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Co-management of Marine Mammals in Alaska: A Case Study-Based Review

July 2019

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Co-management of Marine Mammals in Alaska: A Case Study-Based Review

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Marine Mammal Commission
An Independent Agency of the U.S. Government

Our mission is to provide independent, science-based oversight of domestic and international policies and actions of federal agencies addressing human impacts on marine mammals and their ecosystems.

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EXECUTIVE SUMMARY

Co-management of subsistence use of marine mammals in Alaska is a key provision of the Marine Mammal Protection Act (MMPA). Under authority of Section 119 of the MMPA, the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) may enter into cooperative agreements with Alaska Native organizations (ANOs) to conserve marine mammals and provide co-management of subsistence use by Alaska Natives. Of the agreements established under Section 119, some have been more effective than others, and there is general agreement that co-management relationships can be improved.

The Marine Mammal Commission (MMC) undertook this review in response to concerns MMC heard from ANOs, NMFS, and FWS that the co-management process continues to experience serious challenges, despite a similar review MMC completed in 2008. The goal of this review was to strengthen co-management relationships and support co-management to improve the conservation of marine mammals in a region where they are of critical cultural, ecological, social, nutritional, and economic importance. The objectives of the review were to:

Co-management Review Steering Committee members and Co-PIs (L to R): Jon Kurland, Vera Metcalf, Billy Adams, Lauren Divine, Jenna Malek, Vicki Cornish, Taqulik Hepa, and Patrick Lemons; absent are Peggy Osterback and Pamela Lestenkoff (Photo by Mike Miller, IPCoMM)

- Develop a "working" definition of co-management[1],
- Identify important characteristics of, and major impediments to, effective co-management through:
  - a review of selected co-management and cooperative agreements, and
  - discussions with federal agency and Alaska Native co-management partners and community members, and
- Provide recommendations for improving co-management relationships that account for the constraints on available resources, including funding[2].

With the help of a Steering Committee comprised of ANO representatives and federal resource managers with co-management experience, we developed a working definition of co-management as a first step, given the lack of a formal definition in the statute and inconsistencies in how co-management partners appeared to view what was meant by co-management. The Steering Committee agreed, however, that the definition should be used primarily for the purpose

[1] Co-management is referenced in Section 119 of the MMPA but is not defined.

[2] The original objectives of the review also included the development of guidelines to aid in the creation of improved or new cooperative agreements. However, this objective was subsequently removed from the review as it was deemed redundant with the final recommendations and suggested action items.

of the review, with broader use beyond the review to be determined by the individual ANOs and federal agencies as appropriate.

The Steering Committee also helped us to select three 'case study' ANOs that currently hold Section 119 agreements for review: the Aleut Marine Mammal Commission, the Aleut Community of St Paul Island, and the Eskimo Walrus Commission. The case study approach was used given the large number of ANOs in Alaska and the limited timeframe and funding available for the review. In an effort to address the diverse nature of marine mammal co-management in Alaska, the three case studies were selected to reflect diversity in terms of geographic regions covered, the number of communities represented, the number of marine mammal species co-managed, and the federal agency partner (NMFS or FWS).

We conducted interviews with 16 federal agency staff, 10 current and former ANO members[3] involved in at least one of the case study agreements, and focus groups with 44 participants in seven coastal communities that were members of one or more of the selected case study agreements (north to south: Utqiaġvik, Nome, Gambell, Savoonga, St. Paul Island, Atka, and Akutan). Findings based on the interviews and focus groups fell into seven overarching categories: key elements of co-management; partner roles and expectations; communication; organizational structure and accountability; leadership training and transitioning; agency practices and decision-making processes; and challenges of subsistence hunting and harvesting and the future of co-management. We also heard that limited funding can be an impediment to effectively carrying out co-management responsibilities, particularly for ANOs.

Based on our findings, and in coordination with our Steering Committee, we developed the following recommendations (main bullets) and action items[4] (sub-bullets) that federal agencies, ANOs, and communities/marine mammal resource users can take to strengthen co-management. Recognizing that sufficient funding is important for successful co-management, but also understanding that funding levels are unlikely to improve in the near future, we focused our recommendations on issues that can be addressed using the resources currently available to co-management partners. Additionally, due to our case-study approach, our findings may not be reflective of all ANOs and not all recommendations and corresponding actions will be appropriate for all groups.

- Co-management partners should clearly define and mutually agree upon their respective roles, responsibilities, and accountability mechanisms, and should be more transparent regarding partner limitations, through actions such as:
    - Federal agency and ANO leadership specifying the roles, responsibilities, goals, and expectations of all co-management staff and participants, and including this information in revisions to co-management agreements
    - Federal agencies outlining major decision-making processes (e.g., ESA listings) and any limitations for including ANO perspectives (e.g., indigenous knowledge) in decision-making

[3] ANO members, for the purposes of this report, refer to ANO board members, tribally-appointed representatives, Commissioners, and staff.
[4] The complete suite of suggested actions can be found in the Discussion section.

- Communities/resource users working with ANOs to understand the roles and responsibilities of ANO members, and helping hold members accountable for fulfilling their responsibilities

- Co-management partners and stakeholders should work cooperatively to strengthen communication, trust, and respect within and among partners, through actions such as:
  - Federal agency and ANO partners participating in cross-cultural awareness and communication training to help strengthen partner relationships and share expectations
  - Properly training and providing experience for federal agency field staff to communicate and collaborate with Alaska Native groups
  - Federal agency staff coordinating with ANOs to understand preferred timing, formats, and mechanisms for communicating with different communities
  - Federal agency staff spending more time working in communities to enhance communication, trust, and respect with ANO members and resource users
  - Federal agency decision-makers being fully informed of co-management activities and concerns, and regularly engaging with ANO members and other community representatives
  - ANOs stating expectations for timely and effective communication between ANO members and their communities
  - ANOs informing communities of the communication responsibilities of their ANO members to enlist the help of communities in holding members accountable for timely and sufficient communication
  - ANO leadership ensuring that newly elected community leaders are informed about ANO missions and the expectations of appointed community representatives
  - Communities coordinating with ANOs on the preferred method of communication for sharing co-management information

- New generations of Alaska Natives and new federal agency staff should be exposed to and provided opportunities to engage in a range of co-management activities, through actions such as:
  - Federal agency and ANO partners forming a joint working group to identify and explore opportunities for training youth in skills related to co-management and leadership
  - Federal agency and ANO partners creating internal job shadow and volunteer opportunities, and promoting youth and new staff participation in these and other opportunities
  - Federal agencies and ANOs developing co-management history, curriculum, and training tools for use by both new ANO leadership and federal agency staff
  - ANOs pursuing funding for Alaska Native youth involvement in co-management related activities, such as internships and fellowships, through their yearly co-management funding requests and non-federal funding opportunities (e.g., grants from foundations)
  - Communities supporting Alaska Native youth involvement in opportunities related to co-management and leadership

- The effectiveness and efficiency of co-management (ANO) structures should be assessed and alternative structural models should be considered as appropriate, through actions such as:

- Federal agencies investigating how alternative structural models would affect co-management partner relationships
- ANOs working together to consider the overall structure of co-management, how well it promotes shared goals, and how it may be improved
- ANOs and agencies working to explore how different structures may affect their co-management relationship

In early 2019, we traveled back to most of the participating communities[5] and also met with federal agency staff to share the review findings and recommendations and gather feedback that was incorporated into this report. Returning to the communities and agencies was an important step in making sure Alaska Native community members, ANOs, and agency staff were informed of the final outcomes of the study and able to see how their input was incorporated into the report.

Our approach to identifying the key elements and major impediments to co-management involved working with all parties—federal agency partners, ANOs, and marine mammal hunters/harvesters and resource users in coastal communities. That integrated approach would not have been possible without the guidance and support of our Steering Committee members and advisors, who also helped ensure that the review was conducted thoughtfully and respectfully. We would also like to thank the review participants for meeting with us and sharing their experiences and perspectives on co-management. MMC is willing to facilitate further discussions, as appropriate, regarding how the findings and recommendations from this report can used by ANOs, agencies, and communities to continue to enhance co-management and conservation of marine mammals in Alaska.

[5] We were not able to return to the Aleut Community of St. Paul Island.

INTRODUCTION

Overview of MMPA Alaska Native Exemption and Section 119

Marine mammals have long been an important part of Alaska Native subsistence and culture. Recognizing this, Congress provided an exemption for Alaska Natives in the Marine Mammal Protection Act (MMPA) of 1972. Specifically, Section 101(b) of the MMPA allows Alaska Natives to take of marine mammals for purposes of subsistence or creating and selling authentic native articles of handicrafts and clothing, provided that take is not accomplished in a wasteful manner. When necessary, restrictions may be placed on the taking of marine mammals, but only for species or stocks[6] that have been determined to be depleted under the MMPA[7] by the National Marine Fisheries Service (NMFS; for whales, dolphins, seals, and sea lions) or the U.S. Fish and Wildlife Service (FWS; for walruses, polar bears, and sea otters).

Co-management of marine mammals in Alaska is a key provision of the MMPA. In 1994, the MMPA was amended to add Section 119, giving explicit authority to NMFS and FWS to enter into cooperative agreements with Alaska Native Organizations (ANOs) to conserve marine mammals and provide co-management of subsistence use by Alaska Natives. Cooperative agreements under Section 119 may include the following activities, among others:

PI Jenna Malek and Steering Committee member Lauren Divine at a sea lion blind on St. Paul Island (Photo by Mike Levine, Ocean Conservancy)

- Collecting and analyzing data on marine mammal populations;
- Monitoring the subsistence harvest of marine mammals;
- Participating in marine mammal research conducted by federal and state governments, academic institutions, and private organizations; and,
- Developing co-management structures with federal and state agencies.

There are currently nine ANOs that have active co-management or cooperative agreements with either NMFS or FWS[8] (see Table 1a). Two other ANOs are currently engaged in co-management

[6] The MMPA defines a stock as a group of individuals "of the same species or smaller taxa in a common spatial arrangement that interbreed when mature."

[7] Depleted species are those that have been determined to be below their optimum sustainable level or are listed as endangered or threatened under the Endangered Species Act.

[8] Section 119 agreements differ between NMFS and FWS: NMFS establishes co-management agreements that outline the terms of the partnership and uses cooperative agreements as funding mechanisms for the co-management agreements. FWS has historically established cooperative agreements with ANO partners, this process is currently in transition.

activities but do not have a formal agreement (Table 1b) and several other ANOs have previously had Section 119 agreements but are no longer active (Table 1c). The establishment of several ANOs and the development of co-management agreements between some ANOs and federal agencies pre-date the enactment of Section 119 (Huntington 1992, Adams et al. 1993). However, Section 119 provided a formal, statutorily-based structure for incorporating the knowledge, skills, and perspectives of Alaska Natives into the research and management of subsistence harvests. Section 119 also initially authorized dedicated funding for co-management activities, though the means of funding co-management has evolved since enactment of the 1994 amendments to the MMPA.

History of Marine Mammal Commission Involvement in Review of Co-management

In 2008, the Marine Mammal Commission (MMC) conducted a workshop in Anchorage, Alaska, to assess progress in co-management since enactment of Section 119 in 1994 (MMC 2008). At that time, ten cooperative agreements had been established between NMFS or FWS and ANOs, covering twelve marine mammal species. The agreements reflected a diversity of approaches to co-management: regional versus species-based, single species versus multiple species managed, and single tribe/village versus multiple tribes/regions.

The 2008 review identified four major themes critical to effective co-management of marine mammals: trust between partners, the need for ANO capacity building, the need for funding and accountability, and the recognition that Alaska Native subsistence culture faces enormous threats from climate change. MMC made several recommendations for ANOs and federal agency partners to aid in continued efforts to develop more effective co-management partnerships. A summary of the recommendations is as follows (see MMC (2008) for full text):

- Funding: ANOs and their federal agency partners should collaborate on joint co-management funding proposals that promote capacity building, prioritize co-management tasks, justify the budget required to support all co-management functions and activities, and outline co-management objectives and measures of accountability.
- IPCoMM Review: The Indigenous People's Council for Marine Mammals (IPCoMM) should review its bylaws and operating procedures, focusing on mechanisms that ensure that all ANOs are treated equitably and fairly, and that all IPCoMM activities are conducted in a transparent and unbiased manner.
- Conflict Resolution: ANOs and their federal agency partners should develop detailed protocols and timelines designed to ensure effective and timely conflict resolution.
- Harvest Monitoring: NMFS and FWS should work with their ANO partners and the Alaska Department of Fish and Game (ADF&G) Divisions of Subsistence and Wildlife Conservation to identify potential biases in monitoring strategies, and develop and implement methods for correcting and reducing these biases.
- Statutory Authority for Managing Harvests: ANOs, IPCoMM, and federal agency partners should continue to advocate for amendments to the MMPA that would authorize co-management partners to adopt enforceable harvest limits prior to a species or stock becoming depleted.

- Research Collaboration: ANOs and agency partners should establish research plans that identify priorities, responsibilities of the parties, and the resources required for conducting the research.
- Education and Outreach: ANOs and their federal agency partners should continue to develop education and outreach projects related to subsistence, Traditional Ecological Knowledge (TEK), and co-management, focusing on youth from grade school through college, hunters, their communities, scientists, and the general public.
- Traditional Ecological Knowledge: ANOs and their federal agency partners should continue to infuse TEK into all aspects of co-management (e.g., harvest monitoring, research, education and outreach), as appropriate.
- Climate Change and Other Future Threats: ANOs and their federal agency partners should seek ways to anticipate the possible consequences of climate change on Alaska Native subsistence cultures and consider possible actions to manage those effects.

Unfortunately, for various reasons, MMC's recommendations were only partially implemented.

