

GROUND FISH ENDANGERED SPECIES WORKGROUP REPORT

The Groundfish Endangered Species Workgroup (Workgroup) met April 30 and May 1, 2019 in Seattle, Washington. Notice for the Workgroup meeting was provided via emails from the Pacific Fishery Management Council (Council), a publication in the *Federal Register*, and announcements at the Council and Advisory Body meetings. Meeting details and an agenda were also posted on the Council website.

The Workgroup received presentations regarding fishing effort in the groundfish fishery from Dr. Kayleigh Somers (NWFSC Observer Program), and on the bycatch of the listed species from Drs. Brad Hanson (NWFSC), Thomas Good (NWFSC), Rick Gustafson (NWFSC) and Tomo Eguchi (SWFSC). Additional Workgroup members (or alternates) participating included: Corey Niles, Washington Department of Fish and Wildlife (WDFW); Jonathan Scordino (Makah Tribe); Brian Hooper, NMFS, Sustainable Fisheries Division (NMFS SFD); Robin Bown, U.S. Fish & Wildlife Service (USFWS); Patrick Mirick, Oregon Department of Fish and Wildlife (ODFW); Caroline McKnight, California Department of Fish and Wildlife (CDFW); and Dr. Jason Jannot (NWFSC Observer Program). Additional participants included: Kit Dahl (PFMC); Todd Phillips (PFMC), Kevin Duffy (NMFS SFD); Dr. Sean Matson (NMFS SFD); Keeley Kent (NMFS SFD); Aja Szumylo (NMFS SFD); Abigail Harley (NMFS SFD); Teresa Mongillo (NMFS PRD); and Kate Richerson (NWFSC). Joining the discussion on the webinar/teleconference were: Dan Waldeck, Lynn Mattes, Mike Burner, Penny Ruvelas, Jeff Hard, Jenn Humberstone, Jessi Doerpinghaus, Amanda Gladics, Jan Jacobs, Melissa Hooper and Curt Witmire.

In general, the Workgroup's objectives and duties are to recommend new analyses to improve bycatch estimates, consider whether the amount of incidental take stipulated in the biological opinions (BiOps) was exceeded, consider whether new information reveals effects not previously considered in the BiOps, and propose for Council consideration conservation and management measures to minimize bycatch of listed species, if needed, in the groundfish fishery. The Terms of Reference for the Workgroup, approved at the June 2015 Council meeting, are attached to this report (Appendix B).

The Workgroup appreciates the work done by everyone on the bycatch teams in updating reports on fishing effort, marine mammals, sea turtles, eulachon, green sturgeon, and seabirds to include information from 2016 and 2017. In addition, the Workgroup appreciates the presentations by bycatch team leads and discussion that followed.

General Comments

The Workgroup process for integrating the Endangered Species Act (ESA) consultation with Council management continues to create more effective communication between all parties. It brings together experts in the behavior of the listed species with experts on the management and behavior of the fishing fleets. More so, any suggestions for new management measures are benefited from the feedback and openness and transparency of the Council process. We very much appreciate the protected species professionals for continuing to support these integrative discussions.

Groundfish fisheries generally have minimal interactions with ESA listed marine mammals, sea turtles, eulachon, green sturgeon, and seabirds. The rarity of these ESA species in the catch makes projecting and estimating incidental take challenging. Outside of the shoreside individual fishing quota (IFQ) and at-sea hake fishery sectors, and their 100 percent observer coverage, this rarity means when observer coverage in a specific sector is low, it can result in estimates of take being inherently imprecise and variable. Even where 100 percent observer coverage exists, variability and rarity of encounters can mask the causes of encounters and add uncertainty to future projections.

