

MEMORANDUM

TO: Council, SSC and AP Members

FROM: Chris Oliver *Chris*
Executive Director

DATE: January 29, 2008

SUBJECT: Groundfish Management – ‘Other Species’ Complex

ESTIMATED TIME:

6 HOURS
(all D-2 issues)

ACTION REQUIRED

- (a) Initial Review of GOA ‘other species’ catch specifications amendment
- (b) Review discussion paper on analytical approach, action plan, and Non-Target Species Committee recommendations on proposed joint GOA/BSAI Groundfish Plan amendment to revise management of other species complex. (Council only)

BACKGROUND

In April 2005, the Council initiated an analysis to split the other species complex into separate groups. In 2007, the Council added an alternative to amend the Gulf of Alaska (GOA) Groundfish Fishery Management Plan (FMP) to allow the Council to recommend an overfishing level and acceptable biological catch for the GOA other species assemblage. Council staff recommended that the Council bifurcate the combined analysis into two separate actions.

(a) Initial Review of GOA Other Species catch specifications

The Council received the Initial Review Draft for this amendment in mid-January. The draft included an environmental assessment (EA), a regulatory impact review (RIR), and an initial regulatory flexibility analysis (IRFA). It has since been determined that the RIR and IRFA are not required for the proposed action, as it would be solely a FMP amendment with no accompanying regulatory change. Item D-2(a)(1) is the full analysis.

The proposed action would amend the GOA groundfish FMP to require the Council to annually set an aggregate overfishing limit (OFL) and acceptable biological catch level (ABC) for the ‘other species’ complex. The Council currently sets total allowable catch (TAC) for the ‘other species’ complex according to a formula in the FMP. Under Alternative 2, the Council would instead use the OFL and ABC specifications to determine the TAC for the ‘other species’ complex, according to the harvest specifications procedure laid out in the FMP for other groundfish species (see table below).

Comparison of harvest specifications for the 'other species' complex under the alternatives (illustrated using 2007 available data)

	Alternative 1 (status quo - set TAC only)	Alternative 2 (set OFL, ABC, and TAC)
ABC and OFL	none	ABC = 7,943 mt; OFL = 10,588 mt Sum of recommended Plan Team/ SSC ABCs and OFLs for component species groups (only recommended for purposes of this analysis)
Maximum permissible TAC	13,271 mt Council may set TAC at $\leq 5\%$ of combined TACs for target species	7,943 mt Council may set TAC \leq ABC
Actual TAC	4,500 mt Council reduces TAC from maximum, to allow for incidental catch and limited directed fisheries, but reduce risk of excessive harvest on a single stock or the complex as a whole	$\leq 7,943$ mt Council would retain prerogative to reduce TAC, as in Alternative 1

In addition to the proposed substantive change, this FMP amendment will also make a technical change to the FMP, to add a description of Amendment 68. The proposed text for this FMP amendment is attached as Item D-2(a)(2).

A draft action plan for the GOA FMP amendment is presented under Item D-2(a)(3), which also describes the timeline to implementation. Final action is scheduled for April 2008, with implementation planned for the beginning of the 2009 GOA groundfish fisheries.

- (b) Review tasking plans for managing Other Species complex and discussion paper on analytical approach. Review Non-Target Species Committee report.

A second proposed action would amend the GOA and Bering Sea/Aleutian Islands Groundfish FMPs to allow the Council to set separate specifications for sharks, skates, squids, sculpins, and octopuses, and possibly grenadiers. A draft action plan is presented under Item D-2(b)(1). Scott Miller (NMFS) will discuss his preliminary findings (Items D-2(b)(2)).

This agenda item was addressed by the SSC (Item D-2(b)(3)) and AP (see below) in October 2007.

"The AP requests the Council to bifurcate the other species breakout initiative into two separate proposed actions. The first proposed action would amend the GOA groundfish FMP to allow the Council to recommend and overfishing level and allowable biological catch for the GOA and other species assemblage. Motion passed 13/0.

Further, the AP recommends the Council task staff to proceed with the staff-proposed methodology and the "next steps" as recommended by the SSC. Motion passed 13/0."

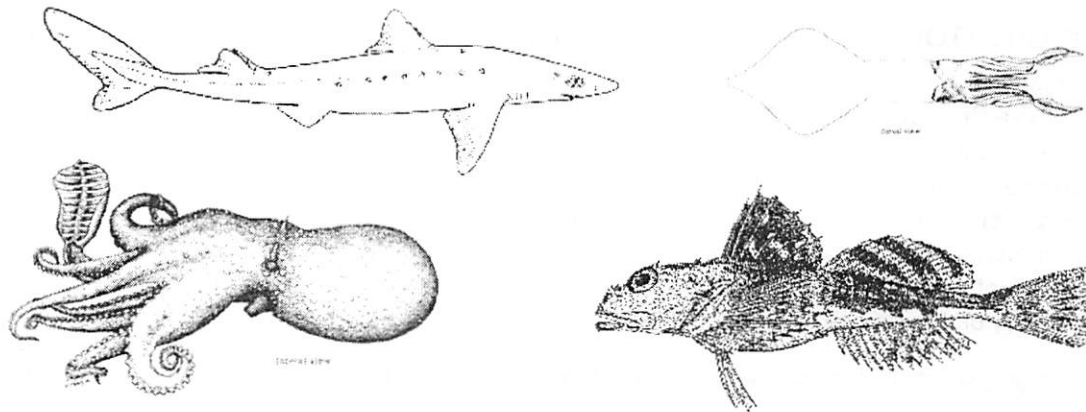
The Non-Target Species Committee met on November 12, 2007 to review the action plans and discussion paper and to provide recommendations to the Council. The committee concurred with separating the two actions and scheduling final action on the GOA FMP amendment for April 2008 and to continue analysis of the joint FMP amendment to break out the groups from the other species assemblage. The committee suggested numerous possible actions that industry could initiate in place of Federal closures under group level quotas. The committee also discussed different ways to prioritize the proposed alternatives for separating the groups from the assemblage (e.g., BSAI skates only, all groups in one of the FMPs, or deleting the option to add grenadiers to the TAC-setting process). The committee report is attached as (Item D-2(b)(4)). Council staff has provided brief comments on possible approaches to prioritize the proposed alternatives (Item D-2(b)(5)).

INITIAL REVIEW DRAFT

Proposed Amendment to the Fishery Management Plan for Groundfish of the
Gulf of Alaska

Set Overfishing and Allowable Biological Catch Specifications for the 'Other Species' Assemblage in the Gulf of Alaska

Environmental Assessment / Regulatory Impact Review / Initial Regulatory
Flexibility Analysis



Abstract: The proposed action would amend the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP) to require the Council to annually set an overfishing limit (OFL) and allowable biological catch level (ABC) for the 'other species' complex. The Council currently sets total allowable catch (TAC) for the 'other species' complex according to a formula in the FMP. Under the proposed action, the Council would instead use the OFL and ABC specifications to determine the TAC for the 'other species' complex, according to the harvest specifications procedure laid out in the FMP for other groundfish species.

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1 PURPOSE AND NEED

1.1 Introduction

The proposed action would amend the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP) to require the Council to annually set an overfishing limit (OFL) and allowable biological catch level (ABC) for the 'other species' complex. The Council currently sets total allowable catch (TAC) for the 'other species' complex according to a formula in the FMP. Under the proposed action, the Council would instead use the OFL and ABC specifications to determine the TAC for the 'other species' complex, according to the harvest specifications procedure laid out in the FMP for other groundfish species.

Actions taken to amend the FMP must meet the requirements of Federal laws and regulations, including the Magnuson-Stevens Fishery Conservation and Management Act, the National Environmental Policy Act, the Endangered Species Act, the Marine Mammal Protection Act, Executive Order 12866, and the Regulatory Flexibility Act, among others. Chapter 1 of this document examines the purpose and need for this action, and Chapter 2 describes the alternatives. An Environmental Assessment (Chapter 3), a Regulatory Impact Review (Chapter 4), and an Initial Regulatory Flexibility Analysis (Chapter 5).

1.2 Purpose and Need

The Council has developed the following problem statement for this analysis:

The GOA Groundfish FMP requires that an annual total allowable catch (TAC) be set for the other species assemblage. That TAC is set less than or equal to the sum of the four groups that comprise the assemblage (sharks, squids, sculpins, and octopuses). However, the FMP does not authorize the specification of an overfishing level (OFL) or allowable biological catch (ABC) for the assemblage. The proposed action is intended to comply with National Standard 1 of the Magnuson-Stevens Act, MSA Section 303(a) for specifying annual catch limits in the FMP, and Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 Section 104(b)(1)(B) requirements that Annual Catch Limits be implemented in 2011, and other applicable laws.

1.3 Background and history of the 'other species' assemblage

The 'other species' complex in the GOA FMP has evolved via a series of amendments. The following section provides an overview of how the complex has been managed historically under the FMP, and the amendments that have modified the complex and its management.

The original FMP, implemented in 1978, identified three separate species categories: 1) prohibited species; 2) specific species or species complexes; and 3) 'other species'. Under the original FMP, 'other species' had a Maximum Sustained Yield/Optimum Yield (MSY/OY) of 16,200 mt, as a whole, based upon historic foreign catch.

Amendment 5 to the FMP removed grenadiers from the 'other species' complex and established them as their own category with a separate MSY/OY of 13,200 mt based upon the recorded average grenadier catch from 1967-1979. Grenadiers were removed from the 'other species' complex given concerns that catches of grenadiers (specifically unforeseen bycatch in the hook-and-line sablefish fishery) would exceed the MSY/OY for the 'other species' complex and close directed fishing for target species. Because

the population of grenadiers was not included in the development of the OY for 'other species', the MSY/OY for the 'other species' complex remained unchanged following the removal of grenadiers.

Amendment 8 to the FMP was implemented in November, 1980 (45 FR 73486). Under this amendment, the grenadiers category was re-named non-specified species and all non-target catches from directed fishing (other than the species named in the 'other species' complex) were reported to that category. This was intended to alleviate operational problems with fishermen reporting non-target species in the 'other species' complex. 'other species' were defined as species that have "*only slight economic value and are not generally targeted upon, but which are either significant components of the ecosystem or have economic potential.*" (45 FR 73486). The OY for the 'other species' complex was established as 5% of the OYs for all target species. The 'other species' complex included sculpins, sharks, skates, eulachon, smelts, capelin, and octopus. At this time, squid were managed as a separate target fishery with a separate MSY and OY. Under amendment 8, OY for the 'other species' complex (as well as squid, other rockfish, and thornyhead rockfish) was modified to be managed Gulf-wide, rather than allocated by management area.

The non-specified category was defined as a "*residual category of species and species groups of no current or foreseeable economic value or ecological importance, which are taken in the groundfish fishery as an accidental bycatch and are in no apparent danger of depletion.*" (45 FR 73486). Grenadiers were included under the non-specified category.

Amendment 14 to the FMP was implemented November 18, 1985 (50 FR 43193). As a by-product of changing the OYs for pollock (western and central), Pacific Ocean perch, Atka mackerel, and "other rockfish," the OY for the 'other species' complex decreased, given the specification in the FMP that OY for the 'other species' complex be established as equal to 5% of the total OY for all of the target groundfish species.

In 1987, the FMP was amended (Amendment 15) such that the TAC calculation for the 'other species' complex was fixed in regulation as equal to 5% of the total TACs for all GOA target groundfish species. This percentage was consistent with previous approaches for OY for the 'other species' complex, and was determined as "ample to provide for the anticipated incidental catch of those species" (NPFMC 2008).

In 1988, Atka mackerel were combined into the 'other species' complex due to low abundance, and the absence of a directed fishery for several years. However, high landings in 1992, and a directed fishery in 1993, led to the development of Amendment 31 to the GOA FMP, which removed Atka mackerel from the 'other species' complex and placed them back into a target species category. In 1988, under Amendment 16, squid were moved into the 'other species' complex. Previously they had been listed as a separate target fishery.

Amendment 39, implemented in 1998, defined a forage fish category in the FMP. Important prey species were included in this category. Regulations were implemented which prohibited directed fishing on this category, placed limitations on allowable bycatch retention, and on the sale, barter, trade, or other commercial exchange, and prohibited the processing of forage fish in a commercial processing facility. The forage fish category contains species that were formerly included in the 'other species' complex, including species of eulachon, capelin, and smelts. The full list of species included in this category is in the GOA groundfish FMP (NPFMC 2008).

Conservation concerns were raised in 2003, regarding a developing skate fishery, and the inability of inseason management to allow for some directed fishing, and still adequately protect skate stocks, while these species were within the larger 'other species' complex. In 2004, amendment 63 to the GOA FMP removed skates from the 'other species' complex and placed them in a target category. Currently OFL,

ABC, and TACs are specified for big skates, longnose skates, and the remaining skates in the *bathyraja* (or other skate) complex. This has allowed for some small but controlled directed fishing to occur on skates until such a time as additional data allow for adequate stock assessment and monitoring of these species to ensure their continued health and viability.

In 2006, amendment 69 to the FMP was implemented, which changed the language of the FMP to allow TAC for the 'other species' complex to be set at or below 5% of the combined TACs for the GOA target species. This amendment was prompted by the fact that the removal of skates from the 'other species' complex could result in increased harvest of the remaining species in the complex. Given the configuration of the complex, it was possible to target one member of the complex up to the full complex-level TAC, inhibiting in-season management's ability to control directed fishing within the complex, and raising concerns given the lack of available stock information on most members of the complex. The Council's intent with Amendment 69 was to provide themselves with the flexibility to set TAC at a level that would allow for incidental catch of 'other species' in the directed groundfish fisheries, allow a limited directed fishery for stocks in the 'other species' complex, but low enough to prevent excessive harvest of a single targeted species or of the complex a whole.

The 'other species' complex currently contains the following species: squids, sculpins, sharks, and octopus. The Council's non-target species committee has been considering initiatives to break out the component groups, and develop individual harvest specifications (OFL, ABC, TAC) for each group. This initiative is a long-term effort, however, and is on hold pending guidance on annual catch limits as specified in the reauthorized Magnuson-Stevens Act of 2007. In the interim, this action has been proposed, to set an aggregate OFL and ABC for the 'other species' complex, which would allow the harvest specifications for this complex to be biologically based.

In State waters, there is no closed season for the 'other species' complex. Instead, they are managed as a parallel fishery where openings and closing are made concurrently with federal actions. Directed fishing for sharks, squid, and octopus requires a Commissioner's permit. The permit is for a specific time period (generally 30 days), specifies the type of gear which may be used, and requires that a logbook be filled out by the vessel operator describing the fishing location, effort, and harvest. Sculpins are managed as groundfish in a parallel fishery where openings and closing are made concurrently with federal actions.

2 ALTERNATIVES

Alternative 1: No Action

Alternative 2: Set aggregate overfishing level (OFL) and acceptable biological catch (ABC) for the GOA other species complex.

Alternative 1 would maintain the status quo. Currently, the FMP specifies that a total allowable catch level (TAC) be set for the 'other species' category at "less than or equal to 5 percent of the combined TACs for target species" (NPFMC 2008). This means that no stock assessment is annually required for the other species assemblage, as is the case for the GOA target species, although the Council has received such assessments in recent years as an appendix to the annual GOA Stock Assessment and Fishery Evaluation (SAFE) Report. Until the implementation of Amendment 69 to the GOA FMP, in 2006, the TAC for the 'other species' complex was automatically set at 5% of the combined TACs for the target species. Amendment 69 gave the Council the flexibility to set the TAC at or below 5% should. Since implementation in 2006, the Council's Plan Team, Scientific and Statistical Committee (SSC), and Advisory Panel (AP) have recommended, and the Council has adopted, lower TACs. The Council's

intent, expressed in the analysis for Amendment 69, is to set TAC at a level that accounts for incidental catch in directed groundfish fisheries, and allows for limited development of target fisheries on stocks in the 'other species' complex, but is low enough to prevent excessive harvest of a single targeted species or of the complex as a whole.

Under Alternative 2, the FMP would be amended to require the 'other species' assemblage to undergo the identical harvest level specifications procedure to which other groundfish species or species groups are subject. This alternative would require an aggregate OFL, ABC, and TAC be determined annually for the 'other species' complex. This alternative would result in the GOA groundfish FMP mimicking the BSAI groundfish FMP in its treatment of the 'other species' category. An annual stock assessment for the 'other species' assemblage would be required, upon which the Plan Teams, SSC, AP, and Council would base their recommendations for harvest specifications.

Table 1 provides a comparison of the harvest specifications for the 'other species' complex between Alternatives 1 and 2, using 2007 data. To determine the aggregate ABC and OFL for the BSAI FMP 'other species' complex, the SSC generally considers ABC and OFL recommendations for each of the four component assemblages, and then sums both the ABCs and the OFLs to achieve an aggregate. It is likely that the SSC would continue this practice for the GOA FMP should this alternative be adopted, and consider OFL/ABC recommendations for the shark, squid, sculpin, and octopus assemblages in arriving at an aggregate OFL and ABC for the 'other species' assemblage as a whole. This analysis assumes that the SSC would use this method to arrive at an aggregate ABC and OFL. In 2006 and 2007, the Plan Teams and SSC reviewed stock assessments for the component species groups of the 'other species' complex, and recommended ABCs and OFLs solely to provide additional information for this analysis.

Table 1 Comparison of harvest specifications for the 'other species' complex under the alternatives, illustrated using 2007 available data

	Alternative 1 (status quo)	Alternative 2 (set ABC and OFL)
ABC and OFL	none	ABC = 7,943 mt; OFL = 10,588 mt ^a Sum of recommended Plan Team/ SSC ABCs and OFLs for component species groups (only recommended for purposes of this analysis)
Maximum permissible TAC	13,271 mt Council may set TAC at ≤ 5% of combined TACs for target species	7,943 mt Council may set TAC ≤ ABC
Actual TAC	4,500 mt Council reduces TAC from maximum, to allow for incidental catch and limited directed fisheries, but reduce risk of excessive harvest on a single stock or the complex as a whole	≤ 7,943 mt Council would retain prerogative to reduce TAC as in Alternative 1

^a Further explanation of the origin of these numbers may be found in Section 3.1.

3 ENVIRONMENTAL ASSESSMENT

The purpose of this section is to analyze the environmental impacts of the proposed Federal action: to set ABC and OFL specifications for the 'other species' complex in the GOA. An environmental assessment is intended, in a concise manner, to provide sufficient evidence of whether or not the environmental impacts of the action are significant (40 CFR 1508.9).

There are four required components of an environmental assessment (EA). The need for the proposal is described in Chapter 1, and the alternatives in Chapter 2. This section discusses the environmental impacts of the proposed action and alternatives. A list of agencies and persons consulted is included later in this document in Section 6.

3.1 'Other species' complex, biological and fishery information

As discussed in Section 1.3, the 'other species' complex in the GOA FMP currently comprises squid, sculpins, sharks, and octopus. Until 2005, TAC was set for this complex as a proportion of the TACs of other target species. Since the implementation of Amendment 69 in 2005, the TAC has been set at a lower level. The Council establishes the TAC level to meet incidental catch needs in other directed groundfish fisheries, buffered to allow for limited directed fishery potential, but low enough to prevent excessive harvest of a single targeted species or of the complex a whole.

