

**ASSESSING U.S. PREPAREDNESS AND RESPONSE
IN THE ARCTIC: THE OPPORTUNITIES AND
CHALLENGES OF INCREASED MARINE ACTIVITY**

FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON OCEANS, ATMOSPHERE,
FISHERIES, AND COAST GUARD

OF THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION

UNITED STATES SENATE

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

—————
MARCH 27, 2013
—————

Printed for the use of the Committee on Commerce, Science, and Transportation



U.S. GOVERNMENT PRINTING OFFICE

85-764 PDF

WASHINGTON : 2013

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
Fax: (202) 512-2104 Mail: Stop IDCC, Washington, DC 20402-0001

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

JOHN D. ROCKEFELLER IV, West Virginia, *Chairman*

BARBARA BOXER, California	JOHN THUNE, South Dakota, <i>Ranking</i>
BILL NELSON, Florida	ROGER F. WICKER, Mississippi
MARIA CANTWELL, Washington	ROY BLUNT, Missouri
FRANK R. LAUTENBERG, New Jersey	MARCO RUBIO, Florida
MARK PRYOR, Arkansas	KELLY AYOTTE, New Hampshire
CLAIRE McCASKILL, Missouri	DEAN HELLER, Nevada
AMY KLOBUCHAR, Minnesota	DAN COATS, Indiana
MARK WARNER, Virginia	TIM SCOTT, South Carolina
MARK BEGICH, Alaska	TED CRUZ, Texas
RICHARD BLUMENTHAL, Connecticut	DEB FISCHER, Nebraska
BRIAN SCHATZ, Hawaii	RON JOHNSON, Wisconsin
WILLIAM COWAN, Massachusetts	

ELLEN L. DONESKI, *Staff Director*

JAMES REID, *Deputy Staff Director*

JOHN WILLIAMS, *General Counsel*

DAVID SCHWIETERT, *Republican Staff Director*

NICK ROSSI, *Republican Deputy Staff Director*

REBECCA SEIDEL, *Republican General Counsel and Chief Investigator*

SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES,
AND COAST GUARD

MARK BEGICH, Alaska, <i>Chairman</i>	MARCO RUBIO, Florida, <i>Ranking Member</i>
BILL NELSON, Florida	ROGER F. WICKER, Mississippi
MARIA CANTWELL, Washington	KELLY AYOTTE, New Hampshire
FRANK R. LAUTENBERG, New Jersey	DAN COATS, Indiana
RICHARD BLUMENTHAL, Connecticut	TIM SCOTT, South Carolina
BRIAN SCHATZ, Hawaii	TED CRUZ, Texas
WILLIAM COWAN, Massachusetts	

CONTENTS

Hearing held on March 27, 2013	Page 1
Statement of Senator Begich	1

WITNESSES

Tommy P. Beaudreau, Acting Assistant Secretary, Land and Minerals Management, U.S. Department of the Interior	3
Prepared statement	5
Rear Admiral Thomas P. Ostebo, Commander, U.S. Coast Guard Seventeenth District	7
Prepared statement	10
Peter E. Slaiby, Vice President, Shell Alaska	12
Prepared statement	14
Helen Brohl, Executive Director, U.S. Committee on the Marine Transportation System	28
Prepared statement	30
Captain Edward Page, USCG (Retired), Executive Director, Marine Exchange of Alaska	33
Prepared statement	36
Eleanor Huffines, Manager, U.S. Arctic Program, The Pew Charitable Trusts ..	40
Prepared statement	42
Matt Ganley, Vice President, Resources and External Affairs, Bering Straits Native Corporation	51
Prepared statement	53
Jack Omelak, Executive Director, Alaska Nanuuq Commission and Member, Arctic Marine Mammal Coalition	55
Prepared statement	56
Letter dated January 30, 2013 from Rear Admiral Thomas P. Ostebo, U.S. Coast Guard	57

APPENDIX

Christopher M. Reddy, Ph.D., Woods Hole Oceanographic Institution	69
Letter dated September 20, 2012 from the Alaska Eskimo Whaling Commission, Alaska Beluga Whale Committee, Eskimo Walrus Commission, Alaska Nanuuq Commission and Ice Seal Committee	71

**ASSESSING U.S. PREPAREDNESS
AND RESPONSE IN THE ARCTIC:
THE OPPORTUNITIES AND CHALLENGES
OF INCREASED MARINE ACTIVITY**

WEDNESDAY, MARCH 27, 2013

U.S. SENATE,
SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES,
AND COAST GUARD,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Anchorage, AK.

The Subcommittee met, pursuant to notice, at 10:07 a.m. in room 307, University of Alaska Anchorage Campus, Hon. Mark Begich, Chairman of the Subcommittee, presiding.

**OPENING STATEMENT OF HON. MARK BEGICH,
U.S. SENATOR FROM ALASKA**

Senator BEGICH. Thank you very much. Let's go ahead and call the meeting of the Oceans subcommittee hearing on Arctic matters to order, and we thank everyone for attending and being here, and we appreciate it. To our guests, we appreciate that they are also here.

