

MEMORANDUM

TO: Council and AP Members  
FROM: Chris Oliver *CO*  
Executive Director *for*  
DATE: March 28, 2010  
SUBJECT: Groundfish Annual Catch Limits (ACLs)

ESTIMATED TIME  
2 HOURS

ACTION REQUIRED

- (a) Review Non-Target Species Committee Report and take action as needed.
- (b) Final Action on Environmental Assessment to comply with ACL Requirements.

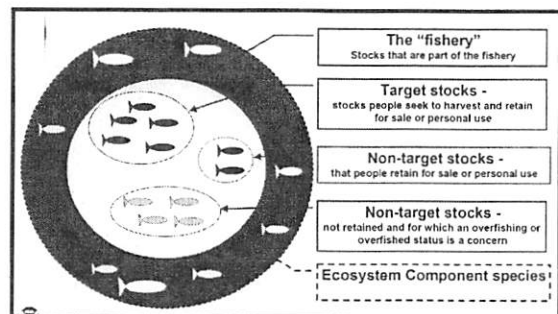
BACKGROUND

Committee report

The Non-Target Species Committee met on March 23, 2010 to provide a recommendation regarding: (1) final action to amend the groundfish FMPs to comply with ACLs requirements, and (2) a discussion paper on future management actions to address management of (a) grenadiers; (b) vulnerable species (i.e., octopus and squid); and (c) accountability measures (AMs) for new ACL species (i.e., sharks, sculpins, octopus, BSAI skates, and GOA squid. Committee minutes are attached as Item C-3(a).

ACL Final Action

The Magnuson-Stevens Act and the National Standard 1 Guidelines require councils to develop measures to prevent overfishing, rebuild overfished stocks, achieve optimum yield, and to establish ACLs and AMs for species and species groups identified as "in the fishery." An ecosystem component (EC) category may also be included in the FMPs for species and species groups that are not targeted for harvest, not likely to become overfished or subject to overfishing, and not generally retained for sale or personal use.



In addition to the status quo, the EA includes two alternatives to amend the BSAI and GOA Groundfish FMPs. Alternative 2 would identify (1) target groundfish stocks in the fishery, (2) forage fish species in the ecosystem component category, (3) prohibited species in the EC category, and (4) non-specified species outside of the FMPs. Alternative 3 differs from Alternative 2 in that it would identify forage fish species as in the fishery. The public review draft was distributed on March 8, 2010. The executive summary is attached as Item C-3(b)(1). An addendum includes corrected figures for the EA under Item C-3(b)(2).

**DRAFT**  
**Non-Target Species Committee**  
**AFSC-Seattle**  
**March 23, 2010**

Members in Seattle: Dave Benson, Karl Haflinger, Michelle Ridgway, Dr Paul Spencer, Lori Swanson, Anne Vanderhoeven

Members by phone: Julie Bonney, Janet Smoker, Jon Warrenchuk

Members absent: Dr Ken Goldman, John Gauvin

Committee staff in Seattle: Jane DiCosimo, Dr Olav Ormseth

Agency staff: in Seattle: Dr Loh-lee Low, Dr Grant Thompson, Dr Anne Hollowed, Dr Liz Conners; by phone: Mary Furuness, Tom Pearson, Dr Cindy Tribuzio, Dave Clausen, Cara Rodgveller, Clayton Jernigan, Maura Sullivan, Dr Phil Rigby

**Agenda** The Non-Target Species Committee convened at 9 am (PST) on Tuesday, March 23, 2010. The main agenda topics included discussion of final action on the Groundfish ACL plan amendments to conform to requirements for annual catch limits (ACL) and accountability measures (AM) under the Magnuson-Stevens Act and to discuss potential management changes to address management issues for non-target species.

**Review status of proposed groundfish ACL action.** Jane DiCosimo briefly reviewed the proposed timeline for action for revising the groundfish fishery management plans (FMPs) to meet requirements for ACLs and AMs. Final action is needed by April 2010 so that implementation can occur by the statutory deadline of January 2011. Alternative 1 would be the no action alternative. Target species, BSAI squids, and GOA and BSAI skates currently are managed under catch limits (status quo). Alternative 2 would 1) manage GOA squids, GOA and BSAI sculpins, GOA and BSAI sharks, and GOA and BSAI octopuses under group catch limits; 2) manage prohibited species and forage fishes (with no change to their regulations) under the EC category, and 3) moving non-specified species out of the FMP. Alternative 3 differs from Alternative 2 by managing forage fish in the fishery. It would require adoption of proposed biological reference points for these groups by the Council in October 2010.

The committee discussed the differences between the two action alternatives, principally the placement of forage fish in the FMPs. The EA identified that data on forage fish was limited for identifying essential fish habitat or for setting biological reference points, particularly by the statutory deadline. Jon Warrenchuk asked why OFLs could not be set for forage fish. Anne Hollowed responded that it may be possible to do so in a few years after major research initiatives that were ongoing in the BSAI and were planned for the GOA were concluded; however this may be achieved for select forage species. Olav Ormseth cautioned that biomass estimates based on acoustic surveys might provide a minimum estimate because the survey is not targeted on forage fish species (such as capelin). He suggested that such efforts could prove costly. He added that the current catch deterrents (i.e., maximum retainable allowances) likely are more appropriate than catch limits; further, new requirements for total catch accounting would be difficult to perform for these species. Paul Spencer noted that with expected advancements in our knowledge of forage fish species under BSEIRP and GOAIERP, the AFSC may be able to develop biomass estimates and ACLs for them. Leaving them in the EC category may result in their being ignored. He and Olav suggested that species listed in the EC category should have a mandatory periodic review. The committee discussed the need for a periodic review of the placement of species both 'in the fishery' and in the EC category.

Dave Benson recognized that the advancement of science is a good idea, and asked whether the committee wanted to recommend that it may reconsider the placement of forage fish in the future?

Michelle Ridgway responded that because we do not know the impacts of their removals on the ecosystem, we would reconsider the management category for forage fish (and all species) on a periodic basis in the future. The committee recognized that the placement of stocks under these plan amendments was necessary to meet the statutory deadline to identify those in the fishery, which are subject to ACLs and AMs. Jon expressed concern that the best available science was being determined because of timing

and that the EA should be more explicit in this regard. Other federal actions identify that forage fish are those that would be affected first; they live on the edge of energy budgets, are more vulnerable to pollution.