At about the same time, there was an increase in oil and gas exploration and other federally-permitted activities being conducted in the U.S. Arctic. This led to increasing demands on tribal entities to review the impacts of those activities on marine mammals and subsistence hunting. MMC convened a meeting in Anchorage in December 2012 to determine whether lessons learned from co-management could enhance the federal government-to-tribal government consultation process[9] in Alaska. Participants included representatives of various federal agencies, ANOs, other Alaska Native tribal members, and public and private stakeholders. Several meeting participants suggested that Alaska Native communities take initial responsibility for developing guidance on how the tribes would like federal agencies to conduct consultations related to actions that may affect marine mammals. In 2014, MMC contracted with the Environmental Law Institute (ELI) to develop model procedures for government-to-government consultations with Alaska Native tribes. ELI convened an advisory group with members from IPCoMM, other ANOs, and individuals with expertise in marine mammal consultation and co-management to help develop draft consultation procedures, drawing on the experiences and lessons learned from marine mammal co-management and cooperative agreements. ELI issued a final handbook outlining model consultation procedures in January 2016 (ELI 2016) and made it available to all coastal Alaska Native tribes.

In February 2016, MMC held a series of Alaska listening sessions in Barrow (now Utqiaġvik), Kotzebue, and Nome, with a wrap-up session in Anchorage. The listening sessions enabled MMC to hear directly from people living in each of these communities and surrounding villages about the environmental changes they were seeing or had seen, changes in the availability of marine mammals for subsistence and handicraft purposes, and other general concerns regarding marine mammals (i.e., health, management, etc.). A central concern expressed by these communities was the need for improved consultation and communication between Alaska Native communities and federal agencies on actions affecting subsistence and cultural uses of marine mammals. Other concerns focused on the tenuous nature of some of the relationships between

[9] Executive Order 13175 directs federal agencies to consult with American Indian and Alaska Native tribes on policies, regulations, legislation, and other actions that may have tribal implications. That includes actions affecting not only marine mammals but all other tribal resources.

ANOs and federal agency co-management partners, and the inadequacy of available funding for fulfilling the terms of cooperative agreements under Section 119. Based on what MMC heard at the listening sessions and subsequent discussions with IPCoMM, it was clear that some relationships between co-management partners had become strained, resulting in dissatisfaction with the co-management process and frustration over a lack of adequate funding and other resources for implementing cooperative agreements. To help address these concerns, IPCoMM recommended that MMC, in coordination with relevant ANO and federal agency co-management partners, facilitate a new review of marine mammal co-management. In May of 2016, a subset of IPCoMM members volunteered to serve on a committee to start defining the terms of reference for a co-management review.

A harbor seal resting on the ice (Photo by Wild at Art, Shutterstock)

The recommendation for a review of co-management was reiterated to MMC at the Fall 2016 IPCoMM Board of Director's meeting after FWS determined that it could no longer provide funding to the Alaska Nanuuq Commission (ANC; at that time the ANC was the ANO focused on polar bears), and in light of the overall condition of co-management relationships between ANOs and their partner federal agencies. Participants at the meeting noted that differences in how various entities define co-management illustrated inconsistencies between, and even within, the various co-management partners represented at the meeting. MMC agreed that a review that defines co-management, evaluates current co-management relationships, and identifies important characteristics of and impediments to effective co-management (within the constraints of available resources) would be beneficial to all parties involved in Section 119 agreements. In response to the feedback from the 2016 listening sessions and the recommendation from IPCoMM to conduct another review of co-management, MMC applied for and received a grant from the North Pacific Research Board (NPRB) in 2017 to conduct the review[10].

Upon receipt of the funding, we assembled a Steering Committee of ANO and federal agency representatives who shared their co-management expertise and provided guidance on various aspects of the review.

Goals and Objectives

The goal of this review was to strengthen co-management relationships and support co-management to improve the conservation of marine mammals in a region where they are of critical cultural, ecological, social, nutritional, and economic importance. The objectives of the review were to:

[10] The review was led by Dr. Malek while under contract to MMC.

- Develop a "working" definition of co-management[11]
- Identify important characteristics of, and major impediments to, effective co-management through:
  - a review of selected co-management and cooperative agreements, and
  - discussions with federal agency and Alaska Native co-management partners and community members, and
- Provide recommendations for improving co-management relationships that account for the constraints on available resources, including funding[12].

[11] Co-management is referenced in Section 119 of the MMPA but is not defined.

[12] The original objectives of the review also included the development of guidelines to aid in the creation of improved or new cooperative agreements. However, this objective was subsequently removed from the review as it was deemed redundant with the final recommendations and suggested action items.

Table 1a. List of ANOs that have active Section 119 agreements with either NMFS or FWS.

ANO	Species	Status[13]	Year ANO Est.	Mission	Structure	# of Member Villages	Federal Co-Management Partner	Year agreement established	Most recent amendments	Funding Received[14]
Alaska Beluga Whale Committee (ABWC)	Beluga whale	Not depleted (MMPA)	1988	Maintain a healthy beluga whale resource for subsistence use and public enjoyment by future generations	Hunters, scientists, agency represent-atives, etc.	40	NMFS	2000	2000	NMFS: $3,304,060 (2000-2017)
Alaska Eskimo Whaling Commission (AEWC)	Bowhead whale	Endangered (ESA)	1977	To safeguard the bowhead whale and its habitat and to support the whaling activities and culture of its member communities.	Chair, vice-chair, secretary, treasurer, one representative per whaling village	11	NMFS	Began co-managing in 1981; first Sec 119 Agreement in 1998	2016	NMFS: $9,831,846 (2000-2017)
Aleut Marine Mammal Commission (AMMC)	Harbor seal Steller sea lion	Not depleted (MMPA) Western stock: Endangered (ESA)	1997	To encourage and implement self-protection and self-regulation of marine mammal use by coastal Alaska Natives who utilize this resource	Executive Director, Chair, Vice Chair, Secretary/Treas urer, eleven Commissioners	11	NMFS	2006	NA	NMFS: $2,781,529 (2000-2017)
Aleut Community of St. Paul Island (ACSPI)	Northern fur seal Steller sea lion Harbor seals	Depleted (MMPA) Western stock: Endangered (ESA) Not depleted (MMPA)	1950	Ataqan Akun. To ensure the optimal quality of life for all Tribal members and never forget where we have come from.	Co-manage-ment council: three represent-atives from ACSPI and three from NMFS	1	NMFS	2000	In progress	NMFS: $2,240,061 (2002-2017)

[13] Stocks deemed threatened or endangered under the ESA are also, by default, depleted under the MMPA. However, not all stocks designated as depleted under the MMPA are listed as threatened or endangered under the ESA.

[14] Funding amounts are based on information provided by NMFS for 2000-2017, and FWS for 1998-2016. Some ANOs (e.g., AEWC) have been receiving funding for longer periods of time but it was not designated as Section 119 funding, so the actual amount provided during the entirety of the partnership may be higher for some organizations.

Table 1a. (Cont.) List of ANOs that have active Section 119 agreements with either NMFS or FWS.

ANO	Species	Status	Year ANO Est.	Mission	Structure	# of Member Villages	Federal Co-Management Partner	Year agreement established	Most recent amendments	Funding Received
Eskimo Walrus Commission (EWC)	Pacific walrus	Not depleted (MMPA)	1978	Encourage self-regulation of walrus hunting and management of walrus stock by Alaska Natives who use and need walrus to survive.	Executive Director, Chair, Vice Chair, Board Seats A-C	19	FWS	1997	NA	FWS: $3,914,956 (1998-2016)
Qayassiq Walrus Commission (QWC)	Pacific walrus	Not depleted (MMPA)	1995	To oversee walrus harvest activities for the Bristol Bay area	Village commissioners, Hunt Captains	9	FWS	2011	NA	FWS: $93,743 (2011-2013, 2018)
Ice Seal Committee (ISC)	Bearded seal Spotted seal Ringed seal Ribbon seal	Threatened (ESA) Not depleted (MMPA) Threatened (ESA) Not depleted (MMPA)	2004	To preserve and enhance the marine resources of ice seals including the habitat; to protect and enhance Alaska Native culture, traditions, and especially activities associated with subsistence uses of ice seals; and to undertake education and research related to ice seals.	Executive Manager, Chair, Co-Chair, Secretary/ Treasurer, Co-management Committee	5 Regions with 2 represent atives per region, 118 comm-unities repre-sented	NMFS	2006	NA	NMFS: $944,291 (2006-2017)
Traditional Council of St. George Island (TCSGI)	Northern fur seal Steller sea lion	Depleted (MMPA) Western stock: Endangered (ESA)	NA	NA	Co-manage-ment council: three represent-atives from the Traditional Council of St. George Island and three from NMFS	1	NMFS	2001	NA	NMFS: $1,241,102 (2002-2017)

Table 1a. (Cont.) List of ANOs that have active Section 119 agreements with either NMFS or FWS.

ANO	Species	Status	Year ANO Est.	Mission	Structure	# of Member Villages	Federal Co-Management Partner	Year agreement established	Most recent amendments	Funding Received
Alaska Nannut Co-Management Council (ANCC)	Polar bear	Threatened (ESA)	2017	To respect, conserve, and manage polar bears while protecting the hunt and traditional uses of polar bears and their habitat based on Indigenous Knowledge and appropriate scientific principles.	Executive Director, Chair, Vice Chair, Secretary, Treasurer, At-Large Executive Committee member	15	FWS	In progress	NA	FWS: $915,000[15]
Indigenous People's Council for Marine Mammals (IPCoMM)	All Alaska marine mammal species	NA	1992	To bring marine mammal ANOs together to discuss issues of common concern regarding marine mammal conservation and subsistence	Executive Director, Chair, Vice Chair, Secretary/ Treasurer, 3 additional Executive Committee members	17 mem-bers[16], one observer	NMFS, FWS	1997	2006	FWS: Unknown NMFS: $1,563,191 (2010-2017)

[15] Funding provided from 2017 to present, as the ANCC was newly formed in November of 2017.
[16] Members of IPCoMM are ANOs, not individual communities.

Table 1b. List of ANOs that conduct co-management activities without a Section 119 agreement.

ANO	Species	Status	Year ANO Est.	Mission	Structure	# of Member Villages	Federal Co-Management Partner	Year agreement established	Year agreement ended	Total Funding Received
The Alaska Sea Otter and Sea Lion Commission (TASSC)	Northern sea otter Steller sea lion	Southwest stock: Threatened (ESA) Western stock: Endangered (ESA)	Sea otters in 1988 Steller sea lions added in 1998	Develop and protect Alaska Natives' rights in Sea otter and Steller sea lion customary and traditional uses through co-management, conservation, research, education and artistic development.	Executive Director, Chair, Vice Chair, Secretary, Treasurer, six commissioners (as of Aug 2018)	5 regions	FWS NMFS (no formal Sec 119 agreement)	1998 (for sea otters) NA	2008 NA	FWS: Unknown NMFS (earmarks and subrecipient): $1,131,004 (2008-2009, 2013-2017)
Bristol Bay Marine Mammal Council (BBMMC)	All regional species	Species-dependent	1995	To promote the conservation of marine mammal populations in the Bristol Bay marine ecosystem for subsistence use by tribal members	Executive Council: one member from each of the five Bristol Bay sub-regions and two at-large members	23	NA	No Sec 119 agreement; Subrecip-ient of grants to ANHSC and IPCoMM	NA	NMFS: (earmarks and subrecipients): $858,818 (2000-2017)
Sitka Marine Mammal Commission (SMMC)	Harbor seal	Not depleted (MMPA)	NA	Protecting Sitka's Marine Mammals and the Traditional Usage Rights of Tribal Citizens	Unknown	1	NA	No Sec 119 agreement; Previous subrecip-ient of grant to IPCoMM	NA	NMFS: $77,933 (2011-2012)
Native Village of Tyonek	Cook Inlet beluga whale	Endangered (ESA)	NA	To provide quality services and leadership with honor, commitment, and respect; empowering our people by encouraging traditional values and independence to ensure a healthier future for our children.	Unknown	1	NA	No Sec 119 agreement; Previous subrecip-ient of grant to IPCoMM	NA	NMFS: $14,209 (2014)

Table 1c. List of ANOs that have previously had Section 119 agreements but are no longer active**.**

ANO	Species	Status	Year ANO Est.	Mission	Structure	# of Member Villages	Federal Co-Management Partner	Year agreement established	Year agreement ended	Total Funding Received
Alaska Nannuq Commission (ANC)	Polar bear	Threatened (ESA)	1994	To ensure that Alaska Native hunters continue to have the opportunity to harvest polar bear through conservation, because when we lose the resources we hunt, we lose our cultures.	Executive Director, Chair, Vice Chair, Secretary/ Treasurer	15	FWS	1997	2016	FWS: $6,755,010 (1997-2014)
Alaska Native Harbor Seal Commission (ANHSC)	Harbor seal	NA	1995	To ensure that harbor seals remain an essential cultural, spiritual, and nutritional element of our traditional way of life, and to promote the health of harbor seals in order to carry forward the cultural, spiritual, and nutritional traditions of Alaska Natives.	Executive Director, Chair, Vice Chair, Secretary/ Treasurer	State-wide	NMFS	1999	TBD	NMFS: $5,300,990
Cook Inlet Marine Mammal Commission (CIMMC)	Cook Inlet beluga whale	Endangered (ESA)	1995	Unknown	Chair, Vice Chair, Secretary, Treasurer	8	NMFS	Yearly Agreements 2000, 2001, 2002, 2003, 2005, 2006	2012	NMFS: $108,448

METHODS

Steering Committee Structure and Membership

Steering Committee members and MMC Executive Director Peter Thomas in Anchorage, AK (Photo by Jenna Malek)

We assembled a Steering Committee comprised of ANO members and federal agency resource managers with extensive experience in marine mammal co-management to ensure that the perspectives of the relevant co-management parties were included in the design and execution of the review. The primary role of the Steering Committee was to advise on our suggested plans and methods for conducting the review. Representatives from NMFS and FWS were included as the two federal agencies authorized under Section 119 of the MMPA to enter into co-management agreements with ANOs[17]. In the selection of ANO members, we wanted to ensure that perspectives from around the state were represented to reflect the variety of species and ANO structures that occur in each region. Based on these criteria, we selected the following individuals to serve on the Steering Committee (in alphabetical order):

- Billy Adams – Chairman, Ice Seal Committee; active marine mammal hunter and resource user
- Lauren Divine – Director, Ecosystem Conservation Office, Aleut Community of St Paul Island (alternate for ACSPI)
- Taqulik Hepa – Director, North Slope Borough Department of Wildlife Management (NSB-DWM); Vice-Chair, IPCoMM; active marine mammal hunter and resource user
- Jon Kurland – Assistant Regional Administrator for Protected Resources, NMFS Alaska Region
- Patrick Lemons – Chief, Marine Mammals Management, FWS Alaska Region
- Pamela Lestenkof – Manager, Ecosystem Conservation Office, Aleut Community of St Paul Island; active marine mammal resource user
- Vera Metcalf – Executive Director, Eskimo Walrus Commission; Executive Committee member, IPCoMM; active marine mammal resource user
- Peggy Osterback – Executive Director, Aleut Marine Mammal Commission; Secretary/Treasurer, IPCoMM; active marine mammal resource user

We met with the Steering Committee in-person at three meetings in Anchorage, AK – the first in March 2018 to develop a draft definition of co-management for the review and help choose case

[17] Other federal and state agencies (e.g., Bureau of Ocean Energy Management, Alaska Department of Fish and Game, etc.) were not included because they do not have marine mammal co-management authority under the MMPA.

study agreements/ANOs and communities to visit; the second in November 2018 to review and discuss the draft findings and recommendations; and the third in March 2019 to discuss comments and feedback on the draft final report. Participation on the Steering Committee was voluntary and Alaska Native Steering Committee members located outside of Anchorage had travel costs reimbursed if requested. Additionally, Alaska Native Steering Committee members were offered an honorarium for each meeting ($150/day).

