

Senate Committee on Commerce, Science, and Transportation

Written Questions for the Record from Senator Dan Sullivan to Dr. Andrew Read

Nomination of Dr. Andrew Read to be a Member of the Marine Mammal Commission

August 8, 2015

1. In your previous responses, you were very positive in your comments related to the Alaska Eskimo Whaling Commission's Cooperative Agreement with NOAA. Do you support similar civil-based, local co-management arrangements for the other Arctic marine mammal subsistence harvests?

I believe the Alaska Eskimo Whaling Commission's co-management arrangement for bowhead whale *could* serve as a good model for other marine mammal subsistence harvests in the Arctic. As I noted in my previous response, several factors contribute to this success, including the close working relationship between NOAA and the AEWC, an adequate level of funding, active involvement of the local government entity (the North Slope Borough) in providing additional support for research and other activities, and clear-cut regulatory authority. I would support similar co-management agreements with other Alaska Native organizations (ANOs) if these factors were present. Critical considerations include whether the ANO is adequately funded and staffed, has the necessary resources to support research, and has sufficient statutory or tribal authority to assume enforcement responsibilities.

2. Building on your answer to question two, what are your thoughts on how the Marine Mammal Commission can become more relevant to the needs of my constituents? In particular, how can the Commission's role evolve to better protect subsistence uses in the context of conservation?

As noted in my earlier answer, the Commission is funding a study to gather input from Alaska Natives on improvements to tribal consultations with federal agencies, which is of particular importance for activities that can disrupt subsistence harvest of marine mammals. As Chair, I would work with the other Commissioners and Commission staff to further incorporate the views of Alaska Natives into the Commission's consultation policies, and encourage action agencies to do the same to help ensure that harvesting rights are respected.

As reflected in my response to question six below, climate change represents one of the biggest threats to subsistence harvest of marine mammals by Alaska Natives. I note that the first element in the Commission's strategic plan is to ensure that marine mammal populations in the Arctic are maintained as viable functioning elements of their ecosystems through management measures that address the direct and indirect effects of climate change. As Chair, I would expect the Commission to work closely with Alaska Natives in pursuing this goal. Such a strategy should provide tangible benefits for Arctic marine mammals and the hunters who depend on them.

I have been advised that the Commission is partnering with other agencies, ANOs, industry, and NGOs to plan a workshop to review and evaluate information regarding the effects of dispersants

on marine mammals and implications for Alaska Native communities that depend on marine mammals for subsistence. The results of this workshop will be used to promote future research efforts to increase the environmental safety and effectiveness of oil spill response measures in the Arctic. This is another example how the Commission is using its mandate to further the interests of subsistence hunters.

As Chair, I would also consult with my fellow Commissioners and the Commission's Special Advisor on Native Affairs to explore other opportunities for Alaska Native subsistence harvests. I note, however, that subsistence use of marine mammals is subject not only to domestic law (*e.g.*, the MMPA, Endangered Species Act, and Whaling Convention Act) but, at least for some species, also to the requirements of international agreements, such as the International Convention for the Regulation of Whaling, that apply to the United States as a signatory nation.

3. Your response to question three indicates that the only marine mammal subsistence harvest subject to legal limitation is that of Cook Inlet beluga whales. In fact, the bowhead whale harvest is subject to a quota limitation; other large whale species are made unavailable by law; and the Fish and Wildlife Service, with the support of the Marine Mammal Commission, is moving to restrict the harvest of Chukchi Sea polar bears. Are you aware of how these limitations are affecting the nutritional and cultural livelihoods of my Arctic constituents? Will you commit to working with my office on measures available to the Marine Mammal Commission to help alleviate these adverse results?

My response to question 3 specified that Section 101(b) of the MMPA has been used only once to regulate the taking of marine mammals by Alaska Natives, for the harvest of Cook Inlet beluga whales. My response to question 12 recognized that the taking of marine mammals by Alaska Natives is also regulated under other authorities. I specifically mentioned the limits on taking bowhead whales established under the International Convention for the Regulation of Whaling and the Whaling Convention Act. I also noted that the taking of polar bears from the Chukchi Sea population is subject to regulation under the U.S.-Russia Polar Bear Agreement and Title V of the MMPA.

The harvest of all large whales is subject to authorization by the International Whaling Commission and subject to the provisions of the Whaling Convention Act. The only such authorization currently applicable to Alaska Natives is for bowhead whales and, therefore, the taking of other large whales is currently not permitted. However, in the past, Alaska Natives shared a catch limit for gray whales with hunters in Russia.

If confirmed as a member of the Marine Mammal Commission, I will reach out to Alaska Natives to hear more about their concerns and will commit to working with your office and others to better understand the nutritional and cultural needs of your constituents. I understand that the Commission is contemplating holding its next annual meeting in Alaska, which would provide an excellent opportunity to pursue this issue further.

4. In response to question six, you state that "throughout its history, the Commission has supported Native subsistence rights as reflected under the MMPA's provisions and has advocated on behalf of Alaska Native interests." However, in the case of Chukchi Sea polar

bears, the Commission is advocating establishment of a quota enforced through criminal sanctions, without clear justification for the quota from science or Traditional Knowledge. Regardless of any previous interactions that may have occurred with the Alaska Nanuuq Commission, today, community representatives strongly oppose the setting of a quota. They see no indication that the population is declining, but they do see that Chukchi Sea bears are healthy, in great body condition, and are producing many young.

