AGENDA C-3(b)
MARCH/APRIL 2012

MEMORANDUM

TO: Council, SSC and AP Members

FROM: Chris Oliver
Executive Director

DATE: March 20, 2012

SUBJECT: GOA Trawl Sweep Modifications

ESTIMATED TIME
6 HOURS
(All C-3 items)

ACTION REQUIRED

Final action on GOA trawl sweep modification

BACKGROUND

In February 2012, the Council released a public review of an analysis evaluating the requirement for elevating devices on nonpelagic trawl sweeps for vessels targeting flatfish in the Central Gulf of Alaska. The purpose of the proposed action is to reduce unobserved crab mortality in the Central Gulf of Alaska from the potential adverse effects of nonpelagic trawl gear used for flatfish fishing. The Council initiated this action in conjunction with final action on the GOA Tanner crab PSC measures, which created an area closure in Marmot Bay Kodiak to protect Tanner crab.

The public review analysis for the proposed action item was mailed out on March 5, 2012; an executive summary of that analysis is attached **(Item C-3(b)(1).**

Executive Summary

ES.1 Introduction

This document analyzes a proposed gear modification to require nonpelagic trawl vessels targeting flatfish in the Central Gulf of Alaska (GOA) to use elevating devices on trawl sweeps to raise them off the seafloor.

ES.2 Purpose and Need

The purpose of this action is to reduce unobserved crab mortality in the Central Gulf of Alaska from the potential adverse effects of nonpelagic trawl gear used for flatfish fishing. This would be achieved by modifying nonpelagic trawl gear used for flatfish fishing, by raising the majority of the gear off the sea bottom. Studies in the Bering Sea (BS) have shown that elevating the trawl sweep can reduce trawl sweep impacts effects on *C. bairdi, C. opilio,* and red king crabs by reducing the unobserved mortality of these species. In addition, elevating the trawl sweep can reduce impacts on benthic organisms, such as basketstars and sea whips.

ES.3 Alternatives

Provided are the alternatives evaluated in this analysis.

Alternative 1: Status quo

Alternative 2: Require trawl vessels targeting flatfish in the Central GOA using non-pelagic trawl gear to use elevating devices on trawl sweeps to raise them off the seafloor

The proposed action would be to combine a gear and performance standard to raise the elevated section of the sweep at least 2.5 inches, measured next to the elevating device. To achieve this performance standard, elevating devices would be required along the entire length of the elevated section of the sweep. To allow for some flexibility around the requirement, there would be two possible sweep configurations that meet the performance standard. In the first configuration, elevating devices that are spaced up to 65 feet apart must have a minimum clearance height of 2.5 inches when measured next to the elevating device. In the second configuration, the elevating devices may be spaced up to 95 feet apart, but they must have a minimum clearance height of 3.5 inches when measured next to the elevating device. In either case, the minimum spacing of the elevated devices is no less than 30 feet.

The Council, in February 2012, added a new element to the analysis, based on the experience in the BS flatfish fisheries using modified trawl sweeps. The proposed action would extend slightly the exempted area on the net bridles and door bridles from 180' to 185' to accommodate hammerlocks attached to net and door bridles (see Appendix A for a copy of existing BS regulations). This change would apply to both the BS and the Central GOA.

ES.4 Impacts of the Alternatives

The alternatives were analyzed for their impacts on habitat, target and non-target species, marine mammals, seabirds, and the ecosystem (Section 1.8), and for their economic and socio-economic impacts.

The impacts on the socio-economic environment are analyzed in the Regulatory Impact Review (Section 2) and the Initial Regulatory Flexibility Analysis (Section 3). Impacts are summarized in the following section.

C. bairdi Tanner crab

The trawl sweep modification has proven to be effective in the BS flatfish fisheries at reducing unobserved mortality of crab from the trawl sweeps. It is also likely to provide protection to Tanner crab in the Central GOA flatfish fisheries. It is not possible to quantify a benefit to crab stocks in the Central GOA from modified trawl sweeps without further testing to understand how sediment conditions in the Central GOA flatfish fisheries compare to the areas in which BS experiments occurred. However, the general similarity of GOA trawl gear to that used in the BS indicates that while the benefits may be smaller, they would still be substantial. While requiring this modification for vessels fishing in the Central GOA flatfish fisheries could certainly provide benefit to crab stocks, by reducing unobserved mortality, it would not be likely to change reported PSC totals from trawl fishing, which account only for PSC that comes up in the trawl net.

Groundfish and incidental catch species

The effects of the proposed action on target and incidental groundfish species are limited to those effects that may occur on habitat that supports target species and their prey. All fishing done under the proposed alternative would be done within the annual harvest specifications and within the management measures currently applied to the target fisheries. Based on the research in the BS by the Alaska Fishery Science Center (AFSC) in conjunction with BSAI Amendment 94, which implemented elevated sweeps in the BS flatfish fisheries (NMFS 2009), the proposed action is not expected to have any net decrease in the target catch rates in the Central GOA flatfish fishery compared to that of status quo. The catch of target flatfish species with the modified gear was not significantly different than the catch of unmodified gear, when using 8-to 10-inch diameter disks. Based on maintaining the current harvest management and on the potential effects of the modified gear on benthic target species, the effects of the proposed action are insignificant for stock biomass, fishing mortality, temporal distribution, and change in prey availability.