Committee members commented on specifics of the ACL EA. Lori asked why quantitative estimates of foregone losses to directed fisheries on target stocks as a result of separate ACLs for sharks, sculpins, octopuses, and GOA squid were not provided. Jane responded that she was not able to project what the group level TACs might be, nor which directed fisheries would be closed as a result of attaining those hypothetical TACs. Julie commented that the cumulative GOA other species OFL and ABC projected for 2010 in Figure 8 conflicted with similar data reported in an earlier table. She also said that she contacted Mary Furuness regarding catches assigned to certain GOA gear/target categories presented in Figures 20 and 21. Mary responded that her staff will provide corrected data/figures to the Council prior to final action.

After additional discussion, the committee recommended that the Council select Alternative 2 as its preferred alternative for both the BSAI and GOA Groundfish FMPs.

**Next steps.** After a brief review of potential action that the Council might take based on past discussions of the Council and its advisory bodies, Jane suggested that the committee could consider recommending that staff prepare a discussion paper of issues of interest. The committee concurred with that approach. The following list of items was recommended for the paper. Additional guidance to staff was provided but not reported here.

- For stocks in the fishery:
  - Discuss how species could be apportioned to particular targets/gears as is done with PSC (a 'skeleton' framework for apportionments with actual numbers determined in the annual specification process)
  - Update Smoker and Miller (cite) that includes spatial and seasonal analysis, along with potential impacts on directed fisheries, and including tables of the data along with graphical interpretations;
  - Effects of moving grenadiers in the fishery by FMP area;
  - General discussion of discard mortality rates (DMR), with focus on sharks and octopus examples. Include discussion of effect of retention requirements (GRS) on mortality.
  - Description of Agency authority to control catch to prevent large closures (e.g., area-specific closures, careful release programs)
  - Discussion of effect of unobserved fisheries on determination of total catch
- For stocks in the EC category:
  - Effects of managing squids and/or octopus (compared to status quo);
  - Effects of managing grenadiers (compared to status quo or in the fishery) by FMP area;
  - General discussion of current NMFS management authority for EC species (specific issues include 1) processing limits, 2) how to define EC criteria of "not generally retained," 3) MRAs, 4) DMRs, 5) mandatory review of species, and 6) frequency of vulnerability analyses;
  - General discussion of management implications for total catch accounting (e.g., observer program) for stocks moved into the EC category

**New Business.** No new business

**Next meeting.** Schedule for a next meeting would be linked to review of discussion paper

**Adjourn.** The committee adjourned at approximately noon.

## EXECUTIVE SUMMARY

This Environmental Assessment (EA) provides environmental and socio-economic analyses for a proposed action in accordance with the National Environmental Policy Act (NEPA). Amendment 96 to the Fishery Management Plan (FMP) for Groundfish of the Bering Sea and Aleutian Islands (BSAI) Management Area and Amendment 87 to the FMP for Groundfish of the Gulf of Alaska (GOA) are necessary for the groundfish FMPs to conform to the revised National Standard 1 guidelines and the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

While the North Pacific Fishery Management Council's (Council's) groundfish annual harvest specification process generally complies with the guidelines for National Standard 1, some amendments to the groundfish FMPs are required to improve the description of the harvest specifications process in the FMPs and document compliance with annual catch limits (ACL) and accountability measures (AM) requirements; however, these amendments to the FMPs are categorically excluded from NEPA (see Appendix 1 for more information).

One basic change to the FMPs that is included in this EA requires the identification of stocks in the fishery for the purpose of setting ACLs and AMs; stocks in the fishery must have ACLs and AMs specified for them, either individually or in aggregate. The Council proposes to eliminate the other species category, and list its component groups in the fishery. The guidelines allow the identification of a new ecosystem category (EC), within which stocks would not be subject to ACL and AM requirements. The Council proposes to list prohibited species in this new EC category while retaining the current management regime for them; in effect the only change would be to exclude them from requirements to implement ACLs and AMs by moving them under an EC category "umbrella," since prohibited species currently are not subject to ACLs and AMs. The Council proposes to list the forage fish category (1) in the fishery, where forage fish would be subject to ACLs and AMs or (2) in the EC category, where they would not be subject to ACLs and AMs, but would retain their current management regime. The Council also proposes to remove reference to non-specified species from the FMP because these species are too poorly understood to set ACLs and AMs or to develop a management regime. As species or groups are understood sufficiently the Council will consider moving them into the FMP, either in the fishery or the EC category; for example, the Council has initiated an analysis that will consider listing grenadiers (currently a non-specified species) either in the fishery or in the EC category.

This action is necessary to comply with requirements of the MSA to end and prevent overfishing, rebuild overfished stocks, achieve optimum yield, and to comply with statutory requirements for ACLs and AMs. Species and species groups must be identified "in the fishery" for which ACLs and AMs would be required. An ecosystem component category may also be included in the FMPs for species and species groups that are not targeted for harvest, or likely to become overfished or subject to overfishing, and are not generally retained for sale or personal use. Proposed FMP text will document compliance with ACL and AM requirements through the harvest specification process. These must be addressed by the statutory deadline of the start of the 2011 groundfish fisheries. To ensure the implementing regulations are consistent with the language in the FMPs regarding the other species category, minor regulatory amendments also would be part of this action, as further described in the Regulatory Impact Review (RIR) in Appendix B.

The EA addresses the statutory requirements of NEPA to predict whether the impacts to the human environment resulting from implementation of Amendments 96 and 87 will be "significant," as that term is defined under NEPA. If the predicted impacts from the selected action are found not to be significant, no further analysis is necessary to comply with the requirements of NEPA.

Three alternatives are analyzed for revising the BSAI and GOA groundfish FMPs in this EA.

Alternative 1. No action

Alternative 2. Revise the groundfish FMPs to comply with requirements to set annual catch limits and accountability measures

- Eliminate the other species category and manage (GOA) squids, (BSAI and GOA) sculpins, (BSAI and GOA) sharks, and (BSAI and GOA) octopus separately in the target species category.
- Target species are “in the fishery.”
- Prohibited species and forage fish are in the ecosystem component category.
- Non-specified species are removed from the FMPs.

Alternative 3. Revise the Groundfish FMPs to comply with requirements to set annual catch limits and accountability measures

- Eliminate the other species category and manage (GOA) squids, (BSAI and GOA) sculpins, (BSAI and GOA) sharks, and (BSAI and GOA) octopus separately in the target species category.
- Target species and forage fish are in “the fishery.”
- Prohibited species are in the ecosystem component category.
- Non-specified species are removed from the FMPs.