Table 2 illustrates the history of TACs and catch for the 'other species' complex in the GOA groundfish fisheries. 'Other species' are primarily taken incidentally, in many groundfish fisheries, although limited directed fishing occurs (e.g., a developing skate fishery in 2003 was the reason that skates were removed from the 'other species' complex to become a target species). Exceeding the TAC for 'other species' places the complex on prohibited species status, but does not currently shut down any target groundfish fishery since there is no ABC or OFL established for 'other species'. Stock assessments are not routinely prepared for the 'other species' complex, although at various times such stock assessments have been reviewed by the Plan Teams and the SSC as an appendix to the GOA SAFE report. Stock assessments are not required as the Council does not currently specify an OFL or ABC for this complex.

Table 2 TAC and catch for 'other species' complex in the GOA groundfish fisheries, 1997-07.

Year	TAC (mt)	Catch (mt)		Catch as % of TAC
1997	13,470	5,409	During these years the 'other species' category included skates, which were broken out as a target species in 2004.	40%
1998	15,570	3,748		24%
1999	14,600	3,858		26%
2000	14,215	5,649		40%
2001	13,619	4,801		35%
2002	11,330	4,040		36%
2003	11,260	6,377		57%
2004	12,942	1,553	2,912	12%
2005	13,872	2,306	2,710	17%
2006	13,856 / 4,500 ^a	3,566	3,501	79%
2007	4,500	2,719	3,498	60%

^a Amendment 69, which amended the FMP to allow TAC to be set at or below 5% of the combined TACs of the target species, was implemented mid-2006. The Council adopted the 4,500 mt TAC at the December 2005 meeting, in anticipation of its implementation as soon as the FMP amendment was approved.

Under proposed Alternative 2, the SSC would recommend an aggregate ABC and OFL for the 'other species' complex as a whole, and the Council would set the TAC at or below the recommended ABC. This mimics the way the 'other species' complex is treated in the BSAI groundfish FMP. In order to come up with aggregate harvest specifications for the BSAI, the SSC considers a group-level ABC and OFL for each component of the 'other species' complex, and then adds the ABCs and OFLs to arrive at an aggregate ABC and OFL. For the purposes of this analysis, it is assumed that the SSC would use a similar method to arrive at an ABC and OFL for the GOA 'other species' complex under Alternative 2.

In late 2006, the Plan Teams and the SSC recommended ABCs and OFLs for the component species groups of the GOA 'other species' complex, for the purposes of this analysis. These numbers were revisited in 2007, and updated for sculpins based on its most recent biomass estimate. The recommendations are listed in Table 3.

Table 3 Plan Team and SSC recommendations for 'other species' ABC and OFL, 2006 and 2007 (mt).

'Other species' complex		ABC (mt)	OFL (mt)	Tier	Notes
component species groups	squid	1,526	2,030	6	Modified Tier 6 formula, ABC based on maximum incidental catch (in 2006)
	sculpins	4,327	5,770	5	Calculations based on biomass estimate from 2007 trawl survey
	sharks	1,792	2,390	6	Modified Tier 6 formula, OFL based on maximum incidental catch (in 1998)
	octopus	298	398	6	Modified Tier 6 formula, OFL based on maximum incidental catch (in 2002)
Aggregate		7,943	10,588		

Under Alternative 2, the Council would then set TAC levels at or below ABC, as specified in the FMP. A comparison of Table 2 and Table 3 illustrates that, based on recent information, the proposed aggregate ABC for the 'other species' complex would allow the TAC to be set at a higher level than has been the practice for the last two years, but still lower than 5% of the combined target species TACs (13,271 mt in 2007), which is the current maximum TAC as prescribed in the FMP. However, the Council could continue to reduce the TAC below the ABC, at a level to meet incidental catch needs but low enough to prevent excessive harvest of a single targeted species or of the complex a whole.

Table 4 lists catch of the 'other species' complex by species group, for the most recent five years. Octopus represents the lowest proportion of the 'other species' catch in most years. A comparison with Table 2 shows that the catch is well below TAC in all years.

Table 4 'Other species' complex catch (mt) for 2003-2007, broken out by component species groups

Year	'other species'	Squid		Sculpin		Sharks		Octopus	
		mt	% of complex	mt	% of complex	mt	% of complex	mt	% of complex
2003	6,377 ^a	91	1%	751	12%	750	12%	210	3%
2004	1,553	157	10%	658	42%	474	31%	265	17%
2005	2,306	627	27%	544	24%	987	43%	149	6%
2006	3,566	1,527	43%	576	16%	1,300	36%	164	5%
2007	2,719	413	15%	855	31%	1,189	44%	263	10%

^a Skates included as part of complex in 2003

Each group in the 'other species' complex plays an important ecological role. The species groups in this category occupy all marine habitats from pelagic to benthic, nearshore to open oceans, and shallow to slope waters. Sharks are top predators, so fluctuations in their populations may have significant effects on community structure. Squid and octopus are highly productive, voracious predators which are in turn important prey for commercially important groundfish, sharks, and marine mammals. Sculpins are important benthic predators, and sculpins serve as prey for many groundfish species.

Stock assessments were most recently prepared for the 'other species' component species groups in 2006, and updated in 2007 and are included as appendices to the GOA SAFE reports (Reuter et al. 2006, Ormserth and Jorgenson 2007, Conners and Jorgensen 2006, Courtney et al. 2006). These assessments provide the most recent information on GOA 'other species', and they are incorporated by reference. The following sections contain an overview of information on each component species group, drawn from the SAFE reports.

Squid

Squid are highly productive, short-lived animals, with a general lifespan of about 1 to 2 years. Ecosystem models estimate that there is a much larger squid biomass in the GOA ecosystem than is represented by their incidental catch in the GOA groundfish fisheries, and that a large proportion of squid mortality is attributable to predation. Consequently, the trawl survey biomass estimates for squid are likely to be low, and are considered unreliable (Table 5). The 2006 incidental catch was significantly higher than previous years, as was the 2007 survey biomass. Natural mortality rate is difficult to calculate, as a high proportion of the biomass dies off during the year.

Table 5 Squid biomass and catch of squids in the GOA (mt)

Year	2003	2004	2005	2006	2007
GOA squid survey biomass	6,322		4,899		11,991
total GOA squid catch	91	157	627	1,527	413
pollock fishery squid catch	62	139	620	1,515	406
pollock fishery as % of total squid catch	69%	89%	99%	99%	99%

The stock assessment author provided ABC and OFL recommendations for both Tier 5 and Tier 6. Tier 5 is problematic because of the unreliable biomass and natural mortality estimates. The traditional Tier 6 calculation, average catch over 1978-1995, results in a very low ABC and OFL, and seems overly conservative considering that squid appear to have a much larger abundance than is indicated by fishery catch. 2006 had the highest incidental catch, and the Plan Team and SSC recommended an alternative Tier 6 calculation, where ABC was set equal to the maximum incidental catch of 1,526 mt, and OFL was calculated at 133% of that amount.

Since 2004, the vast majority of incidental catch of squid occurs in the pollock fishery, largely in an area of the Shelikof Straits, during February and March.

Sculpins

GOA sculpin are dominated by 4 of the largest sculpin species groups: yellow Irish lord, plain sculpin, great sculpin, bigmouth sculpin, although about twenty species show up in the survey. The coefficients of variability (CV) around the biomass estimates for sculpins are low, and biomass is considered to be reliable (Table 6). Life history information is lacking for GOA sculpins, although new data is available for the BSAI.

Table 6 Sculpin complex biomass (selected species, mt) from the 1996-2007 GOA trawl survey

Species	Common name	Biomass						CV
		1996	1999	2001	2003	2005	2007	2007
<i>Hemilepidotus jordani</i>	Yellow Irish lord	17,804	20,255	20,945	12,064	15,952	15,720	0.15
<i>Hemitripterus bolini</i>	Bigmouth sculpin	4,246	3,983	3,471	5,767	5,543	3,126	0.22
<i>Myoxocephalus jaok</i>	Plain sculpin	1,015	1,692	932	1,220	3,912	4,456	0.50
<i>Myoxocephalus polyacanthocephalus</i>	Great sculpin	7,326	3,913	3,540	6,037	6,574	7,734	0.19
TOTAL – all sculpin species		31,313	30,782	30,417	26,515	33,560	32,468	0.11

Because of the reliable biomass estimates, sculpins are assessed in Tier 5. A conservative estimate of natural mortality is applied, based on information on sculpin species throughout the North Pacific. Sculpin catch is low in the groundfish fisheries, relative to their recommended ABC. The most common sculpin species are incidentally caught in flatfish trawl and Pacific cod pot fisheries. Smaller sculpin species are incidental catch in rockfish fisheries.

Sharks

Sharks are a long-lived species with slow growth to maturity, low productivity, and large maximum size. The three most common shark species in the GOA are spiny dogfish, Pacific sleeper shark, and salmon sharks. Reliable point estimates for biomass do not exist for sharks in the GOA, as the efficiency of bottom trawl gear varies by species and is unknown. Average biomass from 1996-2006 is considered the best available biomass estimate for GOA sharks (47,433 mt for spiny dogfish, 37,459 mt for Pacific sleeper shark, and 1,729 mt for salmon shark). Natural mortality has been estimated for spiny dogfish, but not for other species.

The Plan Teams and SSC recommended that ABC and OFL for sharks be specified using a modified Tier 6 approach. The maximum annual incidental catch for sharks between 1990 and 2006 occurred in 1998. This figure, 2,390 mt, is specified as the OFL, and ABC is calculated at 75% of the OFL.

Spiny dogfish and Pacific sleeper sharks are taken incidentally in flatfish and pollock bottom trawl, and sablefish longline fisheries. Catch by species is estimated in Table 7. There are currently no directed commercial fisheries for shark species, although there were some deliveries of spiny dogfish to Kodiak in 2004 and 2005.

Table 7 Estimated catch (mt) of sharks in the GOA, by species.

Year	Spiny dogfish	Pacific sleeper shark	Salmon shark	Other/unidentified shark	Total sharks
	<i>Squalus acanthias</i>	<i>Somniosus pacificus</i>	<i>Lamna ditropis</i>		
2003	369	292	36	53	750
2004	180	233	22	39	474
2005	414	460	53	60	987
2006	948	240	29	83	1,300
2007	692	294	95	107	1,189

Octopus

At least seven species of octopus can be found in the GOA, and all but one are benthic octopuses. In general, octopus life spans either 1-2 years or 3-5 years, although life history is little known for all species except *Enteroctopus dofleini*. Trawl survey biomass estimates are highly variable (Table 8), and may not accurately reflect the species and sizes caught, for example, in the pot fishery. As with squid, ecosystem models indicate that fishery catch is small compared to estimated predation mortality on octopus.

Table 8 GOA survey biomass estimates for octopus (all species, mt)

Survey year	Survey hauls	Hauls with octopus		Estimated biomass
1999	764	47	6.2%	994
2001	489	29	5.9%	994
2003	809	70	8.7%	3,767
2005	839	56	6.7%	1,125
2007	820	71	8.7%	2,296
10 year average				1,835

The Plan Teams and the SSC recommended a modified Tier 6 approach for octopus, as the traditional average catch Tier 6 approach appears too conservative for octopus. ABC is recommended as the maximum incidental catch, which occurred in 2002, and OFL is calculated at 133% of that value.

There is some interest in a directed fishery for octopus, although currently there is little evidence of such a fishery taking place. One Kodiak processor purchases incidentally-caught octopus primarily for halibut bait. Recent increases in market value have increased retention of incidentally-caught octopus in the GOA. The vast majority of incidental catch comes from the Pacific cod pot fishery.

3.2 Physical and Biological Impacts

Alternative 1

Alternative 1 represents the status quo, with no change to the harvest specifications for the 'other species' complex. Status quo groundfish fishing is periodically evaluated in the environmental assessment (EA) that supports decisionmaking on harvest specifications for the BSAI and GOA groundfish fisheries (NMFS 2006). The EA evaluates all physical and biological resources affected by the groundfish fisheries, and describes the impact of the fisheries. A "beneficial" or "adverse" impact leaves the resource in better or worse, respectively, condition than it would be in an unfished condition. "Significant" impacts are those adverse or beneficial impacts that meet specified criteria for each resource component, but generally are those impacts that affect the species population outside the range of natural variability, and which may affect the sustainability of the species or species group.

The analysis of Alternative 2 in NMFS (2006), which describes status quo fishing, is incorporated by reference. The EA has found that under status quo groundfish fishery management there is a low probability of overfishing target species, or generating significant adverse impacts to fish species generally (target, non-specified, forage, or prohibited species). The preliminary stock assessments prepared in 2006 and 2007 also do not indicate that the species of the 'other species' complex are overfished or subject to overfishing. Direct and indirect effects of the groundfish fisheries on marine mammals and seabirds have been identified as adverse but not significant, and effects on essential fish

habitat are no more than minimal and temporary. Effects on ecosystem relationships are also analyzed as adverse but not significant.

Alternative 2

Alternative 2 would change the status quo to annually set an ABC and OFL for the other species assemblage. This would allow the TAC for the 'other species' complex to be based on best available scientific information, and would incur an annual review of stock status of the 'other species' complex. This does not currently occur under status quo management. The annual review and biological limits are likely to further reduce any risk of overfishing the species within the 'other species' complex, and so are likely to be beneficial to those species. As Table 1 demonstrates, the maximum permissible TAC for the 'other species' complex would be reduced, under the proposed action, to a limit that is biologically determined. There continues to be some risk, as these species are managed as a complex, that directed fishing might target an individual stock of the complex and risk overfishing that species. A similar situation occurred in 2003, when a developing fishery for skates emerged in the GOA. At that time, the Council took swift action to remove skates from the 'other species' complex, which is an appropriate way to address such issues under the FMP. This safeguard is still available should developing fisheries for 'other species' emerge.

Under Alternative 2, the impacts of a developing fishery would not be as severe as they could have been in 2003, as the aggregate OFL for the complex will be notably less than the TAC for the complex at that time (which was calculated as 5% of the combined target species TACs). Additionally, with the specification of an overfishing limit, inseason management has the ability to close directed fisheries once the 'other species' OFL has been attained, which presents a further safeguard to any risk of overfishing.

Furthermore, the Council currently sets TAC for the 'other species' complex at a level that is approximately half of the estimated ABC for the complex (see Table 1). The Council would retain its flexibility under Alternative 2 to set the TAC at a level lower than the ABC, should the Council wish to continue its practice of accommodating incidental and limited directed fisheries, but preventing excessive targeting on a particular stock within the complex. For all these reasons, no significantly adverse impacts are likely to be associated with Alternative 2 with respect to the 'other species' complex. The proposed ABC in fact lowers the maximum permissible TAC that the Council might specify. Alternative 2 places the conservation of those species on a more sound, biologically-based footing.

With regard to other elements of the physical and biological environment, the proposed action is unlikely to exert any change. The 'other species' complex is primarily an incidental catch fishery, and no element of this proposed amendment is likely to change this status. The amount of incidental catch of 'other species' is unlikely to change, as this proposed amendment has no impact on other directed groundfish fisheries, and so is unlikely to change fishery interactions with seabirds, marine mammals, habitat, or the ecosystem generally.

3.3 Economic and Socioeconomic Impacts

Alternative 1 represents the status quo, with no change to the harvest specifications for the 'other species' complex. Status quo groundfish fishing is periodically evaluated in the environmental assessment (EA) that supports decisionmaking on harvest specifications for the BSAI and GOA groundfish fisheries (NMFS 2006). The analysis of Alternative 2 in NMFS (2006), which describes status quo fishing, is incorporated by reference. The EA has found that status quo groundfish fishery management does not result in significantly adverse social or economic impacts.

Under Alternative 1, the Council retains the ability to set TAC up to the maximum of 5% of the combined target species TACs, or 13,271 mt in 2007. In practice, since the passage of Amendment 69, the Council has elected to set TAC well below such a limit, at a level sufficient to accommodate incidental catch. Alternative 2 would restrict the overall maximum TAC that could be set for the 'other species' complex to be at or below ABC, which is recommended at 7,943 mt in this analysis (Table 1). While this amendment does preclude the ability of the Council to set a maximum permissible TAC of 5% of the combined target species TACs, which could allow for directed fishing of the 'other species' complex, the Council would be highly unlikely to take such an action. Almost of the catch of the 'other species' complex is taken incidentally in the directed groundfish fisheries. The Council has stated its intent to set the 'other species' TAC at a level appropriate to accommodate incidental catch, and in fact, should directed fishing occur on a species within the 'other species' complex, that species would likely be moved out into the target species category (as with skates in 2003), where it would be subject to biologically-based harvest specifications.

NMFS (2006) estimates earned gross revenue for the GOA 'other species' fishery in 2006 as \$700,000, when the catch was 3,526 mt. This represents a calculation of approximately \$198.5/mt. Using this calculation, the maximum foregone TAC between Alternative 1 and Alternative 2 would be 13,271 mt – 7,943 mt, or 5,328 mt, which could represent potentially \$1.1 million earned gross revenue. However, this figure is only 0.5% of the total earned gross revenue of the GOA groundfish fishery, so that even large changes in the retained catch of 'other species' will only have a small impact on industry gross revenues. Given that the 'other species' catch is frequently not retained, this suggests that it is not currently profitable to harvest the 'other species' complex up to its current reduced TAC of 4,500 mt, let alone to the maximum permissible TAC.

One consequence of the difference between Alternative 2 and Alternative 1 is that because an ABC and OFL are specified for the 'other species' complex, directed fisheries in which 'other species' are incidentally caught would be closed once the OFL is reached. However, in the last 30 years, the catch of 'other species' has never once exceeded the proposed OFL level of 10,588 mt. It is therefore unlikely that other groundfish fisheries would be impacted by a closure to prevent overfishing of the 'other species' complex.

Based on this discussion, and the comparison to Alternative 1, Alternative 2 is not considered to have significant social and economic impacts.

3.4 Cumulative Impacts

Analysis of the potential cumulative effects of a proposed action and its alternatives is a requirement of NEPA. Cumulative effects are those combined effects on the quality of the human environment that result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what Federal or non-Federal agency or person undertakes such other actions (40 CFR 1508.7, 1508.25(a), and 1508.25(c)). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The concept behind cumulative effects analysis is to capture the total effects of many actions over time that would be missed by evaluating each action individually. At the same time, the CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action on the universe but to focus on those effects that are truly meaningful.

The 2004 Final Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (Groundfish PSEIS; NMFS 2004) assesses the potential direct and indirect effects of groundfish FMP policy alternatives in combination with other factors that affect physical, biological and socioeconomic resource components of the BSAI and GOA environment. To the extent practicable, this

analysis incorporates by reference the cumulative effects analysis of the Groundfish PSEIS, including the persistent effects of past actions and the effects of reasonable foreseeable future actions.

Beyond the cumulative impacts analysis documented in the Groundfish PSEIS, no additional past, present, or reasonably foreseeable cumulative negative impacts on the biological, physical, or socioeconomic environment (including fish stocks, essential fish habitat, ESA-listed species, marine mammals, seabirds, marine ecosystems), fishing communities, fishing safety or consumers have been identified that would accrue from the proposed action. Cumulatively significant negative impacts on these resources are not anticipated with the proposed action because no negative direct or indirect effects on the resources have been identified.

One related future action that would interact with this proposed action is the development of an analysis to set individual harvest specifications for the component species groups of the 'other species' complex. That analysis has been initiated by the Council, but is on a longer-term track, as it is waiting national guidance regarding the annual catch limits specified in the reauthorized Magnuson-Stevens Act. However, that analysis is in effect a sequential extension of the one that is proposed here, and so any cumulative impacts will appropriately be discussed at the time of the future analysis.

