



ARCTIC COASTAL AND MARINE SPATIAL PLANNING AND THE ROLE OF THE ARCTIC PEOPLE

CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE, WASHINGTON DC

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SEMINAR SUMMARY

The Alaska Eskimo Whaling Commission and the Environmental Law Institute brought together representatives of US Arctic communities (including Barrow, Savoonga, and Kotzebue) and federal agencies to begin a national conversation about US Arctic coastal and marine spatial planning (CMSP). The day-long discussion centered on the rights, traditions, and experiences of the Arctic people; existing co-management practices; competing management imperatives; and how to build from the existing system toward an Arctic coastal and marine spatial planning (CMSP) framework.

SESSION I. COASTAL AND MARINE SPATIAL PLANNING: PURPOSE AND CONCEPT

In the first session, panelists set the stage for the subsequent discussions. They introduced the scientific rationale for developing a CMSP framework, discussed the Interagency Ocean Policy Task Force CMSP framework recommendations, and considered the unique nature of the Arctic that must be taken into account when implementing regional CMSP.

Moderator

- Kathryn Mengerink, *Director, Ocean Program, Environmental Law Institute*

Speakers

- Kate Moran, *Senior Policy Analyst, Office of Science and Technology Policy, Executive Office of the President*
- Paul Sandifer, *Senior Science Advisor, National Ocean and Atmospheric Administration*
- Eleanor Huffines, *Manager, US Arctic Program, Pew Charitable Trusts*

Dr. Kate Moran spoke from her perspective as a Senior Policy Analyst at the Office of Science and Technology Policy (OSTP). OSTP is responsible for advising the President and others in the Executive Office on science and technology issues and has helped unite agencies and communities during the CMSP development process.

Dr. Moran provided an overview of federal efforts to develop CMSP. The recently proposed CMSP framework, which was prepared by the Interagency Ocean Policy Task Force, builds from the proposed science-based national ocean policy. She explained that numerous challenges provided the impetus for developing a CMSP framework: deteriorating human and marine ecosystem health, the effects of warming water on communities, sea level rise and storm surge, decreased biodiversity, and increased human uses that exacerbate the strain on coastal environments. Dr. Moran noted that other countries are also undertaking CMSP – such as Canada, whose increasing use issues are similar to those in Alaska – and that the US should learn from other international efforts in order to improve its CMSP policy.

Dr. Moran described the regional approach that the proposed CMSP framework takes. It creates nine regional planning bodies and gives them authority to further divide into sub-regions. She stated that marine spatial planning has been happening for a long time, but through a sector-by-sector approach. The CMSP framework should build on existing efforts, such as the Integrated Ocean Observing System.

Dr. Moran then spoke to the highlights of the CMSP plan. First, it is ecosystem-based and promotes multiple sustainable uses in the environment. Second, it is designed to accommodate emerging issues—the framework intends to adapt to changing and increasing information and new technologies. Third, the framework aims to increase scientific certainty to enable economic investments. The plans should be informed by the best available science. Finally, although the framework sets national objectives, it also gives regions the authority to establish their own goals.

Dr. Paul Sandifer began by describing President Obama’s June 12, 2009 memorandum that established the Task Force and required the heads of twenty-four executive departments and agencies to work together to develop a national ocean policy and a framework for CMSP. The Task Force spent months developing the Interim Framework, which defines CMSP as a regional, comprehensive, adaptive, integrated, and ecosystem-based approach to managing uses of the coastal and marine environment. The proposed framework is not regulatory in and of itself, but rather is a tool or planning process that builds upon existing federal, state, and local regulatory structures.

Dr. Sandifer highlighted the fact that the President’s memorandum specifically states that the national framework should be ecosystem-based. This means looking holistically at ecosystems and recognizing that humans are part of the ecosystem, not outside of it. He noted that human uses and activities affect marine ecosystems, which alters their ability to sustain important ecosystem services. Additionally, ecosystem-based management seeks to reduce conflict between competing uses.