As in previous Workgroup meetings, the benefits of a logbook in Federal fixed gear fisheries came up several times. The Council recommended a mandatory sablefish fixed gear logbook be implemented during the 2009-2010 biennial specifications process for the groundfish fishery. As noted in a prior Groundfish Management Team (GMT) report ([September 2012, Agenda Item H.4.b](#)), a model fixed gear logbook has been developed, but competing priorities and funding constraints have delayed implementation. ODFW is the only agency currently requiring a logbook for fixed gear boats and provided a successful example during model federal logbook development. While the impetus for requiring fixed gear logbooks was specific to sablefish, the Workgroup recognizes and emphasizes the additional benefit this information may lend to estimating bycatch for protected species if broadened to all fixed gear sectors. Although resources for development and implementation would be required, a fixed gear logbook is expected to reduce uncertainty in bycatch estimates for both overfished groundfish species and protected species, for fixed gear sectors that are not monitored at high observer coverage rates. The logbooks would reduce uncertainty by providing better estimates on location-specific effort and total effort overall (e.g. number of hooks or pots set in the year).

At the April 2019 Council meeting NMFS suggested the Council consider adding southern resident killer whales to the Workgroup terms of reference starting in 2020. NMFS recommended work to cross-walk between the existing BiOps (non-salmonid from 2012 and salmonid from 2017) and the Washington Governor's Southern Resident Orca Task Force could be accomplished by the Workgroup. The Workgroup discussed that if southern resident killer whales were added to the terms of reference, membership may need to be expanded or altered to ensure the group has the necessary expertise on southern resident killer whales and its preferred prey species (Chinook salmon).

Workgroup recommendations endorsed by the Council are typically addressed in future BiOps, the next groundfish harvest specifications and management measure process, or in a standalone action like what is being done with the seabird mitigation measures. A suggestion was made to improve the feedback loop to the Workgroup on actions taken by the Council so Workgroup members have an idea on why or why not certain recommendations were taken up. The Workgroup will investigate further on how best to accomplish this so members can keep up to date.

Fishing Effort Report

The Workgroup received an updated report on fishing effort in the 2002-2017 Pacific Coast groundfish fisheries by Dr. Kayleigh Somers. The patterns seen in fishing effort were well within the bounds of what was expected from the Workgroup's last look. Changes of note include the continued development of the shoreside midwater rockfish trawl fleet, as well as an increase in the

number of fleet-wide pots used. Shoreside midwater rockfish trawl landings and effort in 2016 and 2017 grew after the successful rebuilding of widow rockfish and canary rockfish, which allowed for direct targeting of widow and the underutilized yellowtail rockfish stock. Fleet-wide pots used by both catch shares and non-catch shares increased from 2013 to 2017. The number of pots per set during this time was highly variable, with the median number ranging from 16 to 49 across all years. While these changes in fishing patterns are notable, the Workgroup does not believe they warrant a new look at the BiOps on their own. As discussed below, the increase in the use of pots is something to keep an eye on with respect to the risk of whale entanglement.

Dr. Somers asked the Workgroup if shifting this report to every five years was worth consideration. A longer time series could provide for better comparisons of trends and free up analysts time for exploring more innovative indicators of fishing effort. The Workgroup agreed comparing two years of data compared to five trends is not ideal, but heard the views expressed by NMFS and others that felt fishing effort data is important for the biennial harvest specifications and when issues arise related to biological opinions. Dr. Somers will re-evaluate the appropriate two year periods for the Workgroup report and see if it can be better aligned with the biennial harvest specifications years. The Workgroup also discussed some of the efforts associated with NOAA's Integrated Ecosystem Assessment (IEA) and how that might be relevant and useful for future reports.

Workgroup recommendations:

The Workgroup did not have any substantial recommendations on the fishing effort report but again thanks Dr. Somers and her colleagues for the time and effort taken to produce it. The Groundfish Management Team (GMT), Groundfish Advisory Subpanel (GAP), and Council may wish to comment on the trade-off between producing the fishing effort report every two or five years.

Eulachon

The Workgroup received a presentation from Dr. Rick Gustafson on the bycatch of eulachon in the groundfish fishery. The 2018 BiOp for eulachon includes two new incidental take thresholds that are designed to take the fluctuating abundance of eulachon into account. The precautionary and reinitiation thresholds are five year geometric means of 0.01% and 0.02% of minimum Columbia River abundance. These thresholds are meant to be compared to a five year geometric mean bycatch estimate for eulachon, which is based on the mean generation time of the species and is calculated from the most recent year's and the four preceding year's bycatch count estimates in the West Coast groundfish fishery.