4 Regulatory Impact Review (RIR)

4.1 Introduction

This Regulatory Impact Review (RIR) evaluates regulatory alternatives that would modify the annual determination of the harvest specifications for the 'other species' complex in the GOA. This RIR has been prepared to meet the requirement contained in Presidential Executive Order 12866, to evaluate the costs and benefits of regulatory actions.

The 'other species' complex includes shark, sculpin, octopus, and squid. These species are taken as incidental catches in directed groundfish fisheries. Skates were included in the 'other species' complex category until 2004; they were taken from this category and made a target species, after a commercial fishery targeting them emerged in 2003.

Currently, a TAC for the the GOA 'other species' complex is set at less than or equal to 5% of the sum of the TACs for the target groundfish species. The alternative under consideration in this RIR would allow the Council to set an ABC and OFL for the 'other species' complex.

4.2 What is a Regulatory Impact Review?

This RIR is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735, October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant". A "significant regulatory action" is one that is likely to:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

4.3 Statutory authority for this action

The National Marine Fisheries Service manages the U.S. groundfish fisheries of the Gulf of Alaska management area in the Exclusive Economic Zone under the Fishery Management Plan (FMP) for this area. The North Pacific Fishery Management Council prepared the FMP under the authority of the Magnuson-Stevens Fishery Conservation and Management Act. Regulations implement the FMP at 50 CFR part 679. General regulations that also pertain to U.S. fisheries appear at subpart H of 50 CFR part 600.

4.4 Purpose and need for this action

Chapter 1 provides a detailed discussion of the purpose and need for this action, and a history of the evolution of the 'other species' complex in the GOA FMP. The following problem statement was adopted by the Council for this action:

The GOA Groundfish FMP requires that an annual total allowable catch (TAC) be set for the other species assemblage. That TAC is set less than or equal to the sum of the four groups that comprise the assemblage (sharks, squids, sculpins, and octopuses). However, the FMP does not authorize the specification of an overfishing level (OFL) or allowable biological catch (ABC) for the assemblage. The proposed action is intended to comply with National Standard 1 of the Magnuson-Stevens Act, MSA Section 303(a) for specifying annual catch limits in the FMP, and Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 Section 104(b)(1)(B) requirements that Annual Catch Limits be implemented in 2011, and other applicable laws.

4.5 Description of the alternatives under consideration

There are two alternatives under consideration in this analysis, listed below. The alternatives are described in detail in Section 2 of this document.

Alternative 1: No Action

Alternative 2: Set aggregate overfishing level (OFL) and acceptable biological catch (ABC) for the GOA other species assemblage.

4.6 Background information on the fishery

Sections 1.3 and 3.1 of this document provide background information on the role of the 'other species' complex in the groundfish fisheries of the GOA. Section 3.3 summarizes information on the economic and socio-economic environment, and provides information on the potential social and economic impacts to the human environment from the alternatives under consideration. Section 5.7 of the IRFA in this document provides estimates of the number of small entities (defining small entities using U.S. Small Business Administration criteria) that may be directly regulated by this action, and describes them. Section 5.8 of the IRFA discusses adverse economic impacts on these directly regulated small entities. Further background on the harvesting and processing sectors of the Alaska groundfish fisheries can be found in the Alaska Groundfish Programmatic Supplemental Environmental Impact Statement (NMFS 2004), and the harvest specifications EIS (NMFS 2006). Some key points include:

- Almost all 'other species' catches are currently made incidentally to harvests of targeted groundfish species.
- Limited markets exist for incidental harvests of some of these species, but markets elsewhere do support directed fisheries for these, such as spiny dogfish, octopus, and squid. It is possible for directed fisheries to emerge for some of these species. The likelihood of these markets emerging, or the likely magnitude of associated directed fisheries, cannot currently be predicted.
- Atka mackerel and skates were formerly included in the 'other species' complex in the GOA, and were removed when directed fisheries emerged for these species. A directed skate fishery emerged in 2003, and skates were given target species status in 2004.
- Even if the entire 'other species' complex had been caught and retained in 2006, the revenues generated would have been small compared to overall GOA fishery gross revenues (less than 1%).
- The annual catches of species in the 'other species' complex have been small compared to total GOA groundfish catches (on the order of 1% per year).

4.7 Analysis of the alternatives

Alternative 1 represents the status quo, with no change to the harvest specifications for the 'other species' complex. Status quo groundfish fishing is periodically evaluated in the environmental assessment (EA) that supports decisionmaking on harvest specifications for the BSAI and GOA groundfish fisheries (NMFS 2006). The analysis of Alternative 2 in NMFS (2006), which describes status quo fishing, is incorporated by reference. The EA has found that status quo groundfish fishery management does not result in significantly adverse social or economic impacts.

Under Alternative 1, the Council retains the ability to set TAC up to the maximum of 5% of the combined target species TACs, or 13,271 mt in 2007. In practice, since the passage of Amendment 69, the Council has elected to set TAC well below such a limit, at a level sufficient to accommodate incidental catch. Alternative 2 would restrict the overall maximum TAC that could be set for the 'other species' complex to be at or below ABC, which is recommended at 7,943 mt in this analysis (Table 1). While this amendment does preclude the ability of the Council to set a maximum permissible TAC of 5% of the combined target species TACs, which could allow for directed fishing of the 'other species' complex, the Council would be highly unlikely to take such an action. Almost of the catch of the 'other species' complex is taken incidentally in the directed groundfish fisheries. The Council has stated its intent to set the 'other species' TAC at a level appropriate to accommodate incidental catch, and in fact, should directed fishing occur on a species within the 'other species' complex, that species would likely be moved out into the target species category (as with skates in 2003), where it would be subject to biologically-based harvest specifications.

NMFS (2006) estimates earned gross revenue for the GOA 'other species' fishery in 2006 as \$700,000, when the catch was 3,526 mt. This represents a calculation of approximately \$198.5/mt. Using this calculation, the maximum foregone TAC between Alternative 1 and Alternative 2 would be 13,271 mt – 7,943 mt, or 5,328 mt, which could represent potentially \$1.1 million earned gross revenue. However, this figure is only 0.5% of the total earned gross revenue of the GOA groundfish fishery, so that even large changes in the retained catch of 'other species' will only have a small impact on industry gross revenues. Given that the 'other species' catch is frequently not retained, this suggests that it is not currently profitable to harvest the 'other species' complex up to its current reduced TAC of 4,500 mt, let alone to the maximum permissible TAC.

One consequence of the difference between Alternative 2 and Alternative 1 is that because an ABC and OFL are specified for the 'other species' complex, directed fisheries in which 'other species' are incidentally caught would be closed once the OFL is reached. However, in the last 30 years, the catch of 'other species' has never once exceeded the proposed OFL level of 10,588 mt. It is therefore unlikely that other groundfish fisheries would be impacted by a closure to prevent overfishing of the 'other species' complex.

4.8 Summary of significance criteria

As noted in NMFS (2006), the estimate of current first wholesale gross revenue from the GOA 'other species' complex is \$700,000, based on the current TAC. This is based on a 2006 'other species' catch of 3,526 mt. Under alternative 2, the Council would most likely continue to set TAC at similar levels (currently 4,500 mt), to accommodate incidental catch but prevent intensive fishing on a particular stock within the complex. This would not constrain directed groundfish fisheries' incidental catch of 'other species'. In the unlikely case that the Council were to set maximum permissible TAC for the 'other species' complex, the maximum foregone TAC, should it be fully harvested, could represent \$1.1 million earned gross revenue.

The specification of an OFL under Alternative 2 means that once the OFL for 'other species' is attained, the directed fisheries taking them incidentally may be closed to avoid overfishing of the 'other species' complex. However, the level of 'other species' catch has historically never reached a level where this would occur.

Therefore, these alternatives do not appear to have the potential to impose costs of \$100 million on the U.S. economy. These alternatives do not appear to "adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities..."

NMFS has not identified any factors that would (a) "Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency"; (b) "Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof"; or (c) "Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the executive order."

5 Initial Regulatory Flexibility Analysis (IRFA)

5.1 Introduction

This Initial Regulatory Flexibility Analysis (IRFA) evaluates regulatory alternatives that would modify the annual determination of the harvest specifications for the 'other species' complex in the GOA. This RIR has been prepared to meet the requirement contained in Presidential Executive Order 12866, to evaluate the costs and benefits of regulatory actions.

The 'other species' complex includes shark, sculpin, octopus, and squid. These species are taken as incidental catches in directed groundfish fisheries. Skates were included in the 'other species' complex category until 2004; they were taken from this category and made a target species, after a commercial fishery targeting them emerged in 2003.

Currently, a TAC for the the GOA 'other species' complex is set at less than or equal to 5% of the sum of the TACs for the target groundfish species. The alternative under consideration in this RFA would allow the Council to set an ABC and OFL for the 'other species' complex.

5.2 What is the Regulatory Flexibility Act?

The Regulatory Flexibility Act (RFA), first enacted in 1980, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require that agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities. The RFA emphasizes predicting impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action.

On March 29, 1996, President Clinton signed the Small Business Regulatory Enforcement Fairness Act. Among other things, the new law amended the RFA to allow judicial review of an agency's compliance with the RFA. The 1996 amendments also updated the requirements for a final regulatory flexibility analysis, including a description of the steps an agency must take to minimize the significant economic impact on small entities. Finally, the 1996 amendments expanded the authority of the Chief Counsel for Advocacy of the Small Business Administration (SBA) to file *amicus* briefs in court proceedings involving an agency's violation of the RFA.

In determining the scope, or 'universe', of the entities to be considered in an IRFA, NMFS generally includes only those entities, both large and small, that can reasonably be expected to be directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis. NMFS interprets the intent of the RFA to address negative economic impacts, not beneficial impacts, and thus such a focus exists in analyses that are designed to address RFA compliance.

Data on cost structure, affiliation, and operational procedures and strategies in the fishing sectors subject to the proposed regulatory action are insufficient, at present, to permit preparation of a "factual basis" upon which to certify that the preferred alternative does not have the potential to result in "significant

adverse impacts on a substantial number of small entities” (as those terms are defined under RFA). Because, based on all available information, it is not possible to ‘certify’ this outcome, should the proposed action be adopted, a formal IRFA, focusing on the complete range of available alternatives (including the designated “preferred” alternative), has been prepared and is included in this package for Secretarial review.

5.3 IRFA Requirements

Under 5 U.S.C., Section 603(b) of the RFA, each IRFA is required to contain:

A description of the reasons why action by the agency is being considered;

A succinct statement of the objectives of, and the legal basis for, the proposed rule;

A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);

A description of the projected reporting, record keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;

A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the proposed action, consistent with applicable statutes, and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:

- 1) The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
- 2) The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
- 3) The use of performance rather than design standards;
- 4) An exemption from coverage of the rule, or any part thereof, for such small entities.

5.4 What is a Small Entity?

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) small government jurisdictions.

Small businesses. Section 601(3) of the RFA defines a “small business” as having the same meaning as “small business concern” which is defined under Section 3 of the Small Business Act. “Small business” or “small business concern” includes any firm that is independently owned and operated and not dominant in its field of operation. The SBA has further defined a “small business concern” as one “organized for profit, with a place of business located in the United States, and which operates primarily within the United States or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor. A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture,

association, trust or cooperative, except that where the firm is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture.”

The SBA has established size criteria for all major industry sectors in the US including fish harvesting and fish processing businesses. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of \$4.0 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the \$4.0 million criterion for fish harvesting operations. Finally a wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

The SBA has established “principles of affiliation” to determine whether a business concern is “independently owned and operated.” In general, business concerns are affiliates of each other when one concern controls or has the power to control the other or a third party controls or has the power to control both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern’s size. However, business concerns owned and controlled by Indian Tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805 are not considered affiliates of such entities, or with other concerns owned by these entities solely because of their common ownership.

Affiliation may be based on stock ownership when (1) A person is an affiliate of a concern if the person owns or controls, or has the power to control 50% or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock, or (2) If two or more persons each owns, controls or has the power to control less than 50% of the voting stock of a concern, with minority holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern.

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors or general partners control the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint venturers if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations The RFA defines “small organizations” as any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of fewer than 50,000.

5.5 Reason for Considering the Proposed Action

Chapter 1 provides a detailed discussion of the purpose and need for this action., and the evolution of the 'other species' complex in the GOA FMP. The following problem statement was adopted by the Council for this action:

The GOA Groundfish FMP requires than an annual total allowable catch (TAC) be set for the other species assemblage. That TAC is set less than or equal to the sum of the four groups that comprise the assemblage (sharks, squids, sculpins, and octopuses). However, the FMP does not authorize the specification of an overfishing level (OFL) or allowable biological catch (ABC) for the assemblage. The proposed action is intended to comply with National Standard 1 of the Magnuson-Stevens Act, MSA Section 303(a) for specifying annual catch limits in the FMP, and Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 Section 104(b)(1)(B) requirements that Annual Catch Limits be implemented in 2011, and other applicable laws.

5.6 Objectives of, and legal basis for, the proposed action

The objectives of this action are to: (1) protect the long-term sustainability of the stocks that comprise the 'other species' complex; (2) comply with the Magnuson-Stevens Fishery Conservation and Management Act requirement to set annual catch limits in the FMP.

The National Marine Fisheries Service manages the U.S. groundfish fishery of the Gulf of Alaska management area in the Exclusive Economic Zone under the Fishery Management Plans for this area. The North Pacific Fishery Management Council prepared the FMP under the authority of the Magnuson-Stevens Act. Regulations implement the FMP at 50 CFR part 679. General regulations that also pertain to U.S. fisheries appear at subpart H of 50 CFR part 600.

5.7 Number and description of directly regulated small entities

The directly regulated small entities are those entities that fish for groundfish in the GOA, and which make incidental catches of sculpin, shark, octopus, and squid in the course of these operations.

In 2006 (the most recent year for which complete information on the number of participating vessels has been compiled), 648 small catcher vessels and 6 small catcher-processors were directly regulated under the SBA criteria. Most of these (486 catcher vessels and 4 catcher-processors) were hook-and-line vessels. In addition, there were 144 vessels using pot gear (143 catcher vessels and one catcher processor) and 77 vessels using trawls (76 catcher vessels and one catcher-processor) (Hiatt et al 2007, Table 37).

These estimates of small vessel numbers are probably high for several reasons. The analysis only takes account of operational revenues from Federally managed groundfish fisheries. It does not include revenues from other Federally managed fisheries, or from State managed fisheries. These other revenue sources, however, would be relevant to the determination of operation size under SBA criteria. Thus, at least some of these operations are likely to have gross revenues greater than \$4.0 million. Moreover, this analysis has not taken account of affiliations among operations. In many instances, operations are affiliated. For example, many fishermen own shares in more than one fishing vessel in order to diversify their risks. AFA catcher vessels also operate in the GOA and these vessels are considered large by reason

of their participation in AFA cooperatives in the BSAI. AFA affiliation may particularly bias the small trawler count upwards.

These vessels had average gross revenues of \$190,000 from Federally managed groundfish fishing. Average revenues were \$380,000 (at ex vessel) for catcher vessels. Hook-and-line catcher vessels grossed \$300,000, pot catcher vessels grossed \$470,000, and trawl catcher vessels grossed \$910,000. Because of confidentiality restrictions, there are not enough catcher-processor pot or trawl vessels to permit the reporting of average gross revenues. There are enough small hook-and-line catcher processors to report this average; these vessels averaged \$2,670,000 (first wholesale) (Hiatt et al 2007, Table 39).

5.8 Adverse economic impacts on directly regulated small entities

A detailed discussion of the impacts of the alternatives may be found in Section 4.7 of the RIR. The following analysis draws on this earlier discussion.

All alternatives provide for the 'other species' incidental catch needs of fisheries targeting groundfish in the GOA. No existing fisheries should experience adverse impacts from any of these alternatives. No small entity participating in an existing groundfish target fishery should be adversely impacted by these alternatives.

Alternative 1 is the status quo. This alternative does not appear to create adverse impacts on directly regulated small entities.

Alternative 2 allows the Council to continue providing for incidental catches, while ensuring the continued sustainability of these species. The Council retains the flexibility to adjust TAC levels to accommodate future incidental catch as well as developing fisheries. Like Alternative 1, this alternative does not appear to create adverse impacts for directly regulated small entities.

5.9 Recordkeeping and reporting requirements

The analysis did not identify any new "projected reporting, record keeping and other compliance requirements" associated with the proposed FMP amendment and regulatory changes.

5.10 Duplicating, overlapping, or conflicting Federal rules

This analysis did not reveal any federal rules that duplicate, overlap, or conflict with the proposed action.

5.11 Comparison of preferred and other alternatives

The Council is proposing alternative 2 as a change from the status quo. As noted in Section 5.8, neither alternative creates adverse impacts for directly regulated small entities. Alternative 2 better meets the action objectives and the MSA National Standard requirement to specify annual catch limits.

6 Preparers, Agencies and Persons Consulted

Preparers:	Diana Evans, NPFMC
Agencies and persons consulted:	AFSC SAFE authors Josh Keaton, NMFS AKR

7 References

- Conners M.E. and E. Jorgensen. 2006. Appendix D: Octopus Complex. Gulf of Alaska Stock Assessment and Fishery Evaluation Report. NPFMC. December 2006.
- Courtney D., C. Tribuzio, K. Goldman, J. Rice. 2006. Appendix E: GOA Sharks. Gulf of Alaska Stock Assessment and Fishery Evaluation Report. NPFMC. December 2006.
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- NMFS. 2004. Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement, U.S. Dept. of Commerce, NOAA Fisheries, Alaska Region. June 2004.
<http://www.fakr.noaa.gov/sustainablefisheries/seis/intro.htm>.
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- Reuter R., T. TenBrink, S. Gaichas, S. Lowe. 2006. Appendix B: 2006 GOA Sculpins. Gulf of Alaska Stock Assessment and Fishery Evaluation Report. NPFMC. December 2006.
- Ornseth O. and E. Jorgenson. 2007. Appendix C: Gulf of Alaska Squids. Gulf of Alaska Stock Assessment and Fishery Evaluation Report. NPFMC. December 2006.

**Proposed Text to Amend
the Fishery Management Plan for Groundfish of the Gulf of Alaska**

1. In Table ES-2, row 'Procedure to set Total Allowable Catch (TAC)', delete the sentence:

TAC for the "other species" category will be set at 5% of the summed target species TACs.

2. In Section 3.1.2, numbered paragraph "4" beginning "Other Species", delete the sentence:

The TAC will be less than or equal to 5 percent of the combined TACs for target species.

3. In Section 3.2.5.1, revise the introductory paragraph to read as follows:

A procedure has been developed whereby the Council may set annual harvest levels by specifying a total allowable catch for each groundfish fishery on an annual basis. The procedure is used to determine TACs for every groundfish stock and stock complex managed by the FMP.

4. In Section 3.2.5.1, revise numbered paragraph "2" to read as follows:

Determine a TAC based on biological and socioeconomic information. The TAC must be less than or equal to the ABC. The TAC may be lower than the ABC if bycatch considerations or socioeconomic considerations cause the Council to establish a lower harvest.

5. In Appendix A.1, revise or include the following paragraphs, in the appropriate order:

Amendment 68, implemented December 20, 2006:

1. Created a rockfish cooperative program allocating primary rockfish species in the Central GOA to eligible LLP licenses, based on catch history of legal landings of these species
2. Allowed eligible harvesters to fish in a cooperative or in a limited access fishery.
3. Program is authorized from January 1, 2007 until December 31, 2008.

