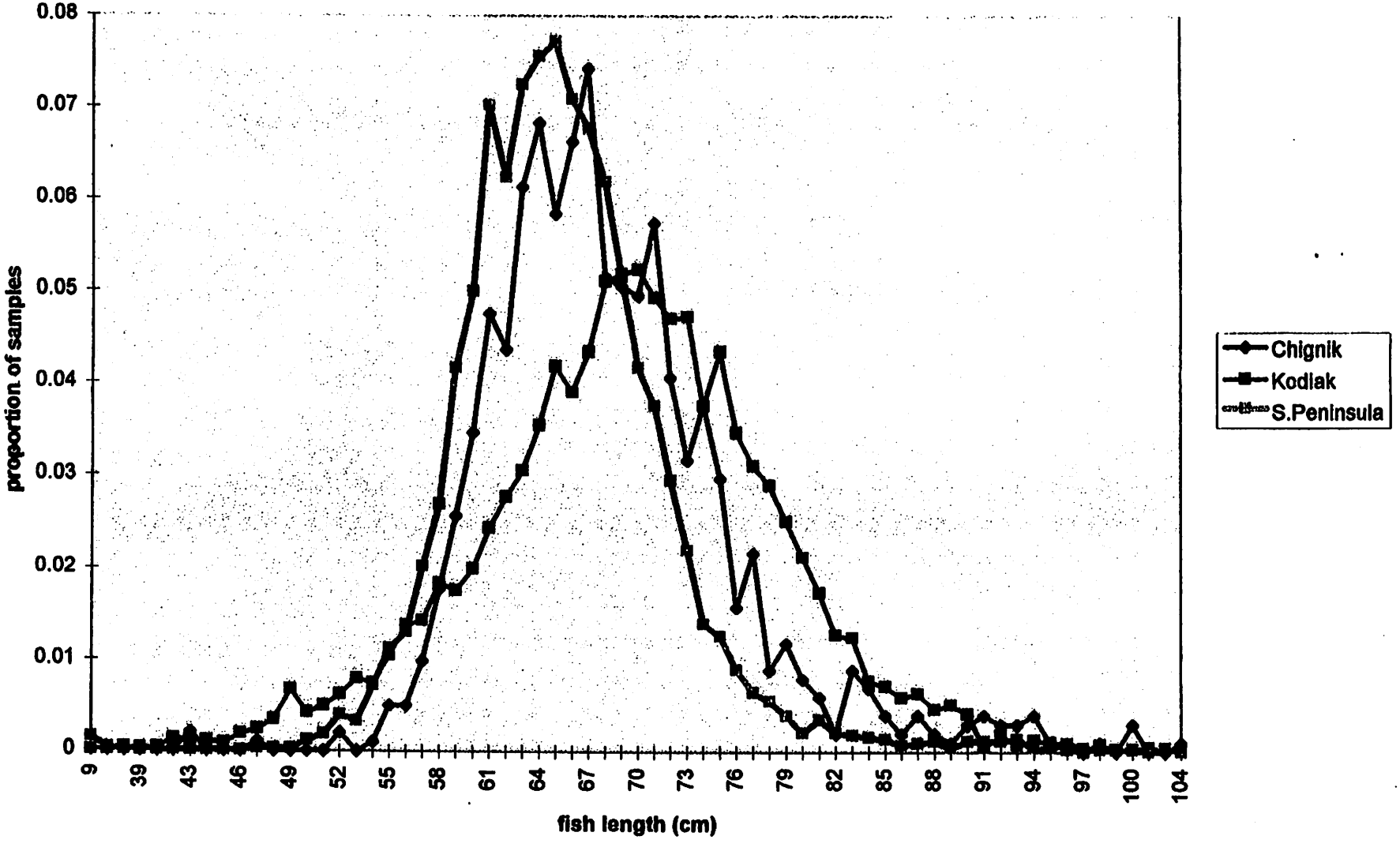
Pacific Cod harvest from the Central and Western Gulf, 1989-1997