Development of Co-Management Definition

The first objective of the review was to define co-management consistent with the authorities in Section 119 of the MMPA. Defining co-management was important as a first step given the lack of a formal definition in the statute and inconsistencies in how co-management partners appeared to view what was meant by co-management. The Steering Committee agreed, however, that the definition should be used primarily for the purpose of the review, with broader use beyond the review to be determined by the individual ANOs and federal agencies as appropriate. A definition that had previously been drafted for consideration by IPCoMM was used as a starting point. Discussions regarding the definition focused on the extent to which ANOs were involved in broader decision-making regarding management of marine mammal resources and the importance of highlighting the conservation and sustainable subsistence use of marine mammals by Alaska Natives. After extensive conversation, the Steering Committee agreed to a "working definition" of co-management.

Participants refers to the individuals that were interviewed in the course of this review.

Parties refers to the three groups of participants engaged in the review – federal agencies (NMFS and FWS), ANOs (AMMC, ACSPI, EWC), and Alaska Native hunters/harvesters/resource users.

Partners refers to the federal agencies with marine mammal management responsibilities (NMFS and FWS) and the ANOs/Alaska Native tribes that have active marine mammal co-management or cooperative agreements under Section 119 of the MMPA (not all of which were involved in this review).

The working definition of co-management that the Steering Committee agreed upon is as follows:

"A partnership based on trust and respect, established between an Alaska Native Organization, as defined by the MMPA, and either NMFS or FWS, with shared responsibilities for the conservation of marine mammals and their sustainable subsistence use by Alaska Natives."

In the event that the MMPA is amended in the future and co-management is formally defined within the legislation, the Steering Committee recommended that Congress seek technical drafting assistance from all ANOs and both federal agencies to ensure that each party's perspective is appropriately represented in the definition, and in any other MMPA amendments pertaining to co-management.

Selection of Case Studies and Communities

We suggested to the Steering Committee that 3-4 ANO "case studies" be selected, given that the available budget and planned duration of the project would not allow us to review the experiences and perspectives of each of the numerous ANOs in depth. The use of specific ANOs as case studies was intended to guide the selection of communities for individual and focus group interviews with Alaska Native hunters and marine mammal resource users so that a diversity of perspectives on co-management would be represented in the review. The Steering Committee agreed with the suggested approach for selection of communities and recommended that the ANO case studies chosen for the review have active Section 119 agreements in place and be in good standing with the federal agency partners (see Table 1a). The Steering Committee also considered the following additional criteria in the selection of ANO case studies for the review:

- Region represented by the ANO: North Slope/Beaufort Sea, Northwest Arctic/Chukchi Sea, Bering Sea, Aleutian Islands, Gulf of Alaska, Southeast
- Number of marine mammal species co-managed by the partners: single vs. multiple
- Number of communities represented by the ANO: single vs. multiple
- Federal agency partner: NMFS, FWS

Hunter focus group participants in Nome, AK (Photo by Jenna Malek)

After considering these factors, as well as the logistical feasibility of arranging visits to communities in the various regions, the Steering Committee recommended the following ANOs be used as case studies for the review[18]:

- Aleut Marine Mammal Commission (AMMC): Aleutian Islands region; multiple species (harbor seals and Steller sea lions); co-management partner: NMFS; eleven communities represented
- Aleut Community of St Paul Island (ACSPI): Bering Sea region; multiple species (Northern fur seals and Steller sea lions); co-management partner: NMFS; one community represented
- Eskimo Walrus Commission (EWC): North Slope/Beaufort Sea, Northwest Arctic/Chukchi Sea, and Bering Sea regions; single species (walrus); co-management partner: FWS; nineteen communities represented

[18] The Alaska Eskimo Whaling Commission (AEWC) was initially recommended by the Steering Committee as a fourth case study due to its unique history, research and legal capacity, delegated enforcement authority, and role in establishing and complying with a harvest quota established at the international level by the International Whaling Commission (IWC). However, AEWC representatives were not available for interviews during the timeframe of the review and so AEWC was not included as a case study.

For each of the case studies, the Steering Committee identified the principal hunting/harvesting communities in which to conduct individual and focus group interviews. The selected communities are shown in Table 2 and described in Figure 1.

Table 2: List of seven communities (north to south) selected for interviews with Alaska Native hunters and resource users, the associated ANO case study affiliation, federal co-management partner, and rationale for inclusion in the review.

Community	**ANO**	**Federal Agency Partner**	**Rationale for Inclusion in the Review**
Utqiaġvik (formerly Barrow)	EWC	FWS	Utqiaġvik is a "hub" community on the North Slope that relies heavily on several marine mammal species for subsistence.
Gambell	EWC	FWS	Gambell is a northern Bering Sea community that relies heavily on walrus for subsistence, as well as bowhead whales and ice seals when available.
Savoonga	EWC	FWS	Savoonga is a northern Bering Sea community that relies heavily on walrus for subsistence, as well as bowhead whales and ice seals when available.
Nome	EWC	FWS	Nome is a hub community for the Bering Straits region that relies on walrus and ice seals for subsistence.
St. Paul Island	ACSPI	NMFS	St. Paul Island has a history of both commercial and subsistence harvest[19] of northern fur seals; the community also relies on Steller sea lions for subsistence.
Akutan	AMMC	NMFS	Akutan is in the central Aleutian Islands and still relies on marine mammals for subsistence but to a lesser extent than other communities.
Atka	AMMC	NMFS	Atka is the farthest west Aleutian Islands community that is part of AMMC and is more reliant on marine mammals for subsistence than other communities to the east. Atka is also in the process of initiating a harvest monitoring program as part of AMMC's co-management agreement with NMFS.

[19] Harvest refers to the taking of northern fur seals through remnant methods from the commercial harvest that consist of round-up, stunning and immediate exsanguination, as opposed to hunting with firearms. These practices are used by subsistence users today, but are not the traditional Unangan (Aleut) methods for hunting seals.

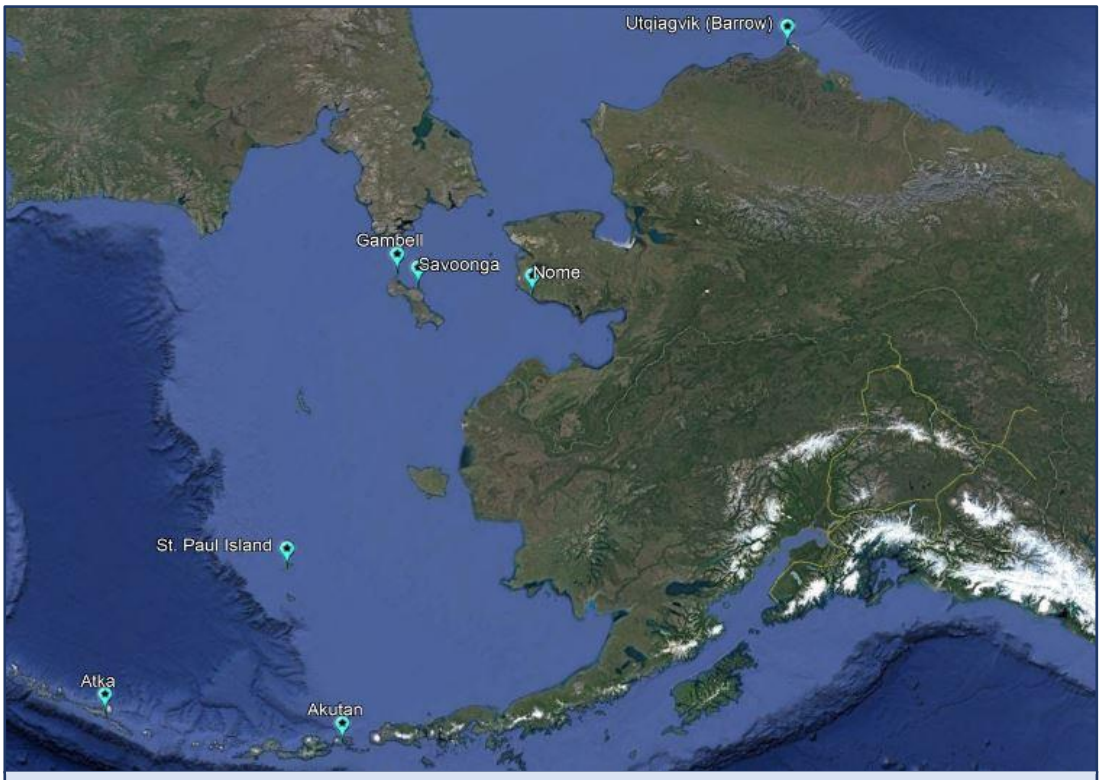

Figure 1. *Map of the seven communities where individual and focus group interviews with Alaska Native hunters and resource users were conducted (Map created with Google Maps)*

Steering Committee members offered to serve as local points of contact in the selected communities to aid in identifying individual and focus group participants, arranging meeting space and lodging, translation (as necessary), and outreach regarding the project, its objectives, and the dates of our visit. In several cases, Steering Committee members traveled with us to the selected communities to attend interviews.

Question Development

We worked with the Steering Committee to develop guiding questions for individual and focus group interviews with Alaska Native hunters, harvesters and resource users, ANO members[20], and agency representatives (see Appendices C-E). The questions were intended to gather both general and specific information on marine mammal subsistence use and to stimulate other comments regarding the effectiveness of co-management. We also reviewed methods used in other human dimension studies (Huntington 2000) and consulted social scientists experienced in working with subsistence communities. The specialists provided feedback on question structure and content, as well as insight on ideal focus group size, methods for analyzing information, and appropriate participant selection and compensation.

[20] ANO members included current and former staff, community representatives/Board members, and Executive Directors.

Institutional Review Board Process

Steering Committee member Vera Metcalf with members of the Savoonga Marine Mammal Advisory Council, St. Lawrence Island, AK (Photo by Jenna Malek)

At the recommendation of the Steering Committee, we submitted the proposed methodology, including all questions and participant-facing forms, to the University of Alaska Fairbanks' (UAF) Institutional Review Board (IRB)[21] for approval. The purpose of the IRB is to protect the rights and welfare of human subjects that participate in research activities through free, prior, and informed consent. Based on previous interactions involving Alaska Natives, scientists, and federal agencies, the Steering Committee cautioned that marine mammal hunters, harvesters, and resource users in some communities would be hesitant to participate in interviews without assurance that, if requested, their identities and responses would be anonymous. IRB approval of the conditions for participation helped to alleviate such concerns.

UAF routinely works with external (i.e., non-University affiliated) entities seeking IRB approval. Because of the qualitative nature of the review and its non-invasive interview methods, we requested an expedited IRB review. The IRB process required online training prior to conducting interviews, the submittal of all interview questions and forms for IRB review, and revisions to the questions based on comments received from the IRB to ensure that all questions and forms met IRB standards. The IRB advised that the PIs require all participants to read and complete two forms:

- An informed consent form (Appendix D) that provided a description of the study, the risks and benefits of taking part in the study, compensation for participation, the voluntary nature of the study, and contact information for the PIs and the UAF IRB. Upon signing, each participant received a copy of the form that was also signed by the lead PI.
- A release form (Appendix E) that provided consent to (1) audio record the interview/focus group discussion, (2) include any personally identifying information collected during the study, (3) take photographs of participants, and (4) use photographs and personally identifiable information as part of the review's public outreach materials. The release form also asked for the mailing address, email address, and telephone number for each interviewee, which was used to contact participants for subsequent review of a summary of the interview/focus group discussions.

[21] https://www.uaf.edu/irb/

Participant Selection

Community focus groups ranged from 3–10 people, with a total of 44 participants interviewed across all communities (Table 3). In St. Paul, Gambell, and Savoonga, we met with groups of marine mammal hunters, harvesters, and resource users which included the Tribal Council on St. Paul Island and the Marine Mammal Advisory Committees in Gambell and Savoonga. In Utqiaġvik and Nome, hunters were identified by the Steering Committee members from those communities. In Atka and Akutan, the lead PI and the local Steering Committee member held community meetings first to introduce the project and gauge interest and availability of possible participants. Focus groups were then scheduled for the following day and consisted of both hunters and resource users.