Amendment 79, implemented _____.

Removed exception by which TAC was determined for the "other species" category. The "other species" stock complex is now subject to the same framework for setting ABC and TAC as other groundfish stocks and stock complexes.

**ACTION PLAN TO SET OVERFISHING AND ALLOWABLE BIOLOGICAL CATCH SPECIFICATIONS
FOR THE OTHER SPECIES ASSEMBLAGE IN THE GULF OF ALASKA GROUND FISH FMP
January 2008**

PROPOSED ACTION In April 2005, the Council initiated an amendment to the GOA Groundfish FMP that would set an OFL and ABC for the GOA other species assemblage¹.

PROBLEM STATEMENT/OBJECTIVE The GOA Groundfish FMP requires that an annual Total Allowable Catch (TAC) be set for the other species assemblage. That TAC is set less than or equal to the sum of the four groups that comprise the assemblage (sharks, squids, sculpins, and octopuses)². However, the FMP does not authorize the specification of an overfishing level (OFL) or allowable biological catch (ABC) for the assemblage. The proposed action is intended to comply with National Standard 1 of the Magnuson-Stevens Act, MSA Section 303(a)³ for specifying annual catch limits in the FMP, and Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSRA) Section 104(b)(1)(B) requirements that Annual Catch Limits⁴ be implemented by 2011, and other applicable laws.

ANALYSIS An EA for a GOA Groundfish FMP amendment is required.

PROPOSED RANGE OF ALTERNATIVES

Alternative 1. No Action

Alternative 2. Set aggregate OFL and ABC for the GOA other species assemblage.

STAFF RESOURCES

NPFMC Diana Evans (EA)
NOAA AKR Scott Miller (EA), Andy Smoker (regional coordinator)
NOAA AFSC Olav Ormseth (REFM liaison), Jennifer Ferdinand (Observer Program liaison), Rebecca Reuter, M.Elizabeth O'Connell, Todd TenBrink, Dave Clausen, Cindy Tribuzio
NOAA GCAK John Lepore (legal review)
HQ No national policy implications

TIMELINE TO IMPLEMENTATION

August 2006 interagency staff meeting to draft the action plan for this analysis
October 2006 Council, AP, and SSC reviews action plan and analytical outline
November 2006- AFSC prepares stock assessments for the groups
- Plan Teams recommend 2007-2008 group OFLs and ABCs for analysis
December 2006 SSC recommends 2007-2008 groups OFLs and ABCs for analysis
March 2007 - SF In-Season Management staff prepares discussion paper on:
1) temporal/spatial fishery interactions between groups and directed groundfish fisheries; and
2) effects of proposed group specifications on groups and directed fisheries
- Non-Target Species Committee, Council, AP, and SSC reviews paper
June 2007 interagency staff meeting to revise the action plan for this analysis
Sep 2007 GOA Plan Team reviews revised action plan, AFSC updates stock assessments
Feb 2008 Initial Review

¹ A second action to separate the BSAI and GOA other species assemblages into the component groups is proposed to be addressed in a separate FMP amendment.

² Skates were separated from the assemblage in 2004 under GOA Plan Amendment 63.

³ As amended under MSRA Section 103(c)(3)

⁴ The definition of which is under development by NOAA Headquarters Staff

April 2008 Final Action

Spring/summer 2008 Secretarial approval of FMP amendment (no rulemaking)

November 2008 Plan Teams recommend GOA other species assemblage OFLs and ABCs for 2009/2010

December 2008 Council recommends GOA other species assemblage OFLs, ABCs, and TACs for 2009/2010

Feb/Mar 2009 Publication of GOA groundfish specifications

APPLICABLE LAWS NEPA, MSA

MAJOR ISSUES

- Protect other species assemblage from overfishing as an intermediate step in a long range plan to revise policy for management of non-target groundfish species
- No economic, enforcement, or legal issues identified
- Addresses MSRA requirements to prevent overfishing and set annual catch limits for all stocks
- Implementation will require biennial preparation of AFSC stock assessment chapters for the groups

**ACTION PLAN TO SET SEPARATE SPECIFICATIONS FOR SQUID, SHARK, SKATE, SCULPIN,
OCTOPUS, AND GRENADIERS IN THE BERING SEA/ALEUTIAN ISLANDS AND GULF OF ALASKA
GROUND FISH FMPs
January 2008**

PROPOSED ACTION In April 2005, the Council initiated a joint BSAI/GOA Groundfish FMP amendment to eliminate the "other species" category and set specifications for squid, shark, skate, sculpin, and octopus (and possibly grenadier), based on recommendations from its Groundfish Plan Teams, Scientific and Statistical Committee, and Non-Target Species Committee.

PROBLEM STATEMENT/OBJECTIVE The two groundfish FMPs require that specifications be set for the "other species" assemblage category (BSAI squid and GOA skate specifications already are set separately). Management of the assemblages, however, may not offer sufficient protection from overfishing of the component groups because its overfishing level (OFL), allowable biological catch (ABC), and total allowable catch (TAC) is set equal to the sum of the estimates for the groups in the BSAI. The GOA FMP does not authorize the specification of an OFL and ABC for the assemblage; only a TAC is set at less than or equal to the sum of four groups. Therefore, any one (or more) groups (or species within a group¹) are vulnerable to overfishing because they are managed under specifications that are set above the level deemed appropriate for that individual group.

ANALYSIS An EA for a joint BSAI/GOA Groundfish GMP amendment is required.

RANGE OF ALTERNATIVES

- Alternative 1. No Action
- Alternative 2. Eliminate "other species" assemblage and manage squids, skates, sculpins, sharks, and octopi as separate assemblages.
- Alternative 3. Manage only BSAI skates and BSAI and GOA sculpins as separate assemblages.
- Alternative 4. Manage only BSAI skates as separate assemblage
- Alternative 5. Add grenadiers to BSAI and GOA TAC specification process:
 - Option 1. separate assemblage
 - Option 2. in other species assemblage

STAFF RESOURCES

NPFMC Jane DiCosimo (project leader, EA), Diana Stram and/or Diana Evans (EA)
NOAA AKR Scott Miller (economic analysis in EA, RIR, IRFA), Andy Smoker (regional coordinator), Steve Lewis (GIS); Sally Bibb (CDQ liaison), Jim Hale (editor)
NOAA AFSC Olav Ormseth (REFM liaison), Jennifer Ferdinand (Observer Program liaison), Rebecca Reuter, M. Elizabeth O'Connell, Todd TenBrink, Dave Clausen, Cindy Tribuzio
NOAA GCAK John Lepore (legal review)
HQ No national policy implications

TIMELINE TO IMPLEMENTATION

August 2006 interagency staff meeting to draft the action plan for this analysis
October 2006 Council, AP, and SSC reviews action plan and analytical outline
November 2006- AFSC prepares stock assessments for the groups
- Plan Teams recommend 2007-2008 group OFLs and ABCs for analysis
December 2006 SSC recommends 2007-2008 groups OFLs and ABCs for analysis

¹ Specifications for species will be set as information is deemed sufficient to break them out of a group, per GOA Plan Amendment 63.

March 2007 - SF In-Season Management staff prepares discussion paper on:
 1) temporal/spatial fishery interactions between groups and directed groundfish fisheries; and
 2) effects of proposed group specifications on groups and directed fisheries
 - Non-Target Species Committee, Council, AP, and SSC reviews paper
 June 2007 interagency staff meeting to revise the action plan for this analysis
 September 2007 Groundfish Plan Teams review AKR staff discussion paper on fishery interactions
 October 2007 AP and SSC reviews revised action plan and discussion paper
 February 2008 Council reviews revised action plan and discussion paper
 June 2008 Preliminary Review of draft analysis
 Summer/Fall 08 Non-Target Species Committee reviews draft analysis
 Sept 2008 Plan Teams review draft analysis
 October 2008 Initial Review
 December 2008 Final Action
 Fall 2009 Approval by the Secretary; Implementation of FMP amendments
 November 2009 Plan Teams recommend group OFLs and ABCs for 2010/2011
 December 2009 Council (and AP and SSC) recommends group OFLs, ABCs, and TACs for 2010/2011
 March 2010 Implementation of group specifications, with other groundfish specifications

APPLICABLE LAWS NEPA, E.O. 12866, RFA, MSA

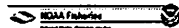
MAJOR ISSUES

- Protect non-target species from overfishing as intermediate step in long range plan to revise policy
- Most non-target species are managed under Tier 5 or 6 (data poor), yet these specifications are managed equal to those set at Tier 1 or 3 (less uncertainty)
- Difficulty in managing small TACs, with CDQ and area suballocations
- Complex temporal/spatial patterns of how fleets shift effort between directed fisheries
- Historical patterns of how fleets respond to high levels of incidental catches
 - Can not predict future patterns – case by case basis
- How SF –In Season Management responds when catches approach TAC, ABC, and OFL
- Geographic hotspots where high levels of incidental catches occur (e.g. BS octopus in Areas 517/519)
- Adding grenadier TAC would further constrain other BSAI groundfish TACs under OY cap
- Determining if specifications should be set for other non-specified species would unduly burden this analysis and compromise the proposed timeline (defer to “next step”)
- Would increase workload on recordkeeping and reporting systems (would be mitigated by electronic reporting), In-Season Management, Groundfish Plan Teams, and SSC
- Already increased workload on AFSC RACE, REFM, and Observer Programs
- No enforcement or legal issues identified

Evaluating Potential Fishery Effects of Changes to Other Species Management

Analysis Conducted
by
Scott Miller
Economist
NOAA Fisheries, Alaska Region, Analytical Team

With Contributions by
Andy Smoker, NOAA Fisheries Alaska Region Inseason Management
Jane DiCosimo, North Pacific Fisheries Management Council Staff.



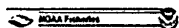
Focus of Discussion Paper

- Is the catch of the species in question, if managed independently, likely to approach management benchmarks such that management measures would be necessary to prevent overfishing?
- Which fisheries (gear/target species) are primarily responsible, and thus most likely to be affected by management measures, for the incidental catch of the species in question?
- What are the implications of spatial and temporal aspects of the incidental catch?
- In light of the answers to the above questions, what methodology would be appropriate to analyze the likely effects on fishery revenue of potentially needed management measures?

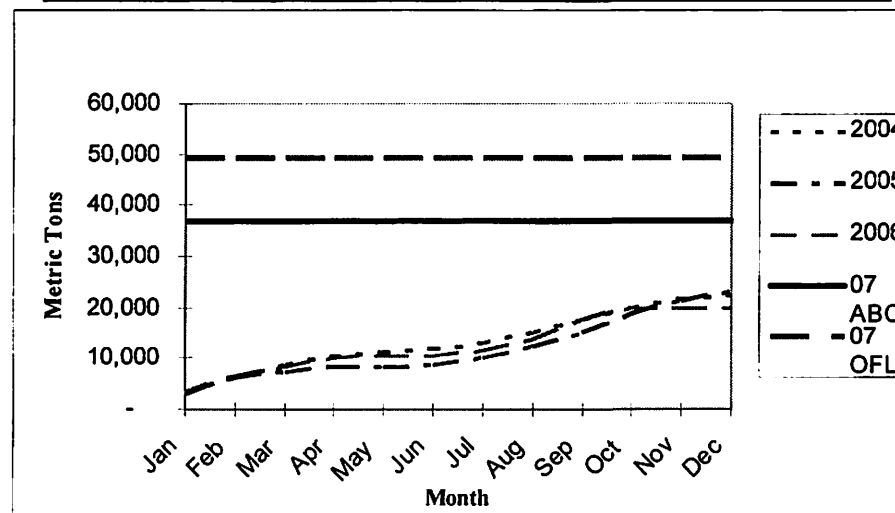


The Alternative Set

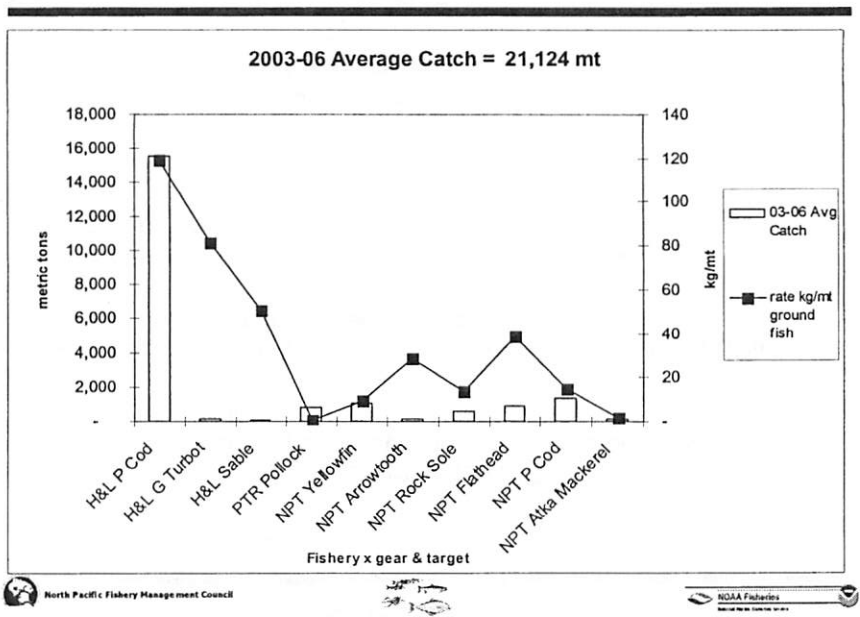
- Alternative 1: No Action
- Alternative 2: Eliminate "other species" assemblage and manage squids, skates, sculpins, sharks, and octopi as separate assemblages.
- Alternative 3: Manage only BSAI skates and BSAI and GOA sculpins as separate assemblages.
- Alternative 4: Manage only BSAI skates as a separate assemblage.
- Alternative 5: Add grenadiers to BSAI and GOA TAC specification process.
 - Option 1. separate assemblage
 - Option 2. in other species assemblage



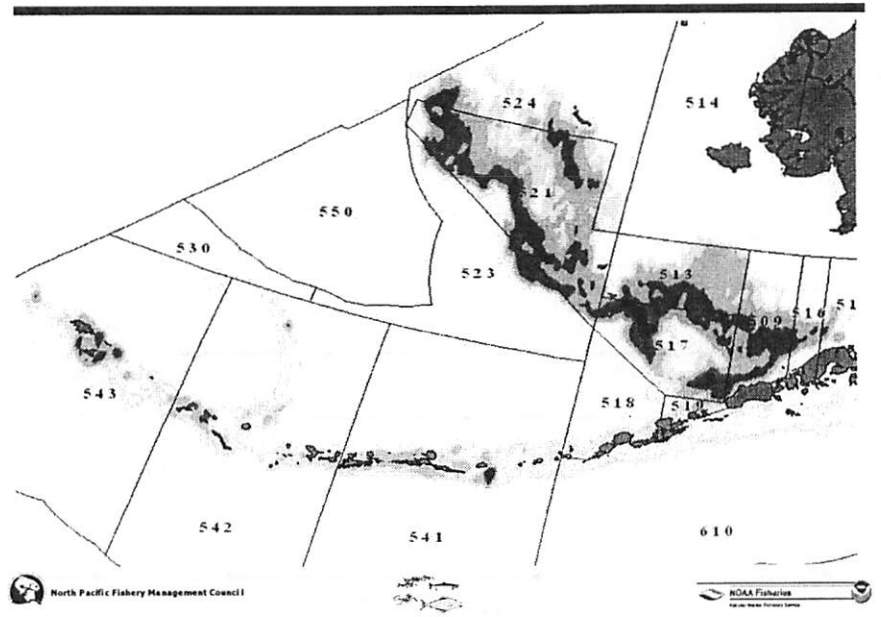
Cumulative BSAI Skate Catch by Year (2004-6) Relative to Skate ABC and OFL



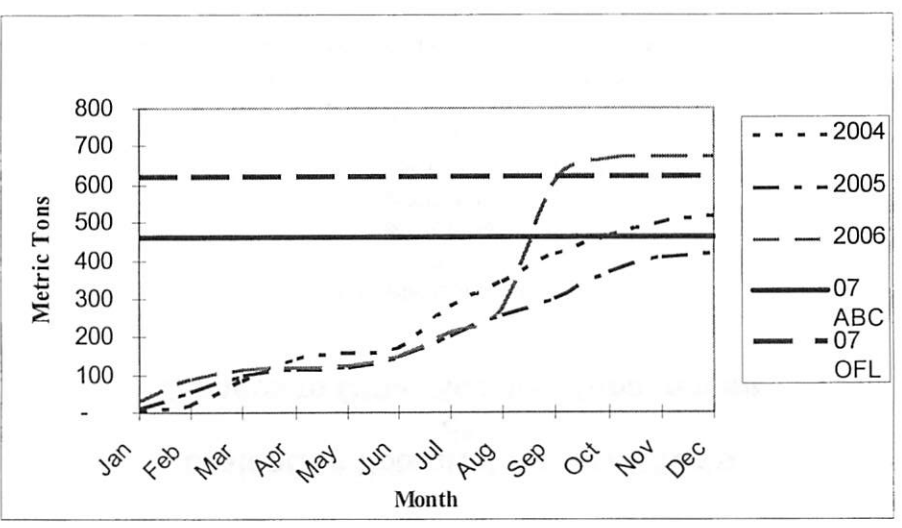
BSAI Skate Average Catch by Gear and Target



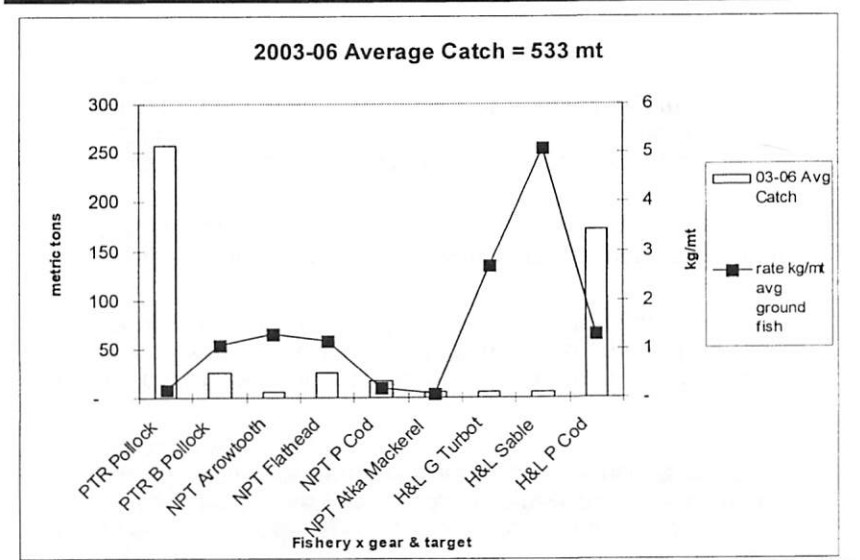
BSAI Skate Catch Density (kg/mt groundfish) 2003-2005