Under the no action alternative the groundfish FMPs soon may be out of compliance with the MSA and revised National Standard 1 guidelines. Currently the National Marine Fisheries Service (NMFS) and the Council do not have the ability to separately protect sharks, sculpins, octopuses, and some squids from the risk of overharvesting, as these species are managed as a complex under the other species category. While the Council may set a conservative total allowable catch (TAC) for the other species stock assemblage, harvest of one group could compose the entire TAC for the assemblage. This is particularly problematic since the biomass and population dynamics of the other species groups are uncertain. Shark species have low fecundity and low growth rates, which would lead to slow recoveries if stocks were fished down. Biomass estimates for squid and octopuses are uncertain due to their life history characteristics, which result in their being not well surveyed by bottom trawls. Sculpins are abundant and biomass is well estimated; however, their abundance masks potential overharvesting of less abundant species (i.e., sharks) managed with them collectively under the other species assemblage.

Revenues from the groundfish fisheries could be higher under the status quo compared to the action alternatives in the short run if the biomass of sharks, for example, was being driven down due to overharvesting by target fisheries in which they are incidentally caught. Revenues could be lower in the longer run if a reduced biomass required lower TACs. Also, fishing costs may be higher, due to lower catch per unit of effort if the biomass(es) was fished down. A key tradeoff could occur between the immediate cost of possible constraints on the directed groundfish fisheries that catch these groups incidentally and the long-term benefits from their protection, with possibly larger harvests of those groups and higher revenues in the long run.

The analysis identified no potential impacts in target categories that incidentally harvested sculpins; this is partly due to this group being managed under Tier 5, instead of average historical catches under Tier 6 for the remaining groups. Several target categories may be impacted by the proposed action for sharks, octopuses, and GOA squids. The analysis found that 2008 and 2009 harvests of individual groups would not have exceeded a 2009 overfishing level (OFL) or acceptable biological catch (ABC) of any of the seven groups, if those specifications had been in place that year; however, each of these groups had at least one year when catch exceeded one of these benchmarks between 2005 and 2007. Thus it can not be predicted whether proposed group level specifications would impact target fisheries in the future, given

the fluctuations in incidental catches and potential for voluntary measures to reduce these harvests by the fishing fleets. Overall, it is unknown whether fishing practices would change significantly under Amendments 96 and 87. The Council can control whether a future directed fishery develops for the groups by the level at which it sets the annual TACs.

The purpose of the proposed action is to comply with requirements of the MSA to end and prevent overfishing, rebuild overfished stocks, achieve optimum yield, and to comply with statutory requirements for ACLs and AMs. Alternatives 2 and 3 may lead to short-term reductions in gross revenues due to foregone harvest of BSAI and GOA sharks, BSAI and GOA sculpins, BSAI and GOA octopuses, and GOA squids, and all directed fisheries that encounter these species incidentally, but in the long run may lead to greater gross revenues, as a result of protecting the biomasses of the other species groups. Given the uncertainties about future TACs for squid, shark, sculpin, and octopus, and with respect to industry's valuation of the tradeoff between potential short-run restrictions and long-run sustainability, the socio-economic impacts are difficult to quantify, but are discussed qualitatively in section 1.5.

The proposed action is limited in scope and is likely to have limited effects on most environmental components of the BSAI and GOA. The effects discussion includes more in-depth discussion on biological, social, and economic impacts on groundfish target species, prohibited species, forage fish species, and non-specified species; and limited discussion for seabirds, marine mammals, habitat, and ecosystem effects. No significant cumulative effects were identified.

Alternatives 2 and 3, which provide more protection to the biomasses of the groups than the status quo, have been given an insignificant designation for environmental effects. No additional bycatch of groundfish, prohibited species, forage fish, or non-specified species is expected to be taken as additional target fisheries are not expected to develop as a result of this proposed action. Should a target fishery develop in the future, the effects of increased harvests of these species are expected to be insignificant because harvest limits (target and incidental) are already in effect for those fisheries in which they are harvested. It is unknown whether foregone target groundfish catch (e.g., Pacific cod) would be expected because proposed catch limits for squids, sharks, sculpins, and octopuses were not determined to be limiting on those fisheries in 2008 or 2009; although some instances were found from 2005 to 2007 in a theoretical example. Alternatives 2 and 3 would limit the amount of sharks, sculpins, octopuses, and squids that can be harvested under individual ACLs; however, they would continue to be managed under collective other species maximum retainable amount (MRA), forage fish MRAs, and prohibited species catch (PSC) limit regulations.