Scientific research is showing these results as well. Nonetheless, based on the information available to me, the Commission is doing little or nothing to advocate on behalf of my subsistence constituents in this case. Federal actions such as this can have devastating consequences on the food and cultural security of the communities and families that will be affected by the federal action. As Commission Chair, what will you do to rectify this situation?

I have not been personally involved in the polar bear issue you raise, so I do not have first-hand knowledge of the situation. However, based on my past experience with the Commission, I know that it takes its mandate to further the purposes of the MMPA as they relate to the protection of Alaska Natives very seriously. This is something that, if confirmed, I would continue.

My understanding is that paragraph 7 of Article VIII of the U.S.-Russia Polar Bear Agreement requires the bilateral Polar Bear Commission to determine “on the basis of reliable scientific data, including traditional knowledge of the native people, the polar bear population’s annual sustainable harvest level.” That provision further requires the bilateral Commission to establish annual taking limits, not to exceed the sustainable harvest level. The Agreement defines the term “sustainable harvest level” to mean “a harvest level which does not exceed net annual recruitment to the population and maintains the population at or near its current level, taking into account all forms of removal, and considers the status and trend of the population, based on reliable scientific information.”

I understand further that the bilateral Commission first determined the sustainable harvest level in 2010 and has confirmed that level at each subsequent meeting. This level is based on the recommendations of the Commission’s Scientific Working Group, which includes at least one Native representative from each country who, among other things, provides advice based on traditional knowledge.

Article V of the Agreement prohibits any taking of polar bears from the Chukchi Sea population that is inconsistent with its terms. That prohibition is carried forward in the U.S. implementing legislation (Title V of the MMPA). Section 502 of the MMPA makes it unlawful for Alaska Natives to take any polar bear in violation of the Agreement or any annual taking limit or other taking restriction adopted by the bilateral Commission. Section 503(c)(1) of the MMPA specifies that violations of Title V are subject to the enforcement authorities set forth in Title I of the Act, which include both civil and criminal penalties. However, as with other violations of the Act, criminal penalties are available only for “knowing” violations.

Your question characterizes the Marine Mammal Commission as “advocating establishment of a quota enforced through criminal sanctions, without clear justification for the quota from science or Traditional Knowledge.” I disagree with this assertion. Instead, a fairer characterization of the

Commission's position is that it is advocating for the faithful implementation of the terms of a binding international agreement, the decisions of the bilateral Commission established under that agreement, and the provisions of the MMPA that implement that agreement. The Senate provided its advice and consent to the Agreement in 2003 and Congress passed implementing legislation in 2007, in both cases setting a national policy that managing subsistence taking under the terms of the Agreement was appropriate. Some may argue that there is no basis, or at least an insufficient basis, for establishing a quota, but doing so is required under the applicable law. The only outstanding question then is what the sustainable harvest level should be.

As a Commissioner, therefore, I would carefully review the information underlining the U.S.-Russia Polar Bear Commission's decisions, but also take note that the existing sustainable harvest level is based on the advice of the bilateral Commission's Scientific Working Group, which includes many of the leading scientific experts on this polar bear population and traditional knowledge, and has been supported in the past by both the Federal and Native Commissioners representing the United States. I would advocate that the parties to the Agreement carry out their duties based on the best available information. If a lack of information is creating impediments, I would advocate for expanded research programs to collect the necessary information.

In addition, it also does not appear to me that the Commission is advocating for the imposition of criminal sanctions for any violation of Title V, as suggested by your question. Criminal sanctions would be available as a consequence of the applicable statutory language, but would be considered by the agencies responsible for prosecuting such cases (the Fish and Wildlife Service and Department of Justice), presumably only in egregious situations with a knowing violation.

As Commission Chair, I would listen to the concerns of the Alaska Native community to see how they can be accommodated within this existing legal framework and to consider whether changes to the MMPA or the bilateral Agreement might be necessary. I believe that there is considerable common ground here and that all parties support a sustainable harvest, based on the best available information, including both traditional science and traditional knowledge.

5. In response to question six you state that, if confirmed, you will consult with my constituents and "work with other Commissioners, the Committee of Science Advisors, and the Commission staff" to seek avenues for accommodating my constituents' concerns. In response to question seven, you state that "the roles of the three Commissioners and the nine members of the Committee of Scientific Advisors are critical in ensuring that the Commission provides a well-informed, critical review" of federal decisions. What are your views on the role of staff in Commission decision-making and the formulation of Commission advice to agencies?