Overall, a large decrease in eulachon bycatch occurred in 2016 and 2017 compared to 2014-2015 levels. Total fleetwide bycatch was estimated at 56 total eulachon in 2016 and 90 total eulachon in 2017. The five year geometric mean bycatch estimates were 1,326 eulachon in 2016 and 676 eulachon in 2017. For 2016, this equates to 34.0% of the precautionary threshold and 17.0% of the reinitiation threshold. In 2017, eulachon bycatch was 20.7% of the precautionary threshold and 10.4% of the reinitiation threshold. Therefore, these thresholds were not exceeded in 2016 or 2017.

While not subject to the groundfish BiOp, observed bycatch of eulachon in the ocean (pink) shrimp fishery is discussed in Appendix A of the eulachon report. There was a large decline in eulachon bycatch and bycatch ratios in the Washington, Oregon, and California pink shrimp fisheries in 2016 and 2017. The Workgroup discussed this may be attributed to voluntary use of green LED lights on trawl net footropes. However, it noted the overall decline in abundance of eulachon in 2016 and 2017 could also be a factor.

Workgroup recommendations:

The Workgroup had no recommendations with respect to eulachon. The Workgroup appreciated that for the new BiOp, NMFS took into account fluctuating abundances of eulachon. The Workgroup felt it was a more reasonable approach and provides greater flexibility for the operation of the groundfish fishery.

Green Sturgeon

The Workgroup received a report from Dr. Kate Richerson on bycatch of green sturgeon in the groundfish fishery. Green sturgeon encounters have only been documented in Limited Entry bottom trawl (prior to 2011), IFQ bottom trawl (2011-present), and at-sea hake sectors based on groundfish observer data. There are two distinct population segments (DPS) for green sturgeon on the West Coast: Southern DPS and Northern DPS. Only the Southern DPS is listed under the ESA. DPS cannot be determined morphologically upon bycatch encounter, so a genetic stock identification (GSI) technique is used.

The annual take of Southern DPS green sturgeon was estimated based on the combination of individual assignments of GSI and an estimated ratio of Southern to Northern DPS by given catch area (48 percent for Washington and Oregon, and 96 percent for California coast). The estimated number of Southern DPS green sturgeon encountered was 26 individuals in 2016 and 2 individuals in 2017. Therefore, the estimated bycatch of the Southern DPS of green sturgeon has not exceeded the incidental take statement (ITS) amount of 28 fish per year. Bycatch appeared to be highest in the spring at shallower tow depths. The report also includes a section on the observed bycatch of green sturgeon in the California halibut trawl fishery, but this fishery is state managed and not part of the groundfish BiOp.

Workgroup recommendations:

The Workgroup had no recommendations with respect to green sturgeon.

Humpback Whales

The Workgroup received a presentation from Dr. Brad Hanson on the bycatch of humpback whales in the groundfish fishery. The ITS for humpback whales is a five year average of one humpback whale injury or mortality per year, and up to three humpback whale injuries or mortalities in any single year.

There have been two documented takes of a humpback whale in the Pacific Coast groundfish fisheries—one in the Limited Entry (LE) sablefish pot fishery sector in 2014 and one in the Open Access Fixed Gear pot fishery sector in 2016. Although there have been no other observed takes in the groundfish fishery since data collection began in 2002, pot and trap fisheries generally

represent the majority of documented fishery interactions with humpbacks along the U.S. west coast.

The bycatch report used Bayesian procedures to estimate annual mean fleet-wide bycatch and a running 5-year fleet-wide average in two West Coast groundfish pot sectors. The estimated fleet-wide entanglements/takes the combined Limited Entry Sablefish and Open Access Fixed Gear sectors were consistently above the 5-year running average threshold over the time period examined (2002-2017). While the estimated fleet-wide entanglements/takes in the Limited Entry Sablefish pot sector were consistently below the 5-year running average threshold, the estimated fleet-wide entanglements/takes in the Open Access Fixed Gear pot sector was consistently above the 5-year running average threshold. Based on the analysis in the bycatch report, it appears the incidental take amount was exceeded.