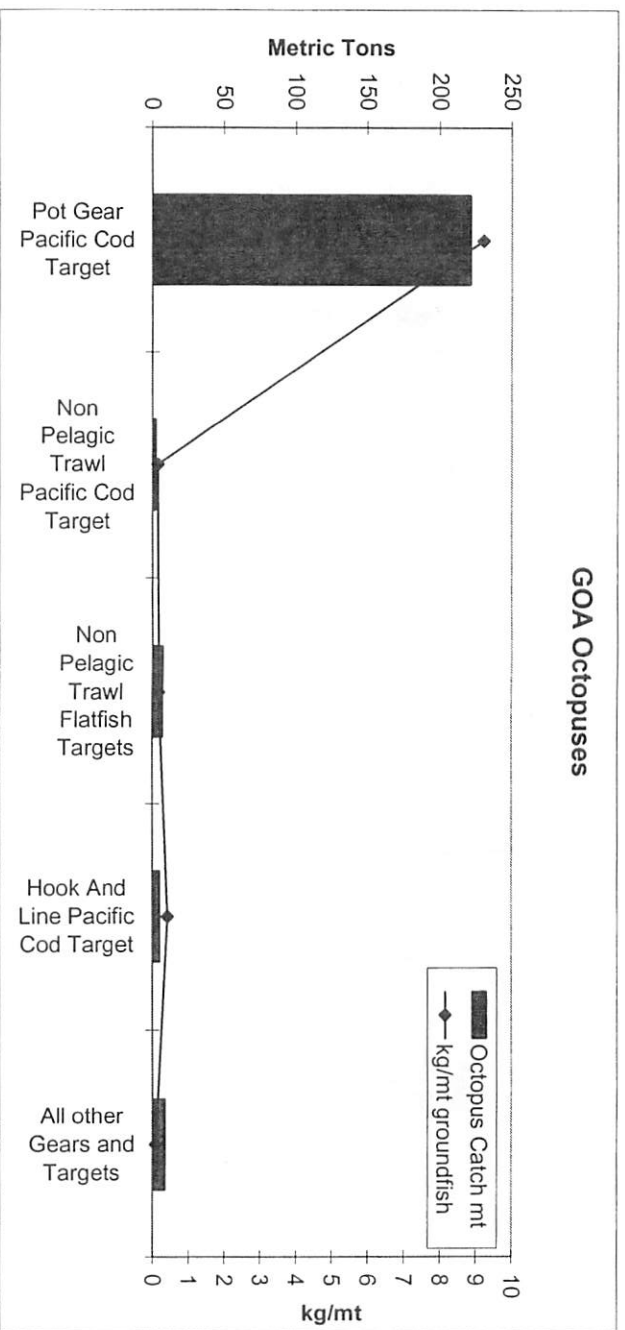
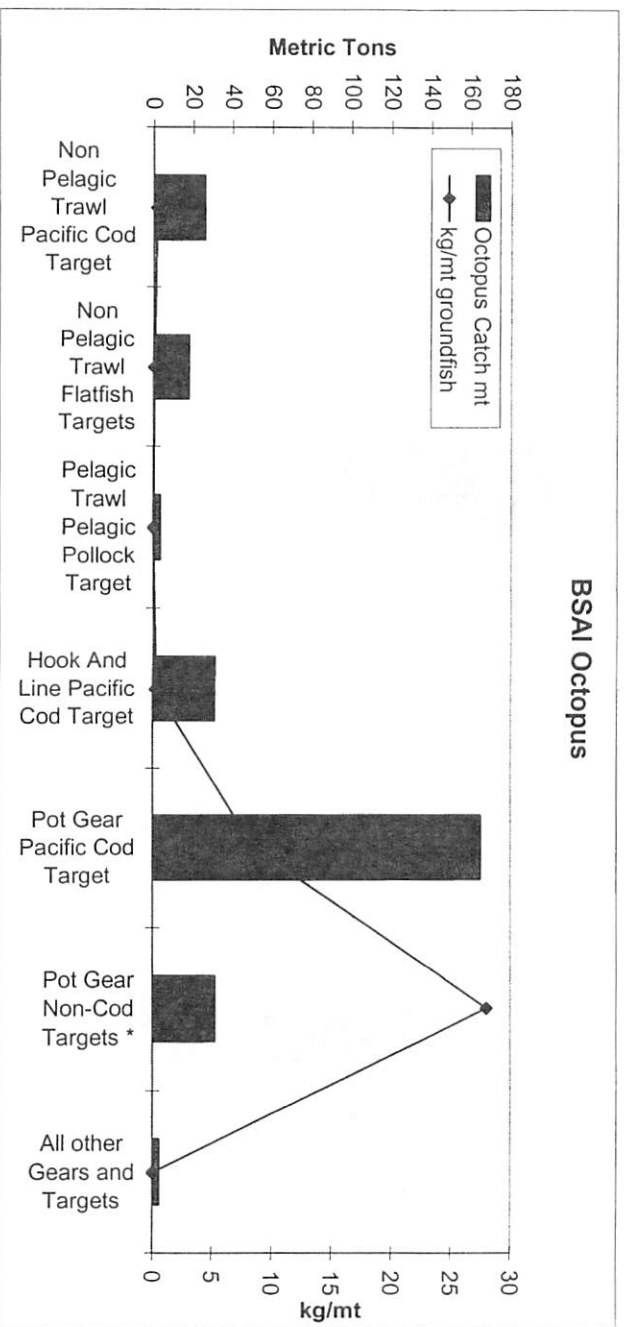
Additional elements under both Alternatives 2 and 3 include (1) maintaining the entire regulatory structure (unchanged) for prohibited species but listing them under a new "umbrella" management category for ecosystem components; and 2) removing non-specified species from the FMPs.

Alternative 3 differs from Alternative 2 only in proposed management of forage fish. Alternative 2 would maintain the entire regulatory structure (unchanged) for forage fish species but list them, along with prohibited species, under an ecosystem component category "umbrella." Under Alternative 3, forage fish species would be subject to ACLs and AMs. Alternative 3 would maintain requirements to designate essential fish habitat (EFH) and for EFH consultation on federal actions that may adversely affect EFH. The impacts of Alternatives 1, 2, and 3 on EFH for forage fish are not significant. Alternatives 1 and 3 may have a future beneficial impact on forage fish as NMFS will be required to review information regarding forage fish EFH every 5 years; once information becomes available, NMFS may designate EFH for forage fish. Any benefit is not likely significant, as EFH for the other species group is extensive and is likely to overlap with any forage fish EFH; therefore EFH consultation is likely already occurring for forage fish habitat.