Based on my knowledge of day-to-day operations of the Commission, its policies are set by the three Commissioners, with advice from the Committee of Scientific Advisors (CSA) and with input from the staff. The Commission's Executive Director and staff support the Commissioners by collecting, analyzing, and synthesizing background information, and, with guidance from the Commissioners, by drafting many of the Commission's reports and recommendations. All Commission documents containing recommendations on science and policy are reviewed by the CSA members and approved by the Commissioners. As with most other government agencies, career employees (the Commission staff) serve in a variety of roles, including representing the

agency's political appointees (the Commissioners) in interagency and international fora. In all cases, the Commission staff operates under the policy and scientific guidance of the Commissioners. I believe this is an appropriate division of labor and entirely consistent with the operations of other Federal agencies.

a. In the Marine Mammal Protection Act, Congress authorized funding at the Commission for administrative staff, and instructed the Commission to establish a Committee of Scientific Advisors. Appointments to this Committee are to be well-vetted by outside expert bodies, to ensure that appointees have qualifications appropriate to their advisory role. Congress further instructed the Commission to consult with the Committee of Scientific Advisors on a number of topics. I am aware that research and other staff functions are important to the Commission's fulfillment of its duties. However, I do not find any language in the Act indicating that Congress has authorized a role for staff in the setting of Commission policies, or in speaking on behalf of the Commission in official contexts. Nonetheless, based on information available to me, at the Bilateral Commission on Chukchi Sea polar bears, the Commission is represented by a staff attorney, and is also represented by a staff attorney on the Bilateral Commission's Scientific Working Group. If the Marine Mammal Commission is going to take an active role in an international body whose decisions can affect the lives and livelihoods of American citizens, I find it difficult to understand why these roles would be delegated to non-science staff positions. Why would these roles not be filled by a Commissioner or members of the Commission's Committee of Scientific Advisors?

I understand that Commission staff members regularly represent the Commission at or on U.S. delegations to a number of scientific and policy organizations, including the IWC, the Joint Ocean Commission, and Interagency organizations such as the National Ocean Council (NOC), NMFS Take Reduction Teams, and the Committee on the Maritime Transportation Systems. This is consistent with how other agencies operate, sending career employees to represent the views of the agency, rather than in every case sending the political appointees that set the agency's policies. However, I would expect that staff who participate in this capacity do so with policy oversight and guidance of the Commissioners, consulting on a regular basis, particularly in regard to binding and/or novel policy issues.

If I am appointed as Chair, I will review the Commission's participation in such organizations to ensure that staff members are aware of applicable constraints in taking positions on behalf of the Commission and that the policies of the Commissioners are fully reflected in the staff's input.

In the case you raise, however, I would like to make a few observations. In some instances, the discussions at these meetings are general in nature or require a broad understanding of the full suite of relevant issues, including the legal, policy, and scientific aspects. Indeed, the U.S. delegations to the meetings of the bilateral Polar Bear Commission include a mixture of policy, legal, and scientific staff from other agencies. In this case, therefore, it seems reasonable for the Commission's General Counsel, who possesses a background in biology and is one of the leading experts on the MMPA, to represent the Commission on the U.S. delegation to the Polar Bear Commission.

I understand that the General Counsel does not represent the Commission on the Scientific Working Group. Rather, he recently has begun attending those meetings as an observer in an

effort to learn more about the science underlying the Polar Bear Commission's work and to identify any new developments that should be called to the attention of the Commissioners.

b. If you are confirmed, can you assure me that the interests of my constituents in this international arena will be given the highest priority by the Marine Mammal Commission? This includes representation of the Marine Mammal Commission by Congressionally appointed individuals and by science advisors whose credentials have been properly vetted as instructed by Congress.

I note that one of the Commissioners, Dr. Mike Tillman, already serves as the Commission representative at a number of fora which are of interest to Alaska native communities. If I am confirmed as Chair, I will review the staff's participation in such organizations and consider whether additional steps are needed to ensure that the policies of the Commissioners are fully reflected.

6. Where bowhead whale and walrus harvests have failed in recent years, current legal restrictions make gray whales and other large baleen whales unavailable as a means of supplementing subsistence foods in villages. How might the Marine Mammal Commission advocate for greater flexibility in the harvest of marine mammals for subsistence?

At the outset, I think it is important to note that problems associated with these harvests are related to the effects of climate change, which adversely affects ice conditions and makes it difficult, and sometimes impossible, for hunters to access traditional hunting areas. Changing climate may also affect the distribution of marine mammals and the timing and location of their migratory routes, which may have adverse consequences for subsistence hunters who rely on those species.

As noted in my response to question 3 above, the hunting of large whales for subsistence purposes requires an authorization from the International Whaling Commission. Such authorization would require that the United States demonstrate a subsistence need to the IWC and, furthermore, demonstrate that the harvest level is sustainable. Based on recent experience with subsistence hunts in Greenland, it is possible that other IWC members would ask the Alaska Natives to reduce the take of bowhead whales if catches of other whales are authorized.

I have been advised that in 2014 some Alaska Natives broached this possibility with members of the U.S. Delegation to the IWC (on which a member of the Marine Mammal Commission serves). Specifically, these individuals expressed interest in seeking a catch limit for gray whales as an alternative to other subsistence hunts to tide their villages over in a year of shortages. I have also learned that the U.S. Delegation subsequently consulted with the Alaska Eskimo Whaling Commission (AEWC) in 2015 about its interest in pursuing such a proposal but that the AEWC decided not to pursue this possibility at the 2016 IWC meeting.