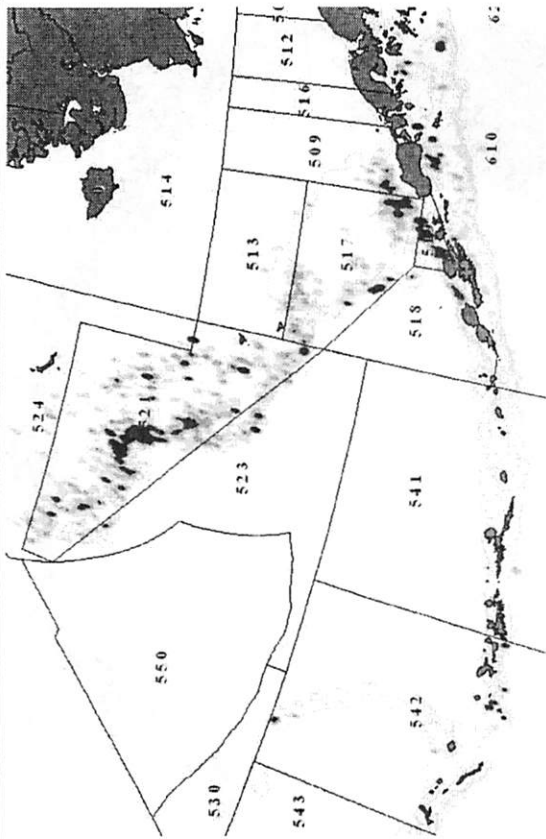
Cumulative BSAI Sharks Catch by Year (2004-6) Relative to ABC and OFL



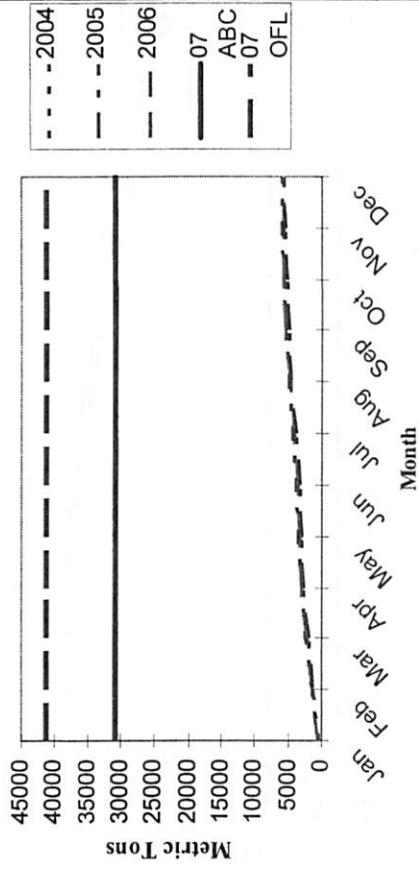
BSAI Sharks Average Catch by Gear and Target



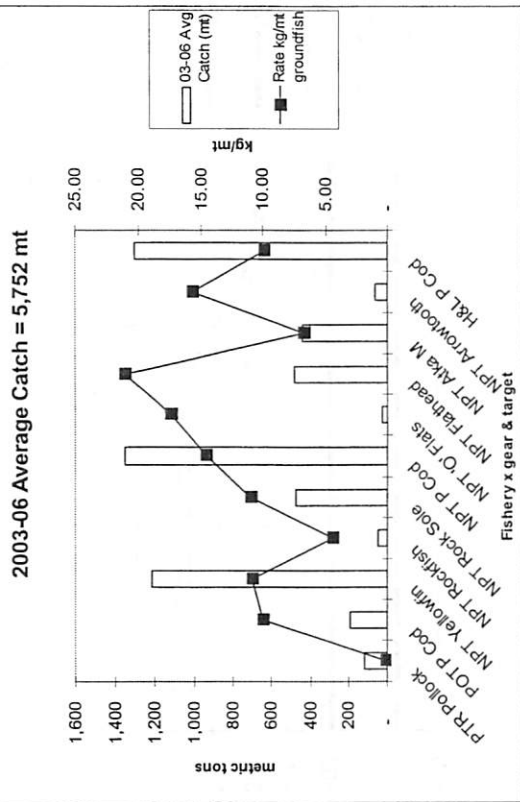
BSAI Shark Catch Density (kg/mt groundfish) 2003-2005



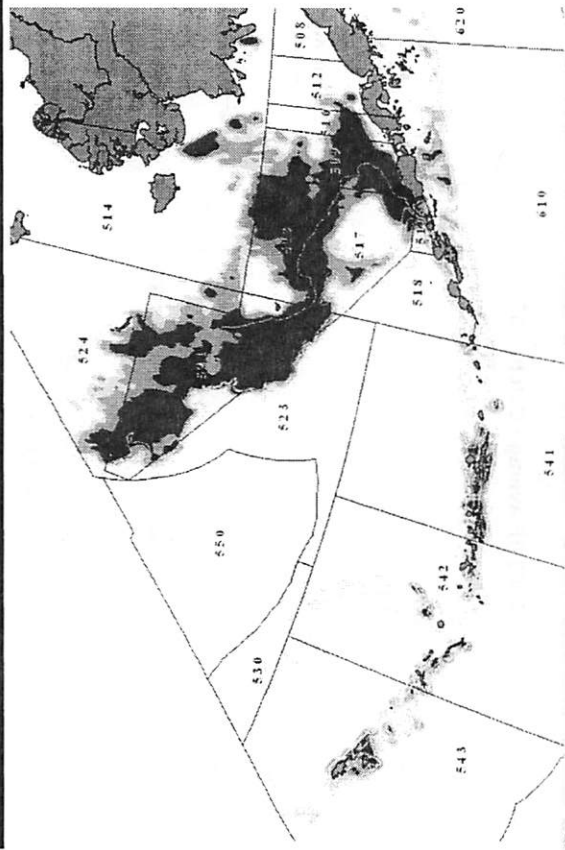
Cumulative BSAI Sculpins Catch by Year (2004-6) Relative and OFL



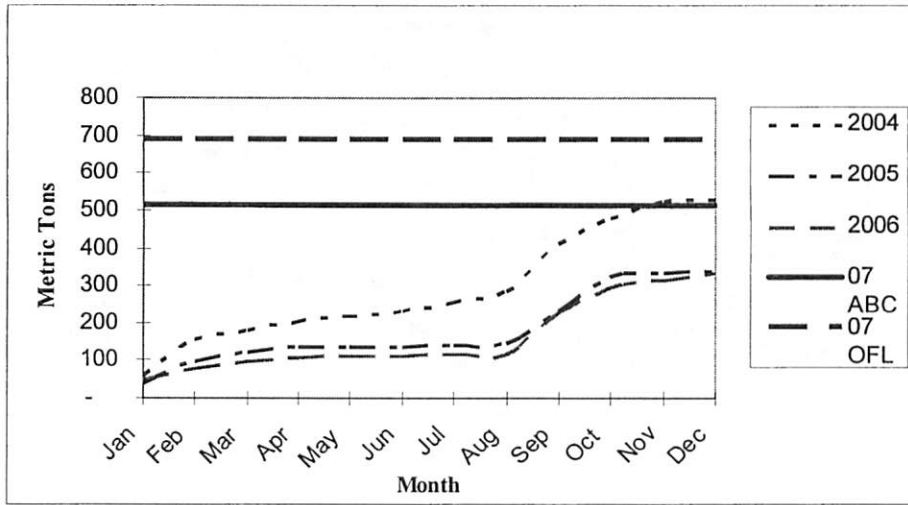
BSAI Sculpins Average Catch by Gear and Target



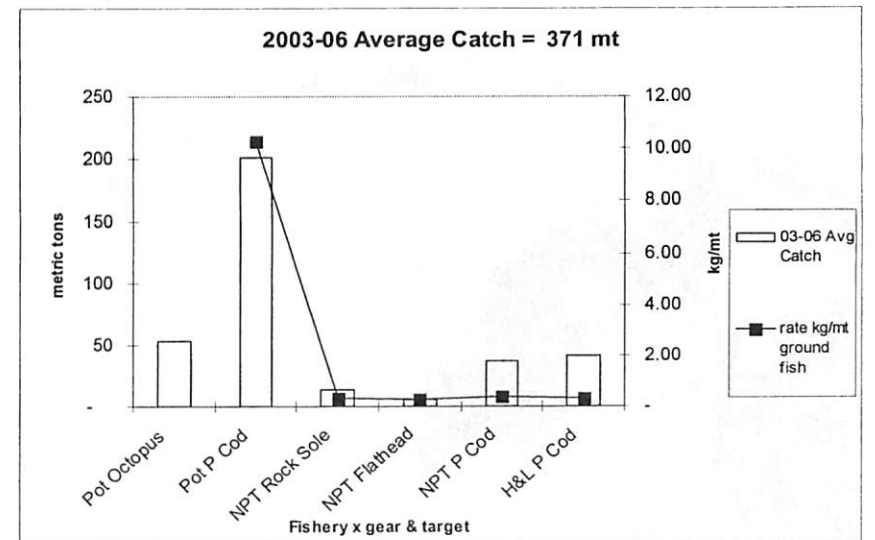
BSAI Sculpin Catch Density (kg/mt groundfish) 2003-2005



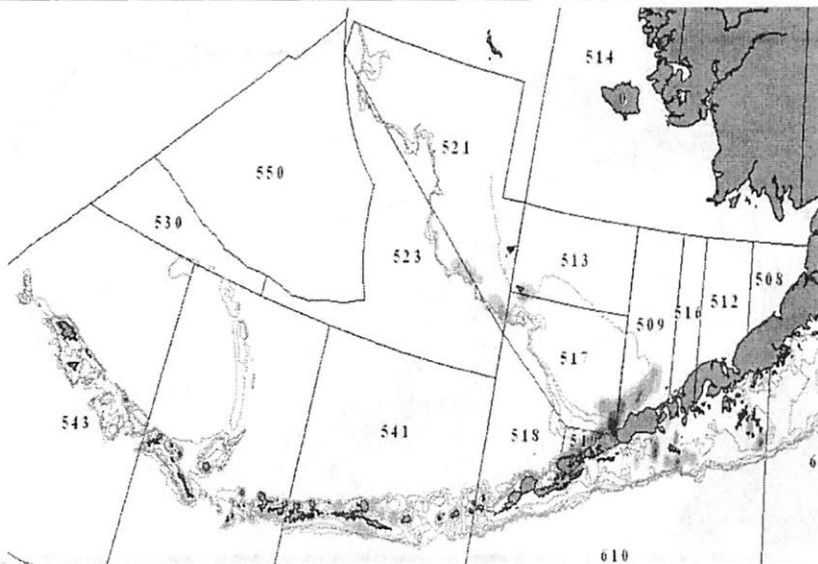
Cumulative BSAI Octopi Catch by Year (2004-6) Relative to ABC and OFL



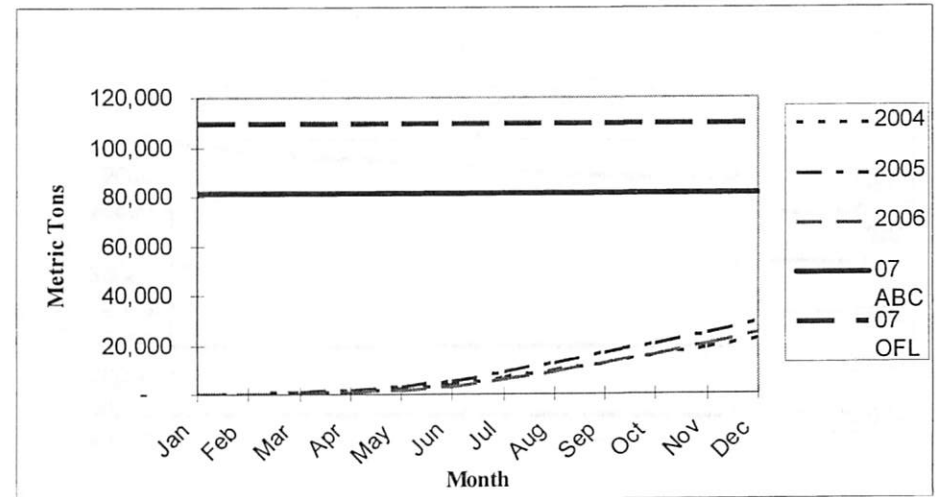
BSAI Octopi Average Catch by Gear and Target



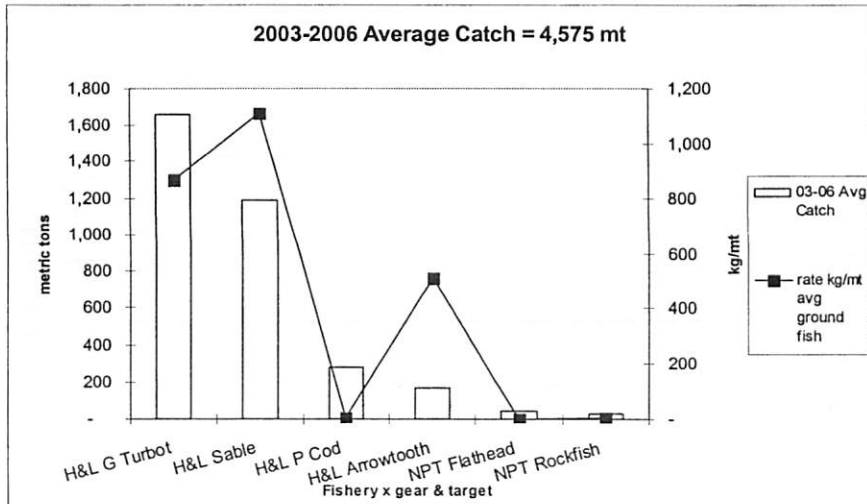
BSAI Octopi Catch Density (kg/mt groundfish) 2003-2005



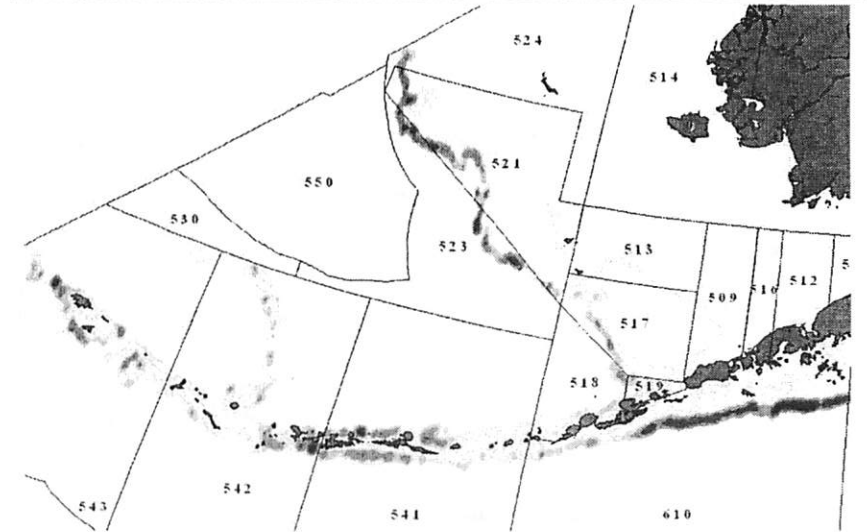
Cumulative BSAI Grenadier Catch by Year (2004-06) Relative to ABC and OFL



BSAI Grenadier Average Catch by Gear and Target



BSAI Grenadiers Catch Density (kg/mt groundfish) 2003-2005

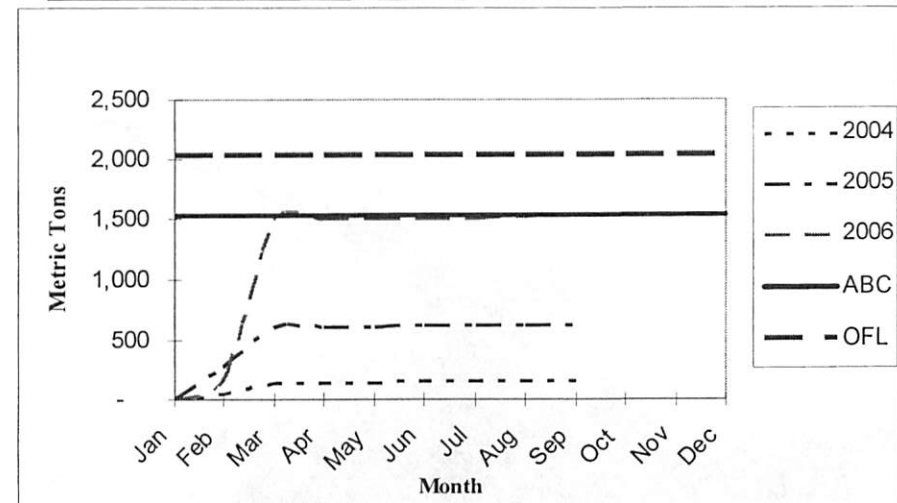


BSAI Summary Table

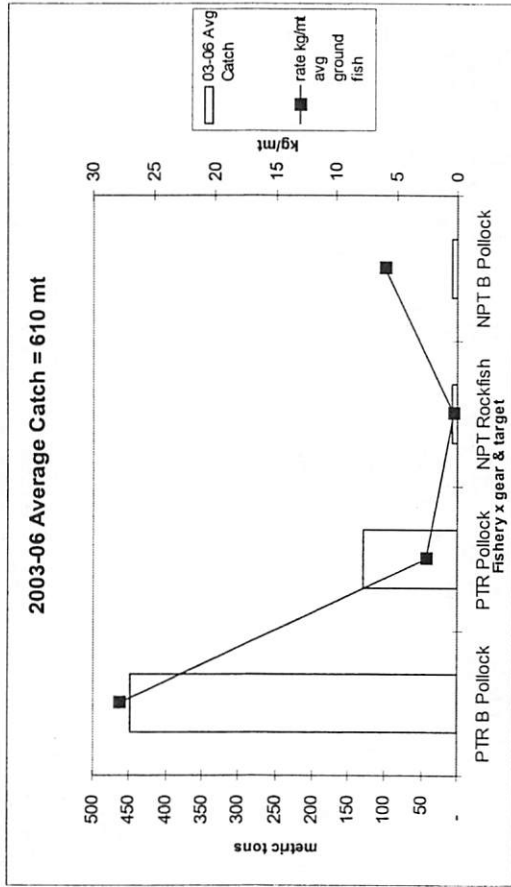
BSAI Species	Likely to Approach Benchmarks	Directed Fishery Possible	Gear/Target Potentially Affected	Spatial Context	Potential Management Measures	Potential Closure Timing
Skates (Tier 5)	No	Yes	Pacific cod H&L	Broad	Broad Closures	n/a
Sharks (Tier 6)	Yes	No	Pollock Pelagic Trawl, Pacific cod H&L	Broad	Broad Closures	Aug.-Sept.
Sculpins (Tier 5)	No	Yes	Yellowfin sole NPT, Pacific cod NPT, Pacific cod H&L	Broad	Broad Closures	n/a
Octopi (Tier 6)	Possibly	Possibly	Pacific cod pot, Pacific cod H&L, Pacific cod NPT	Patchy / Discrete	Voluntary / Discrete Closures	October
Grenadiers (Tier 5)	No	Possibly	G. Turbot H&L, Sablefish H&L	Broad / Bathymetry	Broad Closures	n/a