Dr. Sandifer described an example of the potential benefits of CMSP. Along the Atlantic coast, endangered baleen whales are at risk of collision with commercial ships. The challenge has been to protect the whales, an endangered resource, while at the same time ensuring that commercial ships could continue to transport goods in and out of essential ports. By understanding the ecosystem and looking at the system holistically, a solution was found: a relatively small shift in the primary vessel channel allowed ships to pass through the least dense area of typical whale sightings. An underwater passive acoustic system was also put in place, which listens for whale sounds in order to alert vessels to whales in the area. Finally, the ships have human lookouts at all times. The result has been a significant reduction in negative interactions between vessels and whales, illustrating the success of ecosystem-based management and CMSP generally.

Ms. Eleanor Huffines considered the CMSP framework in light of Alaska’s unique ecosystems, society, and economy, explaining why CMSP will necessarily be different in Alaska than in other regions. She

described Alaska's vibrant communities, healthy and functioning ecosystems, and subsistence ways of life. The Arctic region also helps to regulate the world's climate. Ms. Huffines noted that the Interagency Ocean Policy Task Force recognized the Arctic as a unique environment experiencing unique changes, which is why it is included as one of the nine priority objectives of the national ocean policy. Climate change, ocean acidification, expansions in industrial development, as well as other issues, are identified as specific Arctic issues that need to be explored and addressed.

Ms. Huffines outlined some of the essential factors to consider when creating an Arctic strategic plan and engaging in CMSP in the Arctic. As noted in the national ocean policy, some of the main issues that must be addressed include: protecting marine ecosystem health, devising a better emergency response system, addressing concerns about risks from pollution and environmental degradation, acknowledging the importance of the Arctic to national security, and remedying the current lack of real understanding of the Arctic ecosystem as the climate changes. Ms. Huffines also spoke to the importance of developing partnerships in the communities. Communities, native organizations, and tribes must be involved in the CMSP policy development process and share their traditional ecological knowledge.

Question and Answer

Will NOAA be the primary federal agency developing CMSP in Alaska and the nation generally?

Dr. Sandifer replied that the intent of the CMSP framework is to have a coordinated effort where the various federal bodies work alongside the regional bodies. It is designed to be a collaborative process across all agencies, without a single agency leading or taking control. Dr. Moran emphasized that there will be a strong role for NOAA, but other agencies have an equally important role to play. She noted that there may be opportunities for a stronger role for particular agencies in certain regions, depending on the specific issues of importance to a region.

Given that the Minerals Management Service (MMS) is a federal agency focused on oil and gas development, how can you ensure oil and gas development will not be the primary focus of CMSP?

Dr. Moran said that the framework is designed so that MMS will contribute to CMSP development, but no more so than the other stakeholders involved. The intention moving forward is for multiple uses to be considered, incorporating a range of agencies.

How will action unfold after the President reviews the Task Force's proposed framework?

Dr. Moran stated that CEQ and the Executive Office of the President are preparing to work collaboratively should the President make recommendations that are in line with the interim framework. There is also a federal legal group examining what will need to be done immediately. However, at this point, everything depends on the President's decision.

Dr. Sandifer noted that all agencies are working now to ensure that they are prepared for whatever the President announces. Without reliable scientific data, however, informed decisions cannot be made, which is why a data group will begin gathering and disseminating necessary information.

How did the Interagency Ocean Policy Task Force envision the relationship between the strategic implementation plan for environmental stewardship in the Arctic Ocean and the implementation of

CMSP, and at what point did the Task Force envision getting the necessary science to make these planning processes credible for the region?

Dr. Moran said that data and knowledge are critical for developing CMSP, but that others who have undertaken CMSP urged the Task Force not to delay planning due to the lack of data. High priority data needs will emerge as the regional processes move forward. Also, local communities and industry will be invited and encouraged to provide their own information. Dr. Moran also noted the similarity of the strategic action plan and CMSP.

Dr. Sandifer stated that the Arctic region has incredibly unique attributes that are important both regionally and globally, and although much data are still needed, enough is known to get started. We cannot afford to wait, particularly in the face of the changing climate and increasing uses.

CMSP should be viewed as a comprehensive and ecosystem-based plan, rather than a single-sector plan.

Dr. Moran asserted that we can no longer go forward with sector-based plans. Action must be taken to incorporate different stakeholders. There is tremendous willingness to engage in the process from a wide variety of groups, because CMSP is a win-win scenario.

