The Pacific Scientific Review Group (PSRG) is an advisory group for the National Marine Fisheries Service (NMFS) and Fish and Wildlife Service (FWS). The group includes experts from various organizations and universities. The letter is addressed to Janet Coit, Assistant Administrator of NMFS, and Hugh Morrison and Paul Souza, Acting Regional Directors of the U.S. Fish and Wildlife Service. The letter discusses the group's virtual meeting on 22-25 March 2022, which focused on science, management, and conservation of marine mammals along the U.S. West Coast and in the central North Pacific. The group thanks NMFS and FWS scientists and managers who prepared stock assessment reports and participated in the meeting. The letter conveys recommendations from the meeting.


dear assistant administrator coit and regional directors morrison and souza:

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 22-25 march 2022. 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 liaisons, laura mccue. our recommendations are as follows:

25 july 2022
PSRG 2022 recommendations

Overarching topics:
The PSRG recommends that, if possible, NMFS provide the PSRG draft changes to the GAMMs and SI documents and policies for review and comment as early as possible in the process and ahead of the public comment period. The PSRG does not wish to delay these important revisions and so recognize this may not be possible but also feel we can be uniquely useful in evaluating these changes given our role in reviewing SARs and PBR calculations and in considering new approaches.

The PSRG recommends initiating a discussion with the NMFS staff involved with preparing stock assessment reports for the various stocks of humpback whales. We would like to support the use of a species-specific Rmax value in the stock assessment for the western Pacific stock of humpback whales. We note that the current value of Rmax for this stock is 0.07, even though a stock specific estimate of Rmax is not available. The value of Rmax is one of the three key parameters in estimating the PBR for a stock (along with a minimum estimate of abundance [Nmin] and a recovery factor (Fr). The following text related to when a default value or a stock-specific value for Rmax should be used is from GAMMS (2016): “Default values should be used for Rmax in the absence of stock-specific measured values. To be consistent with a risk-averse approach, these default values should be near the lower range of measured or theoretical values (or 0.12 for pinnipeds and sea otters and 0.04 for cetaceans and manatees). Substitution of other values for these defaults should be made with caution, and only when reliable stock-specific information is available on Rmax (e.g., estimates published in peer-reviewed articles or accepted by review groups such as the MMPA Scientific Review Groups or the Scientific Committee of the International Whaling Commission).” It is likely that this text should be updated, as some cetacean species have been observed to have annual rates of increase that exceed the 0.04 value assigned to cetacean stocks (e.g., humpback whale, beluga whale). Further, it is not clear to the PSRG why a stock-specific value for Rmax is always preferential to a species-specific value. Because the data required to estimate a maximum rate of population increase are substantive, it is not surprising that stock-specific estimates of Rmax are relatively uncommon. In addition, it is the product of Nmin, Rmax, and Fr that is used for establishing a threshold for anthropogenic removals from a given stock (i.e., PBR). Therefore, an adequately precautionary value for PBR can be implemented by the Agencies in managing marine mammal-fishery interactions without being conservative in estimating each of the parameters used to calculate the PBR.

The PSRG wanted to extend our thanks and appreciation to NMFS and FWS for their efforts to both implement and respond to our 2021 recommendations. For example, we appreciated the presentation of the table summarizing planned and anticipated pinniped survey schedules, by NMFS and hope this can become a regular feature.

West Coast:
The PSRG recommends that NMFS reconsider the protocol used to prorate anthropogenic removals for stocks of the North Pacific humpback whale. At a minimum, the PSRG recommends that NMFS provide additional rationale as to why the use of the upper 95% confidence interval of the movement probabilities is appropriate.
The Pacific SRG noted during its recent meeting that NMFS uses a protocol for prorating mortality incidental to commercial fishing, where the proration values add up to a value greater than 1.0. While conservative, it is not clear to PSRG members as to whether this approach is appropriately precautionary and asks that NMFS provide evidence from simulations as to the limits of how precautionary this approach is. Specifically, is there some risk that the current approach could be considered “arbitrary” relative to an approach that used the 50-th percentile value. The following text is from the stock assessment report for western Pacific humpback whale (but is also found elsewhere in the SARs):

“To assess human-caused mortality and serious injury to each stock in areas where stocks overlap, mortality and serious injury is prorated using summering to wintering area movement probabilities reported by Wade (2021) (Table 2). The upper 95% confidence limit of the movement probabilities are used as the proration factors for the endangered WNP stock, consistent with ESA approaches applied to anthropogenic take assessments by NMFS in the Alaska region (NMFS 2021).” and

“Mortality and serious injury events where the animal could not be assigned to a stock (i.e., based on photo-identification or information identifying both wintering and summering areas) were prorated among all stocks present in the area, using the area-specific proration factors in Table 2.”

