GROUNDFISH ADVISORY SUBPANEL REPORT ON THE GROUNDFISH ENDANGERED SPECIES WORKGROUP REPORT

The Groundfish Advisory Subpanel (GAP) reviewed the documents under this agenda item and received an overview from Mr. Brian Hooper, National Marine Fisheries Service (NMFS).

The GAP appreciates the Groundfish Endangered Species Work Group's (ESWG) efforts to quantify incidental takes of Endangered Species Act (ESA)-listed animals in the groundfish fishery and identify measures to mitigate those takes. However, the GAP finds modeling results likely to represent an overestimation of potential impacts, given the paucity of initial data, and are likely to reflect assumptions more than data. Such underlying assumptions were not available to the GAP.

Furthermore, the GAP is concerned the reports under this agenda item, particularly with regard to humpback whales and leatherback turtles, will mislead the public as to the nature and extent of the interactions. The extrapolation of two confirmed humpback whale takes – one each in the limited entry sablefish and open access fixed gear pot fisheries – leading to the conclusion that those fisheries are consistently above the five-year running average of one serious injury or mortality per year could have serious ramifications. That is, takes based on modeling that rely on extremely limited data (one or two data points) – and reported during public Council meetings may unnecessarily alarm some members of the public who don't have a full understanding of the fishery.

To be clear, fishermen don't want to entangle humpback whales or cause harm to other ESA-listed species. Indeed, West Coast Dungeness crabbers are very aware of whale entanglement ramifications. Numerous crab fishermen also fish sablefish using pot gear, and therefore are also aware of the need to avoid entangling whales in any kind of gear that have vertical lines in the water.

Recommendations

The GAP generally agrees with the recommendations in the ESWG Report under this agenda item. However, recommendations regarding seabirds will be addressed under Agenda Item I.5, Seabird Mitigation Measures.

Regarding future ESWG efforts, the GAP:

1. **Supports Federal fixed gear logbooks.** This should have been completed years ago. Logbooks would help improve the data on which ESA species modeling is based.

2. **Supports reaching out to industry.** Like logbooks, including industry perspectives should have been done before this modeling was completed. The GAP appreciates the desire to expand discussions with industry as the reconsultation process moves forward.

a. **Include GAP members on the ESWG.** The GAP suggests revising the 2013 Council Terms of Reference for the ESWG to include at least two fixed gear and one trawl representative on the Work Group to provide practical advice on recommendations and perspectives relative to gear or unusual events, such as ocean conditions in 2016, that should be accounted for the model.

Furthermore, the final Terms of Reference for the ESWG supports the inclusion of industry representatives:

> COMPOSITION:
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> "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.
>
> "Other representatives as determined by the Council. Representatives in this category may be short-term appointments (e.g., one meeting) to address specific issues."

The GAP also requested participation on the ESWG previously, in our April 2017 GAP Report.

b. **Work with already-established groups.** Washington, Oregon, and California have whale entanglement working groups dealing primarily with the crab fisheries. However, as noted above, several of those members also have experience with sablefish pot gear. The groups are already proposing better management practices, improved gear markings, studies to establish real-time whale and industry tracking methods, whale identifications and reporting, and more. These industry-intensive groups are composed of experts with regard to gear and proposed modifications.

c. **Outreach to fixed gear fishermen:** NMFS has the names and addresses of all limited entry fixed gear fishermen using pots as well as those using pots in the trawl catch shares program fishery. NMFS should also assemble a database of the open access fishermen using pots, if one doesn't already exist, and notify all pot fishermen of future meetings.

3. **Supports revisiting the modeling.** As other fisheries have experienced, 2016 was an odd year with very strange ocean conditions and a rare event such as one whale entanglement in pot gear that year may have led to inaccurate conclusions. Similarly, extrapolating one leatherback entanglement in open access pot gear in 2014 to an estimate of 23 turtles caught in the open access pot gear fleet between 2008-2012 is highly uncertain due, in part, to low observer coverage, as noted in NMFS Report 5.

Humpback whale populations are increasing and their distribution also is changing, as noted in Agenda Item I.4, NMFS Report 4, "Estimated humpback whale bycatch in the U.S. West Coast Groundfish Fisheries 2002-2017." How was this accounted for in the modeling?

Given this information, the GAP also would like to better understand whether it is appropriate to mix a Bayesian model (or Poisson model for leatherback turtles) with a ratio estimator in the same analysis to arrive at a conclusion of interactions that seem inflated.

As noted in the Martin et al. paper, *Bayesian inference and assessment for rare event bycatch in marine fisheries: a drift gillnet fishery case study (2015)*[1]:

> "Ratio estimators are commonly used to extrapolate bycatch estimates as the product of an observed bycatch rate (e.g., number of catches per observed fishing set or trip) and total effort in a fishery (e.g., number of sets or trips); however, they are not suitable when observer coverages or bycatch rates are relatively low. When applied in such cases, commonly observed zeros result in underestimates of zero bycatch, whereas those events observed by chance result in implausibly high estimates."

Certainly, two humpback whale interactions and one turtle interaction over a number of years would seem to qualify as "rare events."

We encourage the Northwest and Southwest Science Centers to work collaborate on the best methods and models to use to get the most accurate estimate of interactions for biological opinions and bycatch estimation reports.

4. **Gear changes.** Both the ESWG and Groundfish Management Team reports suggest considering the use of breakaway gear for pot fisheries. This is a clear example of how a lack of consultation with industry has resulted in faulty assumptions. As crab and pot gear fishermen have discussed, breakaway gear doesn't work. It results in more lost and derelict gear and, despite years of testing and use on the East Coast and in Canada, hasn't shown effectiveness at reducing the entanglement of right whales in those areas. The GAP sees value in evaluating gear changes in the future, after consultation with industry.

PFMC
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[1] Martin, Summer L., Stephen M. Stohs, and Jeffrey E. Moore. 2015. Bayesian inference and assessment for rare event bycatch in marine fisheries: a drift gillnet fishery case study. Ecological Applications, 25(2), 2015, pp. 416–429