

750 W. 2nd Avenue
Suite 206
Anchorage, AK 99501



907.258.0224 Telephone
904.258.0223 Facsimile
www.oceanconservancy.org

October 31, 2023

Angel Drobnica, Chair
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, AK 99501

RE: Research Priorities

Dear Chair Drobnica and Council members:

Ocean Conservancy¹ submits the following comments on Research Priorities in advance of the December 2023 North Pacific Fishery Council (the Council) meeting. We appreciate the opportunity to provide comments early in this process and note that identifying Research Priorities in the North Pacific is vitally important in light of dramatic climate and ecosystem changes. Since this process now only occurs triennially, it is imperative that the Plan Teams, Science and Statistical Committee and Council use this opportunity holistically to address some of the most pressing ecosystem-level concerns facing Alaskan communities and climate-vulnerable fish, marine mammals and seabirds.

Research Priorities should focus on broader ecosystem considerations, indicator development and species interactions with an emphasis on non-target species, such as marine mammals and forage fish, subsistence needs and climate vulnerability. This focus will support forthcoming work on the Programmatic Environmental Impact Statement and outcomes from the Climate Change Taskforce scenario planning workshop.

Research Priorities should explicitly evaluate the effects of fisheries on ecosystem function, including prey availability, habitat quality and predator-prey relationships and community resilience. Single-species research for target species is well-established, generally already underway, and is therefore best promoted through Stock Assessment and Ecosystem and Socio-Economic Profiles processes.

Based on these recommendations, we urge the Council to consider the following in establishing Research Priorities:

- **Electronic Monitoring (EM):** 2021 Research ID 712 identified the need for a “Gap analyses of loss of biological samples due to the implementation of EM.” In addition to the loss of biological samples, EM implementation has resulted in numerous unintended consequences that should be addressed as Urgent Priorities.

¹ Ocean Conservancy is a non-profit organization working to protect the ocean from today’s greatest global challenges. Together with our partners, we create evidence-based solutions for a healthy ocean and the wildlife and communities that depend on it.

- With increases in the proportion of boats using EM and the associated lack of onboard observers, it is not possible to effectively track marine mammal interactions because cameras are not currently designed to monitor marine mammals. In turn, there is a decrease in the amount of data on marine mammal interactions with commercial fisheries, which will increase uncertainty in Mortality and Serious Injury (M&SI) estimates used in marine mammal stock assessments. In light of more frequent marine mammal interaction rates and bycatch in fisheries in recent years, the Council should elevate this concern and the need for tracking this issue as an Urgent Research Priority.
- At the October 2023 Performance Standard Workshop, it was apparent that EM did not provide species information at the resolution necessary to ensure compliance with bottom-time restrictions for pelagic trawl fisheries. With respect to ensuring pelagic trawl fisheries are off-bottom, both EM limitations and opportunities should be an Important Research Priority throughout this cycle.
- **Marine Mammals:** The limited number of 2021 Research Priorities addressing marine mammals discounts the important ecological role marine mammals play as well as the risks associated with direct and indirect fishery interactions. We urge the Council and associated bodies to review the attached Appendix 1 that includes Research Priorities recommendations from the [Alaska Scientific Review Group for Marine Mammal Stock Assessments](#) in their [2022 letter to NMFS](#). In addition, 2021 Research ID 215 should be prioritized and extended to explicitly address:
 - Direct fishery interactions (discard feeding, depredation, bycatch), which pose a serious conservation concern for marine mammals. Better coordination with NMFS, MML and the observer program is needed to ensure timeliness and transparent reporting of marine mammal interactions and bycatch data. A new Urgent Research Priority should be listed in the top 10 this year that evaluates marine mammal-fishery interactions (including feeding on discards) and bycatch spatial and temporal trends and potential mitigation measures.
 - Indirect fishery interactions with marine mammals (prey competition, foraging disruption from vessel noise), which is also an established threat for marine mammals, including declining northern fur seals (Divine & Williams 2022, McHuron et al. 2020, McHuron et al. 2023). The Council should amend Research ID 246 and prioritize an Urgent Research Priority aimed at mitigating the negative effects of fishing on vulnerable and/or declining upper trophic-level predators, such as northern fur seals, through spatial and temporal management measures for relevant fleets.
- **Ecosystem Indicators:** Using indicator species as a proxy for overall ecosystem health and function can be both a cost- and time-efficient measure (Carignan & Villard 2002). This is particularly relevant in biodiverse, species-rich systems like the Eastern Bering Sea, where it is not possible to monitor all taxa (Lindenmayer 1999). The use of indicator species can be used to achieve specific management objectives including assessing the efficacy of management measures and detecting both early stage and long term ecological changes or shifts (Siddig et al. 2016).
 - We urge the Council to extend the numerous indicator items identified in the 2021 Research Priorities and move beyond monitoring to develop a new Urgent Research Priority that explores management targets, reference points and onramps for ecosystem indicators to inform management action.