If Alaska Natives wish to pursue the harvest of other species of large whales, the appropriate mechanism is to work with NOAA, as lead agency, and other involved agencies (e.g., the Marine Mammal Commission and the Department of State) to seek an Aboriginal Subsistence Whaling catch limit from the IWC. A first step in this process would be to initiate consultations under the AEWC's cooperative agreement with NOAA regarding the strategy for presenting such a

proposal to the IWC. As previously noted, the Marine Mammal Commission is represented on the U.S. Delegation and already participates in these consultations. If I am confirmed, I would support the Commission continuing to serve in this capacity. I would also expect the Commission to continue to work closely with Alaska Natives and the Alaska Congressional Delegation on these issues, as it has for years.

7. In response to questions eight and thirteen, you highlight the importance of looking to Traditional Knowledge to aid in our understanding of the status of the Arctic ecosystem and its marine mammal populations. However, the population models relied upon by the Fish and Wildlife Service to predict declines in Chukchi Sea polar bears rely only on western science. Input from local observations is excluded despite the fact that data from western science are lacking or are of poor quality for the Chukchi Sea polar bear population. Under your Chairmanship, how will the Marine Mammal Commission promote the inclusion of Traditional Knowledge in the analysis of the status of polar bears?

As noted in my previous responses, I believe that Traditional Knowledge is a valuable source of information and should be considered by decision-makers in concert with information derived from traditional scientific methods. In fact, as noted above in my response to question 4, consideration of Traditional Knowledge is specifically required in setting the annual sustainable harvest level under the U.S.-Russia Polar Bear Agreement. This is appropriate because harvest levels are based on current abundance and population trends.

Nevertheless, it can be challenging to fully incorporate Traditional Knowledge into management systems that are based on western scientific principles. One successful approach to such integration involves restating the observations of hunters into hypotheses that can be tested using western scientific methods. Perhaps the best example of this approach is the incorporation of Traditional Knowledge of the migratory routes of bowhead whales into the research program undertaken by the North Slope Borough in the early 1980s. Hunters believed that a substantial proportion of migrating whales were missed by visual observers based on shore-fast ice, which led to an underestimation of total population size. This hypothesis was tested using a system of passive acoustic recorders, which indicated that the hunters were correct and a large number of whales passed the observers unseen. Future surveys were modified to include both visual and acoustic approaches, yielding a more accurate estimate of abundance.

It is particularly challenging to incorporate Traditional Knowledge into the models used to predict future temperature rises and the resulting impacts on ice conditions and polar bear populations, but it can continue to play an important role in confirming or refuting those predictions. Such observations can contribute to helping refine and improving the accuracy and predictive value of the models being used. It also is worth noting that the predictive models to which you refer, although instrumental in the Fish and Wildlife Service's decision to list the polar bear as a threatened species, have not played a role in decisions concerning subsistence harvests by Alaska Natives.

The Marine Mammal Commission has demonstrated a longstanding commitment to listening to and working with Alaska Natives to promote the inclusion of Traditional Knowledge in analyses of population status and decision making regarding harvest levels, when appropriate. This is a

tradition that I would continue if confirmed. I am open to suggestions from Alaska Native organizations on how this process might be improved and in hearing about any impediments they believe currently exist. If the Commission holds its 2016 Annual Meeting in Alaska as currently planned, there will be ample opportunity to pursue this issue.

8. In some of your publications, you have pointed out the limited availability of data for many marine mammal stocks that occur in U.S. waters. One example pertains to the Chukchi Sea polar bear population. The predicted decline of that stock is not based on direct information regarding that population. Rather, it is based on predicted sea ice decline and data about the association of bears, from other populations, with changing sea ice conditions. In fact, as noted, both science and local observations indicate that the Chukchi Sea population of polar bears seems to be responding differently, and perhaps positively, to sea ice declines. In 1977, the International Whaling Commission imposed a moratorium on the Alaskan subsistence harvest of bowhead whales, led to extreme hardships in our Arctic communities. These hardships included severe food shortages and social stress. In the end, the decision was based on incomplete and ultimately inaccurate science. The science has been corrected; however, the human toll can never be reversed. I do not want to see our government make this kind of mistake again. As Chair of the Commission, what approach would you use and what advice would you provide in situations where scientific data are lacking, Traditional Knowledge is available and shows there is no need for forced limitations on food supply, and yet the federal government is considering limiting subsistence opportunities?

The basis for management in both the IWC and the Polar Bear Commission are sustainable catch or harvest limits based upon the best available scientific advice. Both organizations rely on scientific advisory bodies to provide that advice. The Polar Bear Commission and its Scientific Working Group are required to consider available traditional knowledge and, in recent years, the International Whaling Commission (IWC) has also acknowledged the value of traditional knowledge. The scientific information available for any given assessment may be imperfect, but these two commissions are nonetheless compelled by their respective international agreements to base their decisions upon the best science available. To me, this approach appears to be both reasonable and practical and encourages the continued collection of improved scientific information on which to base management decisions.