There is concern about strengthening the local role and voice in the decision-making process. If there is one regional planning body for Alaska, is there one set of objectives that covers sub-regional plans?

Dr. Moran replied that there is flexibility to have varying objectives within parts of a single region and to have advisory groups in the planning process. There is opportunity to have a public and stakeholder representative group and a science-based group to provide both sides needed for this process: the data and local input. There are no restrictions on doing this.

SESSION II. THE ARCTIC: A UNIQUE PEOPLE AND A UNIQUE REGION REQUIRE A UNIQUE APPROACH

In this session, panelists provided the context within which CMSP will develop. Panelists discussed the history of the region and the people and the critical role that traditional knowledge plays when managing resources. The discussion following the presentation focused on the linkage between traditional knowledge and CMSP.

Moderator

- Anne Henshaw, Program Officer, Environmental Program, Oak Foundation

Speakers

- George Noongwook, Commissioner, Alaska Eskimo Whaling Commission
- Craig George, Senior Wildlife Biologist, North Slope Borough Department of Wildlife Management
- Caleb Pungowiyi, Arctic Rural Liaison/Senior Advisor, Oceana

Mr. Caleb Pungowiyi explained that his motivation for working to integrate traditional knowledge and western science is to safeguard future generations of Alaska Natives, and to preserve the personal relationship they share with the animals and resources on which they depend. In 2006, Dr. Huntington published a book on the best practices in oceans management. A multitude of countries submitted papers on their best practices, and Mr. Pungowiyi's community submitted a chapter on indigenous perspectives, explaining their values regarding ocean management and the unique relationship developed with species.

Mr. Pungowiyi described how Alaska Natives show respect to species and to the spirits of the animals. They know they must behave in an appropriate manner while hunting, for example, by remaining quiet to show respect to the spirit of the animal. It is important that they be generous with the products they receive from animals, share with those in need, and properly store resources for the future. He noted that western management techniques do not recognize these traditional values and practices. US agencies often think of management in terms of seasons and limits, and other restrictions. Indigenous people say that when animals are available, that is when they are harvested. Mr. Pungowiyi advised looking at the larger scope of the issue rather than managing species by species or agency by agency. The current system, Mr. Pungowiyi recognized, is fragmented and there is a lack of communication among the agencies regarding the actions each entity takes. He agreed that humans and human uses must be considered as part of the ecosystem.

According to Mr. Pungowiyi, the big question is: what is traditional knowledge? He shared UNESCO's brief definition of traditional knowledge:

The indigenous people of the world possess an immense knowledge of their environments based on centuries of living close to nature. Living in and from these complex ecosystems they have an understanding of the properties of plants and animals, the functioning of ecosystems and the techniques for using and managing them that are particular and often detailed. . . . Equally, people's knowledge and perceptions of the environment, and their relationship with it, are often important elements of cultural identity.

Mr. Pungowiyi emphasized the final part, reiterating that traditional knowledge needs to be recognized as a fundamental component of indigenous peoples' lives.

Mr. Pungowiyi asserted that there has been much controversy surrounding traditional knowledge. He explained that changes to the state's Coastal Management Act now require that any inclusion of subsistence use areas in local coastal planning must be scientifically defensible. In many cases, the science is missing, and therefore subsistence use areas are ignored. This leaves holes in the framework and negatively impacts those communities which depend on subsistence areas. Other policies require that traditional knowledge be "verified and validated." To overcome these restrictions on the use of traditional knowledge to inform management, Mr. Pungowiyi works to collect local knowledge using accepted methods, ensuring that the research is well designed, and examining if data are consistent. He also noted that it is also important for the data to be well documented and reviewed by experts in the communities and regions.

Mr. George Noongwook discussed an example of how traditional knowledge has been used together with western scientific research. He explained that the Alaska Eskimo Whaling Commission (AEWC) manages subsistence whaling. He provided background on the whales and the hunting practice. He noted that bowhead whales are large creatures with low body temperatures and long life spans. Some

communities hunt whales in the spring, while others conduct their hunts during the fall. Based on the hunters' traditional knowledge, the AEW and Dr. Craig George published a peer-reviewed paper in the *Arctic Journal* in March 2007, which used traditional knowledge from whaling captains to identify two different bowhead whale migratory routes around Saint Lawrence Island. The paper examined changes over time in abundance and distribution of the whales, noting the increasing number of whales and of sub-adults in particular. Most whales migrate west of Saint Lawrence Island, and the whaling captains were instrumental in identifying a staging area to the north that contained approximately 300-500 bowhead whales.