- **Traditional Knowledge:** There are numerous ways Traditional Knowledge will strengthen all Research Priorities, including offering new frameworks for analysis; fostering relationships between Indigenous and Western scientific researchers and communities; and filling gaps in existing ecological and social scientific research.
 - In accordance with the new Local Knowledge Traditional Knowledge Subsistence Protocol, the Council and associated bodies should acknowledge that all 2024 Research Priorities inherently include Traditional Knowledge as a way of knowing and understanding ecosystems to inform the Council's decision-making process at every level.

- **Bycatch Impacts:** In an increasingly unpredictable and warming climate, anthropogenic activities like bycatch that suppress life-history diversity could have serious consequences, particularly for depressed populations persisting at ecological and physiological limits such as salmon (Sturrock et al. 2019). When considering impacts to communities and climate-vulnerable species, the Council must think more broadly about ecosystem impacts associated with target harvest and bycatch removals from the system.
 - A new Research Priority should address the impacts of bycatch on genetic diversity and long-term viability for depressed, climate-vulnerable species such as salmon and/or crab (spp.).

We thank you for your consideration of our recommendations on Research Priorities and look forward to working on this topic in the future.

Sincerely,



Rebecca Robbins Gisclair
Sr. Director, Arctic Programs
Ocean Conservancy

Appendix 1. [Alaska Scientific Review Group comments to NMFS 2022.](#)

ALASKA REGIONAL SCIENTIFIC REVIEW GROUP

SRG members: John Citta, Beth Concepcion, Thomas Doniol-Valcroze, Donna Hauser, Nicole Kanayurak, Greg O’Corry-Crowe, Lorrie Rea, Eric Regehr, Kate Stafford, Megan Williams

Address correspondence to: Megan Williams, 750 W. 2nd Ave, Suite 206, Anchorage, AK 99501;
mwilliams@oceanconservancy.org

Janet Coit
Assistant Administrator for Fisheries
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
transmitted by electronic mail

June 29, 2022

Dear Ms. Coit:

The Alaska Regional Scientific Review Group (AKSRG) held its annual meeting on 7-9 March 2022 virtually. Our agenda included review of draft 2022 marine mammal stock assessment reports (SARs), updates from the United States Fish and Wildlife Service (USFWS), and research and policy updates from the National Marine Fisheries Service (NMFS) staff on issues associated with the status and assessment of Alaska’s marine mammal stocks.

This letter addresses the following key topics:

- [Bycatch and Marine Mammal Interactions](#)
- [USFWS Managed Species](#)
- [Southeast Alaska \(SEAK\) Harbor Porpoise](#)
- [Killer Whales](#)
- [Bowhead Whales](#)
- [Humpback Whales](#)
- [Potential Biological Removal and Sustainable Removals](#)
- [PACMAPPS/ARMAPPS](#)
- [Research Priorities](#)

Bycatch and Marine Mammal Interactions

Electronic Monitoring (EM) continues to expand in federal commercial fishery fleets in Alaska as well as nationally. In particular, partial coverage fleets operating out of the Eastern Bering Sea and Gulf of Alaska have seen a significant proportion of coverage transitioning to EM (as opposed to onboard observers). As EM programs become more commonplace, it may be increasingly difficult to track marine mammal interactions as cameras are not currently designed to monitor marine mammal interactions. This, in turn, decreases the amount of data on marine mammal interactions with commercial fisheries and may increase uncertainty in Mortality and

Serious Injury (M&SI) estimates in several marine mammal stock assessments. **The AKSRG recommends that NMFS and the Marine Mammal Lab at the Alaska Fisheries Science Center continue to work with the observer program to develop protocols within the EM framework to ensure that marine mammal interaction data collection continues to be a component of the observer program and/or associated logbooks. Additionally, the AKSRG would like to be updated on: 1) how M&SI estimates are being adjusted as more vessels transition to EM, and 2) how new EM-based marine mammal sightings/interaction data are being processed and eventually incorporated into the SARs.**

