SSL Mitigation Proposal

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Brief Statement of Proposal: Allow hook and line CP sector to harvest 70% of its Amendment 85 BSAI P. cod allocation during the "A" season, 30% during the "B" season (51%/49% under A. 85). Increase to be taken twenty nautical miles or more from SSL rookeries and major haulouts, outside of the Seguam no fishing area for listed species, and the Bogoslof Foraging Area – in other words, outside Critical Habitat. Please see attached chart. Note that if the BSAI cod TAC is split, the AI Critical Habitat closures in this proposal would have to be relaxed to allow this sector to harvest that portion of the increase required to be taken in the AI (a small amount in any event).

Objectives of Proposal: Increase economic efficiency, improve safety, reduce halibut bycatch and seabird incidental take.

Need and Justification for Council Action: Only the Council can recommend this change.

Foreseeable Impacts of Proposal: Improved economic efficiency would be realized by the freezer-longliner fleet through higher CPUE, lower fuel costs, reduced time at sea. Safety would be improved by reducing time at sea in winter weather. Halibut bycatch and seabird incidental take would be reduced. Other sectors would retain their Amendment 85 seasonal allocations. Sea lions would be further protected by closure of Critical Habitat. Please see supporting information.

Are there Alternative Solutions? None that would achieve all the objectives of this proposal.

Supporting Data & Other Information: Please see attachment.

Offsetting Measures – Increased Protection: The extension of hook and line CP no fishing zones to 20 miles around rookeries and major haulouts would guarantee protection for juvenile SSLs at the critical stage of their development (2003 Supplement to the 2001 BiOp – foraging needs beyond 20 nm is of "low" concern), as well as female SSLs. Virtually all of the Aleutians would be effectively closed to fishing by the fleet (possible exception if BS and AI cod TAC's are split). The closure of the entire Bogoslof Foraging Area would greatly increase protection from the freezer-longliner fleet, which is now closed out of only the Bogoslof no fishing area (Area 518).

Justification

Proposal

This proposal changing the seasonal apportionment from 51% - 49% (amendment 85) to 70% - 30% would increase the BSAI cod harvest of the hook and line CP sector by 19% in the "A" season. This would change the overall seasonal apportionment to 76% - 24% as a percentage of TAC (please see attached message and spreadsheet), and would be a 6 percentage point increase over the ~70% – 30% BiOp guideline. It would be an 8% percentage point increase over the current Amendment 85 overall apportionment of 68% - 32%. All other gear types would retain their Amendment 85 seasonal apportionments – no one would be forced to fish later in the year.

Objectives

1. Economic – For a variety of obvious reasons it is more desirable and efficient to take cod in the "A" season. CPUE's are twice as high in the "A" season (please see NMFS weekly catch table, attached), so the cost of catching cod is reduced. Cod are in prime pre-spawning condition. Less time is spent on the grounds to catch a given amount of fish, reducing costs of fuel, bait, food, insurance, etc. Economic efficiency is increased. Fisheries Information Service (FIS) estimates that if this proposal had been in place in 2005 the "A" season would have been increased by 21 days, the "B" season reduced by 43 days, for a net savings of 22 days (14%).

2. Safety/Crew – This proposal would shift fishing effort from November/December to February/March. Weather may be bad in either period, but in the later part of the year fishing is slower, trips are longer, crews become tired, frustrated, and accident-prone. Equipment breaks down. I have been asked many times by crew members and officers alike if we couldn't shift our fishery out of the "B" season. Because of seasonal CPUE differences, only half the time at sea would be required to harvest the reapportioned cod under this proposal (please see weekly catch table, attached). Note 22 day reduction in 2005 season, as above.

3. Halibut Bycatch – Our halibut bycatch rate doubles in the "B" season (Fisheries Information Service). Any shift to the "A" season will save considerable amounts of halibut. FIS estimates that had the proposal been in place in 2005, 85 mt of halibut mortality would have been prevented, an 18% savings.

4. Seabird Incidental Take – The short-tailed albatross, an extremely endangered species, is of concern here, as are all seabirds taken in longline fisheries (note that there are only 2,200 short-tails in the world, while there are some 45,000 SSL's in critical habitat). 60% of the short-tailed albatrosses remain on the grounds all year, a very real threat given the low incidental take allowances. All seabirds are of concern, and FIS calculates that had the proposal been in place in 2005, 298 of 616 seabirds, or 48%, would have been saved.