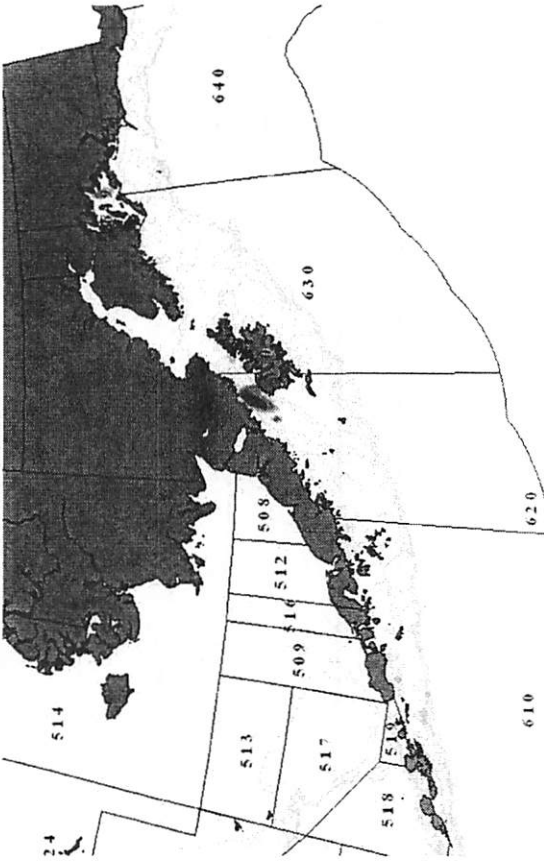
Cumulative GOA Squid Catch by Year (2004-6) Relative to ABC and OFL



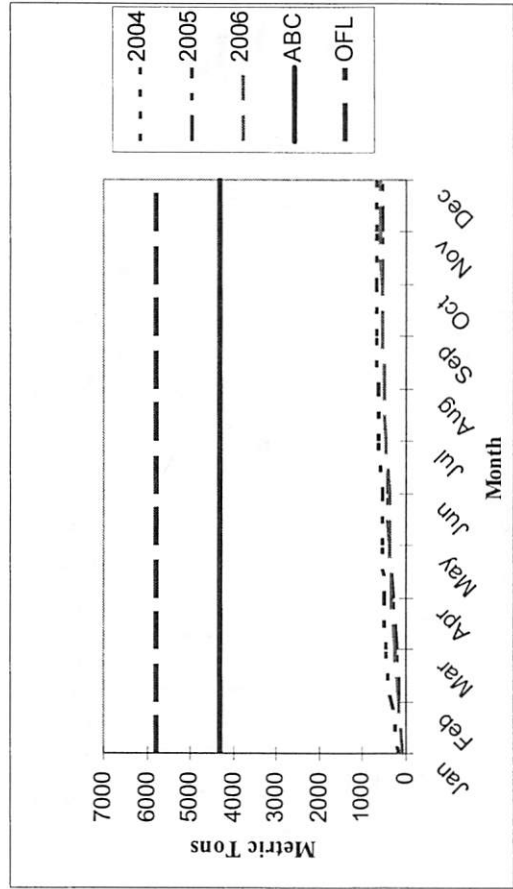
GOA Squid Average Catch by Gear and Target



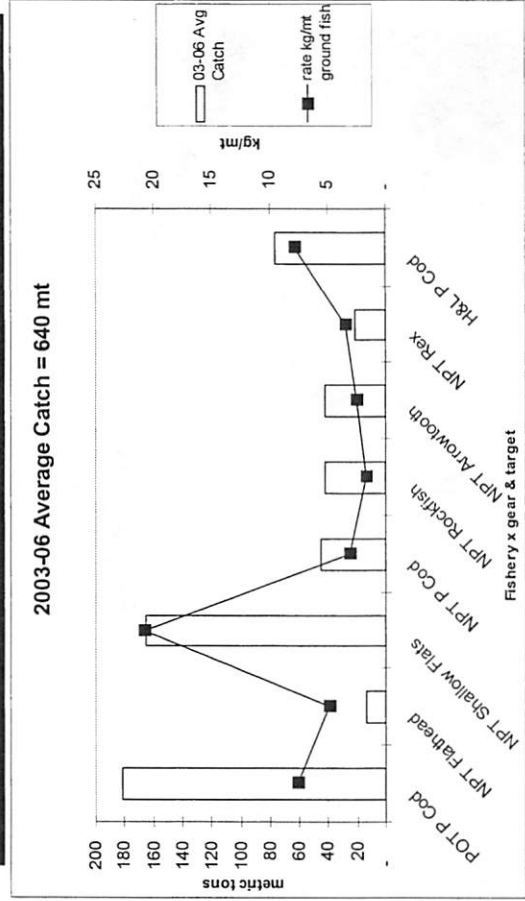
GOA Squid Catch Density (kg/mt groundfish) 2003-2006



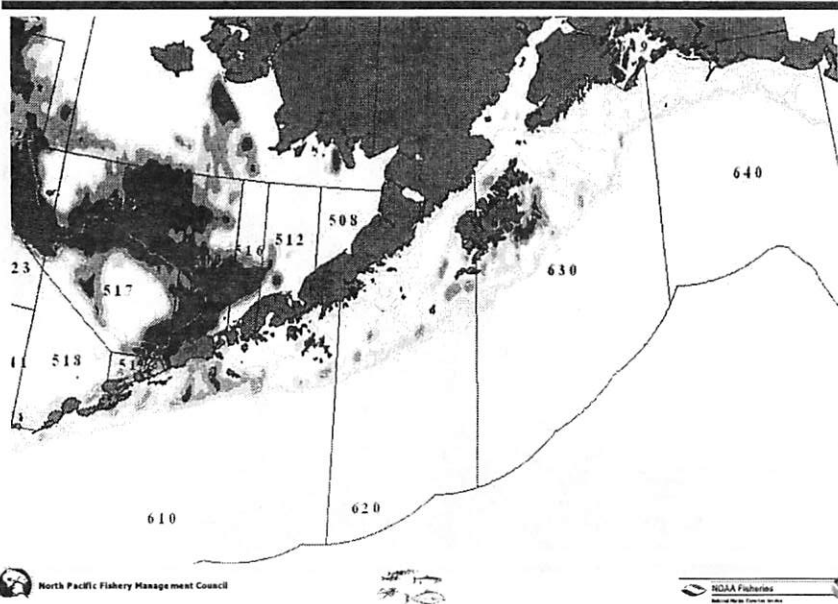
Cumulative GOA Sculpins Catch by Year (2004-6) Relative to ABC and OFL



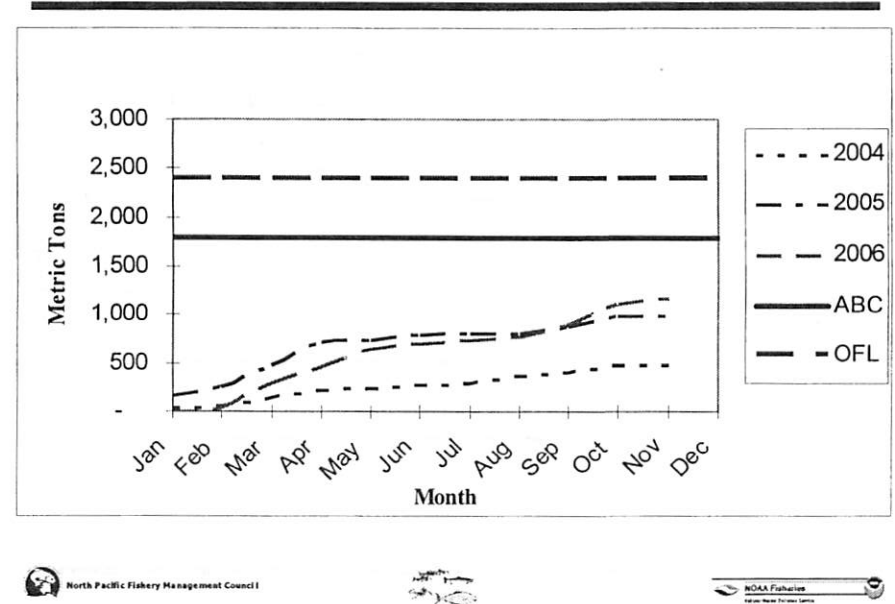
GOA Sculpins Average Catch by Gear and Target



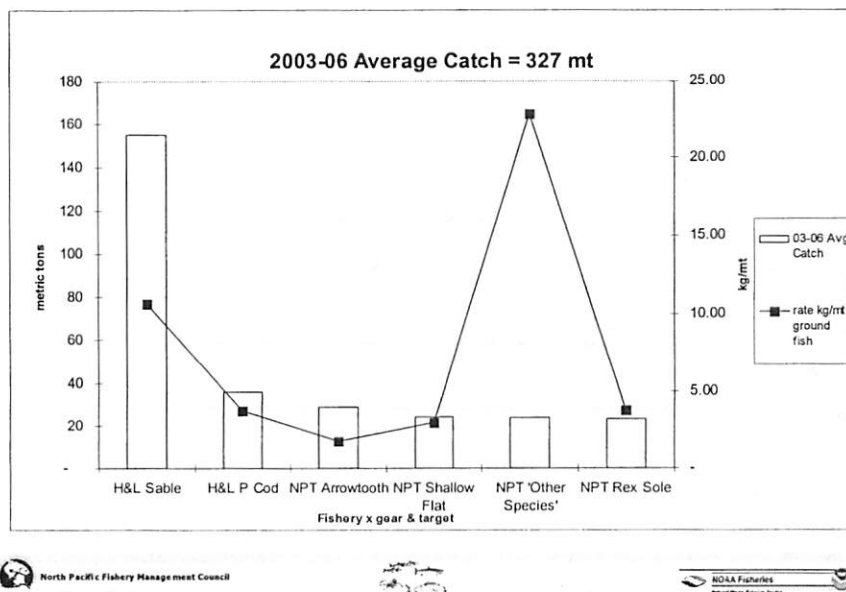
GOA Sculpin Catch Density (kg/mt groundfish) 2003-2005



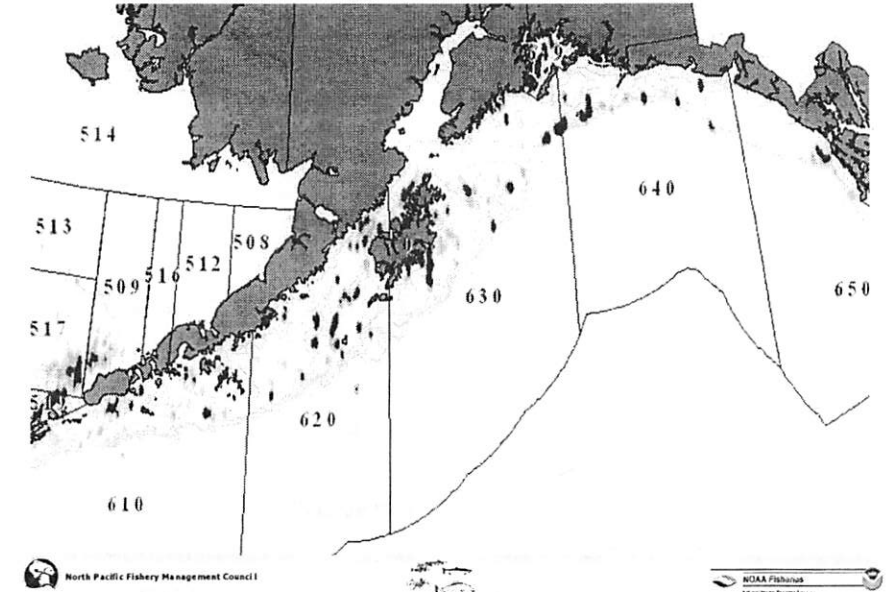
Cumulative GOA Sharks Catch by Year (2004-6) Relative to ABC and OFL



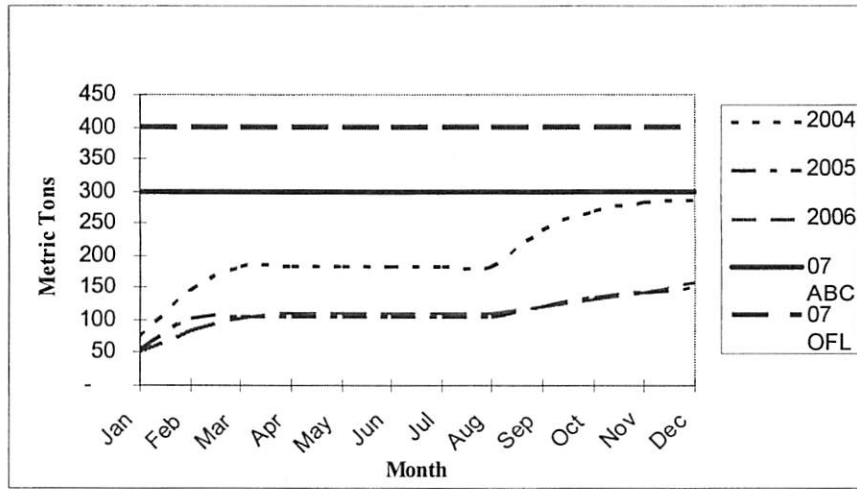
GOA Shark Average Catch by Gear and Target



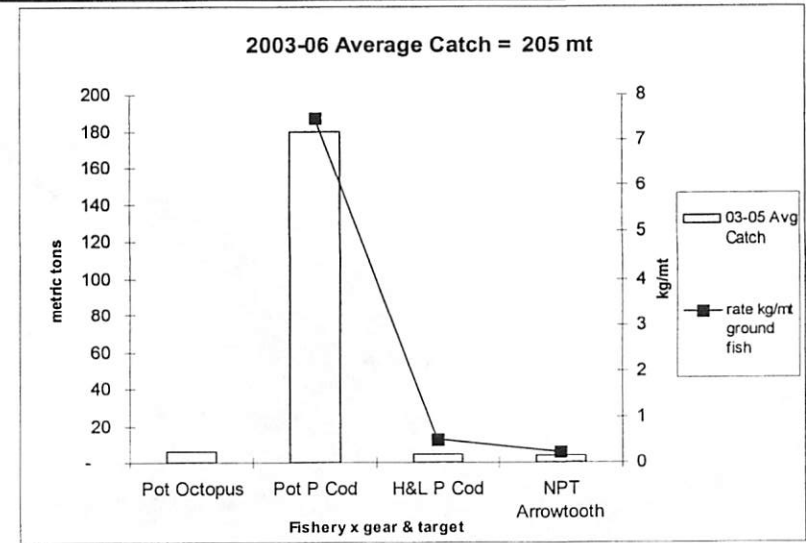
GOA Shark Catch Density (kg/mt groundfish) 2003-2005



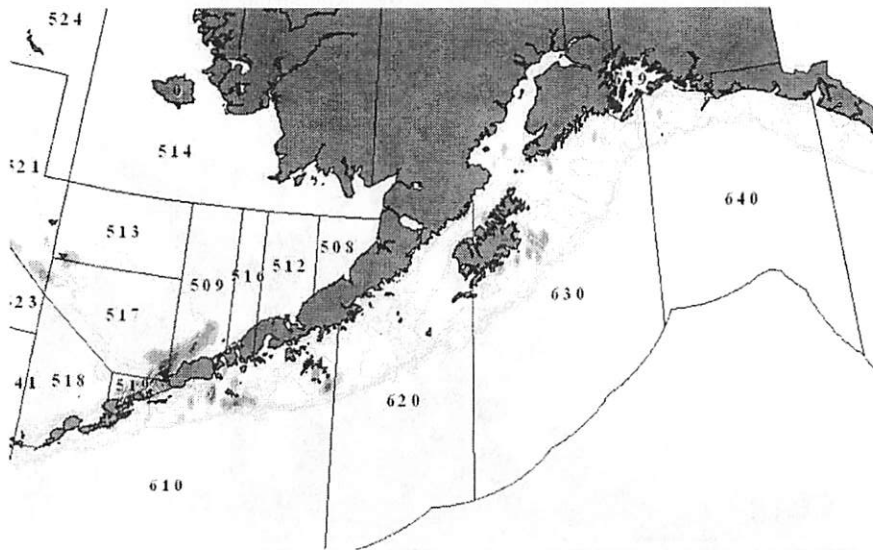
Cumulative GOA Octopi Catch by Year (2004-2006) Relative to OFL and ABC



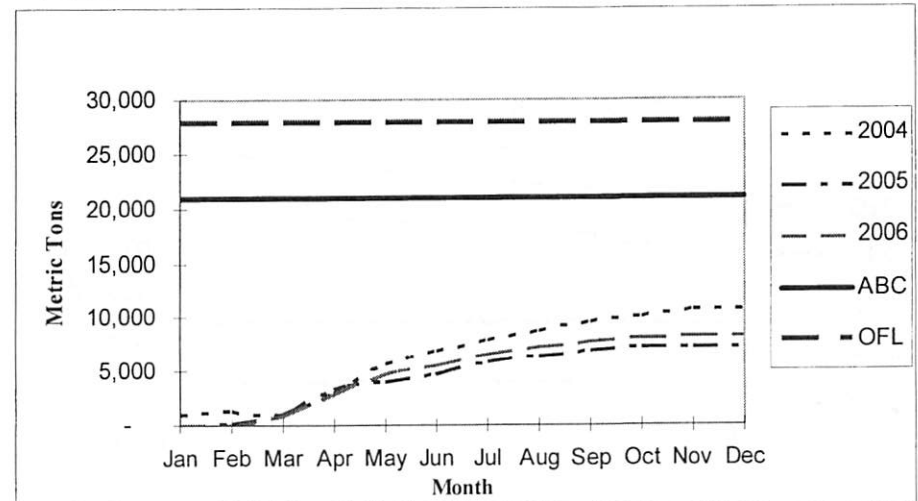
GOA Octopi Average Catch by Gear and Target



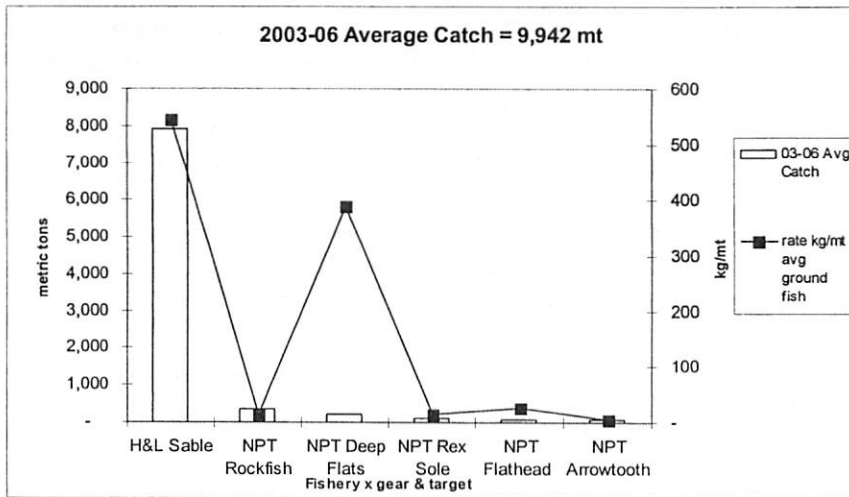
GOA Octopi Catch Density (kg/ mt groundfish) 2003-2005



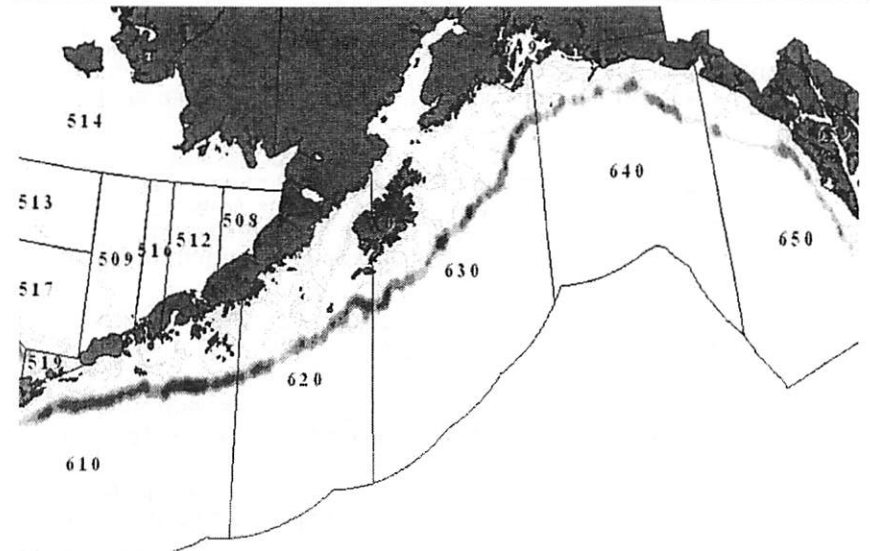
Cumulative GOA Grenadier Catch by Year (2004-06) Relative to ABC and OFL



GOA Grenadier Average Catch by Gear and Target



GOA Grenadier Catch Density (kg/mt groundfish) 2003-2006



GOA Summary Table

GOA Species	Management Concern	Directed Fishery Possible	Gear/Target Potentially Affected	Spatial Context	Potential Management Measures	Potential Closure Timing
Squid (Tier 6)	Possibly	No	Pollock Pelagic Trawl	Very Discrete	Voluntary / Hot Spot	March
Sculpins (Tier 5)	No	No	Multiple Pot, NPT, H&L fisheries	Irregular	Broad Closures	n/a
Sharks (Tier 6)	Possibly	No	Sablefish H&L, Pollock Trawl, Pacific cod H&L, multiple NPT flatfish	Broad	Broad Closures	October
Octopi (Tier 6)	Possibly	No	Pacific cod Pot	Discrete	Voluntary / Hot Spots	October
Grenadiers (Tier 5)	No	No	Sablefish H&L, NPT Deep Flats	Broad / Bathymetry	Broad Closures	n/a



Overview of Alternative 2: BSAI

- Alternative 2 would eliminate the "other species" assemblage and manage BSAI skates, sculpins, sharks, and octopi as separate assemblages.
- BSAI sharks would likely require management measures, primarily in the pelagic pollock trawl and hook-and-line Pacific cod fisheries in the August-September time frame.
- BSAI Octopi catch may approach management benchmarks if individually managed.
- Potential Octopi management measures could be limited to discrete areas closures beginning in October. Voluntary avoidance could also be used.