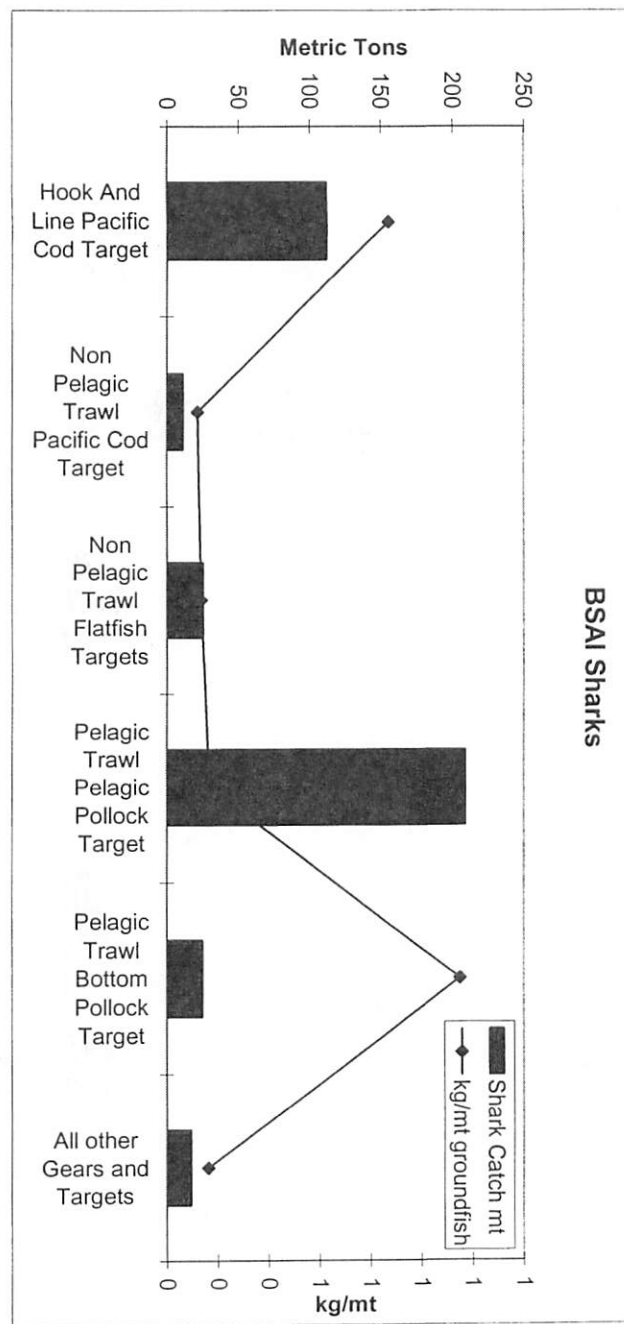
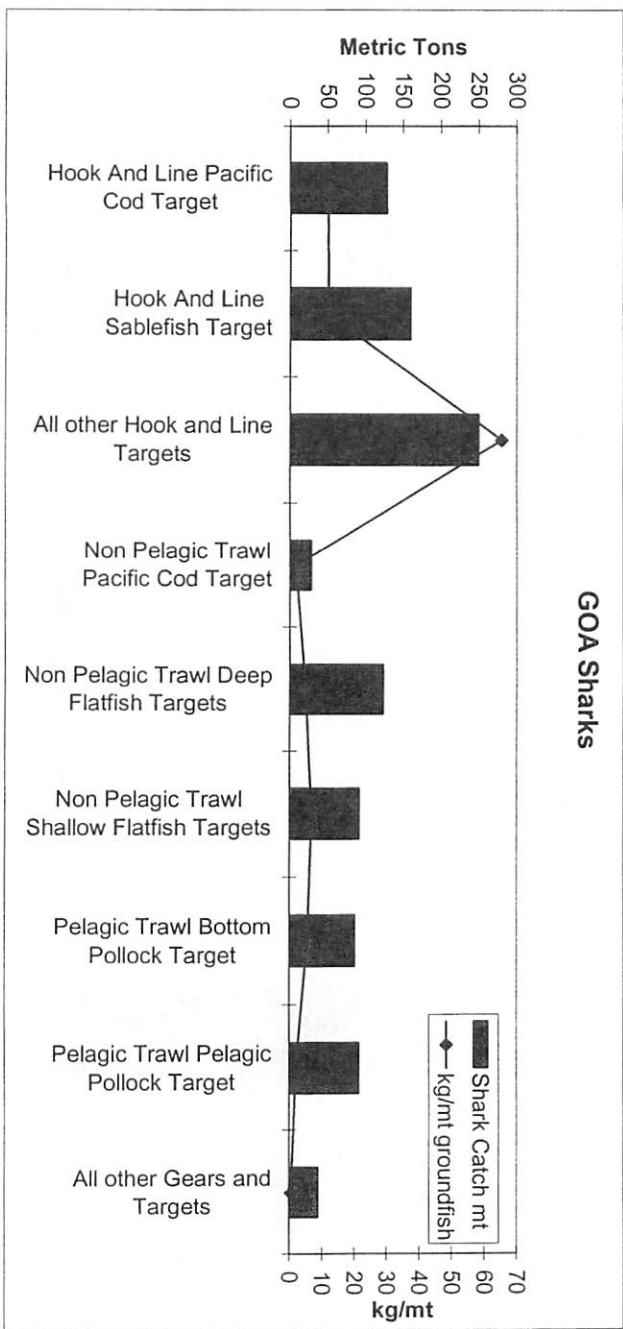
Alternatives 2 and 3 are likely to have beneficial effects for marine mammals, seabirds, and the ecosystem compared to Alternative 1 as species in the other species group would be managed at the level of the separate groups, reducing the potential for overfishing. Many marine mammals and seabirds are dependent on species that are currently managed in the other species group. Protection of these potential prey species would be beneficial to the ecosystem, especially in maintaining predator-prey relationships. The beneficial effect is not likely to be significant as there is no evidence currently of overfishing the species in the other species category, and the impacts are not likely to be seen at population levels for seabirds and marine mammals.

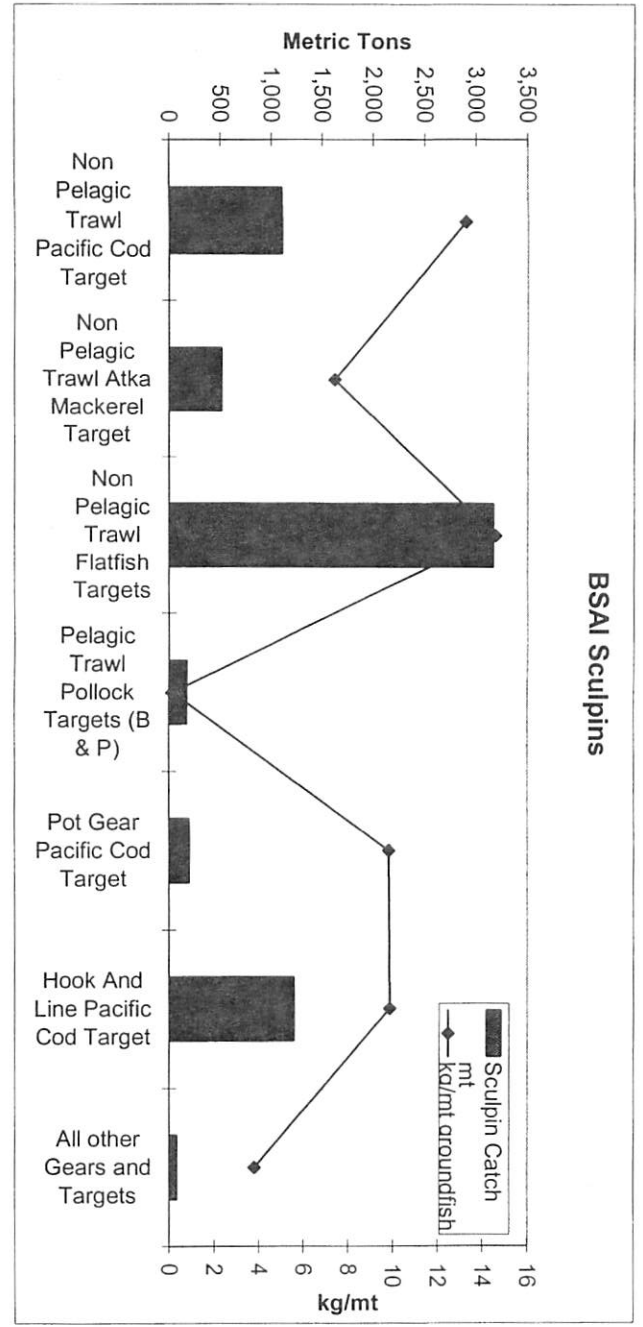
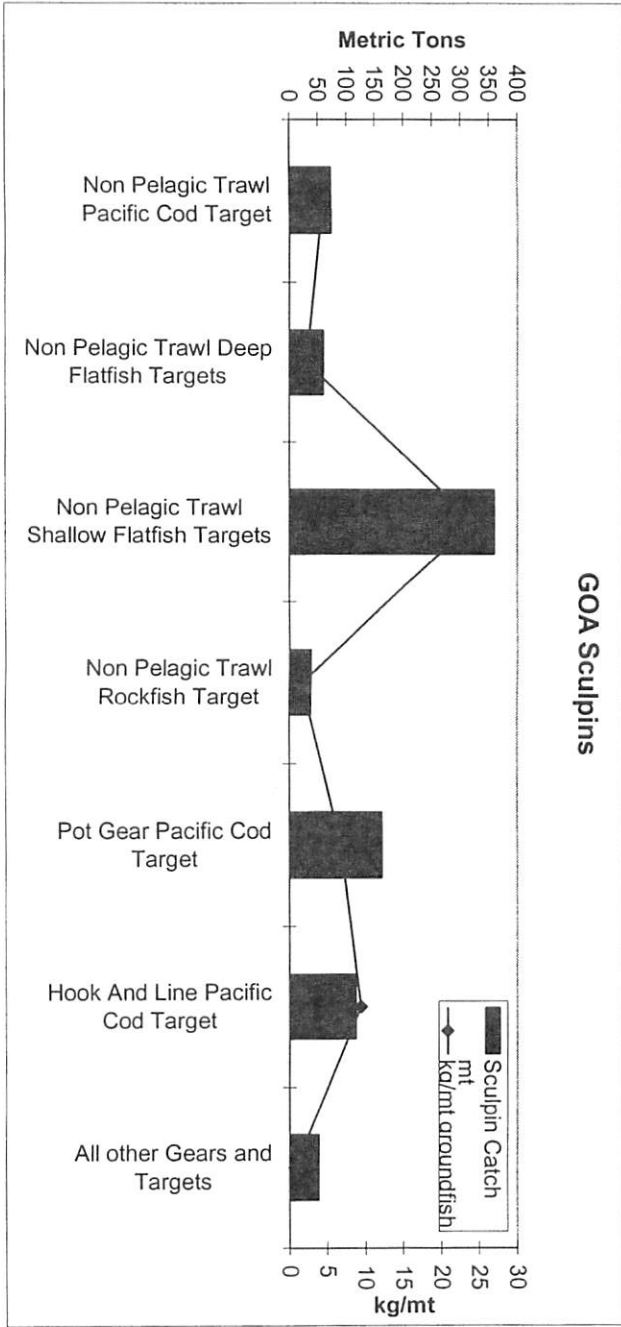
The effects of Alternative 2 and 3 on marine mammals, seabirds, the ecosystem, and habitat differ only in whether forage fish are placed in the fishery or not. As described above, Alternatives 1 and 3 may provide a future potential benefit to the protection of forage fish EFH. Any protection of forage fish EFH may lead to a modest beneficial effect for these species and the part of the ecosystem that depends on forage fish.

