Cascadia Research Collective
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Ann Garrett
Protected Resources Division
National Marine Fisheries Service
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ATTN: Krista Graham

Dear Ann/Krista,

We are writing to provide comments on the Draft Recovery Plan and Draft Recovery Implementation Strategy for the endangered main Hawaiian Islands (MHI) insular false killer whale (IFKW) population, as published in the Federal Register on October 16, 2020. We provide a number of both general and specific comments regarding these planning documents.

Fishery interactions are thought to be one of the most serious threats facing the MHI IFKW population. While the Draft Recovery Plan notes that these threats are "localized" (Table 1-1), analyses of fishing effort in relation to spatial use of this population, only taking into account fishermen with commercial marine licenses, shows that commercial fishing activity occurs throughout almost the entirety of the known range of this population (Baird et al., in review). Thus, we suggest that the Final Recovery Plan be changed to reflect the range-wide overlap of fishing activities that may lead to bycatch.

Given the importance of this threat, we believe that making an attempt to understand the perspectives of fishermen and establishing trust among fishermen and management agencies should happen concurrently with expanded efforts to obtain information on the nature and extent of fishery interactions. The objective to conduct human dimension studies on fishermen-false killer whale interactions is valuable in this respect, however we think it would be particularly useful to assess the attitudes, perspectives, and values of those fishermen to obtain a better understanding of what cooperative bycatch mitigation efforts would be most effective. For example, understanding the values of fishermen could inform what kind of benefits or rewards (e.g., anonymity or actual reward) could be put in place to encourage reporting bycatch or interactions.

In response to developing outreach tools for fishing communities, it would be helpful to have a better understanding of the main forms of communication used by fishermen/fishing communities in Hawai‘i. For example, while there are Facebook pages for offshore "big game"

fishermen[1], and for spearfishing in Hawai'i[2], assessing how broadly these reach into the various island fishing communities, and how representative they are of the diverse fishing methods used among the islands, would be of value. If this mode of communication is shared broadly among fishing communities, it would be good to identify ways to encourage reporting of observations or interactions with MHI IFKWs (or cetaceans in general). Although such observations could and should be reported to other entities, we believe this objective is most likely to be met through a combination of approaches that include forms of communication commonly used among fishermen and stakeholders.

Information on the presence of false killer whales in a particular area, based on sightings, acoustic detections (see below), or from satellite tag data, could be passed on through fishermen social networks, as an incentive to participating in information sharing. Such information may be of value to fishermen in terms of knowing which areas they might want to avoid based on recent false killer whale presence. It may be possible to install detection and signaling systems on fish aggregating devices (FADs) or buoys that would inform fishermen if satellite-tagged false killer whales were within reasonable range of those buoys. A similar example can be seen around the Olympic Peninsula in Washington, where roadside signs with VHF telemetry antennas light up when a VHF-collared elk is within range of the sign and likely to cross the road. Implementing a system where buoys light up or generate some signal when a satellite-tagged false killer whale is nearby would be useful for both fishermen and managers by informing the former of the potential for interactions and the latter in terms of spatial dynamics of MHI IFKWs. However, we recognize the effectiveness of this strategy is highly dependent upon the number of satellite tags deployed at any given time, which is limited in itself for a number of reasons[3].

With respect to all objectives concerning "takes", we have noticed that there is no mention of discriminating between sexes. We know that adult females have more fishery-related injuries to the dorsal fin and may engage in riskier behavior (Baird et al. 2014), and that the death of a female is more detrimental to the population than a male. With an effective population size of ~58 adults, the loss of a reproductive female would have a much greater impact than loss of a male. Along similar lines, when looking at demographic parameter goals of social clusters, the number of juvenile and reproductive females should be considered, not just the percent of the population belonging to a given cluster. Sex ratios that are biased towards males can lead to negative trajectories in population growth.

Regarding objectives that would increase understanding of MHI IFKW spatial use, we suggest an analysis on primary travel corridors used among the main Hawaiian Islands. Analyses of MHI IFKW spatial use thus far has predominantly focused on areas of high density or frequently used areas (Baird et al. 2012, 2019). However, given these animals travel quickly and frequently among island areas, identifying primary travel corridors (e.g., routes between island areas) could help inform where interactions with any dynamic threats cited in these documents (e.g., fisheries interactions, naval activities) could occur in space and time. We have previously undertaken some preliminary analyses of travel corridors in relation to the proposed rule for critical habitat for this population[4], that may help guide such analyses.

[1] https://m.facebook.com/groups/932642700086417

[2] https://www.facebook.com/groups/HSFGroup

[3] We should note that as of the time of writing, Cascadia Research Collective currently has satellite tags deployed on individuals in three of the five recognized social clusters of MHI IFKWs.

[4] https://www.cascadiaresearch.org/files/comments/CRC_comments_on_FKW_critical_habitat_proposed_rule.pdf

With respect to furthering understanding of prey resources and foraging needs of MHI IFKWs, we suggest analyses of fatty acid composition of biopsy samples. Because fatty acids serve as a dietary biomarker, a study on the fatty acid profiles of MHI IFKWs could elucidate variation in diet among demographic classes (e.g., social cluster, sex, age) and over time—inferring a change in prey selection—which could be related to temporal trends in commercial fisheries catch/effort.

There is a lot of emphasis in using the lack of observed cases of "xyz" in the reclassification criteria (e.g., gunshot wounds, marine debris in gut) to show that these threats do not limit recovery. However, strandings are extremely infrequent, representing less than 5% of the animals that die[5], and thus there is a high probability of missing such cases even if they commonly occur. It does not appear that this is taken into account anywhere in either of the documents.

In the objective concerning continued monitoring and response to stranded, sick, or injured false killer whales, we believe it would be useful to take advantage of a range of opportunities that may arise during this type of situation. It is particularly important to obtain high quality photographs of individuals that might be returned to the water, and those that are dead prior to transport, as transport may obscure markings that are critical for individual photo-identification. Obtaining skin biopsy samples of live-stranded animals that are returned to the water may also allow for genetic confirmation of individuals that are poorly marked or that have had markings change since the last time they were photographically documented. Biopsies from live-stranded whales could also be included in hormone chemistry analyses, from which a baseline stranding 'stress' hormone level could be deduced and referred to in future efforts to understand physiological stress levels. Tagging an animal before refloating should also be considered, as this could inform the movement dynamics of recently stranded individuals, or if the animal were to re-strand, allow researchers to effectively respond to the animal.

With respect to monitoring and managing vessel strikes on MHI IFKWs, as an alternative (or additional) strategy, we suggest incentivizing recreational boaters (and others, if applicable) to install propeller guards on their boats. This could be done immediately and not after a 5% increase in propeller related injuries, given that not all individuals are documented each year and photos that are obtained often are not of sufficient quality to identify propeller injuries, even if they were occurring frequently. Any analysis to assess the frequency of propeller injuries should take into account the proportion of the population that have sufficient quality photos to assess such injuries, and recognize that wounds in false killer whales typically heal to the same color as the original skin, and thus may only be visible for a period of months, rather than years.

Thank you very much for your consideration of these comments.

Best regards,

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[5] K.L. West et al. unpublished

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