Supporting Data and Information

Seasonal Apportionment - We feel our proposed change is appropriate because recent studies have brought assumptions underlying the current ~70% - 30% seasonal guideline into question. The proposal also offers additional protection (areas closed to our fishery during increased take) for key elements of the SSL population in the winter.

1. Time of Weaning - A central assumption underlying the current seasonal apportionment guideline was that sea lion pups weaned in the winter months (January – March) and needed protection from commercial fisheries competition at that time. See **Calkins & Goodwin**, 1998; **2003 Supplement to the BiOp of October 2001**, pp. 12, 33; **1999 Revised Final RPA Document**, pp. 21, 33. A recently published paper by **Trites***, et. al*., **Insights into the Time of Weaning and the Attendance Patterns of Lactating Sea Lions In Alaska**…**2006**, found that weaning does not take place in winter. "We did not observe any sea lions weaning during winter; rather, most appeared to wean at the start of the breeding season when they were 1 or 2 y old" (p. 85). It was found that weaning was likely to take place in April or May, and that pups begin supplementing their milk diet in the spring (when we are off the grounds).

2. Localized Depletion - A corollary concern has to do with the availability of an adequate prey field for foraging in the winter. A central concern here was the possibility that fisheries might cause "localized depletion." Three studies conducted by the AFSC Fisheries Interaction Team suggest that this is not a significant problem. In particular a three year study of intensive trawling for cod at Cape Sarichef "overwhelmingly indicated no differences between sites in the trawled and untrawled areas." **Progress Report: Pacific Cod Local Depletion Study**, June 1995; AFSC Processed Report 2004-04, **Pacific Cod Pot Studies 2002-2003**, June 2004, p. 36. While no such adaptive management experiment has been performed in the U.S. for longline fisheries, earlier work in Norway indicated that baited longlines attract large numbers of fish and take only 0.5% of those attracted (Lokkeborg, *et.al*.,). While it is in the water, longline gear causes local aggregation of fish, not local depletion.

3. Telemetry Studies - Telemetry studies indicate that longlining for a relatively small additional amount of cod in the winter outside of critical habitat (beyond 20 nm and no fishing zones) is not likely to cause foraging problems for SSLs. "The data suggests that the areas of highest use are within 0-10 nm of rookeries and haulouts. However, both older juveniles and adult females may utilize the 10-20 nm zone of critical habitat to a greater extent in the winter. NOAA Fisheries concluded (based on the telemetry data) that the 0-10 nm zone was of 'high' concern from potential overlap from fisheries, the 10-20 nm zone was of 'low to moderate,' and beyond 20 nm was of 'low' concern…Use continues to drop off for most of the components of the population beyond 20 nm; therefore, NOAA Fisheries rates the remaining zones as low based on the very limited usage as displayed in the telemetry data." **Supplement to the BIOp, of October 2001**, June 2003, Abstract, p. 20. Juvenile SSLs learning to forage are the most important subset of the sea lion population that NOAA Fisheries is concerned about. **Supplement to the BiOp**, p. 20. A recent telemetry study in the eastern Aleutian Islands indicated that most juvenile SSL diving locations during November-April were less than 5-10 nm offshore. **Immature Steller sea lion dive activity in…the Aleutian Islands**, Fadely, *et. al*., June 8, 2005, p. 253.

4. Female SSLs – In addition to juveniles, female SSL's have been of concern. Females with dependent young are constrained to feeding relatively close to rookeries and haulouts because they must return at regular intervals to feed their offspring (**Draft SSL Recovery Plan**, May 2006, p. 33). The **Supplement to the BiOp of 2001** (introduction) suggests that juveniles and adult females may utilize the 10-20 nm zone of critical habitat to a greater extent in winter. But some adult females may travel farther in winter (**Draft SSL Recovery Plan**, May 2006, p. 33). It would appear that the limitation of our incremental fishery to Critical Habitat would protect juveniles completely and females to a considerable degree (see **Trites, et. al**, *in press*, 2006, p. 4; Fig 4 showing that much of the most suitable habitat for females SSLs in winter falls within Critical Habitat).