Mr. Noongwook stressed the need to respond to climate-induced changes, including those that affect marine mammals and subsistence harvest. Marine mammals constitute a tremendous portion of the Alaska Natives' diet. In Savoonga, for example, 88% of the inhabitants' diet comes from marine mammals.

Dr. Craig George stressed that it is critical for western scientists to integrate their research with traditional knowledge. He discussed how the North Slope Borough, Department of Wildlife Management, has done this successfully on subjects such as reactions of bowhead whales to industrial noise, bowhead whale longevity, and bowhead whale olfaction. Dr. George noted that traditional knowledge and scientific knowledge often overlap, they both involve knowledge gained through experience, and they are both constantly evolving. Just as in the scientific community, there are indigenous people who are experts on particular issues. For example, one person may have substantial expertise in sea ice and another on caribou migration. Dr. George pointed out that collaborative traditional knowledge and scientific studies are not new, and highlighted a few books published in the 1930s to 1950s that connect science and traditional knowledge. He stated that mutual respect for both fields is needed.

Dr. George emphasized the need for scientists who draw information from the Alaska Native communities to be sure to give back to the communities. Historically and still today, many researchers travel to the Arctic, collect data from the communities, and leave without sharing results or building stronger ties to the region and its people. This one-way path results in the communities not benefitting from the research. Instead, Dr. George encouraged researchers to share the results of the research in exchange for local experts sharing their knowledge.

Dr. George explained that when the North Slope Borough took over the responsibility of marine mammal population work for NOAA, indigenous community leaders told them their methodology could be improved because they were missing many whales. The whaling community informed scientists that the bowhead population was larger than scientific estimates predicted, because the animals were moving under the ice. The Borough adopted Eskimo techniques of living on the ice and learned what the hunters already knew – that many whales migrated under the sea ice and were thus not being counted. The example illustrated the critical role of traditional knowledge and indigenous techniques in conducting scientific research in the Arctic. Dr. George stressed the importance of making sure that the community also benefits from the research they assist. One way to develop community relationships, Dr. George noted, is for scientists to live in the area so that they can collect data over time and utilize community knowledge.

Question and Answer

How did you discover that whales can smell? What were the first signs?

Mr. Noongwook said that this scientific confirmation has its roots in traditional knowledge, as hunters know that in order to successfully hunt a whale it must be approached from downwind.

Are Russian villages also harvesting bowhead whales?

Mr. Noongwook stated that there are government-to-government relations between Russia and the US federal government and tribal authorities, because the bowhead whale quota is shared between the Arctic people in both countries.

How can traditional knowledge be shared in a way that is effective for the development of CMSP? Reflect on examples linking traditional knowledge with western science to influence a management process.

Mr. Pungowiyi affirmed that a difficulty in working with the federal government is that it is focused entirely on western concepts of management and specific species, such as walrus. Based on the nature of the agencies' function, they are science-based and very rarely use traditional knowledge as part of their information system.

Dr. George stated that in developing partnerships, agencies could consider sending people to live in communities. Although this would not happen overnight, a cooperative system could be established, building relationships in order to see progress within local communities.

It seems that there is a robust methodology for incorporating and accumulating traditional knowledge. Are you using traditional knowledge as a basis for hypothesis development that traditional scientific approaches can then verify and extend? Have you explored the opportunities for collaborative research that have been successful in other communities?

Dr. George stated that in the case of the bowhead whale population research, traditional knowledge and the observations of the whaling captains were used as hypotheses, which were then tested. This is a great starting point and can advance research by decades. However, gathering and recording hunter observations requires living in a community and becoming part of a traditional knowledge network.

Mr. Pungowiyi noted that all the blame cannot be placed on federal agencies for not utilizing traditional knowledge, because Alaska Native communities are often reluctant to share information. This hesitance can be traced back to earlier times when the government developed rules and regulations that did not coexist with their established practices. The concern is that the Alaska Native communities' knowledge could ultimately be used against them. At what point, Mr. Pungowiyi queried, is information regarded as community knowledge versus personal intellectual property?