We interviewed 10 current and former ANO members, including ANO commissioners and board members, Executive Directors, and staff.

We also interviewed 16 federal agency staff, based on recommendations by the federal agency Steering Committee members. Interviewees included the Steering Committee members themselves as well as other staff with current and past involvement in co-management activities.

Table 3. Number of interviews conducted by affiliation (i.e., community-based hunters/resource users, ANO members, and federal agencies).

Affiliation	**# of individuals interviewed**
Alaska Native Communities:	
Utqiaġvik	3
Gambell	8
Savoonga	10
Nome	4
St. Paul	8
Atka	5
Akutan	6
ANO members:	
EWC	1
ACSPI	2
AMMC	1
Other	6
Agencies:	
NMFS	9
FWS	7
TOTAL	**70**

Interview Procedures

For focus groups, we asked participants to describe their use of marine mammals for subsistence purposes. From there, discussions tended to proceed organically and guiding questions were used as needed to pursue specific topics if they were not otherwise addressed.

For both ANO members and federal agency staff, most interviews were conducted in person with the remaining conducted by phone. As the questions for both groups were similar, interviews were conducted by going through the list of questions and discussing other topics as they arose. Focus groups and individual interviews were audio recorded if the participant(s) agreed. In all cases, we also took handwritten notes. The lead PI then summarized the discussions based on the audio recordings (where available) and handwritten notes. All participants had the opportunity to review the summary of their discussion/interview and provide comments or edits. Summaries were sent to interviewees as electronic copies via email or mailed as hard copies with a return envelope and a note with instructions. Participants had 2-3 weeks to return comments; communities with slow mail service were given longer to respond.

Development of Findings and Recommendations

Once all focus groups and interviews were completed and reviewed, we compiled the key points made by each of the parties interviewed and identified commonalities and themes. The findings were based on points that were made by several or all parties. In a few cases, points made by only one party were also included if they were recognized as significant, but the Steering Committee was not privy to the identity of the contributing participants.

We developed recommendations from the findings such that they reflected the major themes common across discussions with the parties. For each recommendation, we identified action items that would help increase the effectiveness of co-management, taking into account the capacity and limitations of each party.

Co-PIs Jenna Malek and Vicki Cornish with hunter focus group participants in Utqiaġvik, AK (Photo by NSB-DWM)

We recognize that as we did not conduct in depth interviews concerning all ANOs and all cooperative agreements that have been entered into under section 119 of the MMPA, our general conclusions in the findings and recommendations may not apply to each individual ANO or agreement.

Preparation of the Final Report

We presented the draft findings and recommendations to the Steering Committee for review prior to the November 2018 meeting. During the meeting, the drafts were discussed and modified based on feedback from Steering Committee members. We shared a draft final report that included the revised findings and recommendations with the Steering Committee in early March 2019 and a final group discussion took place during a half-day meeting later that month. We also

provided a revised draft of the final report to Steering Committee members for any last comments in April 2019.

The final report will be made available in both print and electronic form and distributed to participating communities, all ANOs, federal agencies, the Alaska Congressional delegation and staff, and the public through MMC's website. Additional outreach materials, including a project webpage and fact sheets, will also be available on MMC's website. We plan to prepare a manuscript summarizing the review for submission to a peer-reviewed journal, which will be made available on MMC's website once published.

Bringing Results Back to the Communities/ANOs/Agencies

Upon completion of the draft report in Spring 2019, we traveled back to the participating communities (as allowed by time and funding) and also had discussions with agency staff that were interviewed to share review results. Returning to the communities and agencies was an important step in making sure Alaska Native community members, ANOs, and agency staff were informed of the final outcomes of the study and able to see how their input was incorporated into the report.

We also briefed other ANOs on the project outcomes, including the Alaska Beluga Whale Committee (ABWC), the Alaska Eskimo Whaling Commission (AEWC), the Alaska Sea Otter and Steller Sea Lion Commission (TASSC (TBD)), the Ice Seal Committee, and the Alaska Nannut Co-management Council (ANCC). Additionally, we provided a summary of the project and its findings and recommendations at the 2019 Alaska Marine Science Symposium and IPCoMM's 2018 and 2019 Spring and 2018 Fall Board of Directors Meetings.

Input received at the follow-up briefings is included in the Discussion section.

FINDINGS

The findings of the co-management review, based on commonalities and themes from across participating parties, fell into seven categories:

- Key Elements of Effective Co-Management
- Partner Roles and Expectations
- Communication
- Organizational Structure and Accountability
- Leadership Training and Transitioning
- Agency Practices and Decision-Making Processes
- Challenges of Subsistence Use and the Future of Co-management

PI Jenna Malek with hunter focus group participants in Atka, AK (Photo by Steering Committee member Peggy Osterback)

For each category, we discuss the major finding (identified in *italics*), supporting context, and examples where appropriate. Because the findings were based on case studies representing a subset of ANOs and Alaska Native communities, they may not all be reflective of other marine mammal co-management relationships.

Key Elements of Effective Co-Management

Throughout the discussions, participants noted examples of where co-management was working well but also indicated there was room for improvement. The following are examples of what is needed for co-management to work well, and the resources that are needed to maintain effective co-management.

In some of the more long-standing co-management relationships, a certain degree of trust has been established between federal agency staff and ANO members. Such *trust has been established through strong communication between partners, integration of federal agency staff into communities, and development of mutually agreed upon explicit goals in which both partners have a vested interest*. *Trust in co-management relationships also stems from having sufficient resources to conduct co-management activities*. This is not limited to just having adequate funding, but also to having sufficient logistical and staff support from both partners to work cooperatively on the development of research initiatives, harvest monitoring, biosampling, and other co-management activities.

Though we focused on topics other than funding during interviews and focus groups, funding was touched upon during all conversations as a key resource needed for successful co-management. The current funding setup, with ANOs receiving money straight from the agencies, has led to the perception for many ANOs that the agency partner ‘manages’ and they (the ANOs)

'cooperate', with little inclusion of Alaska Native perspectives in the decision-making process. This has also led to tension between the partners over funding availability, with ANOs frequently dissatisfied with the level of federal co-management funding that is available. Multiple parties suggested that if funding was distributed through a third party (partially or in full), perhaps money-related tensions in the co-management relationship could be alleviated. Some ANOs receive outside support from non-federal sources, such as the North Slope Borough and Kawerak, while others establish collaborations with other entities and funders for research and outreach, such as tagging and harvest surveys. For example, the ACSPI Ecosystem Conservation Office partnered with Duke University (and NMFS) to conduct drone surveys of harbor seals on the Pribilof Islands, providing the first ever comprehensive estimates of this species in the Pribilofs. Similar efforts for external funding collaborations by all ANOs would be beneficial in the future as federal funding is expected to continue to decline.

In addition to having adequate resources from both partners, *co-management is more effective and successful when the ANO partner has support from the hunters and resource users in its community(ies)*. An example of this is EWC, which has active involvement and support of hunters and resource users in its member communities and strong logistical and staff support from Kawerak[22], a tribal consortium that provides a range of services to residents throughout the Bering Strait region.

Another aspect of co-management that some of the participants indicated was working well is the shared recognition between partners, and some resource users, that *co-management relationships are needed to conserve marine mammals and maintain sustainable populations that can be utilized by future generations of Alaska Natives*. Many of the participants described how Alaska Natives have been ensuring sustainable use of marine mammals since time immemorial and do not need help or interference from the federal government. However, there has been progress by all co-management parties (not limited specifically to case study groups) in gaining a better understanding of the shared goals of co-management and how to best achieve these goals.

The remainder of the findings focus on areas where there is room for improvement and the challenges facing co-management in the years to come.

Partner Roles and Expectations

During interviews and focus groups, participants were asked to describe the roles and expectations of the co-management partners. In many cases, focus group participants did not have a clear understanding of the responsibilities of an ANO. An even greater number of participants were unsure of the agency partner's role outside of law enforcement and funding. We also heard from some agency staff and ANO representatives that they were unclear about the role of their partner, and even what their own role was within the co-management relationship. Thus, we found that *roles and expectations for each partner are not clearly and explicitly defined, nor are they shared with each other*. Additionally, perhaps as a result of not clearly defining roles and expectations, agencies noted that there is *inadequate follow-through, sometimes by both partners, on action items developed during meetings*. Lack of follow-up can lead to frustration for ANOs and agencies.

[22] https://kawerak.org

Linked to the definition of roles and expectations, we found that *partners do not always have a clear understanding of each other's culture and organizational limitations*. There can be insufficient awareness on both sides – federal agencies are not always aware of Alaska Native culture (e.g., appropriate conduct during ANO/tribal meetings) and the capacity of ANOs to be responsive to expectations regarding co-management, and ANOs/Alaska Natives may not be aware of agency capacity (e.g., staff availability), budget constraints, research activities, decision-making processes (i.e., who makes what decisions regarding marine mammals), and limitations that agency staff face under federal laws and regulations. Such gaps in awareness have led to misunderstandings and miscommunications that have resulted in negative interactions between partners (see more in Communication section below).

Steller sea lions in Resurrection Bay, AK (Photo by Dominic Gentilcore via Shutterstock)

Almost all participants from the different parties commented that *individual personalities and/or actions can play a large role in the success (or failure) of co-management efforts*. One example that was raised repeatedly involved fiscal improprieties associated with specific ANOs. Other examples cited previous conflicts between Alaska Native hunters and agency law enforcement personnel. Personalities also affect the interest and willingness of partners to work together. From both the agency and ANO perspectives, *co-management is more successful when both partners have a vested interest in the process and are willing to work cooperatively together*. For instance, when there is limited capacity, willingness (e.g., due to family commitments), or funding for agency staff to travel to communities to work directly with hunters and resource users, this can greatly affect the success of key co-management activities, such as harvest monitoring and outreach.

The final finding in this subcategory was based on comments made by federal agency staff that both partners are reluctant to make difficult decisions or raise sensitive subjects that may result in conflict or disagreement between or within partner organizations. Hesitancy in making these types of decisions or raising these types of issues so they can be resolved can hinder progress. Thus, it is important that *both partners are able to initiate difficult conversations with each other and be forthcoming about issues that need to be resolved.* Having each partner share information about their internal organizational structures, processes, and conflicts can help the other partner understand how and why (or why not) decisions are made within each partner organization. Examples of such decisions include addressing personnel conflicts that may be impeding progress in a co-management relationship (e.g., ANO Commissioners that may not be relaying information to and from their community in a timely manner), staffing issues that are reducing capacity (e.g., someone not having the appropriate qualifications for their role), or changes in regulatory mechanisms, particularly with respect to enforcement.

Communication

A resounding message that we heard in every interview and focus group was insufficiency of clear and consistent communication between and amongst co-management parties across the state. Focus group participants in *several communities were not aware what co-management of marine mammals means and were unfamiliar with the ANO(s) associated with the species that they hunt*. Factors such as affiliation of the participant (Tribal Council member, former co-management member, etc.) or the legal status of a hunted species (e.g., threatened or endangered under the Endangered Species Act (ESA) vs. not listed) influenced whether participants were familiar with co-management actions associated with that species. When such factors do not apply, participants were not as knowledgeable about co-management. Lack of awareness is strongly linked to the finding that *information from meetings between partners is generally not being conveyed back to hunters, harvesters, and resource users*. In addition, many participants agreed that *communication between and amongst parties (within and outside of the case study groups) is infrequent and lacks transparency regarding the intent or purpose of certain actions, and what their implications may be for subsistence use*.

The ESA listing process was the most common example cited by ANO representatives and focus group participants to demonstrate a lack of transparency in communication from agencies. When a species is being considered for listing, we heard that information about the listing process, especially with respect to what it means for subsistence use of the species, is not clearly conveyed to the hunters. This can lead to wide-spread misunderstanding about the effect of an ESA listing on the communities that rely on that species. We also heard that there is a basic lack of understanding regarding which species can be harvested legally (e.g., gray whales and other large whales), especially in communities where those species do not typically occur (e.g., ringed seals or walruses in the Aleutian Islands or Steller sea lions in Utqiaġvik).

One factor that can affect the frequency and transparency of communication between partners is that *negative interactions in the past, even those outside of co-management activities, have led to mistrust between federal agencies and Alaska Natives (ANOs and communities). Prior negative interactions between partners have hindered, and are continuing to hinder, the effectiveness of co-management relationships*. For example, there were numerous stories from focus group participants of historical negative interactions with agency law enforcement officers that involved confiscation of marine mammal parts, violation of privacy, and, in some cases, imprisonment – actions perceived as a lack of respect and understanding of cultural practices. Participants from federal agencies, ANOs, and communities believed that *there is a lack of respect from members of the different parties across the state*, based on prior events and interactions, which further impacts effective communication. In order to improve interactions between parties, participants agreed that *partners need to be honest and respectful listeners and reporters*. If this occurs, then there is a higher likelihood of information being appropriately shared in a timely manner.

Communication is also hindered by technical and logistical factors. The remote communities we visited acknowledged that they are challenged by weak or unreliable radio reception, slow mail service, unreliable air transport, and poor or non-existent cellular phone and internet service. Such limitations make it difficult for partners to convey information to these communities in a timely manner and for communities to respond or reach out when necessary. Across all

communities, we heard that *"one size does not fit all" in terms of receiving and sending information and that more than one method of relaying information should be used*. We also found that *the best communication mechanism may differ by community and/or subsistence resource*. Suggested options for effectively communicating with communities include*: radio broadcasts, presentations at public meetings, newsletters, postings at public venues, and sharing information with tribal or corporation offices for broad distribution*. For face-to-face meetings and community visits, it was recommended that *partners coordinate with the communities through the tribal or corporation offices to ensure that the timing of these activities corresponds with the community schedule* (e.g., agencies should not plan a meeting during whaling or caribou seasons because hunters will not be available).