5. Importance of Cod in SSL Diet - There is limited information on SSL diet (**Andrews and Calkins** 2002, p. 8). Cod are consumed by SSL's, though they play second fiddle to other species. Another study identified cod as an important prey species in some regions, but an examination of the frequency of occurrence of evidence in scats by region indicates that pollock or Atka mackerel predominate over cod in all regions, in both summer and winter (**Sinclair and Zeppelin**, 2002, p. 983). "Diets of sea lions in areas of the Aleutians and Gulf of Alaska, with the highest rates of population decline, had little diversity and were typically dominated by pollock or Atka mackerel" (**Andrews and Calkins**, 2002. p. 8). The **Draft SSL Recovery Plan** states, "Pacific cod has also been an important food, especially in winter in the Gulf of Alaska" (p.31). Additionally, because the pollock and cod fisheries generally target fish of three years of age or older, there may be only minor overlap between the fish taken by humans and the fish taken by SSLs (**Winthrop & Trites 2003**, p.101). The two most important prey are pollock and Atka mackerel. Cod makes up a much smaller percentage of the sea lion diet than these two species, but is nevertheless an important part of the food base for sea lions (**Andrew Trites**, personal communication). So long as cod is available, the degree of its importance may be moot.

6. Relationship to Commercial Fisheries – Many attempts to establish a relationship between commercial catches and sea lion abundance have come up empty handed (**Andrews and Calkins**,

2002, p. 8). Regarding adverse impacts on SSL's from competition with commercial fisheries, the authors state, "…effects of this kind on sea lion abundance have yet to be demonstrated and there are no reports of sea lions competing with active fishing activities" (p.10). The authors go on to state that in order gain substantive appreciation of the impact of fishing on food resources for sea lions it will be necessary to obtain depletion information at a much more local level on much shorter time scales than is available from current information (p. 10). That is exactly what the Fisheries Interaction Team has done in recent years. "For Pacific cod, three years of field experimentation off Cape Sarichef in the EBS showed no statistically significant fishery effect" (**Draft Recovery Plan**, May 2006, p. 140). Recent studies have found a slight positive association between fishing and SSL population trends (**Dillingham** 2006, **Hennan** 2006). "Positive association means more fishing, more SSLs – both fishermen and SSL's find the same offshore fish concentrations. These studies do not indicate that offshore fishing is having a negative impact on SSL populations" (**Daniel Hennan**, personal communication).

7. Additional Protection (Offsetting Proposals) – In the Aleutians, sea lions have fared worst west of Amchitka Pass, and between Amutka and Umnak passes (see **Trites et. al.** in press, **Steller sea lion rookery trends and diets during the 1990s,** p.4). Note that the 20 nm critical habitat closure contained in this proposal will virtually eliminate fishing for the cod A season increment in the Aleutians, as the fishing grounds are well inside the 20 mile closures (this assumes no BS/AI TAC split). Also, the proposal would close all of the Bogoslof Foraging Area, which is composed of the Bogoslof No Fishing Area plus a considerable area to the northwest (see attachment) which is normally open to our fleet.

8. Rates and Times of Removal – This fleet removed cod at an average rate of 873 mt per day or 6,111 mt per week in 2005. For 2006 the rates were 924 mt and 6,489 mt, respectively. The increase in rates is likely due to the introduction of a new vessel to the fishery. FIS calculates that were this proposal in place in 2005 the increase would have been taken in 21 days to harvest, and the fishery would have closed by 3/16.

9. Equity - Under Amendment 85 other major harvesters of cod are allowed to take all or most of their cod quota in the first half of the year – Trawl CPs 100%, Trawl CVs 85%. It seems only fair that freezer-longliners should be able to take 70% of their cod in that season.

Conclusion

The objectives of this proposal are straightforward – improve economic efficiency and safety, reduce halibut bycatch and seabird incidental take. Recent studies on time of weaning, localized depletion and winter foraging indicate that SSLs do not require as much protection from commercial fisheries in the winter as was previously supposed. This is particularly true for juvenile SSLs, the subpopulation of greatest concern. No strong relationship between commercial fisheries and SSL foraging has been demonstrated. To the contrary, recent studies suggest that localized depletion is not a significant problem. The new closures to hook and line fishing in the proposal ensure additional protection for SSLs. We hope the SSL Mitigation Committee and the Council will approve this modest proposal.