Recent research has provided information on changes in whale population size (Calambokidis et al., PSRG presentation). The Workgroup discussed additional efforts to document changes in occurrence (Calambokidis et al. 2017) would be useful for updating distribution models (Becker et al. 2016, Feist et al. in prep.). The Workgroup also discussed incorporating outputs from estimates of abundance and occurrence, as well as potential climate effects on whale prey distribution, into the Workgroup's Bayesian analysis framework could potentially improve the precision of the incidental take estimates.

In 2016, NMFS published a final rule revising the listing status of humpback whales which included 14 distinct population segments (DPS). Nine DPS did not warrant listing under the ESA, one DPS was listed as threatened, and four DPS were listed as endangered. In the North Pacific, there are four DPS identified by breeding location (Hawaii, Central America, Mexico, and Western North Pacific). The Mexico DPS is listed as threatened, the Central American DPS is listed as endangered, and the Hawaii DPS is not at risk of extinction. Humpback whales found in waters off the Oregon, Washington, and California coast are from the Central America, Mexico, and Hawaii DPS.

The revised listing met one of the reinitiation criteria of the BiOp and necessitated reevaluating the effects of the fishery on humpback whales. Prior to the Workgroup meeting, NMFS requested reinitiation of formal section 7 ESA consultation for the continued operation of the groundfish fishery based on the humpback whale DPS changes. NMFS is working to provide additional information needed for the consultation, including the recent data on groundfish fishery interactions to humpback whales compiled for the 2016-2017 bycatch report. This information along with a comparison to the ITS will be factored into the consultation. NMFS explained to the Workgroup that the timeline for completion of the new humpback whale BiOp was still under development, but noted it intends to bring draft conditions to the Council in a similar process to the recent eulachon BiOp.

The incidental take of a second humpback whale in the federally managed groundfish fisheries within the last five years highlights the need for additional actions to improve the precision of interactions estimates and to identify potential mitigation measures. The Workgroup discussed several of the conservation recommendations from the humpback whale bycatch report including gear marking issues, storing of gear at sea, and lost fishing gear. Given that a sizeable portion of entangled gear remains unidentifiable (Caretta et al. 2018), the Workgroup identified the need for

improved marking of fixed gear in order to better track gear interactions with humpback whales by sector or fishery. The Workgroup did not think lost fishing gear interactions with humpback whales was a major issue as observer-derived estimates indicate low levels of lost gear. Rough estimates derived from the fishing effort report ranged between 0.1 to 1.0 percent per year lost pots in IFQ and Limited Entry fixed gear. If lost gear continues to be a topic of concern, mandatory reporting of lost gear in logbooks would provide a clearer picture of the risks facing humpback whales. The Workgroup saw utility in a Federal fixed gear logbook requirement for all fixed gear types, including pot gear. A fixed gear logbook could reduce uncertainty in bycatch estimates for humpback whales, especially for fixed gear sectors that are not monitored at high observer coverage rates, by providing better estimates on location-specific effort and total effort. The Workgroup thought fields such as the number of pots, lost gear, and the location of fishing effort would be most beneficial to include in a fixed gear logbook.

Penny Ruvelas (NMFS PRD) provided some clarifications to the Workgroup on humpback whale related issues. She explained the ESA consultation conducted by NMFS would be based on the listed species, with the focus on the Mexico and Central America DPS. However, a separate process under the Marine Mammal Protection Act (MMPA) would focus on the overall humpback whale population. She noted NMFS Headquarters is currently working on updating the MMPA criteria. Ms. Ruvelas also noted when there are interactions, even things like collecting tissue samples and taking photographs can help parse out the issues and make DPS identifications. Jason Jannot pointed out that in the observer program, when there are interactions, observers are required to take photographs but observers are usually not close enough for tissue samples.

There was some concern among the Workgroup over how aware the groundfish fleet is of the potential for encounters with humpback whales. The Workgroup thought that having conversations at the Groundfish Advisory Subpanel (GAP) on lost fishing gear and storing of gear at sea would help raise awareness on whale entanglement concerns and provide further context on the scale of the potential issue. The Workgroup encourages a proactive dialogue with fishermen to identify gear or operation modifications that could reduce entanglements, in particular incidents that result in serious injury or mortality (e.g, using lines that have a lower breaking strength such as in Knowlton et al 2016) and be compatible with their fishing practices.