Nevertheless, each Commission has deviated somewhat from more restrictive advice provided by its scientific body to set a higher catch limit, to the advantage of the affected Native groups. In 1977 the IWC overturned an earlier decision for a zero catch limit, as advised by its Scientific Committee, to set a small annual catch limit for bowhead whales. More recent scientific assessments have been improved due to the incorporation of Traditional Knowledge regarding the distribution of migrating bowhead whales, as noted above. At its 2010 meeting, the Polar Bear Commission set a harvest limit that exceeded the level initially recommended its Scientific Working Group. In each case, the management action was taken in response to the acknowledgment of Native needs.

It is unfortunate that the Alaska Eskimo Whaling Commission went on through a very painful initial period due to incomplete information on the status of bowhead whales. However, the United States subsequently emerged with a scientifically-sound management regime that the

IWC has acknowledged as the “gold standard” for management of aboriginal subsistence whaling. That is a significant achievement for which the AEWG should feel immense pride. It also has served the United States and the AEWG well, enabling them successfully to counter politically motivated assaults on catch-limit renewals by other IWC countries.

In any similar situation where science is lacking or inadequate, the Marine Mammal Commission should advocate strongly for the research and monitoring needed to improve the scientific basis for management. Scientists and managers also need to be cognizant of, and account for, traditional knowledge. If confirmed, I would support continued application of these two policies. I would work with my fellow Commissioners, Alaska Natives, and you to examine how we might better shape and advocate for effective policies and decisions by the lead agencies. I note, however, that the available options are constrained by the legal framework under which we are operating. In the case of the U.S.-Russia Polar Bear Agreement and Title V of the MMPA, there is an affirmative duty to identify an annual sustainable harvest level based on reliable scientific information, and to establish and implement annual taking limits.

9. Regarding your response to question number two, I would appreciate further clarification on your suggestion that the legislative language allows for flexibility in the Commission’s role. What types of flexibility do you envision, and how would you plan to exercise that flexibility as Chair? What are some specific examples? Before launching any expansion of Commission activities, would you be willing to meet with Congress to discuss your plans and intentions, and be willing to adapt your plans based on our response?

My response was intended to convey the fact that the duties assigned to the Commission under section 202(a) of the MMPA are quite broad and include any measures that would further the purposes of the Act. My intent was to point out that the Commission has considerable discretion in how it meets those responsibilities and on which species and issues of concern it focuses its attention. For example, 10 or 15 years ago, the Commission would likely have not given very high priority to issues associated with how best to reduce potential conflicts between abundant marine mammal populations and human activities. That issue may warrant greater attention given the recovery of some populations of marine mammals since enactment of the MMPA.

As Chair, I would welcome an opportunity to meet with Congressional representatives to discuss the annual work plan of the Commission. I understand that each year the Commissioners and staff address the implementation of the five Strategic Objectives in the Commission’s Strategic Plan via this work plan.

10. Our environmental laws require that decisions be made on the best available scientific information, and do not require that all uncertainties to be resolved through research. When faced with making recommendations on proposed activities that require agency action, how would you define the threshold of insufficient information? What criteria would you use to determine when there is enough information and how would that criteria affect your recommendation?

Some environmental laws specifically require that agency decisions be based on the best available scientific information. For example, listing decisions under the Endangered Species Act must be based on the best scientific and commercial data available. As the name of the

standard suggests, the agency is not typically required to collect new information to satisfy this requirement, but must consider information already on hand or in the published scientific literature. In some cases, there may be a duty to obtain additional information if that information can be readily developed within the time-frame of the decision being made.

Perhaps more germane to the decisions being made by Federal agencies are the provisions of the Administrative Procedure Act, which require that decision-makers have a rational basis for their actions. Whether or not an agency decision is rational depends not only on the information that is available, but on the underlying statutory requirements and where legislators have placed the burden of proof.

I believe that the appropriate role of the Marine Mammal Commission in this process is two-fold. First, the Commission should be apprising the action agency as to what pertinent information is available and calling the agency's attention to what the Commission believes to be the best information that should be applied in each case. Second, the Commission should base its recommendations on the best application of this information to the statutory decision-making criteria. In some cases, the information is sufficient to make the required findings and so the Commission will recommend that the agency proceed with the action. In other cases, the available information may be insufficient to make the findings required by the MMPA (or other applicable law) and so the Commission will recommend against the agency proceeding with the action until more information is obtained. Or, alternatively, the Commission could recommend that the action agency condition its decision to take account of the lack of certainty in the available information.

I believe that the Commission should strive to provide the action agencies with its best advice on implementing the provisions of the MMPA. The action agency is free to deviate from the Commission's recommendations provided that it has a reasonable basis for doing so.

11. Regarding your answer on the "small numbers" requirement I note your comment on the need to consider the "existence of other stressors." These factors are part of the MMPA negligible impact analysis, and not the small numbers determinations. How do you distinguish between "small numbers" and "negligible impact" determinations? And how do you see "multiple stressors" or other factors affecting an agency's "small numbers" finding?

The courts have consistently ruled that the negligible impact and small numbers requirements for incidental take authorizations under section 101(a)(5) of the MMPA are separate issuance standards, but they have recognized that there is a close linkage between the two criteria. In the case I cited (*CBD v. Salazar*), the court determined that the standards would not be impermissibly conflated if the small numbers criterion were assessed relative to the size of the population at issue. However, the court did not provide additional guidance as to what the relationship between the overall population size and the segment that constitutes a small number should be. For instance, the court did not say that the management agency, if it decided to follow this approach, would need to apply the same percentage across all population sizes.