The AKSRG received an informative presentation from Brian Brost regarding approaches for estimating marine mammal bycatch in commercial fisheries nationally and in the Alaska region specifically. The Alaska region currently estimates bycatch based on the bycatch per unit effort for observed hauls, which is then extrapolated to the unobserved portion of the fleet and stratified by vessel length, region and time period. The current approach is problematic due to the inherent volatility of bycatch estimates associated with low coverage and/or documentation of rare events. Additionally, false zeros (or undetected bycatch events), are likely to occur and bias bycatch estimates low. **The AKSRG therefore supports the work proposed to evaluate the efficacy of new bycatch estimation methods as well as methods employed in other regions, such as Generalized Linear Models or Generalized Additive Models, to estimate marine mammal bycatch with the longer-term goal of applying new bycatch estimation methods in the Alaska region.** The AKSRG notes that models that consider Zero-Inflated distributions and hierarchical structures to better characterize uncertainty should be explored as part of this work. The AKSRG looks forward to reviewing analyses exploring ways to improve bycatch estimation at future meetings.

USFWS Managed Species

The AKSRG appreciates the presentations they received on marine mammal stocks managed by USFWS. In light of the considerable research on sea otters, walrus, and polar bears in recent years, the importance of these species as a subsistence resource, and the potential impacts associated with changing environmental conditions, **the AKSRG requests that USFWS update the SARs for sea otters, Pacific walrus, and polar bears in 2023 (noting that updated SARs for the Chukchi Sea and Beaufort Sea polar bear stocks were published in 2021 but did not include scientific information more recent than 2016).**

The AKSRG reviewed the 2021 SARs for the Chukchi Sea and Beaufort Sea polar bear stocks. The 2021 SAR utilizes an abundance estimate generated from 2001-2010 data to calculate the Minimum Population Estimate (N_{MIN}), and data indicate that subsistence takes of Southern Beaufort Sea polar bear likely exceed the Potential Biological Removal (PBR), suggesting there may be short- and long-term conservation concerns for this strategic stock. **In light of concerns regarding Chukchi Sea and Beaufort Sea polar bear stock status, the AKSRG recommends the application of more recent data to update the N_{MIN} estimate if possible. The AKSRG additionally supports USFWS service efforts to focus research efforts on anthropogenic impacts, such as take authorizations, the impacts of oil and gas activities to denning bears, or the impacts of bear viewing activities.** The AKSRG agrees it is important to understand anthropogenic impacts to polar bears as this type of research is most likely to yield tangible management recommendations to minimize negative impacts associated with human activities.

At the 2022 meeting, the AKSRG enquired whether the USFWS was considering metagenomic studies on polar bears and their habitats to assess bear and ecosystem health. Metabarcoding involving next generation sequencing is now in widespread use to assess microorganism community composition in easy to collect environmental samples (e.g., water, snow) while similar techniques are being used to determine the microbiomes of individual species/animals and can be conducted using small amounts of tissue or fluids.

Coordination among such studies is an emerging and powerful approach to assessing potential environmental impacts on apex predator health and population viability, and thus to assessing risk in changing environments. **In considering Chukchi Sea and Beaufort Sea polar bear stock status, the likely declining access to polar bears for sample collection in upcoming years due to sea ice loss, and the power of emerging next generation sequencing (NGS) metabarcoding and microbiome techniques, the AKSRG recommends that the USFWS prioritize coordinated metagenomic studies on polar bears and their environments.** Existing bear tissue samples would likely be of value in establishing techniques, while downstream outcomes can be used to inform risk analyses and decision making.

At the 2022 AKSRG meeting, NMFS reported on procedural changes being made to streamline and improve the quality of the process for updating SARs by differentiating between SAR reviews versus revisions. NMFS will *review* SARs annually for strategic stocks, stocks that have new information, and stocks that have not been reviewed in 3 years. SARs will be *revised* when substantial new information becomes available and/or changes have occurred within M&SI estimates. **The AKSRG recommends that that the USFWS evaluate the feasibility of aligning their USFWS SAR review and revision process with the updated NMFS process for revising and reviewing SARs.**

SEAK Harbor Porpoise

The AKSRG applauds the extensive work that NMFS has done to clarify SEAK harbor porpoise stock structure and abundance and looks forward to reviewing the upcoming Parsons *et al.* manuscript for additional genetic information. This research helps identify gaps in our understanding of and ability to effectively manage SEAK harbor porpoise stocks. The AKSRG therefore recommends the following research priorities: **1) increased observer coverage of the SEAK gillnet fisheries to collect better information on bycatch. The SEAK Harbor Porpoise SAR bycatch information is old and based on limited observer coverage. 2) increased funding for work aimed at reducing bycatch, noting that research to address the response of SEAK harbor porpoise to pingers was not funded for FY22. If pingers reduce or eliminate bycatch, this could directly address conservation concerns with SEAK harbor porpoise bycatch and stock structure. 3) further clarification of stock structure, especially near Yakutat and for offshore regions, and to the extent possible to understand movement between offshore and inshore stocks.**