Northern fur seal at St. George Island, AK (Photo by Nick Pecker via Shutterstock)

As noted previously, trusting relationships are based on strong communication and frequent interactions between partners. Although part of the role of the ANOs is to serve as liaisons between agencies and communities, *limited time spent in the communities by agency staff can significantly affect communication, and hence trust, between partners.* We heard that there are misunderstandings as to why agency staff do not spend more time in communities to foster trusting relationships. From some of the ANOs and resource users, it was perceived that a lack of time on the ground indicated a lack of interest on the part of the agencies to engage with the communities. Conversely, the agencies described frustrations with funding and capacity (i.e., not being able to backfill vacant co-management staff positions and staff that are not willing or able to travel frequently or for long periods of time due to family constraints) as the factors limiting community engagement. These conflicting perceptions are the result of insufficient communication on all sides, and have led to a breakdown in trust between partners in co-management relationships.

A final factor that can influence the effectiveness of communication between all parties, regardless of federal agency, ANO, or community, is language itself. In many hunting communities, *English is not the primary language spoken by hunters and/or elders (and may not even be understood). Successful communication is therefore reliant upon accurate translation tools.* This was experienced first-hand by the lead PI during the initial visit to St. Lawrence Island where St. Lawrence Island Yupik is traditionally spoken. Most of the focus group participants were fluent in Yupik and it was only with the help of the Steering Committee liaison that interview questions could be asked and answered. Thus, when communicating with communities, *it is important to understand the audience in advance and be prepared to address language barriers by using translators, plain language materials, and having patience for the process.*

Organizational Structure and Accountability

Inadequate structure and accountability of partner organizations was another common theme heard from participants across parties. Partner capacity was identified as one of the biggest issues. Specifically, *staffing, capacity, and availability of both ANO representatives and agency staff are hindering effective co-management relationships*. As mentioned previously, agency staff have limited capacity and funding for travel to Alaska Native communities. Similarly, many ANOs do not have the capacity to conduct the outreach, harvest monitoring, research, and other related activities needed for effective co-management. These types of limitations are a source of frustration for parties around the state. To address capacity issues, some ANOs (including IPCoMM) are exploring opportunities for shared services.

Related to partner capacity is the issue of "burn-out" that can occur when ANO representatives and agency staff, because of their valuable expertise regarding subsistence use or co-management of different species, participate on numerous ANO (and other resource-based) boards. Burn-out can result in individuals being spread too thinly, which may affect their ability to fulfill their individual ANO or agency roles and responsibilities effectively. It was suggested that one way to address this might be to identify different *co-management/ANO structures that could help to mitigate excess meeting and travel demands on commissioners and federal agency staff alike.* Having regional ANOs that work on all relevant marine mammal species rather than species-specific ANOs, convening periodic region- or ecosystem-wide meetings, or expanding the issues discussed at semi-annual IPCoMM meetings were some of the ideas mentioned by participants. The suggested structural changes could provide increased conservation benefits (considering marine mammals as a piece of their environment, not in isolation) and could allow for more effective engagement and involvement in marine mammal co-management activities by both agency and Alaska Native partners as demands on individuals are reduced.

Currently, the organizational leadership of many ANOs includes an Executive Director, a Chair, and individual Commissioners and/or board members, though there are various other structures across all of the ANOs in Alaska (Table 1). Board members, in particular, are responsible for making organization decisions and are accountable, along with the Executive Director, for following through on these decisions. In recent years several ANOs have experienced substantial issues with fiscal accountability, leading to the loss of federal funding and in some cases, the disintegration of formal co-management relationships. Based on these experiences, participants from all parties interviewed recognize that in the current structure, *ANO board members do not receive sufficient training in board processes, roles, and responsibilities, nor are they sufficiently engaged in organizational oversight.* Thus, *strong fiscal accountability is needed from both partners and needs to be supported by the underlying co-management structure*. This is an ongoing challenge that should be addressed collaboratively by all partners.

Leadership Training and Transitioning

In addition to insufficient capacity within a number of ANOs and the federal agencies, as mentioned previously, leadership of these groups is aging or transitioning to other roles. We heard from ANO members that *leadership of ANOs is growing older and there is inadequate involvement and mentoring of younger generations, especially middle school age youth and above, to take over these roles*. All parties agreed that involving youth in biological and

environmental science programs or resource management activities is needed to ensure the participation of the next generation in co-management activities. Similarly, agencies are not always able to provide sufficient training for new co-management staff. When experienced and long-term ANO or agency staff move on, oftentimes *valuable historical knowledge of co-management agreements and relationships is lost, causing setbacks for partners in their relationship*.

Also noted but not explicitly discussed by participants was the need for more engagement by young adult Alaska Native hunters and resource users, in addition to youth. Many individuals have extensive experience in hunting/harvesting marine mammals and are familiar with co-management, but do not necessarily participate or serve as leaders in ANOs. In addition to grooming youth for future co-management participation, we found that *inclusion of this "middle generation" in co-management leadership could greatly benefit the transition of ANO leadership in the future.*

PI Jenna Malek and Steering Committee member Vera Metcalf giving an interview at KNOM in Nome, AK (photo by Davis Hovey, KNOM)

Unfortunately, there is *no straightforward process for succession of new leaders into co-management organizations or agency positions*. Younger members of Alaska Native communities may not be aware of co-management opportunities or may not have sufficient encouragement to pursue learning opportunities outside of the community. Likewise, students or staff in resource management and other fields are often not aware of the possibilities, or have the appropriate training, to pursue co-management roles within federal agencies. As with many other aspects of co-management, funding for training or shadowing positions and programs is limited or non-existent. Overall, it is challenging to attract interested and qualified candidates if there is no clear path beyond a given opportunity or an appropriate means of compensation. Until there are adequate opportunities and funding for succession training for both ANOs and agencies, there will be challenges in establishing new leaders in co-management.

Agency Practices and Decision-Making Processes

NMFS and FWS, as the federal agency partners charged with conservation and management of marine mammals, view and implement co-management differently. ANO members and some hunters noted that there are *fundamental differences in the way that the two agencies conduct co-management and develop, interpret, communicate, and enforce regulations. This can cause confusion and frustration for ANOs and Alaska Native hunters and resource users*. Co-

management itself is conducted very differently by the two agencies, such as the structure and type of agreement with ANO partners (cooperative vs. co-management agreements) and how the agreements are funded (i.e., the competitive grants process used by NMFS vs. the internal funding review process used by FWS). Legacy enforcement issues were also raised, with ANO members and hunters recounting stories of FWS enforcement that negatively impacted individuals and even entire communities (historical accounts of NMFS enforcement were also occasionally discussed[23]). In addition to frustration and confusion on the part of Alaska Natives about the differences between agencies, agency staff acknowledged that *there is not a clear understanding of how and under what circumstances certain management responsibilities, such as enforcement, can be delegated to ANOs or individual tribes*.

For example, the Alaska Eskimo Whaling Commission (AEWC) has management authority for bowhead whales, as outlined in its cooperative agreement with NMFS. That agreement authorizes AEWC to allocate a certain number of strikes to each whaling community and to enforce violations of the cooperative agreement. AEWC is the only ANO to date that has been delegated enforcement authority for the species it co-manages. Other ANOs (e.g., EWC) have expressed an interest in gaining similar authorities, in part because of the past history of severe enforcement actions taken against hunters in many communities. Though relationships between hunters and federal law enforcement have been improving, ANO representatives and hunters noted that the apparent success of AEWC's self-governance, coupled with the lingering negative associations with federal law enforcement, suggest that *self-governance and enforcement authority for co-management at the ANO or community level would be more successful and positively received than enforcement by federal agents.*

Indigenous Knowledge (IK): the understandings, skills, and philosophies developed by societies with long histories of interaction with their natural surroundings

Traditional Knowledge (TK): knowledge, innovations and practices of indigenous and local communities around the world

Traditional Ecological Knowledge (TEK): the evolving knowledge acquired by indigenous and local peoples over hundreds or thousands of years through direct contact with the environment

Sources: IK and TK (UNESCO); TEK (FWS)

In an effort to self-govern, Gambell and Savoonga have established tribal ordinances for walrus hunting. The ordinances limit hunters to four walruses per hunting trip and are implemented by a community-based Marine Mammal Advisory Committee (MMAC) and a tribal harvest monitor who reports violations to the MMAC as appropriate. Successful implementation of the ordinances is helping demonstrate to the EWC's co-management partner (FWS) that they are capable of self-regulating the harvest of walrus. Another substantial concern raised by all parties, particularly the co-management partners, was that *conclusions drawn from "western" science and marine mammal research activities are not sufficiently incorporating indigenous knowledge (IK) into agency management decisions*. This has been a concern for decades, stemming from the quota that was placed on bowhead whales by the IWC in the late 1970s that was subsequently determined to be based on inadequate science. In addition to regulations utilizing information

[23] The difference in historical accounts between FWS and NMFS enforcement depend on the communities that were included in the review and may not reflect the Alaska Native community as a whole in their perspectives on agency law enforcement.

that is often not inclusive of IK, ANO representatives and hunters raised the concern that *management decisions are made by agency personnel in Washington, DC, or other areas outside of Alaska, and these decision-makers do not have a sufficient understanding of the subsistence needs and provisions granted to Alaska Natives under the MMPA*. However, staff from both NMFS and FWS confirmed that decisions pertaining specifically to marine mammal co-management in Alaska are made within the Alaska Region offices (with the exception of overall funding, which is decided by Congress). The reported confusion between partners further highlights how breakdowns in communication can lead to misunderstandings. It is thus important that *details about internal decision-making processes are clearly understood by both co-management partners.* Because of the misconception of who and where the agency decision-makers are, we also heard that there can be *a lack of understanding of the importance of incorporating the "human element" (e.g., IK) into broader decisions regarding marine mammal management, and in what situations the agencies are restricted from considering such information in decision-making (e.g., ESA listings)*. Until IK and the subsistence needs of Alaska Natives are taken into full consideration during decision-making, to the extent possible, conflicts in marine mammal co-management will continue. As there are extensive efforts being undertaken by other organizations, such as the Inuit Circumpolar Council-Alaska (ICC-AK[24]), to address the issue (see also ICC 2018), none of the recommendations in this report address this issue specifically.

Challenges of Subsistence Hunting and Harvesting and the Future of Co-management

The last set of findings were related to the challenges of continued subsistence use of marine mammals. In general, marine mammals appear to be more important as a subsistence food source in northern and western Alaska communities, as compared to communities in other parts of Alaska[25].

Most of the challenges to subsistence hunting/harvesting fell into two categories – those caused by climate change and those caused by sociocultural changes in rural communities. Discussions with hunters from all communities indicated that *climate change is affecting subsistence use of marine mammals through changes in species abundance, distribution, and health*. For example, bowhead whales now migrate past hunting communities several weeks earlier than they have historically, and ringed seals are now being reported in the Aleutian Islands. *Changes in ice cover, both spatially and temporally, also are making it more difficult for hunters to access ice-dependent species*. It takes hunters longer to find suitable hunting areas, which is an investment of time and money (e.g., increased fuel costs), and also results in increased safety concerns. More frequent and stronger storms, increased beach erosion, and stronger currents have also altered traditional hunting and navigation patterns. However, there is evidence of some benefits to changes in climate for subsistence species, such as the current success of the bowhead whale population, which increased at a rate of 3.7% from 1978 to 2011 (Givens et al. 2013). Similarly, the Southeast stock of northern sea otter is continuing to increase in size and distribution (Tinker et al. 2019), though this population increase has resulted in increased competition for shellfish prey species with commercial and subsistence fisherman.

[24] https://iccalaska.org/media-and-reports/inuit-food-security-project/

[25] The review did not include participation by communities east of the Aleutians/Bering Sea due to the current limited co-management activity in those areas.

Changes in ice cover has also led to increased vessel traffic in and around the Arctic from increased shipping, oil and gas exploration and development, and tourism. Increased numbers of vessels can negatively impact subsistence directly through interference with hunting activities and indirectly through introduction of invasive species, more frequent exposure to pollutants and biotoxins, and increased acoustic disturbance.

Increased health issues are also being reported in Alaska marine mammals. Two recent marine mammal Unusual Mortality Events (UMEs) have been declared, involving ice seals and walruses[26] and large whales (Savage 2017). The 2011-2012 Alaska Northern Pinniped UME was of particular concern from a human health perspective as there were questions raised by hunters and resource users as to whether animals were safe to consume. However, extensive testing of samples from seals during this period were inconclusive as to a cause of the observed symptoms[27], and the reduced occurrence of seals with similar symptoms has alleviated such human health concerns for now. Other incidents, such as recent sea bird die-offs (NOAA 2018), have raised additional concerns about the safety of subsistence species that may have been exposed to harmful algal blooms (HABs), which have been observed to occur more frequently in the last several years in the Bering and Chukchi Seas (Lefebvre et al. 2016; Anderson et al. 2018). Overall, *impacts of changing marine mammal and ocean health, linked to changes in climate, could have substantial effects on subsistence hunting and harvesting by Alaska Natives.*

Co-PIs Jenna Malek and Vicki Cornish with Steering Committee member Taqulik Hepa and Mike Pederson of the North Slope Borough Department of Wildlife Management (Photo by the Iñupiat Heritage Center Staff)

Sociocultural changes in rural communities are also affecting traditional hunting patterns. Hunters are increasingly engaged in outside employment, which can provide much-needed money but also take time away from hunting. In some communities (such as Utqiaġvik and Nome), employers provide hunters with "subsistence leave" to allow them to participate in subsistence hunting activities. In other communities (such as in the Aleutians), employers do not offer leave and so hunters must take time off from work to hunt or restrict hunting activities to non-work hours. The high cost of fuel and ammunition also can affect the frequency of hunting trips. Other challenges include fewer boats and fewer crew members available for hunting activities. The latter may be caused by what some ANO and community members reported as a waning interest in subsistence hunting and use by younger generations. Similar to availability of time to hunt, this challenge differed by community/region. In Utqiaġvik and across the North Slope and Bering Sea region, youth are heavily involved in many aspects of traditional

[26] Alaska Pinniped UME, 2011-2018; http://www.fisheries.noaa.gov/alaska/marine-life-distress/diseased-ice-seals
[27] https://www.fisheries.noaa.gov/feature-story/unusual-mortality-events-large-whales-ice-seals-closed

subsistence cultural practices, including hunting, processing, and celebrating the harvest of marine mammals. In other communities, it was noted that interest from youth in learning and practicing marine mammal traditions had declined, paralleling an increased interest in the internet and new technology. Despite these regional differences, all communities agreed that *subsistence practices need to continue to be shared and practiced with younger generations to ensure the continuation of marine mammal culture and use into the future*.