The size of a population, its conservation status, and the threats that it faces are all relevant considerations when making a negligible impact finding. My only point was to suggest that, just

like population size, the status of a stock, and the number and extent of other threats it faces, could play a role in determining the appropriate percentage to apply when making a small numbers determination. If, for example, the agency set the small numbers threshold at 10 percent of population size for a healthy population with a high reproductive potential, it might want to adopt a more conservative criterion for a declining or endangered population exposed to multiple threats. There may be some overlap between the negligible impact determination and the small numbers finding, as you note, but they would remain as distinct, separate standards.

12. While the Commission has a role in reviewing and commenting on federal actions to implement the marine mammal laws, such as in NMFS' or FWS' issuance of marine mammal take permits or regulations under the MMPA, your answers also suggest that the Commission should comment on Federal actions such as development of a five-year OCS oil and gas leasing plan. In your view, how much weight should the Administration give to Commission recommendations on major national policies on non-marine mammal issues? What will the Marine Mammal Commission do in the future under your leadership with respect to oil and gas leasing decisions?

Under the MMPA, the Commission has an important role in reviewing, and when it believes it necessary or appropriate, providing recommendations to other federal agencies on activities that have implications for the protection and conservation of marine mammals. Decisions on what areas to include in an OCS leasing plan clearly have a connection to the conservation of marine mammals and protection of the ecosystems they inhabit. As such, commenting on such a plan is within the scope of the Commission's responsibilities under the Act, which include providing federal officials with recommendations on actions it "deems necessary or desirable" for the protection and conservation of marine mammals or to further the policies of the MMPA.

My experience with the Commission is that, when commenting on a 5-year OCS leasing plan, it focuses on elements that would affect marine mammals and the marine environment. However, to be most helpful and effective, the Commission cannot limit its review just to the MMPA. It also must try to be responsive to the policy goals of other statutes; in the case of the Outer Continental Shelf Lands Act, "the dual goals of promoting prompt development of the Nation's oil and gas resources with the necessary protections for the marine, coastal, and human environments" (80 FR 4941, BOEM Request for Comments on the Draft Proposed Outer Continental Shelf Oil and Gas Leasing Program for 2017–2022).

On matters related to the conservation of marine mammals or important marine mammal habitat, other agencies within the Administration should give considerable weight to the views and recommendations provided by the Commission. This does not mean that other agencies are bound to adopt the Commission's recommendations. They are, however, required by section 202(d) of the MMPA to provide a detailed explanation of their reasons for not doing so. Federal agencies are not under a similar obligation to follow Commission recommendations that do not relate to the conservation of marine mammals or the furtherance of the goals and policies of the MMPA. However, in my experience, the Commission does not make recommendations that are not relevant to marine mammals or the environment on which they depend. For instance, the

Commission may comment on OCS leasing actions, but would not comment on land-based energy development activities unless they somehow had an impact on marine mammals or their environment (e.g., through run-off into the ocean).

I would expect the Commission to continue commenting on leasing plans to ensure that the Administration is aware of and considers biologically sensitive areas and populations in its leasing decisions. Consideration of the Commission's comments could lead to reduced conflicts at later stages of development (i.e., exploration, drilling).

13. Do you support the principle of adaptive management that allows for actions to proceed as the scientific record is developing as opposed to a precautionary principle that restricts activity in the face of uncertainty?

Adaptive management is an iterative decision-making process that allows actions to proceed in the face of uncertainty. As the action proceeds, information is collected and analyzed to gain additional insights into the effects of the action and to adjust management measures accordingly. In many cases, baseline information is absent or incomplete, and it is difficult to detect and attribute changes in marine mammal populations to specific factors, so adaptive management presents a risk that populations will experience adverse impacts before a problem is detected.

The precautionary principle is more conservative, erring on the side of caution in cases of uncertainty. Applying this principle, an action would be deferred until there is sufficient information to demonstrate with reasonable assurance that it would not cause unacceptable or irreversible harm. To some extent, the precautionary principle is built into the provisions of the MMPA. For instance, when calculating the potential biological removal (PBR) level for a marine mammal stock, the Act requires that a minimum (rather than best) population estimate be used and that a recovery factor be applied for stocks that are of unknown status. In both of these applications, the MMPA can be interpreted as taking a precautionary approach.

I believe that the provisions of the MMPA provide an appropriate mix of the precautionary principle and adaptive management. For example, before issuing an incidental take authorization under section 101(a)(5), the authorizing agency should have a reasonable basis for believing that the expected effects on marine mammal stocks will be negligible. It would be inappropriate to issue an authorization in the face of complete uncertainty about the effects of the proposed action based on a belief that adaptive management could be used to allow for adjustments to be made once adverse effects are detected. On the other hand, such authorizations must include monitoring and reporting requirements, which reflect an adaptive management approach. Such requirements are intended to ensure that marine mammals are being taken in the anticipated ways and numbers, and to enable adjustments be made as necessary.