What are your concerns, if any, about toxins and pollutants found in marine mammals?

Mr. Noongwook asserted that this is an issue of great concern, but the Arctic people are able to tell if an animal is healthy and safe to eat based on how it behaves and visual examination of its body parts.

Dr. George added that contaminants are worldwide. Samples of bowhead whales show that this species is very low in heavy metals and organic chlorides. Store-bought food was also sampled, and the study found that eating whale is far better than eating purchased food.

SESSION III. INTEGRATING COMPETING IMPERATIVES IN THE CO-MANAGED ARCTIC OCEAN: THE MANAGEMENT CHALLENGE

In this two-part session, panelists discussed the role and rights of the subsistence community in co-managing Arctic resources. Within the context of this co-management system, panelists discussed the competing imperatives, including development, national security, safety, transportation, conservation, and techniques for protecting local uses.

Moderator

- Tim Ragen, *Executive Director, Marine Mammal Commission*

Speakers

- Harry Brower, Jr., *Chair, Alaska Eskimo Whaling Commission*
- Eugene Brower, *President, North Slope Borough Assembly*
- Vera Metcalf, *Director, Eskimo Walrus Commission*
- Monica Medina, *Senior Advisor, National Oceanic and Atmospheric Administration*
- Captain James J. Fisher, *Chief, Operational and Ocean Policy, United States Coast Guard*
- Jim Kendall, *Chief Scientist, Minerals Management Service, Department of the Interior*
- Jessica Lefevre, *Counsel, Alaska Eskimo Whaling Commission*

Part 1

Mr. Harry Brower, Jr., began by showing a short video of a whale hunt in Alaska. He highlighted how quiet it is when the hunters leave in the boats. Many people don't know how quiet the Arctic is, but this knowledge is passed down through the generations of Arctic communities. Mr. Brower provided a personal account of federal resource management that affected his life. After he had graduated from high school, the International Whaling Commission shut down commercial and subsistence whaling. The government believed there were only 600 whales, and they based the moratorium on this information without consulting hunters or considering the impacts of the prohibition. Hunters disagreed with the population estimate given – from their observations, there were far more than 600 whales. Local hunters communicated with scientists to utilize and apply traditional knowledge to population estimates. The result of this effort was the finding that the whale population size was closer to 2,000 animals. Mr. Brower explained that during this same period of time, the Alaska Department of Fish and Game stopped the caribou hunt in an effort to manage the resource.

These decisions meant locals were not able to hunt two of their most important resources that spring or summer. The federal government shipped in beef to replace their missing resources, providing fifteen pounds of beef per family for the whole year. For a family of ten – such as Mr. Brower's family – this did not last long. In addition, some people became sick from eating meat tainted by the multiple freeze-thaw processes. He noted how the elimination of the whale and caribou reserves led hunters to rely more heavily on other resources to sustain their families.

Mr. Brower described how communities have cooperated with NOAA to develop a subsistence hunt that satisfies community needs. This agreement covers all federal actions affecting bowhead whales. To protect the bowhead whale quota, the Alaska Eskimo Whaling Commission (AEWC) provides information to the International Whaling Commission so that it can oversee take levels.

Mr. Brower also addressed issues regarding oil and gas exploration and development in Alaskan waters. The AEWC does not support offshore oil and gas development because of the vast unknowns associated with such projects and concerns about oil spills. He posed the question: does industry or the government have the capability of remediating an oil spill? Mr. Brower noted that local communities are not convinced that they do, and they want to ensure that oil and gas development does not endanger the communities' resources, habitats, or hunts.

Mr. Eugene Brower stated that he was representing the North Slope Borough of Alaska on behalf of Mayor Itta, who was meeting with Alaskan Governor Purnell to discuss these same issues. He spoke on the unique strength of local government in the Arctic CMSP process. The North Slope Borough is the largest Alaskan municipality, covering over 88,000 square miles and comprising 50% of all of Alaska's territory. The largest whale fields are in the North Slope Borough, as are the largest oil fields. Mr. Brower explained that through property taxes on oil and gas infrastructure, the municipal government is able to provide basic community services that support the local population.