Several other challenges have arisen that are connected with both climate and sociocultural changes and the media. The effects of climate change on species such as polar bears and walruses have been highlighted in the media by conservation groups and other non-governmental organizations (NGOs), suggesting that these species are declining and in poor health due to the loss of sea ice. This concept continues to be cited as the basis for NGOs to suggest listing ice-dependent species under the ESA (a prime example being the recent proposed listing of walrus, which the FWS subsequently determined was not warranted[28]). Contrary to concerns that the loss of sea ice would affect access to food and other resources (pupping/calving/breeding habitat), the hunters we spoke to indicated that many of the animals harvested, including polar bears and walruses, are abundant and in good health (i.e., fat).

The media has been known to portray negative images of marine mammal hunting and the sale of handicrafts, especially walrus ivory, which is often confused with elephant ivory. While these negative associations have occurred for decades, social media has amplified and broadened the negative messaging about hunting of marine mammals in Alaska, placing increased pressure on Alaska Natives to defend their cultural practices. Despite the various challenges faced by subsistence hunters, most ANO members and some hunters acknowledged that *co-management is an important part of ensuring that marine mammal populations are sustainable for use by future generations and Alaska Natives need to continue to be involved in the management process.*

[28] 82 Fed. Reg. 46618, 5 October 2017

RECOMMENDATIONS

Steering Committee member Peggy Osterback with focus group participants in Akutan, AK (Photo by Jenna Malek)

Based on the findings from the interviews and focus groups, and with feedback from the Steering Committee, we developed four overarching recommendations. Similar to the findings, the recommendations are based on input from a subset of ANOs and Section 119 agreements and may not be relevant to all co-management partners. However, with input from the Steering Committee and other reviewers, we have formulated generally applicable recommendations for improving co-management that can be considered and used as appropriate.

For each recommendation, we have suggested a number of actions that can be taken by each party (ANOs, NMFS, FWS, and communities/resource users) to implement the recommendations. In the subsections below, the recommendations are identified in **bold**, and the suggested action items are in *italics*.

Roles and Responsibilities

Partnerships function most effectively when the roles and responsibilities of each partner are clearly understood by one another. In addition to partners understanding each other's roles, it is important that roles within a partner group are also well defined so that individuals can contribute and participate in the partnership as successfully as possible. **We recommend that both NMFS and FWS and ANO co-management partners should have clearly defined and mutually agreed-upon roles and responsibilities, mechanisms for tracking and ensuring accountability, and transparency regarding limitations that may affect each partner's ability to meet expectations (e.g., legal restrictions, staffing/capacity, and funding)**.

As a way to put this recommendation into practice, we suggest that *NMFS and FWS leadership specify, both verbally and in writing, the roles, responsibilities, goals, and expectations of all staff engaged in co-management activities (management, research, administration).* In addition, *we suggest that NMFS and FWS and ANO co-management partners work together to develop written agreements (e.g., as part of their co-management agreements) regarding how decision-making authority regarding marine mammal-related research and management actions pertinent to subsistence use are to be shared between the federal agencies, ANOs, and communities.*

To ensure that ANOs are adequately informed about any constraints on NMFS and FWS actions, *the agencies should outline major decision-making processes (e.g., ESA listings) and include reference to any limitations that the agencies may have on including ANO perspectives in*

decision-making (e.g., the extent to which potential impacts on subsistence harvest of marine mammals can be considered in ESA listing decisions).

Similarly, we suggest that *ANO bylaws specify in writing the roles, responsibilities, goals, and expectations of ANO board members, Commissioners, and the organization itself; this information should be communicated to the communities the ANOs represent as well as federal agency partners.* ANO bylaws also should *specify for board members and Commissioners the potential consequences of not fulfilling all of the roles and responsibilities of their positions.*

An alternative approach to directly outlining board member and Commissioner roles within the ANO bylaws would be to create a 'Code of Conduct', such as is currently used by AMMC for its Commissioners. The AMMC Code of Conduct addresses many issues regarding Commissioner accountability and could be used as a potential model by other ANOs. As such, *ANOs should consider developing a 'Code of Conduct' that clearly lays out the expectations regarding ANO board members and Commissioners both during and outside of meetings (e.g., fiscal responsibility, oversight of the executive director, working with hunters to collect information to be shared with other commissioners, disseminating information to hunters, being prepared for meetings, proper personal etiquette, and attending meetings in their entirety).*

To ensure that communities are aware of what to expect from their ANO representatives, *ANOs should provide hunters, harvesters, tribal leaders, and resource users with information regarding the roles and responsibilities of the ANO's board members and Commissioners (and executive director, if applicable), and collaboratively determine what process will be used to hold ANO members and staff accountable for fulfilling those responsibilities.* Additionally, once roles and responsibilities have been shared, *ANOs and tribal leaders should work with IPCoMM to address any board member or executive director shortcomings through training, mentorship, or replacement, as necessary*.

We suggest that *partner roles and responsibilities should be shared and discussed by both partners and included, as appropriate, in revisions to co-management or cooperative agreements to help facilitate accountability by co-management partners.* Partners should also *discuss and add to the agreements explicit expectations for consulting and engaging with each other.* To reflect the continually evolving nature of co-management relationships, *agreements should be reviewed and revised as needed on an annual basis.*[29] *New and amended agreements should be shared with tribal leaders that appoint Commissioners or board members that serve on ANOs.*

In reference to our finding that there is often inadequate follow-through by partners on action items, we suggest that *action items identified at ANO or co-management partner meetings should be summarized in writing and prioritized, and efforts to implement action items should be tracked and reviewed at subsequent meetings*.

Lastly, in addition to establishing and sharing roles, responsibilities, and expectations, we suggest that *partners be aware of each other's priorities and establish mechanisms for*

[29] It is our understanding that NMFS will be requiring a 5-year sunset provision on new or amended agreements to encourage periodic reviews.

integrating individual partner responsibilities and expectations into shared goals as appropriate. For example, a NMFS and FWS mission of successful management of sustainable marine mammal populations could be integrated with concerns regarding food security, which is a major priority for Alaska Native communities.

Communication, Trust, and Respect

Communication, trust, and respect are key elements of successful co-management relationships. Strong communication can help build trust and respect between partners, and trust and respect between partners can facilitate strong and effective communication. These elements allow co-management partners to work as a collaborative team, with each partner having a different role that is needed for the team to succeed. **We recommend that co-management partners and stakeholders work cooperatively to strengthen communication, trust, and respect within and between partners**.

To build trust and respect, there needs to be a solid understanding of each partner's history and current approach to engaging in co-management. Therefore, we suggest that *NMFS and FWS and ANOs participate in training on cross-cultural awareness and interpersonal communication to help facilitate and strengthen respectful and effective partner relationships.* Additionally, *NMFS and FWS should ensure that staff working on the ground with ANOs and in communities are properly trained and experienced in communicating and collaborating with Alaska Native groups.*

NMFS and FWS are responsible for making decisions that affect co-management, thus it is imperative that agency decision-makers make efforts to build trust with co-management partners. We suggest that *regional agency staff work to ensure that higher level decision-makers are fully informed regarding co-management activities, issues, expectations, and concerns, and are provided with opportunities to engage with ANO members and community representatives on a regular basis.* Based on the frequent misunderstandings that were expressed with respect to how co-management decisions are made (primarily due to insufficient communication between partners), we also suggest that *NMFS and FWS inform ANOs on the decision-making processes that affect co-management and subsistence activities directly (e.g., budgets for co-management) or indirectly (e.g., ESA listings), with specific reference to how decisions are made and at what level*. Those conversations can be incorporated into co-management meeting agendas, or be discussed when specific issues arise, such as an ESA listing.

The effectiveness of communication in rural Alaskan communities is largely dependent on the mechanism used to share information. We heard numerous examples of how ineffective communication has led to misunderstandings or conflict between different NMFS and FWS, ANOs, and communities. To avoid similar situations in the future, we suggest that *NMFS and FWS coordinate with ANOs to determine preferred timing, formats, and mechanisms (primary and backup) for transmitting timely information to community members (e.g., radio announcements, newsletters, public fliers, social media), and receiving feedback, recognizing that one communication approach does not fit all communities*.

Pacific walrus mother and calf (Photo via Shutterstock)

Another essential mechanism for strengthening communication, trust, and respect is frequent interactions between all co-management parties. We suggest that *NMFS and FWS staff spend more time working in communities, in coordination with ANOs and tribal leaders, to enhance communication and build more trusting and respectful relationships with ANO members, hunters, harvesters, and resource users.* Sufficient communication between ANOs and their representative communities/commissioners is just as important as communications between ANOs and agencies. Thus, *ANOs should identify and explicitly state, verbally and in writing, their expectations for timely and effective communication between and among commissioners, the communities they represent, and ANO members*. To help ensure that selected representatives are communicating with co-management partners in a timely and effective manner, *communities should be made aware of the communication responsibilities of their ANO commissioners and hold them accountable for communicating information to and from the ANOs and NMFS and FWS*. Recognizing that there can be frequent turnover in tribal or community leaders who appoint ANO representatives, *ANO leadership should ensure that newly elected leaders are briefed in a timely manner about ANO missions and the expectations of appointed community representatives*.

Mentorship of New Co-Management Leadership

A message heard throughout focus groups and interviews, and from the Steering Committee members themselves, was that co-management is experiencing a 'graying of the fleet' – leaders are retiring from their co-management roles in both ANOs and NMFS and FWS, and there are often few, if any, qualified individuals available to take their place. In order to ensure successful continuation of co-management into the future, **we recommend that new generations of Alaska Natives and resource managers/biological scientists be exposed to, and be provided opportunities to engage in, a range of co-management activities**.

One of the biggest obstacles to filling co-management leadership positions is that often there is limited awareness of the history of co-management and the potential opportunities for involvement in related activities. We recommend *that NMFS and FWS and ANOs form a working group to identify and explore opportunities for engaging and training Alaska Native youth in co-management, resource management, and biological sciences through fellowships, internships, volunteering, and job shadowing*. Examples of such opportunities can be found in Table 4. Similar to the research position listed for the St Paul Ecosystem Conservation Office, *ANOs and communities should pursue funding to expand Alaska Native youth involvement in co-management meetings and activities through internships, fellowships, and youth ambassador/commissioner position.* Such funding could be part of their yearly co-management funding requests or could be sought from other sources.

Table 4. Organizations that offer engagement and training opportunities for Alaska Native youth interested in resource management.

Agency/Organization	Position	Description
Caleb Scholar Program	Scholarship	Supports outstanding Alaska Native students in Arctic regions pursuing marine conservation-related education and careers
St Paul Ecosystem Conservation Office (ECO)	Youth Research Assistant (Funded through the NOAA Alaska Native Co-management Funding Program)	Opportunity to assist with environmental surveys, subsistence harvests, marine mammal strandings, etc.
Alaska Arctic Observatory & Knowledge Hub (AAOKH)	Internship	Opportunity for UAF students from AAOKH communities who can help build links between coastal observations and data with community interests or needs
Alaska Delegation	Internship	Opportunity for students to gain valuable policy experience working in local delegation offices, including natural resources/rural affairs
University of Alaska Fairbanks	Alaska Native Scholarship	Opportunity for Alaska Native students to receive financial assistance at UAF towards any degree (including tracks in the Native Studies and Rural Development Program)
Alaska Native Science and Engineering Program (ANSEP)	Scholarship	Opportunities for students in grades 6 – undergraduate to advance in the fields of science and engineering, leading to successful careers in these fields
Udall Foundation Native American Congressional Internship Program through the Native Nations Institute	Internship	Opportunity for American Indian and Alaska Native students to gain experience with the federal legislative process to understand government-to-government relationships between tribes and the federal government

Co-management partners should also try to establish opportunities within their organizations and agencies that are tailored to specific co-management activities (such as conducting outreach or bio-sampling of harvested animals). Therefore, we suggest that *NMFS and FWS and ANOs create and make available internal job shadow and volunteer opportunities, and promote participation by youth in programs offered by the Alaska Native Science and Engineering Program (ANSEP), the Udall Foundation, etc.* (see Table 4). NMFS and FWS can also *provide hands-on mentoring of new staff with veteran co-management personnel, including attending partner meetings and traveling to relevant communities, to begin the development of their own relationships with ANO members, hunters, and resource users*. ANOs should also work with their representative communities to *cultivate engagement of Alaska Native youth in subsistence and co-management activities, and encourage them to develop leadership skills in co-management through external internship and scholarship programs and directly with ANOs and NMFS and FWS (or other agencies) through volunteer or paid positions.*

To help alleviate some of the loss of historical knowledge during leadership transitions for both partners, *ANOs and NMFS and FWS should develop individual and shared co-management history documents, curriculums, and training tools that can be used at both the community and scholarly levels, and by co-management partners for on-boarding new leaders and staff*. Understanding the history of subsistence culture, how different ANOs formed, and how co-management of marine mammals was developed and is currently practiced by ANOs and NMFS and FWS is critical for preparing the next generation of co-management leaders.