14. The MMPA does not require a cumulative impact as part of any take permitting process. Cumulative effects are to be considered under the ESA and NEPA. Regarding your answer to question nineteen, why are you promoting redundant analyses? Instead of creating unnecessary new layers, what would you do as Commission Chair to remove inefficiencies in take permitting, and promote simplification, certainty, and timeliness in permitting?

Neither NEPA nor section 7 of the ESA make specific reference to considering cumulative impacts in the required analyses. Rather, cumulative impacts analyses are required under the implementing regulations. This seems appropriate because understanding the impacts of a proposed action requires knowledge of baseline conditions and the other stressors that are affecting or that are likely to affect the species or other resource of concern. Similarly, the statutory language of the MMPA does not specifically require a cumulative impact analysis as part of its permitting process. Nevertheless, just as with NEPA and the ESA, understanding the impacts of the suite of stressors affecting a marine mammal stock is relevant to evaluating the effects of the particular action under review.

As stated in my response to question 19, my colleagues and I believe that BOEM underestimated the potential effects of multiple, sometimes overlapping, seismic geological and geophysical (G&G) activities along the Atlantic coast in its programmatic EIS analyzing the potential effects of those activities. In addition, unlike NEPA, which is a procedural law, the MMPA includes substantive standards for determining whether proposed activities may have an adverse effect on marine mammal populations. Incidental take authorizations under the MMPA require a negligible impact finding and are to include “means of effecting the least practicable impact” on marine mammal stocks and their habitat.

No federal agency should promote redundant analyses. Nevertheless, it needs to be recognized that there are some differences in the requirements that must be made under various statutes. It serves no one well if shortcuts are taken that make agency actions vulnerable to legal challenge. When I served on the Committee of Scientific Advisors, the Commission was trying to engage action agencies in reviewing the requirements under NEPA, the ESA, and the MMPA to see where the required analyses might be integrated or streamlined. For example, if a negligible impact finding is made under the MMPA, it seems logical that the action being considered would also satisfy the no-jeopardy standard of the ESA, at least as it pertains to marine mammals. As Chair of the Commission, I would want to understand the status of these earlier interagency discussions and support further efforts if they seem promising. I would also work with NMFS to develop comprehensive and consistent guidelines for applicants to follow when submitting an application for an MMPA incidental take authorization, and encourage more timely reviews of applications by NMFS analysts.

15. How would you define a “duplicative” survey as referenced in your answer to question twenty-three? Why should surveys be limited in size or number if current research and science does not show any harmful impacts to marine life populations?

In my answer to question 23, I was referring to G&G surveys that cover the same areas within the proposed survey region, using similar technical approaches. In the Atlantic region nine companies requested permits from BOEM, many of them using identical survey methods. As I note below, some geographical areas were covered by all nine permit applications. And, as I noted in my earlier response, given the difficulty in detecting changes in the abundance and distribution of marine mammal populations and attributing any changes that are observed to particular causes, the fact that we have not observed any harm to marine mammal populations as a result of airgun surveys, does not mean that such effects have not occurred.

16. Regarding your answer to question twenty-three, the June 29, 2015 meeting with BOEM included non-scientists as well, such as NRDC's legal counsel. At that meeting, and in the letter you signed with 74 scientists, it appears your recommendations were intended to directly or indirectly influence the administration and execution of law or public policy. Do you agree?

Throughout my career I have worked to ensure that the best science is brought to bear on important matters pertaining to the conservation and management of marine mammal populations, and this particular issue is no exception. As I noted in my initial response to question 23, in our meeting we made a series of science-based recommendations to the Director of BOEM that would help to mitigate any potentially adverse effects of seismic surveys on marine mammals in the Atlantic. This type of engagement is entirely consistent with the expectations of my institution, Duke University, where one of our guiding themes is *knowledge in the service of society*. Furthermore, I believe that my past record of active engagement in such important public policy issues is one of the reasons that President Obama nominated me to serve on the U.S. Marine Mammal Commission.

17. On the matter of assessing Committee of Scientific Advisors members conflicts of interest (or appearance of) issues, how often does the Commission actually disqualify a CSA member from participating in a scientific review, on average annually? Has it ever issued a waiver to allow review that would otherwise be disqualified, or has it simply determined that the extent of disqualification is "significant enough" that precludes even appointing someone needing waivers as a CSA member? Please provide examples if this has happened, so that the Committee can understand what the Commission sees as the relevant factors in securing effective and balanced CSA representation.

I have no firsthand knowledge on which to answer these questions. I can say that, when I was a member of the CSA, I occasionally would need to be recused (disqualified) from participating in the review of a particular matter. For example, I would be recused from reviewing a permit application submitted by one of my colleagues at Duke University. I contacted the Commission staff to provide additional information regarding these questions and received the following response—

Almost every member of the CSA is recused from participating personally and substantially in the review of some category of activity. These recusals generally are based on the member's financial holdings, outside employment, or other associations or positions. How frequently these recusals are invoked varies depending on the make-up of the Committee and the issues that arise in a given year. It is not uncommon for one or more members to be recused from participating in the review of some particular matter every month. Potential conflicts most frequently arise in the review of research permit applications because the CSA member has a covered relationship with the applicant or is named as a co-investigator.