Mr. Brower described the Borough's lead role in coastal resources management. It exercises coastal planning and management authority to ensure resource extraction occurs in a proper manner, protecting coastal wildlife habitat and subsistence resources. For many years, Mr. Brower noted, the Borough had strong local coastal management authority in accordance with Alaska's Coastal Management Program. This local authority diminished with changes to Alaska's coastal zone management law. Prior to the amendments, the Borough had authority to review development proposals to ensure projects can move forward without adversely impacting coastal resources and subsistence practices. The goal was to protect local priorities and mitigate impacts, while allowing sustainable development. Mr. Brower spoke of the need to reconstruct a portion of that valuable program.

Mr. Brower stated that federal agencies can benefit from the cumulative traditional knowledge that has been passed down for generations. He noted that the Borough has conducted over 30 years of research on marine mammals, water fowl, and other species using traditional knowledge and western science. It collaborates with federal agencies through the Borough's science initiative to help make policy decisions and recommendations based on this data. The North Slope Borough's scientific programs incorporate the local communities. As such, the Borough brings a multitude of strengths to the table in developing a national CMSP policy and one for the Arctic in particular.

Ms. Vera Metcalf began by explaining that as director of the Eskimo Walrus Commission, she works with the U.S. Fish and Wildlife Service (FWS), which provides funding for Alaska Native organizations to participate in co-management. She noted that much has been said and written about the co-management regime implemented through the Marine Mammal Protection Act. She stated that political maneuvering fails to accomplish the goals of management and preservation of subsistence resources. Ms. Metcalf spoke of the differences in how the community considers the resource and the environment and how federal government manages it. FWS research and management is species-focused, and walrus research and management is extremely difficult. She described how, if the agency does not properly utilize the communities' traditional knowledge to complete the population estimate, the relationship between the agency and local community is unbalanced. An incorrect population estimate can affect a wide range of policies and potentially limit the subsistence hunt, leading to mistrust between the agency and communities.

Ms. Metcalf emphasized that co-management of subsistence use of the walrus must include collaborative discussions between the federal agencies and the Alaska Native organizations, especially when the resulting management decisions could impact access, harvest, and use of the subsistence resources.

Ms. Metcalf considered the CMSP process and recommended incorporating tribal consultation and integrating traditional knowledge with scientific studies to improve the effectiveness of the approach. The depth of the native communities' knowledge would complement and inform the federal government's scientific research. Ms. Metcalf explained that traditional knowledge can complete the scientific understanding, and Alaska Native viewpoints can provide great insight.

Part 1 Question and Answer

One of the challenges with walrus management and CMSP is how the Task Force would subdivide the plans. A resource such as walrus affects many communities. How would you recommend approaching this issue?

Ms. Metcalf noted that the current Walrus Commission represents 19 communities, so the CMSP process could include those same members.

Do you see the CMSP framework as an opportunity to make the co-management process more effective, by adopting a multi-species, regional perspective?

Mr. Eugene Brower commented that things are rapidly changing in the Arctic, including competing interests and offshore activities. Federal agencies are attempting to address these concerns, but the agencies are not willing to cooperate with each other. The Alaska Native people are citizens of this country and need to have their viewpoints heard in the process.

Mr. Harry Brower stated that all the communities and commissions need to meet. They must be asked whether CMSP is something they are looking to implement. Many communities are wary because Alaskans have been trying to cope with unfunded mandates for decades. Therefore, developing a new management regime is a decision that needs to be carefully considered.

Part 2

Ms. Monica Medina began her presentation by outlining NOAA's responsibilities in the Arctic, including the improvement of fisheries management and CMSP generally. She noted that the Arctic is an important place for ecosystems around the world, but the region is also extremely vulnerable to change. The many implications of Arctic change have been predicted and are understood by the scientific community. Ms. Medina explained that in light of the expected changes to the Arctic ecosystem, NOAA promotes conservation, management, and uses of coastal and marine resources based on sound science. The management framework should advance US economic growth and ensure that communities remain resilient and viable.