Corrected figures for Groundfish ACL analysis









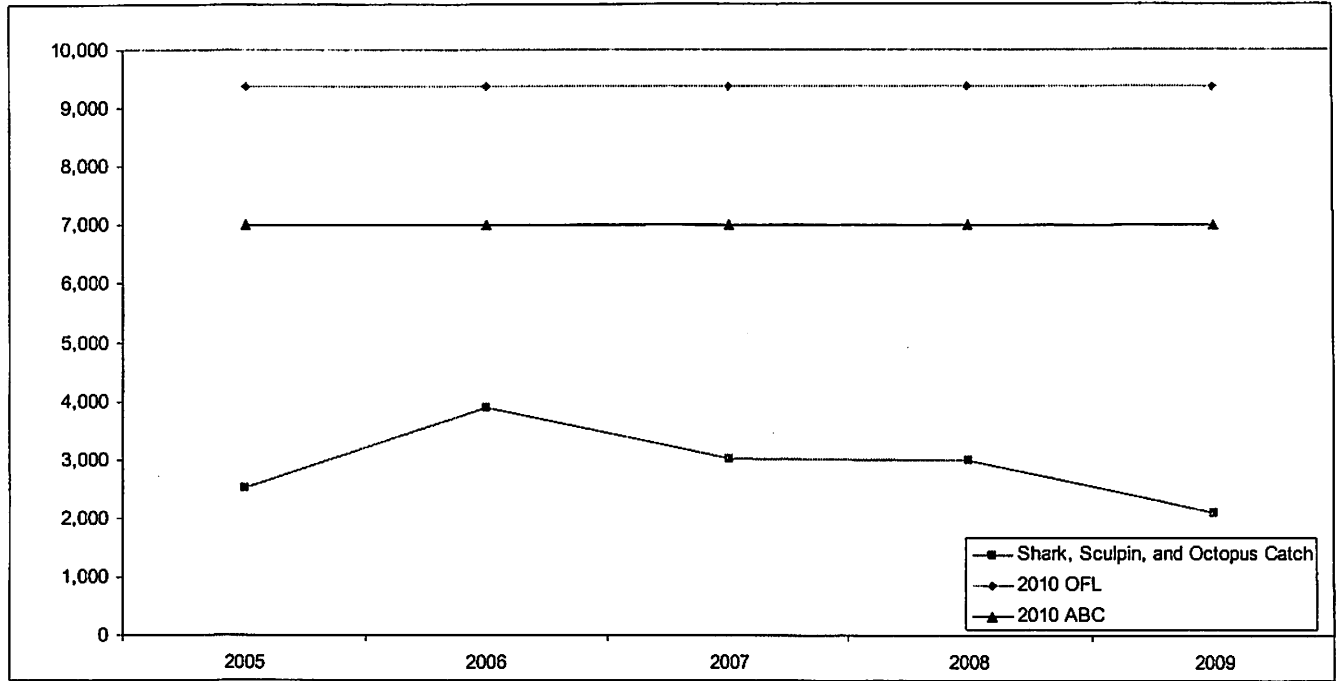


Figure 1 Cumulative catch (mt) by year (2005-09) for GOA other species

# PUBLIC TESTIMONY SIGN-UP SHEET

Agenda Item:           C-3  ACL          

	NAME (PLEASE PRINT)	TESTIFYING ON BEHALF OF:
1	GERRY MERRIGAN	ALASKA LONGLINE COMPANY
2	Kenny Down	Freezen Longline Company
3	George PISTAIKOFF	Greenpeace
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NOTE to persons providing oral or written testimony to the Council: Section 307(1)(I) of the Magnuson-Stevens Fishery Conservation and Management Act prohibits any person " to knowingly and willfully submit to a Council, the Secretary, or the Governor of a State false information (including, but not limited to, false information regarding the capacity and extent to which a United State fish processor, on an annual basis, will process a portion of the optimum yield of a fishery that will be harvested by fishing vessels of the United States) regarding any matter that the Council, Secretary, or Governor is considering in the course of carrying out this Act.