Overview of Alternative 2: GOA

- Alternative 2 would eliminate the "other species" assemblage and manage GOA squids, sculpins, sharks, and octopi as separate assemblages. None of these species are of immediate management concern
- GOA squid and octopi could approach or exceed management benchmarks in the future. Both are caught in discrete areas and could be managed with hot spots.
- If GOA shark catch approaches benchmarks, management measures to prevent overfishing could affect several fisheries across a broad geographic area.
- Sablefish hook-and-line, pollock trawl, Pacific cod hook-and-line, and multiple flatfish non-pelagic trawl fisheries harvest GOA sharks.
- It is possible that some localized areas of highest catch could be identified as areas to be voluntarily avoided. However, it is also possible that broad closures in a multitude of fisheries might be needed. The timing of such closures would be a function of the timing of the increased catch, which is not known.



Overview of Alternative 3: BSAI

- Alternative 3 would separate management of BSAI skates, and sculpins, from the other species assemblage.
- Neither BSAI skates nor BSAI sculpins are of management concern and could support directed fisheries.
- Management measures to prevent overfishing of the other species group (now sharks and octopi) would be similar to the management measures potentially needed to prevent overfishing of each of these species individually.
- These species are incidentally caught in different fisheries with different geographic catch characteristics.
- There does not appear to be a difference in potential effect on fisheries between Alternatives 2 and 3 in the BSAI.



Alternative 3 Overview: GOA

- GOA sculpins catch does not approach benchmarks.
- The remaining species in the other species group, squid, sharks, and octopi, are all managed under tier 6. Thus, catch of these species may approach benchmarks.
- The spatial contexts of incidental catch of the three remaining species in the other species group differ from one another, as do the fisheries that incidentally catch these species.
- Management measures would likely be similar to those used to manage each of these species individually.
- Therefore, there does not appear to be a difference in potential effect on fisheries between Alternatives 2 and 3 in the GOA.



Alternative 4 Overview

- Alternative 4 would manage only BSAI skates as a separate assemblage.
- BSAI skates catch would not approach management benchmarks and could possibly support a directed fishery.
- Under this alternative, the BSAI other species group would consist of sharks, sculpins, and octopi.
- Given that a relatively high proportion of other species TAC comes from sculpins, and that available sculpin incidental catch is not heavily utilized, catch of the remaining other species group would not likely approach management benchmarks under this alternative.
- In essence, the large proportion of unused other species TAC coming from sculpins would mask the potential for shark and octopi catch to approach benchmarks.



Alternative 5 Overview

- Alternative 5 would add grenadiers, a tier 5 species, to both the BSAI and GOA TAC specifications processes
- Grenadiers are not of present management concern in either the BSAI or GOA.
- Management of grenadiers as separate assemblages in both the BSAI and GOA (Option 1) is not likely to have direct effect (i.e. imposition of management measures to prevent overfishing) on the fisheries that incidentally catch them.
- Option 2 would add grenadiers to the other species groups. The addition of grenadiers to the other species groups would add a species with a relatively large, and lightly used, ABC under tier 5 management to these groups.
- This would tend to mask catch of tier 6 species in excess of their individual ABCs and OFLs.

Proposed Impact Analysis Methodology

- Identification of the target fisheries most likely to be directly affected by any needed management measures.
- Create a fisheries activity model for those fisheries
 - Spatial and temporal database and mapping of fishing activity using VMS data, observer data, weekly production reports, and fish tickets.
 - Catch composition, catch rates (of all species, including prohibited species), and effort level at a 5 kilometer grid level of spatial resolution
 - Catch-in-Areas database, and associated GIS output. This effort will be an advance of the previous product to update it with new and better data (e.g. VMS).

Methodology Continued

- Identification of the geographic polygons of potential closure areas.
 - Working with Inseason Management staff, this process will review cumulative incidental catch and catch rate data to determine the spatial and temporal extent of closures that Inseason management staff might take to prevent overfishing.
- This process may provide a range of hypothetical closures, from broad to fine scale, so that potential effects can be determined across a range of potential actions.

Methodology Continued

- Revenue At Risk Assessment.
 - Determines revenue that could be expected to be earned, based on recent fishing activity, in the area being considered for closure.
 - Catch-in-areas is converted to revenue using AFSC pricing data.
- Mitigation of Revenue at Risk
 - Industry will mitigate the revenue at risk by moving fishing effort to adjacent areas that remain open
 - The analysis will have to consider catch rates and effort levels in adjacent areas to determine whether revenue at risk can be mitigated.
- Operational Implications
 - How would mitigating activity affect operational costs (i.e. via lower catch rates and/or higher levels of required effort),
 - What might the affect be on prohibited species catch,
 - Or would mitigating activity tend to create operational burdens (e.g. fishing in areas of bad weather).

Comments from the AP, SSC, and Non-Target Species Committee.

- Need to develop quantitative analysis of when benchmarks might be hit.
- Breakout retained versus discarded catch of other species.
- Breakout subspecies proportions of catch. Specifically sharks (e.g. dogfish vs. sleeper)
- Provide longer time series of catch, and compare to biomass of target species (specific to sharks).
- Breakout Catcher Vessels separately from Catcher Processors and Mothership Processors
- Analyze Pacific Cod sector split and overall Amendment 80 and 85 effect on other species incidental catch.
- Discuss how adding BSAI grenadiers would affect BSAI TAC cap.
- Need spatial overlay of harvest of target species by gear type with other species by gear type.



Comments Continued

- Use of term "management concern" is arbitrary. Use "overfishing concern" or "approaches management benchmarks" instead.
- Clarify whether directed fisheries are actually possible. Specifically for BSAI sharks.
- Discuss market constraints on potential target fisheries.
- Estimate amount of octopi catch retained and used for bait versus retained and sold.
- Discuss process for SSC to re-evaluate management benchmarks based on more recent data.
- Discuss mortality rates of discarded catch: What is the survival rate (e.g. octopi) when discarded? Could survival allow full discard once benchmarks hit but no fishery closure?
- Experimental grenadier processing has been tried and should be discussed in relation to possibility for a directed fishery.



Comments Continued

- The analysis assumes that management measures would be needed but voluntary avoidance of discrete areas could be used (e.g. Freezer Longliners do this now for Halibut avoidance via the co-op system)
- Various types of management that could be used aren't discussed thoroughly. Need to evaluate voluntary avoidance via co-ops, rolling hotspots, gear modification, and fishing strategies (e.g. day vs. night).
- Co-ops exist in two thirds of affected fisheries and that should be looked at as a management method.
- Co-ops exist and are well managed in the BSAI but not so much at this point in the GOA
- Need to give fleet tools to prevent a "race for bycatch" that could shut a fishery down. (e.g. first halibut PSC cap)



Comments Continued

- Halibut fishery catch of other species is a big issue that should be addressed.
- Shark bycatch occurs in Halibut fishery and has "gone through the roof" recently but is all discarded so it doesn't show up in catch accounting.
- Broad closures might be needed to prevent overfishing of other species, specifically sharks, because of Halibut fishery.
- This shows why observer coverage is needed in the Hook and line fisheries, specifically the Halibut fishery.



Comments Continued

- Historic catch accounting doesn't collect data on discarded other species catch in all fisheries (e.g. unobserved hook and line) and this will make analysis highly uncertain.
- What is proposed is nothing more than a retrospective analysis and is not going to be indicative of where the fleet might be in the future.
- The spatial analysis needs to be more focused on the specific alternatives and how they affect the fleet.
- Analysis might be better if split out by BSAI vs. GOA.
- Concern has been expressed over using VMS data, which is highly confidential.



Conclusion

- The Non-Target Committee plans to meet again to discuss this topic.
- Based on comments received, additional work is needed to address the questions raised.
- Options:
 - Develop a preliminary review draft EA/RIR/IRFA.
 - Re-draft the discussion paper to address comments and concerns and to refine potential actions under alternatives.
 - Stand down pending other developments.



October 2007 SSC minutes excerpt on Other species discussion paper

“Scott Miller (NMFS AKR) gave an overview of a discussion paper on the implications of a proposed amendment to set overfishing and allowable biological catch specifications for the other species assemblages in the BSAI and GOA. At the current time, 5 alternatives are under consideration. The discussion paper provided plots of monthly cumulative catch by fishery and sector, and the spatial distribution of other species catch. The analysts expect that the action will trigger a regulatory amendment and will require an EA/RIR/IRFA. The analysts plan to develop a fishery activity model for target fisheries. The effort would include an analysis of temporal and spatial distributions of fisheries on a 5 km grid. This would allow the ability to assess what types of management measures (quotas, time and area closures, or gear restrictions) that would be most effective at maintaining catch at a biologically acceptable level and to evaluate revenue at risk, mitigation of revenue at risk, and operational implications.

Jane DiCosimo (NPFMC) provided background information on the larger effort to manage non-target species. At the current time, rule making on the feasibility of distinguishing between target and non-target management is uncertain. The NPFMC is recommending moving forward with the other species breakout as an interim step. **The NPFMC anticipates that future rule making would propose species specific management measures for every non-target species.** Council staff also noted that grenadiers are currently considered to be of “no management concern” and, therefore, asked the SSC to comment on whether Alternative 5 should be included in the amendment package.

There was no public testimony on this agenda item.

The SSC agrees with the NPFMC plan to proceed with an interim measure to break the other species complex into its component species complexes. This effort, and its associated analysis, should provide useful insight into the potential implications of proposed species specific management of non-target management. **The SSC does not recommend dropping Alternative 5 on adding grenadier to the specification process from the amendment package.** In the GOA, where incidental catch is approximately 40% of a potential ABC, it is premature to drop this species group from the analysis. Furthermore, inclusion of grenadier in the analysis would provide useful insight into the implications of management of a non-target species group.

The SSC agrees that the proposed work plan for development of the EA/RIR/IRFA is reasonable. **However, additional detail would be required for the SSC to provide more specific comments and suggestions.** Analysts should include an analysis of prospective markets for these species, and the anticipated rate of developing markets. The analysis should also include an analysis of the impacts of the proposed species breakout on existing target fisheries and markets.

The SSC recommends that future discussion papers differentiate between bycatch (i.e., incidental groundfish catch that is discarded), versus incidental catch (i.e., which is, by definition, retained). The SSC notes that the label “management concern” is a value judgment. This label appears to be linked to whether recent observed catches of a group approached the group ABC or OFL. The SSC recommends that this criterion be more clearly defined. The SSC notes that, for example, 41 species of sculpins were identified in the Eastern Bering Sea (EBS) and 22 species in the Aleutian Islands (AI) region. Thus, the analysis will need to point out that the assessment of concern applies only at the group level, and that species level impacts might still be incurred in this management system.”

**Non-target Species Committee Meeting
DRAFT Summary
November 12, 2007**

Committee members Dave Benson (chair), Lori Swanson, Julie Bonney, Dave Wood, Janet Smoker, Michelle Ridgway attended the meeting in Seattle on November 12, 2007 from 2-5 pm. Karl Haflinger and Jon Warrenchuk participated by phone. Simon Kineen, Paul Spencer, and Ken Goldman were absent. Jane DiCosimo provided staff support. Scott Miller, Andy Smoker, Tom Pearson, Anne Hollowed, and Olav Ormseth attended for NMFS. Paul MacGregor and John Gauvin also attended.

Jane DiCosimo reviewed the purpose of meeting, which was to comment on Council staff recommendations to split a proposed analysis of two actions (1) (a) set OFLs and ABCs for Gulf of Alaska other species assemblage and (b) set separate specifications for sharks, skates, squids, sculpins, and octopuses (and possibly grenadiers) into two separate analyses and timelines and (2) review a NMFS staff discussion paper on the second proposed action. While the AP and SSC reviewed the discussion paper in October 2007, the Council rescheduled its review for December 2007 due to lack of time to take the report. This timing allowed the committee an opportunity to review the paper also. She also provided an update on the possible timeline for publication of a proposed rule by NMFS Headquarters on annual catch limits (ACLs) and accountability measures (AMs), which are required under the reauthorized Magnuson-Stevens Act. The public comment period may overlap the Council's February Council meeting, but could be later. She recalled that resolution of a management approach for all non-target species management was tabled until proposed revised guidelines for the overfishing definition (which has been captured under the ACL initiative) were published. In the mean time, the Council has initiated the current interim measures to address the other species assemblage. If the Council concurs with staff recommendations, the analysis for the GOA FMP amendment to set an ABC and OFL for GOA other species assemblage would be scheduled for final action in April 2008, with implementation planned for 2009. **The committee concurred with the separating the two actions and scheduling final action on the GOA FMP amendment for April 2008.**

The second action plan is the subject of Scott Miller's discussion paper, which he presented next. Committee members had numerous suggestions on possible actions that industry could initiate in place of Federal closures, which was the only proposed action suggested in the presentation. These include:

- Breakout catcher vessels separately from catcher processors and motherships
- Analyze Pacific cod sector split and overall effects of Amendments 80 and 85 on other species incidental catch.
- Discuss how adding BSAI grenadiers would affect BSAI TAC 2 M t cap.
- Need spatial overlay of harvest of target species by gear type with other species by gear type. The analysis assumes that management measures would be needed but voluntary avoidance of discrete areas could be used (e.g., as freezer longliners have done for halibut avoidance)
- Various types of management that could be used aren't discussed thoroughly. Need to evaluate voluntary avoidance via co-ops, rolling hotspots, gear modification, and fishing strategies (e.g., day vs. night).
- Co-ops exist in two thirds of affected fisheries and that should be looked at as a management method.
- Co-ops exist and are well managed in the BSAI but not so much at this point in the GOA
- Need to give fleet tools to prevent a "race for bycatch" that could shut a fishery down (e.g., first halibut PSC cap)

The committee also discussed different ways to prioritize actions contained within the other species initiative. The committee noted that the Council began consideration of setting sharks and skates as bycatch in 1998, and to date only GOA skates have been provided additional protection. One member suggested that separate analyses could be undertaken for (1) the BSAI and the GOA, (2) sharks and skates, (3) BSAI skates, (4) delete sculpins from action because it has high biomass and no directed fishery, (5) delete grenadiers from action because adding grenadiers as a specification category is counter to the long term goals of not managing species for which there is

no intent to harvest under a TAC and economic implications to other valuable groundfish species under the BSAI 2 M t cap. The committee discussed negative aspects of (1) an analysis of the current suite of alternatives becoming unmanageable and (2) cherry picking individual groups for action.

The committee questioned whether the proposed action to manage at the group level would allow for species to be separated from their respective groups and managed individually. Staff responded that managing at the species level regularly occurs as part of the current specification process as recommended by the Plan team or SSC, and does not require a FMP amendment.

The committee discussed that a general benefit of managing at the group level is that there would then be a disincentive to catch certain species. Therefore, past catch history might not be that reflective of what would happen in the future. Avoidance of their catch might be easier than expected, particularly under rationalized fisheries. Individual vessel accounting may be the key to success. Because of the different natures of the BSAI and GOA fisheries (the BSAI has a small, well observed fleet compared to the GOA), success of proposed GOA group level management may not be as good as in the BSAI. The committee noted a serious flaw in the catch accounting system, in that groundfish caught as incidental catch in the halibut IFQ fishery does not count against OFL, ABC, or TAC. Anne Hollowed suggested that management approaches for non-target species or groups could be based on an evaluation of catch relative to abundance (alternatively, F relative to Z).

The committee agreed to meet again in February 2008 to possibly rearrange or delete some of the current alternatives. The Council can revise the alternatives at any step in its deliberations on this proposed action. By February 2008, the ACL proposed rule may have been published and the Council will review the staff report in December 2007. Staff suggested that they will continue developing the background information for the analysis.

Staff Comments on Prioritizing Proposed Alternatives to Revise Management of BSAI and GOA Other Species Assemblages

Since 1998, the Council has been considering different approaches to optimally manage the groups contained within the other species assemblage in each groundfish fishery management plan (FMP). The assemblage contains sharks, skates, sculpins and octopus in the Bering Sea/Aleutian Islands (BSAI) Groundfish FMP¹ and sharks, squids, sculpins and octopus in the Gulf of Alaska Groundfish FMP². "Other species" are described in the groundfish FMPs as, "species groups which currently are of slight economic value and not generally targeted upon. This category, however, contains species with economic potential or which are important ecosystem components, but sufficient data are lacking to manage each separately. Accordingly, a single TAC applies to this category as a whole and catch of this category as a whole must be recorded and reported."

Staff intent is to aid the Council in setting priorities for analyses, i.e., one alternative would be prioritized as a separate action for analysis in 2008. Analysis of other alternatives would follow sequentially. Two new alternatives, which are proposed by staff for Council consideration as a priority action(s) in 2008, overlap long term management issues that have been tabled while awaiting clarification on Magnuson-Stevens Reauthorization Act of 2006 by NMFS Headquarters. The proposed alternatives under joint BSAI and GOA Groundfish FMP Amendment 63/63³ follow:

Alternative 1. No Action

Alternative 2. Eliminate "other species" assemblage and manage squids, skates, sculpins, sharks, and octopi as separate assemblages.

Alternative 3. Manage only BSAI skates and BSAI and GOA sculpins as separate assemblages.