Ms. Medina briefly described the NOAA initiatives focused on the Arctic. One is to forecast sea ice change, using satellite imagery to help communities understand a changing environment. Another is to strengthen foundational science in the region, where much is still unknown, to better understand and detect Arctic change. Despite the knowledge gaps, there is presently enough data to support

precautionary, good management decisions. A third NOAA goal is to improve management of the Arctic ocean and coastal resources, which is where CMSP fits into NOAA's overall initiatives. Ms. Medina noted that there will be many competing interests in the Arctic, which will conflict if appropriate management measures are not implemented. NOAA will attempt to mediate these disagreements by overlaying competing interests to see where conflicts may arise.

Ms. Medina emphasized that while CMSP is important in other parts of the world, it is critical in the Arctic. She stated that there is an opportunity to do things right and to plan and protect resources in a way that will benefit the country. Other NOAA goals in the Arctic include improving weather forecasts and warnings; enhancing national and international partnerships; and advancing resilient and viable Arctic communities and economies. Ms. Medina stated that change in the Arctic will be dramatic and drastic, and communities that have unique ways of life will experience significant stresses and change. She explained that the role of NOAA and the government should be supporting communities so that they can better withstand change. She concluded by highlighting that CMSP is a tool to better understand the environment, in order to help develop tangible management goals for the Arctic communities.

Captain James Fisher provided a brief history of the US Coast Guard in the Arctic. He explained the Coast Guard's goals, including the protection of living marine resources, search and rescue, environmental protection, and medical and humanitarian services. He also noted the many difficulties the Coast Guard faces operating in the Arctic. First is the region's extreme weather, which includes more hurricane force storms than in the Pacific and Caribbean, combined. Second, the Coast Guard has only two ice-breaker vessels, while the vast majority of the Coast Guard's fleet is not equipped to transit through sea ice. Captain Fisher remarked on the seriousness of this issue – the Coast Guard needs to be able to get to the Arctic, and once there it needs to operate effectively. Third, there is a lack of infrastructure in Alaska and a shortage of viable ports and airports that can accommodate the Coast Guard's ships and planes. Captain Fisher pointed out that this leaves the Coast Guard ill-equipped and unprepared for mass rescue in the northern Arctic.

Captain Fisher explained that President Bush signed a new Arctic policy in early 2009, which is a significantly more comprehensive law than its predecessor. The policy acknowledges changing environmental, economic, and geopolitical issues. It also acknowledges a growing awareness that the Arctic has abundant natural resources but is a fragile environment. The document asserts the preservation of freedom of the seas as a top national priority. Captain Fisher noted that at some point, the conflict between freedom of navigation and the needs of the Alaskan people regarding subsistence hunting will need to be resolved. He pointed particularly to the issue of ship travel through the Bering Straits co-occurring with marine mammal migration. He expressed concern regarding the possibility of oil spills. Captain Fisher acknowledged that the Coast Guard's ability to respond to an oil spill in the Arctic is minimal at best, and cleaning up oil in ice is a significant challenge.

Captain Fisher stated that national interests in the Arctic can best be served by developing partnerships with state and Alaska Native organizations. The Arctic Domain Awareness initiative supports the adoption of a broader view of what is occurring on, over, and under the ocean in Navy and Coast Guard operations, including what impacts these changes will have on subsistence hunting. Captain Fisher emphasized that input from the indigenous people, who have thousands of years of experience living in the Arctic, will be – and has already been – critical for anyone who needs to operate in the region.

Dr. Jim Kendall explained that the Minerals Management Service, which leases and manages energy development on the Outer Continental Shelf (OCS), has already been engaging in CMSP. Dr. Kendall stated that CMSP is an essential component of MMS' stewardship responsibility, and it fits into the agency's existing approach of managing resources based on sound science and stakeholder collaboration. Dr. Kendall reiterated the views of previous panelists that CMSP is a collaborative process that requires discussion of the issues, while utilizing scientific data and community input. MMS views a national CMSP framework as an opportunity to improve and refine their existing process.

As an example of MMS utilizing the CMSP process, Dr. Kendall described the leasing, exploration, and development procedures for oil and gas on the OCS. While adhering to NEPA and other laws, Dr. Kendall noted that MMS undertakes multiple consultations with stakeholders to make sure the decisions are based on the best available science. He also noted that MMS led the development of the Multipurpose Marine Cadastre, an important CMSP tool. Dr. Kendall stated that the Cadastre is a marine spatial planning tool for both the OCS and state waters, which contains spatial data on habitats, migration routes, and jurisdictional boundaries, among many other things.