Workgroup recommendations:

1. The Workgroup supports NMFS moving forward with the re-consultation process for humpback whales to address the DPS changes and incidental take amount exceedance. The Workgroup recommends the Council encourage NMFS to use a collaborative process in the re-consultation process that includes input from the Council and its advisory bodies.
2. The Workgroup recommends the Council and NMFS pursue a coastwide Federal fixed gear logbook requirement for all fixed gear sectors, including pot gear, to improve bycatch estimates for humpback whales.
3. The Workgroup understands NMFS is going through the re-consultation process and no specific actions are being taken or are imminent in terms of conservation and management measures to minimize humpback whale entanglements. The ideas discussed by the Workgroup focused mainly on the need to improve our ability to know where entanglements happen and trace it to the gear type and fishery sector. In the interim, the Workgroup recommends the Council encourage NMFS, industry, and other partners to:

- a. Explore gear modifications that would reduce the risk of humpback entanglements/mortalities. As an example, evaluate the maximum breaking strength of ropes used in the sablefish pot fishery similar to a recent study conducted on the east coast (Knowlton et al, 2016).
- b. Consider changes to fixed gear marking requirements in order to better track gear interactions with humpback whales to specific sectors or fisheries.
- c. Have discussions on the extent of lost gear and storage of gear at sea in order to provide further context on the scale of these potential issues.
- d. Identify methods or improved procedures for identification of humpback whales at the DPS level. This might include mechanisms such as photos or genetic samples to differentiate between the Mexico, Central America and Hawaii DPS.

Leatherback Sea Turtles

The Workgroup received a presentation from Dr. Tomo Eguchi on the bycatch of leatherback sea turtles in the groundfish fishery. Dr. Eugchi noted the leatherback sea turtle population is declining. He suspected the main cause for this is due to fisheries interactions in the western Pacific and Indonesia, as well as declines in habitat for nesting opportunities. The rate of decline in nesting sites is about 6-7% over the last 20 years.

As with other protected species considered by the Workgroup, the greatest difficulty in estimating leatherback sea turtle bycatch is the rarity of encounters in the groundfish fishery. No leatherback sea turtles were observed as bycatch in the most recent five-year period (2013-2017) and thus, all U.S. west coast groundfish fisheries are below the BiOp ITS take limit of an average of 0.38 leatherbacks per year for the most recent five-year period (and up to one turtle in a single year). Since 2006, there has only been one observed leatherback sea turtle caught in U.S. west coast groundfish fishing gear. This occurred in 2008 by a vessel using pot gear in the open access fishery sector.

Bycatch was estimated using a Poisson model which is similar to the humpback whale model but without the Bayesian framework. The Workgroup brought up the idea that analysis for the next bycatch report could be modified to mirror the Bayesian analyses being undertaken for humpback whales and short tailed albatross. This approach may be especially useful if another event (take) occurs in the groundfish fishery.

Workgroup recommendations:

The Workgroup had no recommendations with respect to leatherback sea turtles.

Short-tailed albatross

The Workgroup received a report from Dr. Thomas Good on the bycatch of short-tailed albatross (STAL) in the groundfish fishery. Consistent with the 2017 BiOp, the Northwest Fishery Science Center is now using a risk assessment that is able to address the impacts to STAL directly using a Bayesian approach, rather than using black-footed albatross as a proxy, as in years past. This approach was presented at the meeting and is included in the updated report to the Council.

No STAL takes were documented in the West Coast groundfish fisheries in 2016-2017. Data for 2002-2017 showed one observed STAL take in 2011 off the West Coast in the sablefish fixed gear

fishery. Fleet-wide estimates of mean bycatch ranged from 0.11 to 1.32 STAL/year, depending on the effort metric used, although using observed sets, observer retained catch, or observed hooks resulted in very similar estimates. Based on the analysis presented in the bycatch report, the groundfish fishery did not exceed the ITS thresholds of an estimated five albatross in a two-year period or one observed albatross in a two-year period.