Invoking a recusal often is fact-specific; they are applied on a case-by-case basis. The Commission does not compile statistics on the frequency with which members are disqualified from particular matters, but estimates that, collectively, members are recused around 25 times per year. However, it is rare that more than one or two CSA members are recused from the same matter, leaving a sufficient number and diversity of members participating to provide the

necessary assistance to the Commission in formulating its recommendations and associated rationale.

Until recently, the Commission has not seen a need to provide any CSA member with a waiver. This has changed as matters related to acoustics and the impacts of sound on marine mammals has taken on growing significance in the Commission's workload. There are relatively few experts in this field and the issues presented often are so specialized that other members of the CSA may not be able to fill in if the sound expert needs to be recused. This also means that the leading experts are in high demand and tend to have a higher than average number of financial or other connections to outside projects that could create conflicts or the appearance of conflicts.

The current Commissioners considered issuing a waiver for one prospective appointee. After reviewing all of the facts in that instance, the Commissioners decided that, even with a waiver, which would have provided the prospective member with the necessary authority to participate in a matter despite having a conflict of interest, they were uncomfortable going forward with the appointment because of the nature and extent of the identified conflicts. They thought that doing so could compromise the public's confidence that the Commission and the CSA are providing independent, objective advice.

18. I remain concerned about your suggestion that seismic survey activities should not be approved in the Atlantic OCS at the level proposed because you want to wait for better information on the potential cumulative effects. As you know, many seismic surveys have been conducted in the Gulf of Mexico over several decades with no significant impacts on marine mammal populations, fisheries harvest, or other ecosystem resources, and many seismic surveys for the sake of research have also been conducted. What makes the number and size of the surveys proposed in the Atlantic extraordinary? Why should evidence from the Gulf of Mexico and other regions be disregarded in evaluating proposed seismic in the Atlantic?

I disagree with the assertion that there have been "no significant impacts on marine mammal populations" in the Gulf of Mexico as a result of seismic surveys. We have no measurements of marine mammal abundance or distribution in the Gulf prior to the initiation of seismic exploration in that area, and thus no baseline with which to compare current conditions. I believe a more accurate characterization of our state of knowledge is that we do not know whether or not there have been adverse effects of seismic surveys in the Gulf of Mexico. The limited research addressing the potential effects of seismic surveys on marine mammals in the Gulf of Mexico have focused on sperm whales. The most recent (December 2012) NOAA Stock Assessment Report for sperm whales in the Gulf of Mexico makes the following statement, with which I concur –

Seismic vessel operations in the Gulf of Mexico (commercial and academic) now operate with marine mammal observers as part of required mitigation measures. There have been no reported seismic-related or industry ship-related mortalities or injuries to sperm whales. However, disturbance by anthropogenic noise may prove to be an important habitat issue in some areas of this population's range, notably in areas of oil and gas activities and/or where shipping activity is high. Results from very limited studies of northern Gulf of Mexico sperm whale responses to seismic exploration indicate that sperm whales do not appear to exhibit horizontal avoidance of seismic survey activities. Data did suggest that there may be some decrease in foraging effort during exposure to full-array airgun firing, at least for some individuals. Further study is needed as sample sizes are insufficient at this time (Miller et al. 2009).

Heightened concern regarding the potential effects of seismic surveys on marine mammal populations in the Atlantic is warranted for several reasons. First and foremost is the presence of a critically endangered species, the North Atlantic right whale, which uses the pending Atlantic seismic survey area as a breeding ground and migratory corridor. There have been no studies on the response of right whales to the sounds of airguns, but a recent research paper (Blackwell *et al.* 2015) on the bowhead whale, a closely related species, found that whales changed calling rates in the presence of airgun pulses and, when cumulative sound exposure levels reached approximately 160 dB re 1 Pa²-s, the whales stopped calling altogether. Contact calls between female whales and their calves are critical to ensuring the survival of dependent calves, so such a finding is a particular cause for concern.

Second, the diversity and density of marine mammals is much greater along the Atlantic coast than in the Gulf of Mexico. In particular, it is important to note the presence of seven species of baleen whales (including the right whale discussed above), which rely on low frequency sounds to communicate, and five species of beaked whales which have proven to be particularly sensitive to some sources of anthropogenic sound. Some areas within the potential seismic survey area, such as The Point off Cape Hatteras, are especially rich in marine mammal species – this particular area falls within the survey boundaries of all nine seismic applications received by BOEM.

Finally, unlike the situation in the Gulf of Mexico, there has been no commercial seismic activity in the proposed Atlantic survey area for several decades, so most marine mammals in this area will be naïve to such sources of disturbance. We simply do not know how several of these species will react to the sounds of airguns, particularly from repeated and possibly overlapping exposures and when such sounds are concentrated in important feeding and breeding areas.

19. If confirmed, will you commit to providing my office an annual update on how the Marine Mammal Commission is working with my constituents to address the issues that I raised in my written questions?

Yes, I would welcome an opportunity to update your office on an annual or even more frequent basis on the various activities underway at the Commission that have a direct or indirect impact on Alaska Native communities.