Ms. Jessica Lefevre described the AEWC Open Water Season Conflict Avoidance Agreements as a unique and successful approach to marine spatial planning that has been developed in the Arctic over the past twenty-five years. It is a multi-dimensional process encompassing a variety of complex issues. The Conflict Avoidance Agreements are used by the whaling community and oil and gas exploration and development companies to prevent industry activities from impacting subsistence harvest. Ms. Lefevre emphasized that the approach to CMSP through the Conflict Avoidance Agreement relies on traditional knowledge and the science that follows from that knowledge.

The Agreement process is a collaborative, flexible, and adaptive process that reduces conflicts between subsistence hunters and oil and gas industries. She described how in the early 1980s, oil and gas development occurred during the fall whale migration and subsistence hunt. This had disastrous effects for the hunters due to the noise generated by the oil extraction and the extreme shyness of the whales. The Conflict Avoidance Agreements arose out of necessity as a way to allow both ocean uses to co-exist.

Ms. Lefevre stated that CMSP should attempt to organize, in space and time, the human uses of the oceans so that otherwise incompatible activities can coexist. She noted that subsistence hunters offer a wealth of knowledge that scientists and planners can draw upon, such as where marine life is located and how different species use different habitats.

Ms. Lefevre explained that there are many challenges to planning in the Arctic. One that is not discussed enough is the human challenge. CMSP is needed in the Arctic because the environment and human uses are changing, and a multi-disciplinary approach is needed. Ms. Lefevre stated that Arctic communities will be experiencing rapid social change imposed on them by external sources, largely from development. As a result, their subsistence-based livelihoods could be destroyed. While rapid social change can devastate communities, Ms. Lefevre asserted that this does not have to be the outcome. She explained that making communities partners in the process, and giving the Arctic people a real and meaningful voice, can help individuals cope with change by giving them a sense of control over the process. If residents feel like they have no participatory role, they will believe they have nothing to gain. Ms. Lefevre emphasized that in reality, residents have much to gain from properly planned and managed development. The Conflict Avoidance Agreement is an example of a collaborative process that enables hunters and developers to identify points of conflict and avoid them. This serves as a model for

CMSP development in the Arctic. Ms. Lefevre suggested tasking the people who have the most to gain – or lose – from the process with finding answers to these issues that will directly affect their lives.

Part 2 Question and Answer

How concerned are you about shale drilling in the Arctic this summer?

Dr. Kendall replied that MMS considers itself to be a steward of the environment, and as such it will make sure that oil and gas development is done safely and environmentally soundly. He asserted that if authorizations are given, MMS will be watching. Dr. George confirmed that that he is very concerned about the development, from the oil spill standpoint.

Captain Fisher replied that the Coast Guard is extremely concerned from an oil-spill recovery standpoint. Since there has not been a lot of research conducted regarding oil spills in ice-covered waters, the Coast Guard does not know the best methods for cleaning up oil in ice conditions. He added that cleaning up oil in any kind of water conditions is hard, but in ice-covered waters it is even more difficult. If there is a spill, the Coast Guard – as the lead federal agency for maritime pollution response – will be faced with a significant challenge.

Are collaborative meetings effective?

Dr. Kendall believes that collaborative meetings are very effective, providing a chance for the different stakeholders to comment on documents. Public hearings are also invaluable. Ms. Medina agreed with the value of collaborative meetings, and highlighted that CMSP is a chance to plan holistically and to create a public process that is broader in scope. A conversation about interacting uses must be had, not from a sector by sector or agency by agency approach.

Dr. Kendall also added that the government should perhaps look outside of the Arctic for other management successes incorporating commercial and recreational fishing alongside oil and gas development. He noted that the Flower Gardens National Marine Sanctuary in the Gulf of Mexico is a model for conservation and oil and gas development occurring in close proximity.

Mr. Eugene Brower suggested that examples from Norway or other Arctic regions should be utilized as these environments and communities relate most closely to that of Alaska. However, he firmly recommended that the federal government establish regulations that are site-specific to Alaska so that communities can actually live by the regulations. He emphasized that an innovative program that relates to the Alaskan environment and their resources should be developed.