

Pacific Scientific Review Group

A Regional Advisory Group for the National Marine Fisheries Service and Fish and Wildlife Service

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14 December 2020

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Dear Assistant Administrator Oliver and Regional Directors Thorson
and Souza:

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This letter conveys recommendations from the Pacific Scientific Review Group (PSRG) to the National Marine Fisheries Service (NMFS) and Fish and Wildlife Service (FWS) based on its virtual meeting on 23-27 March 2020. The meeting focused on science, management, and conservation of marine mammals along the U.S. West Coast and in the central North Pacific. The PSRG gratefully acknowledges NMFS and FWS scientists and managers who prepared stock assessment reports and participated in meeting presentations and discussions. The PSRG especially wishes to thank our NMFS liaison, Dr. Karin Forney.

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General recommendations

The PSRG recommends that NMFS continue to identify populations/stocks based on DIPs on a precautionary basis and involve the PSRG where possible in the stock definition process. We welcome the guidance NMFS has developed for procedures to identify stocks in PSRG-2020-B01a, specifically the guidance on recognizing Demographically Independent Populations (DIPs) provided in PSRG-2020-B02. We recognize the importance of this change and welcome the DIPs concept development. As this new designation continues to be applied, there will be greater need to differentiate the term *stock* from *DIP* and be more explicit when describing DIPs in a stock context,

e.g., distinguishing when DIPs are known not to exist for a stock or when insufficient information is available for a stock to designate DIPs. We are also concerned with the components of the procedure document that appear to change some of the definitions of stocks from what had been developed with public comment in the previous Guidelines for Assessing Marine Mammal Stocks. In particular, we think it is important that NMFS continue to fully consider the feeding areas where some species, e.g., humpback whales, spend most of their time, face their primary threats, and show the strongest fidelity, integrating these with the Distinct Population Segment (DPS) designations into a concept analogous to migratory herds. Additionally, the flowchart in both the presentation and process document imply a fairly limited role by the SRGs only in the later review stages of stocks when SRGs have often played a more integral earlier role in reviewing and recommending stock designations.

The PSRG, in its efforts to review revised stock assessment reports and to comment on the efficacy of existing research programs and the need for new research programs, recommends the participation of AFSC Marine Mammal Laboratory staff at future PSRG meetings. At the March 2020 “virtual” meeting of the PSRG, there was strong participation from marine mammal scientists employed by the Southwest Fisheries Science Center, Pacific Islands Fisheries Science Center, and the Northwest Fisheries Science Center; however, there was no formal participation from marine mammal scientists employed by the Alaska Fisheries Science Center. This is unfortunate, given the significant AFSC research program on various marine mammal species that inhabit West Coast waters (e.g., California sea lions, northern fur seals, gray whales, etc.). In addition, the PSRG recommends that all four Science Centers provide brief overviews of on-going marine mammal research programs and anticipated marine mammal research programs to the PSRG prior to its annual meeting. As possible, a similar format for all four presentations is requested. Total estimated cost for each activity should also be provided. Furthermore, the PSRG is concerned regarding the leadership for research on species of the California Current Ecosystem like harbor seals and harbor porpoise throughout their range. The PSRG requests clarification from NMFS as to which Science Center has the lead for each species/stock in each geographic region in the California Current Ecosystem.

The PSRG recommends that NMFS organize, in the near future, a joint meeting between the PSRG and the AKSRG. This could perhaps be best accomplished by having both SRGs meet at a common venue independently for 2-3 days and in a plenary meeting on the final day. At present there are a number of information gaps regarding species information and on-going research programs for transboundary and migratory stocks that occur in waters in the central Pacific and North Pacific. In addition, the PSRG is interested in hearing how the four NMFS Science Centers (SW, NW, AK, PI) prioritize future research needs and limited research funding for these species. The PSRG believes a joint meeting of the two SRGs would best address these issues. Primary species of concern are the humpback whale and gray whale; however, would also include the North Pacific right whale, fin whale, blue whale, northern fur seal, northern elephant seal, etc.

The PSRG recommends that NMFS develop a plan to meet research obligations in regard to monitoring for SARs, given potential for changes in the funding priorities by its partner agencies, including the Navy and BOEM. The Navy's decision to otherwise discontinue support of passive acoustic work in the Marianas Archipelago, as discussed in the letter of response by NMFS to the 2019 PSRG recommendations, is one example. The PSRG asks NMFS for more details on how Navy and BOEM monitoring decisions are being evaluated and accommodated.