M&SI estimates for SEAK harbor porpoise stocks are a critical source of data as estimates of the fishery-related mortality for the SEAK harbor porpoise stocks are close to, exceed or are unknown relative to estimated Potential Biological Removal (PBR) levels, in large part due to interactions with regional gillnet fisheries. The current approach to estimating M&SI for SEAK harbor porpoise stocks estimates interactions and extrapolates estimates to only a subset of the known species range based on historical observer coverage. **The AKSRG notes this could result in an underestimation of overall M&SI estimates for these stocks and recommends that NMFS report back to the ASKRG on the feasibility of extending the M&SI estimate to the full range of the SEAK harbor porpoise stocks in question.** The AKSRG also notes that the M&SI estimates are *already* likely biased low due to limited observer coverage in state-water fleets; thus, additional bias introduced by limited spatial extrapolation further increases the likelihood that M&SI is underestimated for these stocks.

Killer Whales

The AKSRG took note that NMFS is currently reviewing new genetic information on resident killer whales in Alaska that might indicate the current stock structure of killer whales in Alaska needs to be reassessed. **The AKSRG requests an update on new genetic work associated with killer whale stock structure as this work develops.**

Upon reviewing the current SAR for the ENP Alaska Resident stock, the AKSRG acknowledged the efforts made to use the best available information and to synthesize abundance data from a large number of sources (line-transect surveys, photo-identification catalogues and mark-recaptures analyses) covering different time periods and spatial areas. While recognizing the challenges of monitoring a large and wide-ranging population of killer whales, the AKSRG noted that there were issues with using catalogue tallies of unique individuals as minimum counts when those counts are taken over multiple years (e.g., 2001-2012 for Aleutian Islands and Bering Sea, 2005-2019 for Gulf of Alaska). Catalogue totals could overestimate the number of living individuals if evidence of deaths is lacking, are often based on unpublished or non peer-reviewed sources, and do not have any measure of uncertainty associated with them. Although these concerns are partially alleviated when there is evidence that the population is growing, killer whale populations are known to be vulnerable to the loss of key individuals and disruptions in social structure. **Therefore, the AKSRG encourages the assessment of an updated abundance estimate for the full population using relevant modelling approaches.**

Bowhead Whales

The AKSRG will be reviewing the Bowhead whale SAR again in 2023 due to an additional population estimate from dedicated aerial surveys. **The AKSRG therefore requests a presentation on the aerial survey estimates that were noted in the SAR but not presented, as well as what NMFS' rationale will be for using the ice-based census versus the aerial survey data.** The AKSRG also highlights the commencement of year-round commercial shipping in the northern Bering Sea and through Bering Strait in winter which has the potential to impact bowhead whales in core use habitat both via noise, but more critically, through the increased likelihood of ship strikes.

Humpback Whales

The AKSRG applauds NMFS for releasing five updated draft humpback whale SARs in 2022. The revised Western North Pacific (WNP) humpback whale SAR M&SI estimation exceeds the PBR for this stock, and this overage is largely driven by Japanese and Korea bycatch. International take data for this transboundary Endangered stock is critical for a meaningful comparison against PBR; however, there is no uncertainty associated with the international M&SI estimates, and per conversations during the SAR review, the data from Japan in recent years in particular may represent false zeros. **The AKSRG therefore recommends NMFS discuss international take data uncertainty in more detail in future WNP humpback whale SARs, and/or if the uncertainty around these international data increases, the AKSRG recommends considering alternative methods for estimating M&SI for this transboundary stock in subsequent years.**

The AKSRG also encourages NMFS and MML to conduct genetic relatedness analyses on humpback whales within and between DIPs to confirm philopatry when feasible.

Potential Biological Removal and Sustainable Removals

The AKSRG recognizes that the PBR method to calculate mortality limits for marine mammals reflects management objectives and risk tolerances that seek to minimize unwanted mortality (e.g., resulting from bycatch) and ensure that stocks remain within their Optimum Sustainable Population (OSP) range. PBR is not necessarily an appropriate mortality limit for other types of removals, and in some cases PBR is considerably lower than the level of removals that would be considered sustainable for subsistence harvest (e.g., polar bears in the Chukchi Sea; Regehr et al. 2021). **The AKSRG recommends that, when available and applicable, NMFS and USFWS include "other relevant information" in the SARs about the sustainable level of removals.**