The PSRG welcomed the new information on the SPLASH-2 program and, noting the careful attention to archiving the primary data from the previous SPLASH-1 program, requests future updates on the status of this project and efforts to connect and maintain the long-term utility of data gathered for both SPLASH-1 & 2.

The PSRG requests an update on how the NMFS intends to address the gap in reporting by Japan and account for uncertainty in human induced mortality throughout the region. The Pacific SRG recognizes that, with its withdrawal from the International Whaling Commission, the Government of Japan is no longer obligated to report bycatch or other human-induced mortality of large whales. The SRG is also aware that any reports of bycatch or human induced mortality of cetaceans in the Western North Pacific are likely to be underestimates of the true takes. This has serious implications for the SARs and calculations of PBR for humpback and gray whale stocks.

The PSRG recommends that NMFS support efforts to implement mandatory ship speed reductions in areas of known overlap of high ship traffic and large whale concentrations along the US West Coast, as had been used off the US East Coast. We recognize that NOAA sanctuary personnel, management, and research divisions have done important work on trying to reduce ship strikes of large whales. On the US West Coast these do not appear to have reduced ship strikes for blue and humpback whale stocks to below PBR levels when consideration is made for the large portion of ship strikes that go unreported. Unlike the US East Coast, NOAA has not pushed for implementing mandatory speed restrictions in known areas of large whale and high ship traffic overlap and instead have only advocated for voluntary or incentive-based speed guidelines.

The Pacific SRG requests an interpretation of the SRKW inbreeding depression in light of current management priorities and previously identified risk factors. The Pacific SRG notes with concern the new evidence of inbreeding depression in SRKW and asked for further
information on the models used to estimate the impact of this threat on population dynamics (Kardos et al., now in review).

**The PSRG recommends that NMFS engage and provide updates to the PSRG as its integrated population dynamics modeling approaches for ENP gray whales continue to develop.**

The PSRG welcomed the update on ENP gray whale population dynamics modeling. This stock has multiple time series of data (e.g., estimates of abundance and calf production, as well as stranding counts) that provide a valuable opportunity to better understand how population dynamics might be linked to important drivers, like environmental conditions and prey availability on the Arctic and other feeding grounds. The abundance and calf production data have also been integrated in previous population dynamics modeling approaches for this stock, which resulted in estimates of abundance relative to MNPL and carrying capacity following the 1999-2000 UME (Punt and Wade 2012). These previous modeling approaches have formed the basis for OSP status evaluations in terms of setting the recovery factor for PBR in recent stock assessments. Such modeling efforts have incorporated a parameter typically associated with a constant carrying capacity (or long-term average carrying capacity). Given the current ENP gray whale UME, and estimated reductions in abundance associated with this mortality event, future stock assessments and related management decisions will likely once again rely on the results of integrated population dynamics modeling for an updated estimate of OSP status for this stock. To this end, and to fully utilize available sources of data in the estimation of quantities of interest to management, the PSRG encourages the continued development and application of integrated population dynamics models for ENP gray whales. Models in which annual variation in conditions (environmental stochasticity) affects overall growth rate vs. models in which variation is limited to density-dependent effects (“variable K” models) should be compared using information theoretic approaches. For the latter, we note that it will be important to put into context for the MMPA the meaning of annual estimates of carrying capacity. Presumably, some sort of long-term average could be included as an output parameter. The PSRG likewise encourages new and continued development of integrated population dynamics models for other stocks more generally, to augment assessments where data are available in sufficient quality and quantity to be applicable.