Delay final action. Expand the analysis. Get it right. Risk of litigation for deadline is minimal. Council needs to balance out the need to have an adequate analysis versus meeting a deadline.

Analysis should provide the Council information to make an informed decision about the actions and the consequences of that action. This would include a reasonable examination of the impacts of the action – including the potential impacts on fisheries. These impacts should be quantified to the extent practicable and if not possible, a thorough qualitative discussion should be included.

**1.) Lack of economic impact analysis; no regulatory impact review:** In the EA, the economic analysis (p. 44-47) is qualitative and quite brief, *“this action may lead to reductions in gross revenues in the short run.”* The only foregone harvest calculation is from foregone harvest of “o. species” – there is no quantitative or qualitative analysis of potential foregone target harvest (pollock, cod etc) – as the result of reaching OFLs inseason, and closure of a sector, fishery, or fisheries. There is no Regulatory Impact Review for these actions (there is a 3 page RIR attached for minor housekeeping amendments).

**2.) Lack of historic catch data:** The only catch data of “o. species” components is found on page 81 and only spans the time period from 2005-2009. A longer time series is needed to see the variance in ranges of historic catch over time – as well as to see the potential implications of proposed ABC/OFLs. Additionally, species components such as shark and octopus are managed under Tier 6 which is based on average catch from 1997-2007.

If the proposed 2010 Tier 6 ABC/OFLs had been in place in the 1997-2009 time period:

**BSAI sharks:** The ABC would have been exceeded 8 out of 13 years; OFL would have been exceeded 3 times – by as much as +127%.

**GOA sharks:** The ABC would have been exceeded 8 out of 13 years; OFL would have been exceeded 4 times – by as much as 87%. If IPHC research catches are included under ACLs, the ABC would have been exceeded 10 of 13 years; the OFL would have been 7 of 13 years – by as much +120%.

**BSAI octopus:** The ABC would have been exceeded 9 of 12 times; OFL would have been exceeded 6 times – by as much as +66%. The largest catch was in 1995 at 1013 mt and would have exceeded the OFL by +226%. Note: if the Tier 6 method that is used in GOA octopus would have been used in BSAI octopus (that is use maximum incidental catch instead of averaging), BSAI octopus would have exceeded the ABC in 2 years and OFL exceeded once.

**GOA octopus:** The ABC would have been exceeded 6 out of 13 years; OFL would have been exceeded 3 times – by as much as +14%. Note: the Tier 6 method in GOA octopus uses maximum incidental catch, if averaging is used – as in BSAI octopus- the ABC would have been exceeded 10 times and OFL exceeded 7 times.

**3.) Lack of research catch data:** In some areas (GOA sharks) it appears that research catches can be significant. This data needs to be provided as well as a discussion of how research catches will be addressed under ACLs – if ACLs are to account for all mortality.

**4.) Lack of identified management measures to maintain catches below ABC/OFL:** The section on management and enforcement is found on page 48 and consists of two sentences. There are no identified management measures. If OFL is reached, the default management measure is cessation of fishing in all fisheries with incidental catch. Other management measures could include area closures, sector closures, seasonal closures, seasonal apportionment, adoption of DMRs (discard mortality rates) etc. However, none of these measures are discussed in this analysis. If area and temporal closures are being considered, then data needs to be provided to show the geographic and seasonal distribution of incidental catch – and if sector management is being considered, then this data needs to be broken out by sector.

**5.) Lawsuit risk is minimal to negligible.** If this action was delayed until the analysis was improved – and if the “deadline” was not met - the risk of litigation is very minimal. In that scenario, the Council – at the deadline - would have over 99% of its species ABCs under ACLs – and would be in the process of working on the remainder. In 2010 the total ABCs in the BSAI/GOA were 2.687 million. The combined BSAI/GIA shark/octopus ABCs = 1863 mt or 0.07% of all ABCs.

**Request the Council delay final action until the analysis includes an examination of the potential impacts of the action on fisheries including:**

- 1.) Catch tables showing historic catches of sharks, octopus etc (by area, and by sector by area – for sectors with significant proportion of catch).
- 2.) Tables showing average temporal historic catch distribution of same species over the fishing year (proportion by month in the aggregate and by sector etc.)
- 3.) Figures showing average geographic distribution of harvests of same species (are there hot spots?).
- 4.) Tables showing research catches, and an explanation of how these catches are accounted for under ACLs.
- 5.) To the extent practicable, quantified foregone harvest of target species (as a result of potential inseason closure from reaching OFL of shark, octopus, etc). This might be best accomplished by using past years to see when the proposed OFL would have been reached, and which fisheries were still open and how much target TAC would hypothetically been left on the table.
- 6.) A description and hierarchy of management measures that will be used by NMFS to manage to ABC/OFL (i.e. area closures, seasonal closures, seasonal apportionment, sector closures, complete closure of all fisheries etc).
- 7.) A brief description of the process (regulatory and scientific) necessary to get DMRs adopted for octopus and sharks.
- 8.) A brief description of what information is needed to move a stock from Tier 6 to Tier 5, and an update on the status of that data (estimate of biomass, natural mortality) and what research is still needed.

## BSAI Sharks:

Proposed Tier 6 2010 ABC exceeded 8 of 13 years (1997-2009) and OFL exceeded 3 times by as much +127%.

BSAI fisheries at risk: Pollock trawl and p-cod longline – and particularly any fishery that is prosecuted late in the year such as CDQ p-cod longline.

Year	Catch, (mt)	Proposed Tier 6 ABC, previous SAFE documents	Proposed 2010 Tier 6 ABC (449 mt) exceeded?	Proposed 2010 Tier 6 OFL (599 mt) exceeded?	Proposed Tier 5 ABC, previous SAFE documents (not selected)
1997	368				
1998	497		Yes		
1999	530		Yes		
2000	590		Yes		
2001	764		Yes	Yes (+28%)	
2002	1362		Yes	Yes (+127%)	167 256 257
2003	515	376 mt	Yes		468 1975 2196
2004	514	434 mt	Yes		1980
2005	414	434 mt			1195
2006	672		Yes	Yes (+12%)	
2007	330				
2008	185				
2009	132 (as of Oct.7)	449 mt			
2010		449 mt			

- 2010 Tier 6 OFL = average catch 1997-2007 = 598 mt
- 2010 Tier 6 ABC = 75% of average catch 1997-2007 = 0.75 X 599 mt = 449 mt
- Authors calculated 2010 Tier 6 ABC from the aggregate of Tier 6 estimates for spiny dogfish shark (6 mt) + sleeper sharks (312 mt) + salmon sharks (36 mt) + other shark (95 mt) = 449 mt. Previously (2002 and 2003), authors have also suggested separate ABCs for AI and EBS for sharks.
- All catch (discarded or retained) is currently considered 100% mortality - no DMRs are in place.
- Catch data from October 2009 SAFE: Assessment of the shark stock in the Bering Sea

## GOA Sharks:

**Proposed Tier 6 ABC exceeded 8 out 13 years (1997-2009); OFL exceeded 4 times by as much as +87% and as much as +120% (if IPHC research catches are included).**

**GOA fisheries at risk:** Halibut longline; sablefish longline; p-cod longline; trawl (DWF and SWF); pollock trawl – particularly those fisheries that are prosecuted late in the year such as the halibut longline fishery and likely p-cod longline (under sector splits).