Alternative 4. Manage only BSAI skates as separate assemblage

Alternative 5. Add grenadiers to BSAI and GOA TAC specification process:

Option 1. in a separate assemblage

Option 2. in the other species assemblage

Proposed FMP changes would affect five groups in each of the two FMP s and numerous directed fishing fleets that harvest species in these groups as either intended or unintended catch. An analysis of setting specifications for these ten groups and the effects on multiple fishing fleets for each group potentially could result in an unmanageable and confusing analysis, particularly if regulatory action is needed to close or otherwise manage ten additional and smaller TACs (not counting seasonal, subarea, etc. sub-allocations. To enhance public understanding of proposed actions, the Non-Target Species Committee raised numerous ways to prioritize or separate the alternatives but a decision was delayed due to time constraints during the meeting and the belief that the proposed rule for implementing Annual Catch Limits and Accountability Measures would be published in February 2008⁴. To assist the Council in this inquiry, each alternative is examined below in terms of facilitating implementation of action(s) to enhance protection of potentially vulnerable stocks (in the near term).

¹ Squids are a separate TAC category in the BSAI

² Skates are a separate TAC category in the GOA

³ The Council adopted a SSC recommendation to move grenadiers into the TAC specification process from the non-specified category, i.e., TAC specifications currently are not set for them and harvests do not count against the BSAI OY cap

⁴ The timeline for publication of the proposed rule by NMFS Headquarters is unknown, but reported to be on track http://www.nmfs.noaa.gov/msa2007/docs/msra_p1_tracking_update_011808.pdf

Alternative 2. Eliminate “other species” assemblage and manage squids, skates, sculpins, sharks, and octopi as separate assemblages.

Alternative 2 would result in specifications for four groups (or more if some species are broken out of a group⁵) instead of one assemblage in each FMP management area. A minimum of eight additional TACs would result, with potentially fishery interactions for numerous fisheries. The Council could separate this alternative into separate amendments for the BSAI and GOA Groundfish FMPs and proceed with each on separate timelines. The committee noted the different natures of the BSAI and GOA fisheries (the BSAI has a small, well observed fleet compared to the GOA) and suggested that the potential success of proposed GOA group level management may be less than in the BSAI. Incidental catch may be greater in the BSAI, thus warranting a priority management response.

Alternative 3. Manage only BSAI skates and BSAI and GOA sculpins as separate assemblages.

Alternative 3 would separate Tier 5 groups from the assemblage and leave the remaining Tier 6 groups in the assemblage. Removing either or both Tier 5 group(s) from the assemblage will reduce the remaining other species TAC proportionate to the lower (poorly estimated) biomasses of the remaining component groups. This results in greater protection of those groups that are removed from, as well as those that remain in, the assemblage because masking of over harvest of a group TAC would be minimized by more narrowly defining each TAC.

The committee noted that the Council began consideration of setting sharks and skates as bycatch in 1998. To date only GOA skates have been separated from the assemblage because of a temporary interest by industry for a directed fishery and a long term monitoring interest in collecting additional data from the new fishery. Alternative 3 would mirror the GOA action for skates, and extend it to sculpins in both FMP areas. A modified Alternative 3 would remove sharks instead of sculpins in response to the original 1998 Alaska Board of Fisheries proposal, which initiated the inquiry into enhancing management of all incidentally caught groundfish species. Sharks are considered more vulnerable to overharvesting than are sculpins and interest in developing a spiny dogfish fishery in the GOA has occurred. *This suggestion would replace the current Alternative 3 and not add an Alternative 3A.*

Alternative 4. Manage only BSAI skates as a separate assemblage

Alternative 4 would proceed with proposed action just for BSAI skates and would delete sculpins from the proposed action because sculpins have a high biomass and no directed fisheries, while skates are considered to be vulnerable due to their long-life span, slow maturity, and low fecundity. There is no near term concern that sculpins are at risk if no action is taken to enhance their management in the near term. There is not the same level of interest in developing a skate fishery in the BSAI as there has been in the GOA. This alternative would mirror action implemented in 2005 to manage long nose skate, big skate, and other skates as three separate TAC categories in the GOA.

Alternative 5. Add grenadiers to BSAI and GOA TAC specification process:

- Option 1. separate assemblage**
- Option 2. in other species assemblage**

Alternative 5 would add a new TAC category to both FMPs for grenadiers, which would be categorized as a non-target assemblage in the next proposed stage of management of all non-target species. Under a proposed approach, non-target species or groups would be added as a TAC category only when industry requests the creation of a commercial fishery and an adequate data collection plan is developed. Further, adding a group with a large biomass to the BSAI Groundfish FMP would exacerbate management issues of keeping the BSAI groundfish TACs at less than or equal to 2 million mt.

⁵ Skates were removed from the GOA other species assemblage and broken into three specifications for big skate, longnose skate, and other skates

Staff recommends that the Council delete this alternative from this FMP amendment because adding grenadiers as a specification category is counter to the long term goals for managing species for which there is no intent to harvest (i.e., not under a TAC, but perhaps spatially and/or seasonally). Further, there are economic implications to other valuable groundfish fisheries which are limited by the two million metric ton cap for BSAI groundfish harvests. Since the biomass distribution of grenadiers is in the GOA, the Council could limit the analysis to the GOA. But instead of including it in the plan amendments, grenadiers would make an excellent case study for the next phase of non-target species management and staff recommends the development of such a study after the Council has completed its interim actions affecting the other species assemblages in the BSAI and GOA.

New Alternative. Remove BSAI and GOA squids as a TAC category and move them into the forage fish category

The ad hoc working group suggested in 2002⁶ that a case can be made to move squid into the forage fish category in both FMPs because squid are a critical food source for many marine mammal, seabird and fish species, which is how the FMPs define the forage fish category.⁷ The FMPs describe forage fish species as “those species not included in the target species category and which are a critical food source for many marine mammal, seabird and fish species.” The forage fish species category was established to allow for the management of these species in a manner that prevents the development of a commercial directed fishery for forage fish. The forage fish plan amendments: 1) prohibited directed fishing; 2) established a 2 percent maximum retainable bycatch limit; and 3) limited their sale, barter, trade or processing above the maximum retainable amount. Stock assessments for BSAI and GOA squids are poor due to lack of survey coverage, squid are important prey species, and it would be precautionary to foreclose development of a commercial fishery.

Forage fish species have been grouped together because they are considered to be primary food resources for other marine animals and have the potential to be the targets of a commercial fishery. As described in the EA/RIR/IRFA for FMP Amendments 36/39 (Forage Fish), “Forage fish comprise an important part of the diet of commercial groundfish species, marine mammals and seabirds in the Gulf of Alaska (GOA) and the Bering Sea and Aleutian Islands management area (BSAI). Significant declines in marine mammals and seabirds in the GOA and the BSAI have raised concerns that changes in the forage fish biomass may contribute to the further decline of marine mammal, seabird and commercially important fish populations. Members of the fishing industry and public have expressed concern that the current FMP structure with respect to forage fish may allow unrestricted commercial harvest to occur on one or more of these species. One of the recommendations from the International Council for the Exploration at Sea (ICES, 1994) indicated that fishery managers should develop measures to avoid the commercial targeting of food resources that are key to marine mammals and seabirds. The Council's 1995 Stock Assessment and Fishery Evaluation Report states that if any significant directed fishing on any component of the “other species” category develops, particularly those that serve as prey for marine mammals and seabirds, then future assessments should reflect this change by separating these species out (SAFE, 1995).”

Squid and octopus biomass is substantially underestimated by the bottom trawl survey, resulting in overly conservative estimates of ABC and OFL for this group. Both the Plan Teams and the Scientific and Statistical Committee (SSC) have noted the difficulty of developing an OFL and ABC for tier 6 species. The SSC has charged the Plan Teams with developing alternative methods to establish OFLs within tier 6. The SSC recognized, among several issues, that the incidental catch of species like octopuses and sharks may be so low that average catch is not a meaningful measure of an overfishing limit (February 2006 SSC minutes).

⁶ http://www.fakr.noaa.gov/npfmc/current_issues/non_target/adhocrecAug5.pdf

⁷ While incidental catch of squid in the Shelikof pollock roe season, for example, has been as high as 10 percent, enforcement of MRAs is done by NMFS Enforcement and is not monitored by In-Season Management staff. While there are occasional markets for squid, they are not generally targeted. The management issue is whether the fleet can avoid harvesting squid.

New Alternative. Remove BSAI and GOA octopuses as a TAC category from both Groundfish FMPs and move them into the forage fish category or remove them from both FMPs and defer their management to the State of Alaska

The ad hoc working group also suggested in 2002 that BSAI and GOA octopuses could be moved into the forage fish category for the same reasons as identified above for squids. The group also suggested that octopuses could be removed from the FMPs (as occurred for GOA black, blue and dark rockfishes and BSAI dark rockfish). Species or groups removed from the FMP are deferred to the State of Alaska. Interest for developing a target fishery for octopus species has occurred in the BSAI in 2005.

In its March 2005 review of the suite of Council alternatives, the Non-Target Species Committee discussed, but did not recommend, that octopus be re-categorized as a forage fish.

**TRANSCRIPT—2/11/08 9:00 am to 9:10 am
North Pacific Fishery Management Council
February 6-11, 2008
Council Discussion/Action
Agenda D-2(b) Other species Complex Management**

Tape #70

Scott Miller (NMFS-AKR staff):....and that's the conclusion of the paper and the comments received, and I think it points out pretty clearly that we have a tough row to hoe.

Eric Olson: Thank you Mr. Miller. Let's open it up for questions, Mr. Merrigan.

Gerry Merrigan: Mr. Chairman. Thanks for your pretty clear presentation on this. What you're presenting probably is kind of like the extreme of Alternative 2, where you split everything into the individual group categories and the benchmarks you refer to. Benchmarks for sculpins and skates seem pretty good; the trawl survey adequately comes up with a consistent number every year. But the benchmarks...the problem with like...we're trying to meet a benchmark for say, octopus and sharks, where trawl survey doesn't really give us a very good number...you know, octopus look patchy and rocky bottoms, and sharks sometimes it's surveys had a zero in there in some years and I'm sure it's more than zero out there. So...but given what the information and the system we have, if we split it out, that would be the benchmark, given what we know. So, I guess the other way we have to look at this is to get out of say Tier 6, we need an estimate of natural mortality and a better estimate of biomass so we can be improving from that end as well. So this scenario though, it doesn't look at the quality of the benchmark, it's just what we have right now if we went to that degree of splitting things out.

Scott Miller: Mr. Chairman and Mr. Merrigan, that's correct. And this is trying to split it out at a fairly fine level by specie but it doesn't even go into the great detail of CV versus CP and so on, so we'd still be in the analysis having to look at the individual effect and how that would come in under those Tier 6 benchmarks. And the big problem here...and I've discussed this with Andy Smoker...the big problem here is that when you have a Tier 6 specie, and you have your benchmarks set based on average catch, you really have an average chance of hitting those benchmarks, and that's the difficulty. When you have a Tier 5 species and you base it on biomass, the tendency is in our fisheries, is that we have ABC and OFL well above catch and it doesn't become an issue. So it really is that Tier 5 versus Tier 6 problem. And it gets...in analyzing what the effect would be on the fleet, it gets really difficult in the Tier 6 category because it's one of these things where the smaller these groups get, the harder it is to manage with any kind of a bycatch directed closure...you know, closure based on bycatch. And at some point it probably isn't practical and that's something that we would have to analyze once we break it out and figure out who would be affected and how and when and where and why. What effective management tool could be used, and what wouldn't work is as important as what would, I think.

Eric Olson: Mr. Benson.

Dave Benson: Thank you Mr. Chairman. That sort of leads me to my comment on the slide you had about how to characterize concern, and you said you're sensitive to management concern and I think of overfishing concern, and I forget the third one, but I would caution against thinking that using overfishing concern is an improvement over management concern because of that the fact we're dealing with a Tier 6 species in many cases that it's just average catch, and you're bound to go over that at some point, and so it sends kind of the wrong message to an uninformed person that you've got an overfishing problem. So, to me in my mind that's not really an improvement over a management concern, but maybe just concern covers it.

Scott Miller: Mr. Chairman and Mr. Benson, point taken...definitely, and that's why I chose to use the rather arbitrary term of approaches benchmarks. That describes in management what it actually does, and it's not indicating that there's a definite overfishing issue, especially when we're talking about a Tier 6 specie, where we don't have that issue really. We don't know enough at this point. We manage them extremely conservatively, and so, I agree.

Eric Olson: Further questions for Mr. Miller. All right, thank you Scott. Are there any folks signed up under public comment?

Chris Oliver: No sir.

Eric Olson: Looks like we don't have anyone signed up. We're ready for action, Mr. Merrigan?

Gerry Merrigan: Mr. Chairman I have a motion and I'm not going to move all this, it's just a couple sentences out of it, the rest is just for support. I guess I read that 'd move the first and last sentence of that paragraph and then the bullet points underneath as it's getting handed out, so the motion's simply going to read that, "the Council concurs with the staff approach on prioritizing and advising the current alternatives on management of BSAI and Gulf of Alaska other species assemblages." And then I would just move to the last sentence of that and say, kind of reiterating "the Council supports the staff approach and encourages the committee to consider..." And these are the following four highlights I guess, not to restrict the committee and not to restrict all the staff's suggestions but these four highlights are: (1) moving BSAI and/or Gulf squid into the forage fish category, and that's a new alternative; (2) moving BSAI and/or Gulf octopus into forage fish, or remove from the FMPs and defer management to the State of Alaska; (3) deleting alternative 5, adding grenadiers, which would identify if I've added it into the TAC specifications process, alternative 5 would....deleting it would be taking it out, or status quo. And consider separating to the State BSAI and GOA amendment packages.

Dave Benson: Second.

Tape #71

Eric Olson: Moved and seconded, Mr. Merrigan.

Gerry Merrigan: I appreciate the staff taking a...did a very good job of addressing a lot of the things that were presented in Andy Smoker's paper and Scott Miller's kind of rendering Andy's paper into Other Species for Dummies...I really appreciated that...and then clarified a lot of these issues, and I appreciate the work staff put into this, and not to say we'll do all these things, but I think these are really appropriate alternatives, and [I'll] be interested in the committee perspective on those and what ramifications that might have. You know, I think if you look at breaking it into the 10 individual boxes, it sets up a regulatory and management complexity and they may have a lot of confounding effects on industry, while not getting say, appreciable gain for those individual species as well. So, I think this looking for a more balanced approach to protect small components of the Other species assemblages versus trying to get some regulatory framework or work and that's what we're still struggling with and I think this moves us along on that path.

Eric Olson: Questions for Mr. Merrigan? Mr. Benson.

Dave Benson: Not a question exactly, but just a show of support for the motion and as a chairman of the Non-target Species Committee, I certainly appreciate getting some direction from the Council. We've kind of wandered around over the last few years; and it's been very difficult at times to get our arms

around what's a very complex package, and when I say that it's not just Other species, but rockfish and flatfish, and we've talked about a whole lot of things in that committee. So I feel like we're getting a little more focused here, and this certainly helps. We had a half-day meeting in November and didn't quite finish and we all agreed to meet again, so I'm working with Jane on trying to get a date for our future meeting...it may be before the April meeting, but it may not. But we certainly plan to continue our work and this certainly helps us do that. Thank you.

Eric Olson: Further questions or comments on the amendment? Ms. Salvesson.

Sue Salvesson: Thank you Mr. Chair. Gerry, I noted that you are removing alternative 5, which would remove further consideration of adding grenadiers to the TAC specs and I note that that is also consistent with the staff recommendation because...and the staff notes, because "...adding grenadiers is counter to the long-term goals of managing species for which there is no intent to harvest." And I guess I'm just looking to make sure that the record is clear at this point as to why the Council would elect to remove grenadiers from further....remove this alternative from further consideration.

Eric Olson: Mr. Merrigan.

Gerry Merrigan: I guess in response, I think it's part of the prioritizing portion of this, and I think as Mr. Benson went through, if you look at everything all at once, all the non-target species and try to address everything, we weren't really getting anywhere so looking at prioritization...so, I guess in looking at grenadiers, it's a very large biomass in both the Gulf of Alaska, and then Bering Sea, primarily in the Aleutians, it doesn't appear to be at any risk. We have some reasonable pretty good trawl assessment of trends in biomass that don't indicate that there's any biologic concern for grenadiers. There's no directed fishing on grenadiers, there's no real...very, very, very little interest in even retention of incidental. So there's very little economic interest of anybody exploiting the stock; we've got a pretty large biomass. So in the scheme of prioritization, it seems like more of the issues should be the ones, that if people may focus on, you may have more retained catch...and biologically speaking those are the higher priority. In addition, it makes for management concerns also with dealing with the OY cap in the Bering Sea and bringing it in the specs process, and that's a consideration. But I think all-in-all it's much less a biological issue and a management issue than some of the other species that are in this package.

Eric Olson: Further comment? Mr. Cotten.

Sam Cotten: Yeah, just back on the octopus here, I'm just not really sure what this motion would do. "It encourages the committee to consider..." does that in any way express a preference or a direction that's something that we should do, or is it just noting that that's something that we ought to look at. I'm still not real certain what would be the result of categorizing octopus into the forage fish. I assume you meant forage fish category there in your motion, not just into the forage fish.

Eric Olson: Mr. Merrigan.

Gerry Merrigan: Mr. Chairman, Mr. Cotten, I guess, looking at these alternatives now, there's several ways octopus can be dealt with: status quo, leaving it in 'Other species' in each area, you could split it out into individual components as Mr. Miller pointed out in Alternative 2, which gets it to it's own ABC; or we could, I think there's some lumping you can split out, say skates out of a package in the Bering Sea and leave octopus and sculpins in. But trying to figure out if you want to get to more specific levels what might happen, I think this gives a little bit more flexibility than just lumping and splitting it out by itself, which I think poses...it might be hitting the benchmark, and most of that is due to poor stock assessment. So I think this gives more flexibility for state management to look at it and maybe not get us in the potential box where there is not a biologic concern but because of the system, we may be bumping up

against this benchmark cause that's what we have. So this motion is trying to give a little bit more flexibility. We have some other alternatives already to consider and this is to actually expand upon that, whether the forage fish or state management isn't on the table right now. So it's trying to get...to allow the committee to look at additional ideas that's not currently contained in the present suite of alternatives.

Eric Olson: But it doesn't for uh...[Eric Olson & Gerry Merrigan talking over one another...]

Gerry Merrigan: It doesn't presume any... Right...preference

Eric Olson: ...it doesn't presume and preference It just allows the committee to discuss it, come back with their comments, and get the committee's perspective on it.

Gerry Merrigan: Yes, but for clarification, those are not possible under the current alternatives unless the committee...unless we take them up for direction right now.

Eric Olson: Further questions or comments on the motion. Mr. Fields?

Duncan Fields: I was voting for the motion Mr. Chair, but I'm concerned about the whole approach that moves us into these boxes with species we know very little about with wide seasonal variability. And so, I mean, we're taking these steps down this road, but when we get to the end of the road, I'm not sure I'm going to be supportive of where we end up, Mr. Chairman.

Eric Olson: Thank you Mr. Fields. Further comments or questions on the motion? Seeing none, is there objection? With no objection, the motion passes. Any other action to come before us on Item D-2(b)? Seeing none, we will move on to D-2(c) Discussion paper on VMS exemption for dinglebar gear, and I believe that is Ms. Evans. And I guess I should announce that Mr. Tweit is not going to be here today, he is ill and couldn't make it this morning, I should have announced that at the beginning of the meeting, but we'll send him his paperwork.