As model-based approaches to estimating abundance continue to evolve rapidly, the PSRG recommends that whenever warranted, SARs use model-based estimates of population abundance from line-transect data, but also include graphical presentation of the corresponding design-based estimates for comparison, if available. The PSRG is supportive of NOAA's approach to shifting from design-based to model-based abundance estimates where warranted. However, because this shift can sometimes result in substantial changes to abundance estimates and to the temporal patterns of abundance estimates, there is potential for confusion by the reader as to how to interpret such changes. By graphically showing both types of estimates where available, the reader can compare and contrast results, and explanations can be provided where necessary to help interpret the differences.

The PSRG recommends that NMFS develop a guidance document that describes the use of design-based vs. model-based estimates in SARs including presentation of the assumptions and limitations associated with each method. Methods for estimating abundance using species distribution models (SDM) are evolving rapidly, potentially leading to confusion in the interpretation of results and inconsistencies as to when and how to apply such models. Having a guidance document that articulates when model-based or design-based estimates are preferable and clarifies the underlying assumptions associated with the methods would be beneficial for researchers and readers. One particular issue of note that the PRSG mentioned throughout the SARs review process was the ability of model-based estimates to capture temporal changes or trends because of dataset or sample size limitations. Specifically, when SDM are fit to multiple years of survey data but have insufficient data to support inclusion of a temporal effect in the model. In these cases, it should be emphasized that the resulting estimates implicitly assume that abundance is constant over time except for those changes associated with year-to-year differences in the environmental variables. The guidance document should include recommended approaches for how to consider temporal effects and the likelihood of detecting a trend of a given magnitude (e.g., through a power analysis).

The PSRG recommends that NMFS follow past practice and include non-technical and accessible language in the SARs explaining why there have been some notable changes in the estimates of annual abundance from previous SARs. In particular, a clearer delineation between the effects of the new estimate of $g(0)$ and the effects of the shift to the model-based approach on the abundance estimates would be helpful.

The PSRG recommends that NMFS include an overview of the data source (e.g., boat-based photography, visual observation, unoccupied aerial vehicle (UAS); drone) used to document each incident of a Serious Injury (SI) in SI reports. This recommendation is based on a likely increase in SI reporting in coming years due to the increased use of UAS to study large whales. The proliferation in the use of UAS in cetacean research is providing an increased opportunity to monitor and document injuries due to its unique observation perspective. With information on the data source used to document SI, future analyses can account for data source as a possible factor in trends in SI reporting.

Pacific Islands

The SRG recommends that research to investigate the potential for chronic effects of *Toxoplasma gondii* infection, including interactions with other causes of death, should be supported. The PSRG commends NOAA for its inclusion of acute toxoplasmosis as an anthropogenic cause of death for monk seals in the SAR: this represents an important step forward in evaluating combined threats to this species. Yet research on other marine species has shown that not all infections of *Toxoplasma gondii* result in lethal infections. In many cases infected animals may be asymptomatic, with the likelihood of acute effects related to an individual's age, sex, body condition, health status, and even the genotype of the parasite. At the same time, there is research indicating that infection with *T. gondii* can be associated with a variety of chronic effects, some of which may lead to reductions in survival or reproductive success but which may be difficult to measure without extensive health assessments or epidemiological data sets. For example, in southern sea otters there is accumulating evidence that chronic effects of *T. gondii* infection include a significant increase in risk of cardiac disease, and that this is having population-level consequences. Research to investigate *T. gondii* effects in monk seals should be supported, and it should be acknowledged that acute cases of Toxoplasmosis that may be detected represent the low end for any estimate of total population-level impacts of this parasite.

The PSRG recommends that NMFS continue to assess the impact of habitat loss at French Frigate Shoals on monk seals and work with the USFWS and other partners to mitigate entrapment hazards at Tern Island in the short term while exploring longer term habitat improvement or restoration plans as appropriate.

The PSRG recommends that NMFS work with the False Killer Whale (FKW) Take Reduction Team to improve the mitigation measures of the FKW Take Reduction Plan to minimize mortality and serious injury (M&SI) to bycaught FKWs encountered by the Hawaii longline fishery and that NMFS report progress at the 2021 PSRG meeting. The PSRG has previously recommended it would be useful to re-examine all FKW interactions with the Hawaii longline fishery that may be useful for mitigation development, rigorously test branchline and gear-related mitigation measures to examine and improve release protocols and to fund additional research to develop novel mitigation measures to safely reduce M&SI of bycaught animals. The recommendation arose from concern that currently recommended procedures to release hooked FKWs have not

proved effective and have resulted in trauma and injury to the animals while exposing the crew to hazardous conditions.

The PSRG acknowledges and welcomes NMFS plans to develop abundance assessments of spotted dolphins in Hawaii – and requests an update on this initiative at the 2021 PSRG meeting.