Dr. Good noted field studies showed floated longlines in West Coast fisheries (limited entry sablefish fishery) experience higher attack rates by black-footed albatrosses than non-floated gear. They observed 0.8 attacks per 1,000 hooks for floated gear within the 0-40 m zone covered by the streamer lines, compared to 0.08 attacks for non-floated gear, and 4.67 attacks per 1,000 hooks beyond that area (i.e. 40-90 m) for floated gear compared to 0.32 attacks per 1,000 hooks for non-floated gear. None of the observed attacks resulted in mortality to the albatrosses. Analysis of observer data for 2016-2017 broadly supports the field study conclusions that streamer line use is not as effective at reducing risk to birds when floated longline gear is used (Gladics et al., 2017). The conclusions of these studies were considered as part of the Council's current alternatives, which are scheduled for final recommendation at the June meeting.

Most of the Workgroup discussion focused on process and rulemaking approaches around the Council action on extending bycatch mitigation measures (i.e. streamer lines) to smaller vessels (less than 55 feet) in the longline fishery. The Workgroup views the process of getting seabird mitigation measures into place as a model of ESA integration with the federal fisheries management process and commends all those who have contributed

The Workgroup understands industry raised safety and operational concerns at the April 2019 Council meeting about a potential requirement for smaller vessels that use floated gear to fish at night. The Workgroup also understands the Council requested looking at ways for these vessels to adapt streamer lines in a way that effectively minimizes interactions with STAL, for example, by using longer streamer lines. The Workgroup discussed there will not be enough time or research to address the question by the June Council meeting. There was also discussion that longer stream lines would likely not be feasible or effective and individualized configurations could also be difficult to design and enforce. The Workgroup supports the Council's continued deliberations and appreciates industry concerns.

It was suggested during Workgroup discussion that an EFP to test alternative mitigation measures for floated longline gear, designed to further reduce bycatch of seabirds, could be one path forward. The EFP could allow day boats to continue to fish while allowing more research on how these boats can lower the exposure of their gear to albatrosses. The Workgroup noted potential timing issues for Council review and approval of EFPs outside of the groundfish harvest specifications and management measures process. However, in this case, there would be no allocation implications to consider, and allocation implications are the reason why EFPs have been integrated with the biennial process. While a possibility, the Workgroup recognizes the challenges of EFPs in terms of workload and expense because of the need for observer coverage. The Workgroup discussed how seabird mitigation has greatly benefited from outside groups and funding. The Workgroup highlights this as an area where outside support would continue to be highly beneficial and maybe even necessary to make work. The Workgroup appreciates the risk-based way NMFS

and the Council have been of considering management measures and exceptions and encourages continuation of the approach.

Workgroup recommendations:

The Workgroup recommends the Council support efforts that explore ways to improve streamer lines or gear configuration for the purpose of mitigating seabird interactions. The Workgroup notes one way may be an EFP to test alternative mitigation measures for floated longline gear that are designed to further reduce bycatch of seabirds.

Literature Cited

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Appendix A

Listed Species, ITS Amounts, and Estimated Catch.

Detailed bycatch reports are presented in the briefing book for this meeting. The table below shows the listed species covered in the NMFS and USFWS BiOps, the incidental take allowances, and the estimated catch from the bycatch reports.

Species	Incidental Take Amount or Extent of Take from BiOps	Estimated Catch	Incidental Take Amount Potentially Exceeded?
Eulachon	<p>Bycatch/handling or mortality – The precautionary and reinitiation thresholds are five year geometric means of 0.01% and 0.02% of minimum Columbia River abundance</p>	<p>2010 – 22 2011 – 1,624 2012 – 191 2013 – 5,113 2014 – 3,075 2015 – 699 2016 – 56* 2017 – 90**</p> <p>* 33.9% of the precautionary threshold and 17.0% of the reinitiation threshold. ** 20.7% of the precautionary threshold and 10.4% of the reinitiation threshold</p>	No
Green Sturgeon	<p>Non-lethal bycatch/handling in the fishery - 28 fish/year expected and up to 86 fish/year in no more than 2 years within a period of 9 consecutive years;</p> <p>Lethal bycatch in the fishery - 2 fish/year expected and up to 7 fish/year in no more than 2 years within a period of 9 consecutive years.</p>	<p>2010 – 4 2011 – 20 2012 – 11 2013 – 5 2014 – 15 2015 – 3 2016 – 26 2017 – 2</p>	No