YEAR	NMFS AREA	VESSELS	LANDINGS	POUNDS*	% STATE WATERS
1989	CENTRAL	236	1460	60.4	7%
	WESTERN	137	598	31.1	25%
1990	CENTRAL	595	3222	92.4	13%
	WESTERN	165	985	85.7	15%
1991	CENTRAL	908	4389	101.2	19%
	WESTERN	280	1380	76.5	6%
1992	CENTRAL	1093	5115	89.9	18%
	WESTERN	296	1452	73.7	18%
1993	CENTRAL	727	3347	72.1	16%
	WESTERN	166	987	39.8	5%
1994	CENTRAL	632	2825	63.5	20%
	WESTERN	208	1150	32.4	23%
1995	CENTRAL	907	4369	97.1	22%
	WESTERN	266	1115	42.3	21%
1996	CENTRAL	655	3916	91.7	18%
	WESTERN	231	1336	46.2	28%
1997**	CENTRAL	799	4310	84.3	24%
	WESTERN	211	1223	55.3	28%

*Total round pounds catch in millions, all gear types
**database through 11/13/97

Source: ADF&G fish ticket database

PACIFIC COD LENGTHS BY AREA



D-1(c-e)

TABLES FOR AGDB COMMENTS ON GULF OF ALASKA POLLOCK
PREPARED FOR THE NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
DECEMBER 9, 1997

TABLE 1

EXPLOITATION RATE		
1998 EXPLOITABLE BIOMASS W/C	1156000	MT
1998 ABC	120800	MT
PERCENT FISHERY REMOVALS	10.45	%

TABLE 2

BIOLOGICAL PARAMETERS USED IN GULF POLLOCK MODEL

MORTALITY 30 % ALL AGES
(Model Assumptions - Page 32)

GROWTH
Weight at age in first trimester from the fishery

AGE	WT KG	%CHNGE
3	0.313	N/A
4	0.514	64.22
5	0.703	36.77
6	0.864	22.90
7	0.995	15.16
8	1.100	10.55
9	1.181	7.36
10	1.244	5.33

(Table 1.6 - Page 55)

TABLE 3
GULF POLLOCK
EXAMPLE OF YIELD CHANGE AT AGE
USING 30% NATURAL MORTALIITY

AGE	#PLK	WT MT	%CHNGE
3	100000000	14201.45	N/A
4	70000000	16324.86	14.95
5	49000000	15629.31	-4.26
6	34300000	13446.10	-13.97
7	24010000	10839.36	-19.39
8	16807000	8388.25	-22.61
9	11764900	6304.15	-24.85
10	8235430	4648.31	-26.27

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TABLE 4
GULF POLLOCK
LARGEST YEAR CLASSES AT AGE 2 - NUMBER OF FISH
AND FEMALE SPAWNING BIOMASS WHICH PRODUCED EACH YEAR CLASS

YEAR	FEM SPAWN BIOMSS MT	YEAR CLASS	#AGE 2 MILLIONS
1970	223000	1970	1206
1972	212000	1972	2825
1975	351000	1975	1748
1976	448000	1976	2213
1977	528000	1977	2127
1978	551000	1978	3026
1979	565000	1979	1755
1984	890000	1984	2064
1988	445000	1988	1691
1994	399000	1994	2136

Shows all year classes greater than 1 billion fish at age 2
(Derived from Table 1.11 - Page 60)

TABLE 5
SIX HIGHEST FEMALE SPAWNING BIOMASSES
AND NUMBER OF AGE 2 RECRUITS PRODUCED

YEAR	FEM SPAWN BIOMSS MT	YEAR CLASS	#AGE 2 MILLIONS
1980	633000	1980	366
1981	747000	1981	506
1982	871000	1982	184
1983	940000	1983	586
1984	890000	1984	2064
1985	712000	1985	692