**The Pacific SRG supports the use of passive acoustic methodologies to improve on SARs for elusive yet acoustically identifiable species but requests an update on methodological improvements.** In last year’s recommendation, we requested investigations on duty cycle and drift patterns of DASBR data used in this new methodological approach. Solutions were discussed in the response but not undertaken. The acoustic estimate abruptly replaced the visual estimate in the Cuvier’s beaked whale SAR without allowing for a direct comparison between visual and acoustic estimate. Like the discussion on the use of habitat-based species distribution models for density estimation, it would be useful to have a side-by-side comparison until the use of the acoustic-based method is established to entirely replace the visual estimate.

**The PSRG recommends exploring methods that would incorporate a more robust analysis of the survey time series (e.g., Bayesian state-space models) into the Pacific Northwest harbor seal stock assessment model.** The PSRG appreciates the efforts to pull together a comprehensive dataset but has concerns regarding the suitability of using a deterministic model (no stochasticity or temporal effects) to characterize the status of harbor seal stocks in the Pacific
Northwest. From our perspective, the model presented during our recent PSRG meeting appears to be missing some key dynamics. Therefore, among other issues, the associated estimate of K is likely to be highly uncertain and difficult to interpret.

We encourage continued coordination between regional USFWS centers to ensure a fairly rapid transition to standardized survey methods for sea otters in all regions, including WA and CA. The WA sea otter survey, like the CA sea otter survey, has traditionally been based on a single exhaustive count (census) of the entire range. While this method provides a minimum abundance estimate and ensures that all potential habitats are surveyed, it precludes any estimation of uncertainty for annual abundances (i.e. it only provides uncorrected counts), and is also extremely labor intensive. In several other regions, particularly SE Alaska, there is movement towards aerial photograph-based surveys: these new methods allow for optimized sampling of habitats, AI analysis of images to estimate abundance, and include image overlap methods for estimating detection/availability bias and uncertainty. These methods are more efficient than the current observer-based methods, allow for quantification of estimation uncertainty, and will also facilitate a later shift to long-range UAS platforms as this technology becomes more available and affordable.

Hawaii and WNP:
The Pacific SRG requests a detailed update from NMFS on results and progress from the FKW bycatch mitigation projects (funded from the FY 2021 and 2022 FKW research appropriations) to understand how bycatch mitigation is progressing. The Pacific SRG also requests a summary of 2022 FKW interactions with the Hawaii longline fishery including the amount of trailing gear left on released animals noted.

The Pacific SRG reiterates its recommendation that a wider range of mitigation strategies for FKW bycatch in the Hawaii longline fishery be explored. This includes mechanisms to sever the leader closer to the hook to release animals with minimum amounts of trailing gear as well as approaches that limit or eliminate gear fly-back. We also request an update on research and recommend additional research that provides more information on post-release survival of bycaught FKW individuals.

The PSRG recommends that models able to account for fluctuating abundance over time be fit to the data available for FKW. The current approach does not appear to account for some temporal patterns in the data that cannot be accounted for based solely on sampling issues.

The PSRG requests an update from NMFS on proposed mitigation strategies for the reduction in terrestrial habitat for monk seals in the North Western Hawaiian Islands due to increases in average sea level.

The PSRG would like to congratulate NMFS for the implementation of the 50-yard no-approach rule, but has concerns on its effectiveness without the presence of strong enforcement particularly in spinner dolphin resting bays. The PSRG reiterates its concerns for the lack of effectiveness of this rule within important spinner dolphin resting bays and recommends the implementation of no-go areas in these habitats (as provided for in the current proposed-rule). The PSRG is aware of and supportive of the sentiments expressed by the US Marine Mammal Commission in a letter to PIRO dated 22 December 2021. The PSRG would like to be
informed of any correspondence between NMFS and the MMC regarding this letter. Further, the PSRG requests a tentative timeline from NMFS regarding decisions related to the proposed rule.

The Pacific SRG requests an update on NMFS plan to monitor beaked whale population trends and beaked whale strandings in the Mariana Archipelago, particularly as it relates to Navy activities in the region. In previous PSRG recommendations, NMFS was asked to establish a monitoring program capable of observing long-term trends of beaked whale populations. NMFS published on beaked whale and *Kogia* spp. acoustic detections from Drifting Acoustic Spar Buoy Recorders (DASBR; McCullough et al. 2021). While informative regarding spatial species distribution and relative density, this effort may not be sufficient to document the impacts on beaked whale stocks of naval activities, specifically to identify strandings in the region.

References:


Sincerely,

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CC:
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