Year	Catch, (mt)	Proposed 2010 Tier 6 ABC (957 mt) exceeded?	Proposed 2010 Tier 6 OFL (1276 mt) exceeded?	IPHC Research survey Catch (mt)	Proposed 2010 Tier 6 OFL (1276 mt) exceeded – research catch included?	Biomass estimate
1997	1041	Yes				52,880
1998	2390	Yes	Yes (+87%)	422	Yes (+120%)	
1999	1036	Yes		348	Yes (+9%)	51,104
2000	1117	Yes		443	Yes (+22%)	
2001	853			385		69,469
2002	427			348		
2003	751			633	Yes (+9%)	154,472
2004	2335	Yes	Yes (+83%)	459	Yes (+119%)	
2005	1101	Yes		384	Yes (+16%)	107,403
2006	1603	Yes	Yes (+26%)	315		
2007	1388	Yes	Yes (+9%)	241	Yes (+27%)	213,939
2008	619			188		
2009	365 (as of Oct. 7)					67,568

2010 Tier 6 OFL = average catch 1997-2007 = 1276 mt

2010 Tier 6 ABC = 75% of average catch 1997-2007 = 0.75 X 1276 mt = 957 mt.

Authors calculated 2010 Tier 6 ABC from the aggregate of Tier 6 estimates for spiny dogfish (528 mt) + sleeper sharks (237 mt) + salmon sharks (52 mt) + other sharks (141 mt).

All data from October 2009 SAFE: Assessment of the shark stocks in the Gulf of Alaska.



## BSAI Octopus:

Proposed Tier 6 ABC exceeded 9 of 12 times in 1997-2008; OFL exceeded 6 times as much as + 66%. The largest catch was in 1995 at 1013 mt and would have exceeded the OFL by +226%.

BSAI fisheries at risk: Pot cod and other pot target fisheries.

Year	Catch	Proposed Tier 6 ABC, avg. method	Proposed 2010 Tier 6 ABC (225 mt) exceeded?	Proposed 2010 Tier 6 OFL (300 mt) exceeded?	Proposed Tier 5 ABC, (not selected)
1997	248		Yes		
1998	190				
1999	326		Yes	Yes (+5%)	
2000	418		Yes	Yes (+34%)	
2001	227		Yes		
2002	374		Yes	Yes (+20%)	
2003	268		Yes		
2004	516		Yes	Yes (+66%)	
2005	338		Yes	Yes (+9%)	
2006	334		Yes	Yes (+7%)	
2007	181				
2008	210	233			2691
2009		225			2969
2010		225			2969

- 2010 Tier 6 avg = average catch 1997-2008 (300 mt) X 0.75 = 225 mt. (OFL = 300 mt).
- 2008 Tier 6 avg = average catch 1997-2007 (311 mt) X 0.75 = 233 mt. (OFL = 311 mt).
- If catches are reduced in future years, and if octopus remains in Tier 6, and the time series for catch averaging continues to move forward, the result is a declining ABC.
- BSAI octopus Tier 6 calculation uses average catch; GOA octopus Tier 6 uses maximum incidental catch (not averaged).
- From 2009 SAFE, *"We feel that a standard Tier 6 approach based on the average incidental catch results in an overly conservative limit, because most of these data are from a period in which there was very little market or directed effort for octopus."*
- All catch (discarded or retained) is currently considered 100% mortality - no DMRs are in place. From 2009 SAFE, *"We also recommend that future management of the octopus complex include a discard mortality factor in catch accounting, as initial data suggest that this accounting would better reflect the fishing mortality rate."*
- Discard Mortality Rate study (2003-07): Pot=0.5%; LL=21.4%; NPT=57.3%; PT=85.2%.
- All data from October 2009 SAFE: Octopus Complex in the BSAI.

## GOA Octopus:

Proposed Tier 6 ABC exceeded 6 out of 13 years: OFL exceeded 3 times, up to +14%.

GOA fisheries at risk: Pot cod.

Year	Catch	Proposed Tier 6 ABC, (max method)	Proposed 2010 Tier 6 ABC (224 mt) exceeded?	Proposed 2010 Tier 6 OFL (298 mt) exceeded?	Proposed Tier 6 ABC (avg, not selected)	Proposed Tier 5 (not selected)	Biomass estimate
1997	232		Yes				
1998	112						
1999	166						994
2000	156						
2001	88						994
2002	298		Yes	Yes (0%)			
2003	209						3767
2004	286		Yes				
2005	151						1125
2006	159						
2007	263		Yes				2296
2008	339	224	Yes	Yes (+14%)	142	730	
2009	305	254	Yes	Yes (+2%)	156	953	3791
2010		254			156	952	

- ACL paper uses a 2010 Tier 6 ABC of 224 mt and an OFL of 298 mt (p. 81, Table 17). 2009 SAFE document has a 2009/2010 Tier 6 of 254 mt and an OFL of 339 mt. Table above uses 2010 ABC/OFL as in ACL paper.
- 2010 Tier 6 OFL = maximum catch 1997-2007 = 298 mt (different method than BSAI).
- 2010 Tier 6 ABC = 75% of the maximum catch 1997-2007 = 0.75 X 298 mt = 224 mt.
- From 2009 SAFE, *“The average incidental catch rate over this period [1997-2008] was 208 mt; if this is used as the Tier 6 OFL, the ABC would be 156 mt. Under an alternative Tier 6 proposed in 2007, the maximum incidental catch [339 mt] rather than the average is used as OFL. Under this alternative, the OFL would be 339 mt and the ABC 254 mt.”*
- All catch (discarded or retained) is currently considered 100% mortality - no DMRs are in place. From 2009 SAFE, *“The low Tier 6 OFL has some potential to affect cod fisheries that take octopus as bycatch. In order to address this potential conflict, we propose that investigations into the possible use of a discard mortality factor for octopus be continued.”* Discard Mortality Rate study (2003-07): Pot=0.5%; LL=21.4%; NPT=57.3%; PT=85.2%.
- All data from October 2009 SAFE: Assessment of the Octopus Complex in the GOA.