Marine Mammals

The proposed action would institute elevated trawl sweeps in the Central GOA flatfish fisheries. In general, the timing and general location of effort in the Central GOA flatfish fisheries is unlikely to change as a result of the trawl sweep modification. There would be no changes to the harvest specifications process or management of the fisheries relevant to Steller sea lion protection measures. Annual mortality of Steller sea lions is not expected to change under the proposed action, because fishing effort will remain similar to status quo. The proposed action is not likely to change fishery activities in a way that would affect the potential for competition for prey, disturbance, or incidental takes of marine mammals. Thus, this action would not likely have any effects on marine mammals, beyond those already analyzed for the GOA groundfish fisheries in previous biological opinions and environmental impact statements (NMFS 2001, NMFS 2007, and NMFS 2010).

Seabirds

The proposed action would institute modified trawl sweeps in the Central GOA flatfish fisheries to reduce unobserved crab mortality. In general, the timing and general location of effort in the flatfish fisheries is unlikely to change as a result of the trawl sweep modification. The hook and line sector is responsible for the majority of seabird take in the GOA, and this sector is not impacted by the proposed trawl sweep modification. Thus, this action would likely not have any effects on seabird takes beyond those already

analyzed for the GOA groundfish fisheries in previous biological opinions and environmental impact statements (USFWS 2003a,b; NMFS 2007).

Habitat

The proposed trawl sweep modification may have beneficial effects on the amount of biological structure in the GOA compared to the status quo, due to the reduction in the amount of contact of the trawl sweeps to the sea bed. These structures can be protected by relatively small increases in clearance between the gear and the seafloor, such as proposed under the trawl sweep modification. As noted in BSAI Amendment 94 (NMFS 2009) analysis, the trawl sweep modification resulted in a decrease of the trawl sweeps contact with the seabed by about 90%, and was effective in reducing trawl sweep impact effects on sea whips, with indications of reduced impacts to basketstars, sponges, and polychaetes. Based on the results in the BS from modified trawl sweeps, adoption of the trawl sweeps in the Central GOA flatfish fisheries is expected to decrease mortality or damage to living habitat species. Test results from BS modified trawl sweeps also indicated that the proposed action would provide no further decreases to non-living species' habitat complexity and would likely provide some benefit to non-living substrates, depending on the substrate and the intensity of fishing. The trawl sweep modification would reduce damage to several components of community structure, including living structure animals and other, smaller epibenthos (such as other crab, sea stars, or shrimp). This reduction in damage would likely be a positive effect compared to status quo.

Ecosystem

The GOA groundfish fisheries potentially impact the GOA ecosystem by relieving predation pressure on shared prey species (i.e., species which are prey for both groundfish and other species), reducing prey available for groundfish predators, altering habitat, imposing PSC mortality, or by "ghost fishing" caused by lost fishing gear. Although trawl sweep modification in the Central GOA flatfish fishery will result in benefits to crab stocks by reducing unobserved crab mortality and reduce damage to several components of the community structure, including living structure animals and other, small epibenthos, the overall benefits of trawl sweep modification measured at the scale of the GOA ecosystem are not likely to have a significant impact on the GOA ecosystem.

ES.5 Regulatory Impact Review

The Regulatory Impact Review is in Section **Error! Reference source not found.** of this document.

Description	Alternative 1	Alternative 2
	No action (status quo)	Require vessels targeting flatfish in the Central GOA to use modified sweeps, as specified in regulation.
Protection of habitat: value to commercial fishermen, value to other users, non-use value	Baseline	Use of the gear will reduce adverse impacts to benthic habitat. Benthic communities will change somewhat, but not as greatly as they would in the absence of this gear requirement. Reduction in impacts of nonpelagic trawling may provide an incremental improvement to the ecological services provided by that habitat beyond what they would have been under the status quo. Specific economic benefits, however, cannot be empirically measured. Persons may have non-use values for incremental change in benthic habitat. No estimates of this are available.
Crab and crab fisheries	Baseline	Proper, consistent, and comprehensive use of the gear is expected to result in less crab mortality, which may improve the sustainability of crab stocks and increase the catch per unit effort in crab fisheries.
Cost of gear	Baseline	Estimated to be about $3,000 to $3,500 annually. This could be greater or less depending on the type of gear and length of sweeps in use. Annual cost of the modified gear may be offset if using the elevated disks increases the useful life of trawl sweeps, lengthening the time before replacement of the gear and/or reducing the net wear and tear on the equipment. There may be a one-time cost for modifying the vessel to accommodate the modified trawl gear. Estimates of this cost may range between zero and $25,000* depending on the vessel and its existing configuration. Vessels differ from each other so much that it is not possible to provide an average or aggregate cost.
Cost of fishing with modified gear	Baseline	It may take longer to set and retrieve nets. Industry sources believe that this may be a cost during transitional years, as learning takes place and gear improvements are implemented. Research shows little or no difference in catchability with gear using the proposed regulatory standards.

Description	Alternative 1	Alternative 2
Enforcement	Baseline	Enforcement personnel will need to verify that the modified gear meets the regulatory requirements when conducting regular vessel inspections.
Net benefits to the Nation		The annual cost to fishermen of purchasing and using more expensive modified gear is balanced against the reduced impact to benthic habitat and the potential for increased, sustained, future productivity of species as a result.

Source: Albert Geiser, personal communication, December 22, 2011.

PUBLIC TESTIMONY SIGN-UP SHEET

Agenda Item: C-3(b) GOA Trawl Sweep Mods

	NAME *(PLEASE PRINT)*	TESTIFYING ON BEHALF OF:
1	Julie Bonney	AGDB
2	Bob Krueger	AK Whitefish Trawlers
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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.