Assessment of Co-Management Structure

A northern fur seal colony on St. Paul Island, AK (Photo via Shutterstock)

The final recommendation stems from our findings on the structure of ANOs (e.g., regional vs. species-specific ANOs, stand-alone entities vs. supported within a larger organization) and can be linked to addressing issues identified in the "Challenges of Subsistence Use" section. In this study, we identified key elements (e.g., strong communication and trust) and major impediments (e.g., lack of respect and limited cultural understanding) for co-management, with emphasis towards the relationships between co-management partners. However, based on our findings, it would be beneficial to further evaluate co-management with respect to the overall structure of ANOs. **We recommend that ANOs assess their existing organizational structures with the goal of improving their effectiveness and efficiency by identifying: strengths, suitability for their purpose (i.e., meeting tribally-authorized missions), and the potential benefits and feasibility of alternative structural models**.

As a first step to working towards this recommendation, we suggest that *dialog be initiated among ANOs to consider the overall co-management structure and how well this structure may or may not promote the missions of individual ANOs and the overarching purpose of marine*

mammal co-management. For example, ANOs with limited capacity and resources may suffer from insufficient assistance in legal and accounting matters. The option of a structure that provides shared legal and accounting services (or other administrative services) could alleviate the financial demands of each group procuring these services on their own.

Once these internal discussions have been completed, *ANOs should work with NMFS and FWS to explore which structures, or pieces of different structures, could be improved to better suit the purpose of co-management, and how the relationship between Alaska Native co-management entities and* NMFS and FWS *may differ under an updated management system*. The combined outcomes of the current review and this proposed assessment of co-management structure would provide a more holistic perspective that includes insights on both the outer (structural) and inner (partner/relationship) layers needed for effective co-management.

DISCUSSION

Comparison of Findings and Recommendations to Previous Co-Management Reviews

There have been other reviews of marine mammal co-management in Alaska, including MMC's 2008 Review (MMC 2008), a 2011 review sponsored by The Alaska Sea Otter and Steller Sea Lion Commission (TASSC 2011), a review of polar bear co-management (Kanayurak 2016), and a legal review of Arctic co-management (Mengerink et al. 2016). Each review has taken a different approach in gathering information (in-person workshop, legal review, focus groups/interviews), but despite the differences in methodology, there are similarities in the findings and conclusions of all of these reviews[30].

A young polar bear on the outskirts of Utqiaġvik (Photo by Jenna Malek)

One of the major themes identified in two of the past reviews (MMC 2008 and Mengerink et al. 2016) and in the current review was the importance of trust and respect between partners in co-management relationships, and specifically that these characteristics are the product of long-term, productive relationships (Mengerink et al. 2016). All three prior reviews acknowledged that to build trust and respect, agency staff availability and community engagement was important. In short, the more time co-management partners spend interacting, the stronger the relationship becomes. Related to partner engagement was the integration of IK (also referred to as TEK) into the management of sustainable marine mammal populations. Two of the reviews noted that increased engagement leads to more sharing and understanding of IK between partners (MMC 2008, Mengerink et al. 2016).

Mengerink et al. (2016) and the current review both recognized that the main goals of co-management, which are to conserve marine mammals and promote the sustainable use of these resources for future generations, cannot be successfully accomplished without delineating and articulating the roles and responsibilities of each partner. In addition, both TASSC (2011) and the current review highlighted how there is no "one size fits all" when it comes to co-management, whether it is the roles of the different partners in a given relationship or finding the correct mechanism to communicate with different communities.

A commonality between the previous reviews was the discussion of funding for co-management partners and activities. While limited funding is still one of the most prominent issues faced in co-management, the current review specifically did not focus on funding due to the awareness that funding levels for federal agencies, and thus for co-management partners, have been

[30] For this comparison we will be focusing on MMC 2008, TASSC 2011, and Mengerink et al. 2016 – Kanayurak 2016 focuses specifically on polar bears and the ANC, which no longer has an active Section 119 agreement.

declining, and will likely continue to do so in the future. By streamlining discussions on what can be done with the resources that are currently available (see Findings for overview of funding discussions), we were able to develop recommendations that are more universally applicable to all federal agencies, ANOs, and communities.

Other Examples of Co-Management in Alaska

Marine mammals are not the only subsistence resources that are co-managed in Alaska. Birds, fish, and caribou are also managed by various combinations of federal and/or state government and Alaska Native groups. Two examples – migratory birds and salmon –are discussed briefly below to highlight and compare different approaches to co-management efforts around the state.

Alaska Migratory Bird Co-Management Council

The Alaska Migratory Bird Co-Management Council (AMBCC) was formed in 2000 to include subsistence users in migratory bird harvest management and conservation. AMBCC's federal, state, and Alaska Native representatives are considered equal partners and each group has one vote. This design is similar to ABWC, which includes state, federal, and Alaska Native representatives on the board, however with ABWC, each group can have more than a single vote. AMBCC's primary mission is to make recommendations for subsistence harvest regulations. The group also conducts voluntary household harvest surveys, similar to the marine mammal harvest surveys conducted collaboratively between ADF&G and both the Ice Seal Committee and ABWC.

Kuskokwim Inter-Tribal Fish Commission

A recent addition to the Alaska co-management approach to wildlife conservation is the Kuskokwim River Inter-Tribal Fish Commission (Fish Commission). The group formed in 2015, representing 33 federally recognized tribal governments in Alaska, with the goal of formally working with FWS to co-manage salmon populations along the Kuskokwim River. Per the initial memorandum of understanding between groups, management decisions must be made in consultation with the Fish Commission. While many marine mammal co-management ANOs are consulted about management decisions (or should be), the design of the pending salmon management framework may provide the Fish Commission a stronger position in decision-making. For example, in 2018, the Fish Commission voted against a proposal to allow larger nets to be used for targeting larger fish, recognizing that harvesting larger fish that carry more eggs is contrary to conservation goals.

Examples of Co-Management in Canada

The following example of co-management models from Canada indicate a more inclusive role of First Nation peoples in decision-making with respect to natural resources, and a describe a more stable source of funding directly through the government or other sources.

In the Inuvialuit Settlement Region (ISR) of Canada, a 35,000 square mile area of land in the Northwest Territories and the North Slope Region of the Yukon, the Inuvialuit Game Council (IGC) represents Inuvialuit interests in co-management of wildlife resources, as outlined in the

Inuvialuit Final Agreement[31] of 1983. The IGC is responsible for appointing Inuvialuit members to co-management bodies, advising government agencies on resource policy, regulations, legislation, or positions that Canada may take on international issues that affects wildlife in the ISR. Similar to many Alaskan marine mammal ANOs, the IGC has representatives from each of the ISR communities (six total) and is overseen by an elected chair. The IGC also collaborates with Alaskan entities on shared marine mammal resources such as polar bears and beluga whales through the Inuvialuit and Inupiat Polar Bear[32] and Inuvialuit and Inupiat Beluga Whale Commissions (Adams et al. 1993).

Focus group discussion with Tribal Council members in St. Paul, AK (Photo by Steering Committee member Lauren Divine)

In Nunavut, the most northerly territory of Canada, aboriginal peoples have obtained true self-government with respect to decision-making regarding land and wildlife resources under the Nunavut Lands Claim Agreement Act[33] (Agreement) of 1993. The Agreement, between Her Majesty the Queen in right of Canada and the Inuit of Nunavut, as represented by the Tungavik Federation, created a co-management board that seats an equal number of aboriginal peoples and government representatives. The Agreement ensures that all necessary information, including Indigenous Knowledge, is included in decision-making. The Agreement also provides funding for co-management activities, using royalties from energy development and interest that accrues on a trust. Despite the available funds, there is insufficient capacity for co-management activities, such as research, to occur. While this model of co-management may seem more appealing, especially with respect to the funding security, it should be noted that some of the same issues with marine mammal co-management in Alaska are also present in Nunavut, including limited capacity of Native partners to participate in management activities and the government partner having the final word on management decisions.

Based on these examples from Canada and others from Alaska, it is clear that there are common issues throughout different co-management structures. The ideal approach to effective co-management of natural resources has yet to be fully realized.

[31] https://www.irc.inuvialuit.com/inuvialuit-final-agreement
[32] https://www.fws.gov/r7/fisheries/mmm/polarbear/pdf/I-I%20Agreemnt%20signed%20March%202000.pdf
[33] https://laws-lois.justice.gc.ca/eng/acts/n-28.7/page-1.html

Lessons Learned

As with any study, there were lessons learned over the course of this review that we hope will be helpful to others who pursue similar lines of research regarding co-management. With respect to communication, one lesson learned was that when working with representatives of any given group (ANOs, agencies, etc.) it is important to clarify which perspective someone is representing – that of their affiliated group or their own personal views. In this study, we worked with people who wear many different hats and thus may have several perspectives on a single subject. Though we did not explicitly ask participants to clarify which perspective they were representing, in some cases, individuals made it clear from the start. In hindsight, once the study was funded, we should have also contacted the ANOs that were selected as case studies to receive formal resolutions for organization participation, and thus gain the understanding that ANOs members were speaking from that perspective.

Similar to what was reflected in our findings on communication, we learned that not only should co-management partners identify the proper channels for communicating with each other and their communities, but anyone working with any of the federal agencies, ANOs, and communities needs to determine what methods of communication work best. In many cases we were guided by the Steering Committee on how to best reach out to potential focus group participants, but this did not always guarantee successful contact. Although emails and texts are widely used in much of Alaska as a means of communication, they were not always the best mechanism for communicating with the people we wanted to include in our research. It was suggested to us that phone calls or even fax messages to tribal/community offices would be a better way to contact people in the future.

We have also received comments that in addition to communicating and sharing our plans for the review with IPCoMM, it would have also been helpful to work with individual ANOs to ensure that diverse perspectives were incorporated from the initial planning stages. There are currently 10 ANOs with active cooperative or co-management agreements with a federal agency partner, and several more that conduct co-management activities without a direct agreement with an agency. Due to the limited amount of time we had to conduct the study and budget restraints, we were unable to include more than the three selected case study ANOs/agreements in our review. Even though we focused on certain groups to guide where to visit, we heard a lot of useful information about other species and ANOs during our focus groups, particularly in the North Slope and Bering Sea communities. We have also taken great care in the reporting of our findings to exclude information that pertained to specific ANOs or agencies. That said, we hope the recommendations are relevant to other co-management relationships, recognizing that some recommendations may not be applicable to all relationships and suggested actions may not all be practical or feasible for all federal agencies, ANOs, and communities.

Feedback from ANO, Community, and Agency Follow-Up

As a final step in completing the review, we traveled back to most of the participating communities and attempted to meet with agency staff who had been interviewed to provide a readout of the findings and recommendations. We were able to return to Utqiaġvik, Nome, Gambell, Savoonga, Atka, and Akutan, and plan to call into an ACSPI tribal council meeting in 2019. During the return community visits, we received positive and constructive feedback.

When discussing 'partners' with respect to activities that involved ANOs, we heard that it is important to be explicit, as ANOs work with many different types of partners – NGOs, industry groups, other agencies (e.g., BOEM, EPA). We have been careful to specify that in this report, we are talking about ANOs and the federal co-managers, NMFS and FWS. It was also pointed out that ANOs and communities feel that the priorities of agency co-management partners are shaped by the priorities of the current Administration (i.e., the President), and thus co-management-related research and studies can be overshadowed by other issues such as oil and gas development.

We heard further support from all communities about the importance of including youth in co-management activities such as having youth ANO members that shadow Commissioners and occasionally attend annual ANO meetings. We are aware of some recent ANO meetings that have had youth representatives present as observers, which is an encouraging step for addressing this issue. Additionally, we heard that youth should be encouraged to attend community hunter meetings (such as the ones we attended on St. Lawrence Island) to learn about current issues and hear reports from NMFS and FWS staff that travel to the communities.

When discussing the findings on "Challenges to Subsistence Use", we heard from hunters that in addition to concerns about increased traffic from shipping and tourism in the Bering Sea/Strait and Arctic, there is also concern how commercial fishing traffic will change based on the recent changes in the population sizes and locations of certain species in the Bering Sea[34]. As the ranges of the valuable commercial species shift, fishing vessels may move with them, potentially bringing more traffic and disturbance into subsistence hunting/fishing areas. To help alleviate potential conflicts between any type of vessel (e.g., fishing, shipping, industry) and subsistence hunters, it was suggested that there be more intensive education and outreach to the appropriate entities to ensure that they are aware of where and when subsistence activities may be taking place, and what steps should be taken to prevent conflicts.

A final message that we heard from several communities was that it feels as though the NMFS and FWS and other outside entities (not connected to co-management), are starting to recognize the value of IK, especially as it pertains to decision-making. As this has been a major impediment to co-management in the past, we were encouraged to hear that in some cases, this is changing in a positive way.

NMFS and FWS staff were receptive to the suggested actions and agreed that being explicit about roles and responsibilities, and including them in co-management agreements, would be especially helpful. For some agreements, these actions are already underway and can hopefully serves as models for other groups.

Next Steps

One of the limitations of the 2008 MMC Review was the lack of momentum and the identification of who would be responsible for implementing the many recommendations identified by MMC. As a means to remedy that issue with the current review, we have identified

[34] https://www.fisheries.noaa.gov/resource/data/2018-status-eastern-bering-sea-ecosystem

specific actions that each co-management party can take to move forward in an effective way. As this review is based on findings from a subset of co-management organizations, ANOs and federal agencies should first review the recommendations and action items at their upcoming annual/semi-annual meetings and identify which actions would be valuable for their particular relationship. Applicable actions can then be adopted as short- and long-term goals. Actions such as outlining partner roles, responsibilities, and accountability can be taken up prior to meetings, and then shared and incorporated into co-management/cooperative agreements. As partners take steps towards implementing the recommendations to improve their relationships, hunters and resource users may in turn be willing to work with ANOs and federal agencies to implement community-based action items. Any and all efforts to improve the effectiveness of co-management will be dependent on strong leadership and commitment from the co-management partners.