The consideration of “other relevant information” on sustainable removals is especially pertinent to the management of marine mammals in Alaska, because many stocks harvested by Alaska Natives have limited bycatch in commercial fisheries. A timely example of this is provided by management issues surrounding Eastern Bering Sea (EBS) beluga whales. During the 2022 AKSRG meeting, an update on the SAR for EBS stock beluga whales was received. As part of this update, the AKSRG was provided with a letter to NMFS drafted by the Alaska Beluga Whale Committee (ABWC):

In response to Section 119, NMFS and FWS have entered into cooperative agreements with Alaska Native Organizations to conserve marine mammals and provide co-management of subsistence use by Alaska Natives. FWS and NMFS believe that it is appropriate to develop management programs for stocks subject to subsistence harvests through the co-management process provided that commercial fisheries takes are not significant and that the process includes a sound research and management program to identify and address uncertainties concerning the status of these stocks. Calculations of PBR and classification as to whether a stock is strategic will be determined from the analysis of scientific and other relevant information discussed during the co-management process.”

Hence, it seems that management decisions related to PBR, such as the classification of stocks and harvest regulation, should address “other relevant information” when there is limited take by commercial fisheries. In contrast to this, during the 2022 AKSRG meeting, NMFS OPR staff stated that decisions for the classification of stocks will be based on “science alone” and that management decisions will be solely based on whether or not harvest exceeds PBR. **The AKSRG requests further clarification on this issue and, as stated above, would like to see NMFS consider all available and relevant information, not just the values of PBR and subsistence harvest.**

As part of the update on the SAR for EBS beluga whales, NMFS informed the AKSRG that they will seek input from co-management organizations prior to the adoption of SARs. **The AKSRG approves of this decision and requests that consultation with co-management organizations occur prior to the AKSRG review of the SARs, as this will ensure that the most up-to-date information is included in the SAR. For transparency, the AKSRG would also like to be informed as to how consultation altered the content of SARs under review. To improve communication and transparency in the process, the AKSRG also recommends that NMFS follow-up and consult with co-management organizations if the AKSRG recommends substantial revisions to a SAR during their annual review.**

[PACMAPPS/ARMAPPS](#)

The AKSRG appreciated receiving preliminary information about the recent PACMAPPS cruise in the Gulf of Alaska and is cognizant of the difficulties of planning and executing a cruise during a global pandemic and with limited ship time and multiple scientific priorities. **The AKSRG encourages MML to prioritize data analysis from this cruise as it may provide key new information for a number of SARs with limited abundance and distribution data.** The AKSRG is also interested in understanding how the double platforms were used during the cruise as this was not presented in 2022.

The AKSRG also recommends that MML develop a set of well-reviewed protocols that will serve over the next decade of surveying so that results can be comparable among regions and years. Having enough sea days to adequately cover the regions of interest and enough observers to allow time for off-effort identification of species, small boat operations when needed, and to account for weather systems in the region will maximize the use of limited resources. Developing protocols for handling common challenging situations (e.g., how to proceed when many whales are observed or when rare species such as right whales are sighted). NMFS should also consider pre-planning collaborations to maximize the value of data collection to establish priorities for sample and data collection and explore synergies for additional data collection (eDNA).

Research Priorities

NMFS requested that the AKSRG attempt to rank recommended research priorities for 2022-2023. The AKSRG suggests the following priorities, based on conservation need and the ability for management actions to alter population status and trajectory, in order of most important to least important:

1. Southeast Alaska harbor porpoise (see recommendations above).
2. Alaska Native Organization (ANO) / Co-Management consultation and collaboration: The Alaska region is a unique position and can leverage partnerships with ANOs, Tribal Governments and Co-Management Agencies to improve subsistence, life history, and distribution data quality for many marine mammal species in the Arctic and subarctic.
3. Improving methods to estimate marine mammal bycatch (see recommendations above).
4. The North Pacific right whale is in danger of extinction and data limited. Research on this Endangered population should be a top NMFS priority. The AKSRG requests that NMFS continue to identify specific actions: such as processing of existing acoustic data, maintenance of monitoring stations, and/or the development of novel Platforms of Opportunity, that could provide important data on Endangered North Pacific right whales in a cost-effective manner.
5. The AKSRG would like to see issues relating to the reclassification of EBS beluga whale stock be resolved in a manner that includes meaningful and transparent consultation with the Alaska Beluga Whale Committee and agrees with NMFS that more frequent surveys of this stock are necessary.

The AKSRG thanks NMFS, MML and USFWS for their continued attention to marine mammal stock status, research and conservation.

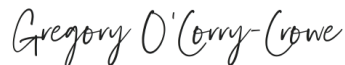
Respectfully,

Megan J. Williams



Co-Chair, Alaska Scientific Review Group

Gregory O'Corry-Crowe



Co-Chair, Alaska Scientific Review Group