US West Coast

PSRG recommends that NMFS continue to evaluate the status of the Pacific Coast Feeding Group (PCFG) as a gray whale stock and strongly recommends NMFS continue to conduct genetic and other research, such as looking at the levels of internal and external recruitment, to explore this issue. We also recognize that the previous evaluation of PCFG status was conducted prior to a publication validating the genetic differences of the PCFG versus other feeding areas and prior to other important studies relevant to this determination.

The SRG recommends continued use of the 0.035 value for R_{max} for southern resident killer whales until a thorough analysis of population growth rates for this species has been performed. This recommendation was in response to a specific request from NMFS regarding whether the R_{max} value currently used in the PBR calculation for the southern resident killer whales was appropriate (i.e., 0.035). When such an analysis is complete, the PSRG will review and provide comments, as appropriate.

The SRG recommends that NMFS, as part of their ongoing work to analyze the 2018 CCES joint fish/marine mammal survey, focus on the positive (e.g., cost savings) and negative impacts (e.g., increased bias) of the survey's dual mission on the quality of West Coast cetacean assessments. The PSRG believes it is important to know how the dual mission affects those surveys and what the long-term consequences might be for continuing with similar survey designs, and looks forward to learning about the results.

Reiteration of past recommendations

The PSRG reiterates their recommendation that NMFS continues data collection in the waters around Guam and the Commonwealth of the Northern Mariana Islands to support the development of SARs for marine mammal species in the region. The PSRG welcomes the planned accumulation of data and information available on Mariana Archipelago cetacean populations as a Technical Memorandum. Additionally, the upcoming PacMAPPS Mariana Archipelago survey in summer 2021 (a partnership between NOAA, Navy and BOEM) should provide relevant information to support estimates of stock abundance and the production of SARs. We acknowledge the need for investigation of DIPs and stocks for cetaceans in the Mariana Archipelago and look forward to these advances.

Reiterating concern with the high rate of beaked whale stranding coincident with Naval sonar exercises in the Mariana Archipelago, the PSRG recommends that NMFS establish

a monitoring program that is capable of quantifying long-term trends in abundance of beaked whales on the Marianas Islands Range Complex. As a component of this monitoring program, the SRG recommends that NMFS work with the Navy to conduct aerial surveys of area shorelines following sonar exercises to survey for cetacean strandings or mortality that might otherwise not be recorded from remote areas of the islands.

The PSRG again recommends that NMFS establish a Recovery Team to provide science-based guidance to promote SRKW recovery (e.g., the management of other marine predators that may compete with SRKWs for food, determining adequate setbacks for vessels in the vicinity of the whales, and review and prioritization of research needs). The SRKW population has been declining since 1995 and the existing evidence indicates that the decline is likely to continue into the foreseeable future: its reproductive and survival rates have fallen well below sustainable levels, its age structure is becoming distorted with a paucity of immature females, and numerous individuals in the population are in poor condition. The PSRG recognizes that the task force established by Washington's Governor Inslee has reviewed the status of, and risk factors affecting, the SRKW population and the outcome of that review would provide valuable information to be considered by a Recovery Team. At the same time, however, NMFS is the lead agency responsible for the protection and recovery of this highly endangered population and, as such, it must lead and coordinate the recovery effort. A Recovery Team would help integrate the research programs conducted by the Southwest Fisheries Science Center and the Northwest Fisheries Science Center, as well as research conducted by various State agencies, academic institutions, and non-profit groups. A Recovery Team would have the legal authority to act as a primary conduit of the best available science from all sources, could marshal the expertise needed to rank the relative threats and thus prioritize potential responses, and provide timely scientific advice to NMFS regarding the most important actions needed to investigate and recover this population.

The PSRG reiterates its recommendation from last year that NMFS continue to support efforts to clear the Northwestern Hawaiian Islands of netting and marine debris that poses a threat to Hawaiian monk seals and other protected species through entanglement and ingestion. The PSRG notes that this recommendation is consistent with the actions identified in the 2007 Hawaiian monk seal recovery plan to "prevent entanglements of monk seals" that included "An action that must be taken to prevent extinction or to prevent the species from declining irreversibly." (P. 98).

The PSRG reiterates their recommendation for implementing time-area closures to protect spinner dolphins. The PSRG also reiterated that it finds the proposed 50-yard no approach rule within spinner dolphin resting bays to be ineffective. The PSRG acknowledges and welcomes NMFS recent efforts towards developing a survey design to estimate spinner dolphin abundance in Hawaii and requests an update on the design and preliminary findings during the 2021 PSRG meeting.

The PSRG gratefully acknowledges NMFS and FWS scientists and managers for their efforts to prepare present, and discuss marine mammal stock assessment reports.

Sincerely,



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CC:

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