Co-PIs Jenna Malek and Vicki Cornish under the bowhead whale jawbone arch in Utqiaġvik, AK (Photo by Steering Committee member Billy Adams)

MMC is willing to facilitate further discussions, as appropriate, regarding how the findings and recommendations from this report can be used by ANOs, agencies, and communities to continue to enhance co-management and conservation of marine mammals in Alaska.

CONCLUSIONS

Co-management of marine mammals in Alaska is fairly simple in concept but complicated in practice. A long and sometimes hostile history of relationships between federal management agencies and Alaska Natives has led to decades of distrust and disrespect between these groups that has largely hindered effective co-management of critical marine mammal resources. In this review we wanted to discover what elements of these relationships were working well and which needed to be improved in order for co-management to function more effectively. To do this, we first established a working definition of co-management for the purposes of the project that representatives of ANOs and federal agencies agreed upon and also fits within the language of Section 119 of the MMPA. Our hope is that the definition, as constructed, will form the basis for further discussions and be useful in any future effort to establish a formal definition of co-management in the MMPA.

Our approach to identifying the key elements and major impediments to co-management involved working with all parties—federal agency partners, ANOs, and marine mammal hunters/harvesters and resource users in coastal communities. This integrated approach allowed the PIs to gain a deeper understanding of how co-management works (and doesn't work) throughout the state and what specific issues are faced in different regions based on species, climate, and culture. The recommendations and corresponding actions that we developed will hopefully transcend those differences and aid in the strengthening/building of co-management relationships that are able to achieve the ultimate goal of conserving marine mammals for sustainable subsistence use by future generations of Alaska Natives.

Steering Committee member Vera Metcalf with hunter focus group participants in Gambell, St. Lawrence Island, AK (Photo by Jenna Malek)

ACKNOWLEDGEMENTS

We would like to first and foremost acknowledge and thank the Steering Committee members. Their participation helped to streamline the objectives of the study and ensure that the review was conducted thoughtfully and respectfully. The ANO members of the Steering Committee were incredibly helpful in organizing community focus groups, including putting us in touch with the right people, scheduling meeting spaces, assisting with securing housing in remote locations, and serving as translators when needed. Their guidance and support during the community visits was invaluable.

Another critical piece to the success of the review was the honest and often enthusiastic participation of marine mammal hunters and resource users, ANO members, and federal agency staff. We are very grateful for everyone who took time out of their busy schedules to meet with us and share their experiences and perspectives on co-management. We would like to thank the following participants in the communities and federal agencies (communities are listed from North to South):

Utqiaġvik: G. Brower, F. Brower, J. Mello Leavitt, W. Lampe (Pt. Lay), M. Pederson, T. Hepa, B. Adams, R. Suydam, J. C. George
Gambell: R. Oozevaseuk, G. Angi, J. Apatiki, C. Koonooka, J. Koonooka, J. Apatiki, E. Apassingok, I. Campbell
Savoonga: F. Kava, L. Kava, C. Noongwook, K. Kingeekuk, P. Rookok, D. Pungowiyi, M. Kiyuklook, B. Pungowiyi, G. Noongwook, W. Okoomealingok
Nome: B. Ahmasuk, A. Ahmasuk, R. Ashenfelter, J. Martin, V. Metcalf
St. Paul Island: D. Shabolin, A. Philemonoff, M. Melovidov, M. R. Zachanof, A. Lestenkof, J. Merculief, Z. Melovidov, R. Melovidov, P. Zavadil, P. Lestenkof, L. Divine
Akutan: J. Stepetin, Z. Borenin, N. Bereskin, A. Shelikoff, C. Bereskin, J. Webster
Atka: A. Golodoff Jr., D. Zaochney, L. Snigaroff, R. Snigaroff, E. Neuzoroff, P. Osterback
National Marine Fisheries Service: G. Balogh, P. Boveng, M. Ferguson, T. Gelatt, A. Jensen, J. Kurland, B. Mahoney, L. Rotterman, M. Williams
U.S. Fish and Wildlife Service: B. Benter, J. Garlich-Miller, C. Hamilton, P. Lemons, S. Miller, J. Synder, J. Wilder

The success of the community meetings would not have been possible without the assistance of staff from the following tribal offices (from North to South):

- North Slope Borough Department of Wildlife Management
- Native Village of Pt. Lay
- Native Village of Gambell
- Native Village of Savoonga
- Kawerak
- Tribal Government of St. Paul Island,
- Akutan Traditional Council
- City of Atka
- Atxam Corporation

We would like to thank Henry Huntington for his input on many aspects of the review, including drafting of interview/focus group questions, methods for conducting interviews and focus groups, and shaping findings and recommendations. We would also like to thank the current and former staff at MMC who assisted in the preparation and review of the initial proposal submitted to NPRB, including: R. Lent, L. Leandro, M. Gosliner, and P. Thomas.

This review was conducted under IRB #1223989, approved on April 27, 2018.

Lastly, this review could not have been conducted without funding from the North Pacific Research Board (NPRB Grant #1721, identified as "Effective Co-Management of Marine Mammals in Alaska: Identifying Essential Components and Key Impediments"). We greatly appreciate the opportunity provided by NPRB to help strengthen co-management relationships in Alaska.

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APPENDIX A. IRB-Approved Informed Consent Form

Informed Consent Form

Effective Co-management of Marine Mammals in Alaska:
Identifying Essential Components and Key Impediments

Institutional Review Board (IRB) #: 1223989
Date Approved: 4/27/2018

Description of the Study: You are being asked to take part in a research study by the Marine Mammal Commission. The study is about how the federal government and Alaska Natives work together to co-manage marine mammals in Alaska. Marine mammals include whales, seals, sea lions, polar bears, walruses, and sea otters.

The purpose of this study is to hear from you and others about how co-management is working or not working. We also want to hear your ideas about how to make it work better. You have been chosen because you have hunted or harvested marine mammals, belong to an Alaska Native Organization, or work for the federal government.

Please read this form carefully and feel free to ask us any questions you may have about the study, its purpose, and your role in this study. You are free to decide whether or not you want to take part. If you agree to take part in this study, we will ask you questions about co-management of marine mammals. We may ask you questions alone or as part of a group. We will ask a few questions to start the discussion, but you are free to tell us anything you think we should know.

In a few weeks we will send you a summary of your answers so you can tell us if we understood you correctly. All answers we receive will be collected and summarized in a final report. We plan to share the results of the project with everyone that participated.

Risks and Benefits of Being in the Study*:* The risk to you in answering these questions is sharing your own opinions or stories with others. If there are questions you do not want to answer, you can ask us to skip those questions. If you answer the questions but do not want other people to know what you said, you can ask us not to identify you in our summary report.

The benefit to you in answering our questions is to help us figure out ways to make marine mammal co-management work better for you and others. We will follow up with recommended actions based on what we find out.

Compensation: (Hunters and ANO members only): If you are a hunter answering questions by yourself or as part of a group, the discussion could last three to four hours. You will receive a gift card for $150.

If you are a member of an Alaska Native Organization, the questions should take only one or two hours. You will receive a gift card for $80.

Confidentiality: All of the answers we get from each group will be summarized for the final report. Personal information, like your name, would only be included if we have your permission first.

Voluntary Nature of the Study:You are not required to take part in this study. It is your choice whether you want to participate. If you decide to take part in the study you can stop at any time or change your mind and ask to leave the study

Contacts and Questions: Please ask us if you have any questions before we start or as we go along. If you have questions later, you may contact the Marine Mammal Commission study lead, Jenna Malek (jmalek@mmc.gov; 907-444-0699) or co-lead, Vicki Cornish (vcornish@mmc.gov; 301-504-0087) at any time.

The University of Alaska Fairbanks (UAF) Institutional Review Board looks at research projects that include people. This review ensures the safety of the people in the study. If you have questions about your rights as part of this study, you can contact UAF at 474-7800 (Fairbanks area) or 1-866-876-7800 (toll-free outside the Fairbanks area) or uaf-irb@alaska.edu.

Statement of Consent: I understand the information on this form. All of my questions have been answered, and I am okay with the answers. I agree to participate in this study. I was given a copy of this form.

_____

Signature of Participant & Date

_____

Signature of Person Obtaining Consent & Date

APPENDIX B. IRB-Approved Audio Recording and Photograph Release Form

Audio Recording and Photograph Release Form

I, _____, agree _____ or disagree ____ that [Photographer's Name] has the right to take audio recordings of my contributions to discussions as a participant in the marine mammal co-management review.

I agree _____ or disagree ____ to the public use of any personally identifying information collected during discussions.

I, _____, do hereby agree _____ or disagree ____ that [Photographer's Name] has the right to take photographs of me during my participation in the marine mammal co-management review.

I agree _____ or disagree ____ to the use of personally identifying information for photographs used in Marine Mammal Commission outreach products related to the co-management review.

_____

Name (Print)

_____

Address

_____

Phone

_____

Witness for the undersigned

_____

Signature Date

APPENDIX C. IRB-Approved Questions for Hunter and Resource User Focus Groups

Questions for Hunter and Resource User Focus Groups

1) How long have you been hunting and/or harvesting marine mammals? Which species do you hunt or harvest?

2) Co-management agreements with federal agencies fall under the Marine Mammal Protection Act (MMPA). Do you know what co-management is?

   a. If yes:

      i. Are you (or have you been) involved in marine mammal co-management activities pertaining to the marine mammal species you hunt or harvest? If so, how?

      ii. Are you familiar with the goals of marine mammal co-management or with marine mammal co-management activities established under the MMPA?

      iii. Are you familiar with the work of [insert appropriate ANO(s) here], the Alaska Native Organization(s) that is leading co-management activities for the species you hunt or harvest? Have you talked to members of that organization about your subsistence activities? Have they talked to you about the work of their organization or their co-management activities?

      iv. Do you think marine mammal co-management is important for marine mammal conservation and for supporting the subsistence traditions of Native people? Why or why not?

      v. Have you noticed any differences in marine mammal co-management over the last 5 to 10 years?

      vi. What more could be done to achieve marine mammal co-management, by:

         1. Individuals (hunters and harvesters)?
         2. Communities?
         3. [Insert appropriate ANO(s) here]?
         4. [NMFS and/or FWS, as appropriate], the government agencies with co-management responsibilities for the species you hunt or harvest?

      vii. What is you preferred way to receive information about marine mammal co-management, marine mammal hunting or harvesting (i.e., email, Facebook, snail mail, fax, etc.)?

   b. If no:

      i. Are you interested in learning more about marine mammal co-management? From your tribe? From ANOs? Federal agencies? (all, some, or others)?

      ii. What is you preferred way to receive information about marine mammal co-management, marine mammal hunting or harvesting (i.e., email, Facebook, snail mail, fax, etc.)?

APPENDIX D. Guiding Questions for ANO Members

Guiding Questions for ANO Members

1) Do you use marine mammals for subsistence or cultural purposes? If so, which species do you use?

2) In your opinion, what are the goals of marine mammal co-management, as provided for under section 119 of the Marine Mammal Protection Act?

3) Do you think marine mammal co-management is important for marine mammal conservation? For supporting the subsistence traditions of Native people? Why or why not?

4) Can you describe your role in marine mammal co-management activities (manager, staff, researcher, etc.)? Who do you work with, or talk to, regarding these activities (other federal agencies; researchers; hunters in your community or other communities; other ANOs; IPCoMM; regional organizations (NSB, Maniilaq, Kawerak); ICC)?

5) Do you feel marine mammal co-management is working well? In what ways? Is there room for improvement? In what ways? And who do you expect to make the needed improvements?

6) What could help marine mammal co-management relationships? What could harm marine mammal co-management relationships?

7) Have you noticed any differences in marine mammal co-management during the time that you've been working on this topic?

8) What is (or should be) the role of ANOs (as co-management partners) in implementing marine mammal co-management?

   a. Do you think the ANO(s) you work with are effective at that role?

9) What is (or should be) the role of the government agencies (as co-management partners) in implementing marine mammal co-management?

   a. Which agency(ies) do you work with?

   b. Do you think that the agency(ies) you work with are effective at that role?

10) What more could be done to reach the goals of marine mammal co-management, by:

   a. Hunters and harvesters?

   b. Communities?

   c. Your ANO?

   d. Other ANOs?

   e. The government agencies: NMFS and/or FWS?

APPENDIX E. Guiding Questions for Federal Agency Staff

Guiding Questions for Federal Agency Staff

1) In your opinion, what are the goals of marine mammal co-management, as provided for under section 119 of the Marine Mammal Protection Act?

2) Do you think marine mammal co-management is important for marine mammal conservation? For supporting the subsistence traditions of Native people? Why or why not?

3) Can you describe your role in marine mammal co-management activities (manager, staff, researcher, etc.)? Who do you work with, or talk to, regarding these activities (other federal agencies; researchers; hunters in your community or other communities; other ANOs; IPCoMM; regional organizations (NSB, Maniilaq, Kawerak); ICC)?

4) Do you feel marine mammal co-management is working well? In what ways? Is there room for improvement? In what ways? And who do you expect to make the needed improvements?

5) What could help marine mammal co-management relationships? What could harm marine mammal co-management relationships?

6) Have you noticed any differences in marine mammal co-management during the time that you've been working on this topic?

7) What is (or should be) the role of ANOs (as co-management partners) in implementing marine mammal co-management?
   a. Which ANOs do you work with?
   b. Do you think the ANO(s) you work with are effective at that role?

8) What is (or should be) the role of the government agencies in implementing co-management?
   a. Do you think that your agency is effective at that role?

9) What more could be done to reach the goals of marine mammal co-management, by:
   a. Hunters and harvesters?
   b. Communities?
   c. ANOs?
   d. Your agency? Other agencies?

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