Humpback Whales	Injury or mortality from entanglement - 5-year average of 1 whale/year and up to 3 whales/year in a single year.	Estimate: Over 5-year average of 1 whale/year Observed: 2013 – 0 2014 – 1 (Limited Entry sablefish pot) 2015 – 0 2016 – 1 (Open Access pot) 2017 – 0	Yes
Leatherback Sea Turtles	Injury or mortality from entanglement - 5-year average of 0.38 turtle/year and up to 1 turtle/year in a single year. One leatherback sea turtle mortality in 2008 in open access pot fishery.	Observed: 2006-2011 – 1 2012-2017 – 0	No
Short-tailed albatross	Injury or mortality - should not exceed an estimated five albatross in a two-year period or one observed albatross in a two-year period	Estimate: mean bycatch of 0.11 to 1.32 albatross/year Observed: 2016 – 0 2017 – 0	No

Appendix B

Pacific Coast Groundfish and Endangered Species Work Group Terms of Reference

PURPOSE:

The Pacific Coast Groundfish and Endangered Species Work Group is established pursuant to Section 302(g)(2) of the Magnuson-Stevens Act to serve as a multi-party advisory body to the Council for the purpose of supporting Endangered Species Act (ESA) compliance of the Pacific Coast Groundfish Fishery (Fishery) for green sturgeon, eulachon, humpback whales, Steller sea lions, leatherback sea turtles, and short-tailed albatross consistent with the requirements of NMFS and USFWS ESA Section 7(a)(2) biological opinions on the continuing operation of the Fishery.¹

COMPOSITION:

The Work Group shall consist of 11 or more members as specified from each entity or category below. The representatives selected to serve on the Work Group shall have appropriate expertise in conservation of the aforementioned species, groundfish fisheries management, or quantitative analysis.

- Four taxa experts. One each for fish, marine mammals, sea turtles, and seabirds.
- One representative of the West Coast Groundfish Observer Program.
- Two representatives from the NMFS. One from the Protected Resources Division and one from the Sustainable Fisheries Division.
- One representative from the USFWS.
- Three representatives of State management agencies. One each from California, Oregon, and Washington.
- Other representatives as determined by the Council. Representatives in this category may be short-term appointments (e.g., one meeting) to address specific issues.

OBJECTIVES AND DUTIES:

1. The Work Group shall at a minimum convene on a biennial basis or more frequently as directed by the Council.
2. The Work Group shall review NMFS reports on annual tracking of observed take, fleet-wide take reporting, spatial and temporal characteristics of fisheries by gear type, observer coverage analysis and implementation plans, and other reports as outlined in the biological opinions or generated under 3.a, below.
3. Based on review of the NMFS reports, the Work Group shall
 - a. Recommend new analyses, reports, or changes to sampling protocols to improve bycatch estimates of the aforementioned species.
 - b. Consider whether the amount or extent of incidental take stipulated in the biological opinions is exceeded.
 - c. Consider whether new information reveals effects in a manner or to an extent not previously considered in the biological opinions.

¹ The opinions are available here:

- https://alaskafisheries.noaa.gov/protectedresources/seabirds/esa/pcgf_biop1112.pdf
- https://pcts.nmfs.noaa.gov/pcts-web/dispatcher/trackable/NWR-2012-9437?overrideUserGroup=PUBLIC&referer=%2fpcts-web%2fpublicAdvancedQuery.pcts%3fsearchAction%3dSESSION_SEARCH

- d. Propose, for Council ² consideration, conservation³ and management measures to minimize bycatch of the aforementioned species. If directed by the Council, the Work Group will meet jointly with the Groundfish Management Team, Groundfish Advisory Panel, or other Council advisory bodies, to incorporate stakeholder perspectives in the development of management measures.
4. NMFS shall take a lead role in chairing the committee, developing agendas, developing or procuring review materials, and drafting and presenting Work Group reports.
5. Council staff will notice meetings, coordinate presentations to the Council and its advisory bodies, and provide logistical support.

PFMC
05/24/19

² Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggested regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information.

³ Conservation measures are actions to benefit or promote the recovery of listed species that are proactively taken to minimize or compensate for effects on the species under review. These may include actions taken prior to initiation of consultation or actions committed to through the course of a consultation.