We have two government witnesses joining us by teleconference, videoconference actually, and we thank them. This is part of what you see with budget reductions. They can't be here, but we have tuned them in here, which we think is just as good. Alaskans are used to videoconferencing, so we thank them for being here. I will introduce them in a moment.

As Chair of the Oceans Senate subcommittee, this is the fifth hearing on the opportunities and challenges facing Alaska with coming Arctic development. We have had hearings in Washington, D.C., Barrow, Anchorage, as well as several trips to communities in-between to engage Alaskans, investors, developers, policymakers and regulators in this discussion.

Some question the future of Arctic development. I would like to say it's here, whether people like it or not. Arctic development, oil and gas exploration, shipping, tourism is happening in our Arctic waters now. The question is whether the U.S. will set the bar for doing it right by using strong science and data, by incorporating local and traditional knowledge with critical supporting infrastructure and under effective regulation to protect our Arctic people and communities and subsistence resources upon which they live.

Since coming to the U.S. Senate, I have put together a package of legislation to help get us there, to improve our scientific under-

standing of the Arctic, to research Arctic health needs, develop the ports and other infrastructure we need, to share the Arctic generated revenues with its communities and tribes and strengthen our international profile in Arctic affairs.

I am also working closely with the administration to make the right investments now to ensure safe and responsible development, such as adequate icebreaking capacity.

Today our goal is to look specifically at current and anticipated future Marine activity in the Arctic. Let's be clear: this hearing is about the broad context of increased maritime activity, not just about oil and gas development or the KULLUK grounding this winter. The KULLUK was a high profile example of challenges posed to marine transportation in the Arctic. In 2012, there were more than 250 vessels operating in the Arctic Ocean, over 480 transiting through the Bering Strait. This, of course, is due to declining Arctic sea ice, which allows increased access for longer periods. It creates increased economic incentives for shipping to move through the Bering Strait and the Arctic Ocean.

I've also said we face greater risks from the increasing traffic we are seeing along the Russian Northern Sea route and later through the Canadian Northwest Passage than we do from oil and gas drilling in the Arctic. In the challenging Arctic maritime environment, where there are no harbors or refuges and few aids to navigation or search and rescue assets, mariners also have less accurate weather forecasts and charts where there are dozens of miles between accurate depths and readings. Unlike oil and gas interests, which have incentives to work closely with Arctic communities, shipping interests are more transient and have fewer resources to mitigate risk and respond to problems.

What I would like to now hear—we have two panels set up today—from our experts is what to expect in the short-term, medium and long-term, what we need and what we need to prepare for, which I hope our panels will address. I plan to take what I hear today back to Washington to move ahead on our Arctic legislation. This is timely because we are now considering the Coast Guard authorization bill. It seems like we just finished one, but we will be back into it, energy legislation, infrastructure investment, bills for the Army Corps, transportation, environmental protection agencies. A variety of issues are going to be in front of us for the next several months. So we look forward to the testimony today.

Our first panel is made up of three individuals. Tommy Beaudreau is from the Department of Interior, who is joining us by VTC.

One moment, Tommy. I will have you speak.

Rear Admiral Tom Ostebo, Commander of the Coast Guard District 17. We were just joking a little bit there. We have this routine where we're always back together again.

And Pete Slaiby, Vice President of Exploration of Shell.

Again, this is our first panel. We'll have a second panel after this, and we thank all three of you for being willing to attend and be part of this testimony. Again, our goal is to focus on not only what we did this last year but where do we see the next stages of future Arctic development.

Let me first turn to Assistant Secretary Tommy Beaudreau.

Tommy?

**STATEMENT OF TOMMY P. BEAUDREAU, ACTING ASSISTANT
SECRETARY, LAND AND MINERALS MANAGEMENT,
U.S. DEPARTMENT OF THE INTERIOR**

Mr. BEAUDREAU. Thank you, Chairman Begich. I appreciate very much the opportunity to appear before the Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard to discuss the extremely important and timely topic, "Assessing U.S. Preparedness and Response in the Arctic: The Opportunities and Challenges of Increased Marine Activity." I apologize for being unable to appear at the field hearing in person in Anchorage, my hometown, and I'm grateful for the work of the Committee staff to facilitate this video connection, and I trust it's working.

Senator BEGICH. Absolutely. It's only 75 degrees here, and it's sunny.

[Laughter.]

Senator BEGICH. But still, I'm glad to have you.

Mr. BEAUDREAU. Spring is a little bit late in D.C., too.

It's my sincere pleasure to appear on this panel, particularly with United States Coast Guard Rear Admiral Ostebo, for whom I have tremendous respect. No one understands more deeply the unique maritime challenges of working safely in offshore Alaska than Admiral Ostebo and the men and women of the Coast Guard 17th District.

The Interior Department works closely with the Coast Guard on a range of strategic and oversight issues relating to Alaska and the U.S. Arctic, including offshore oil and gas exploration. The Coast Guard performed extremely well in planning for and playing a central role in overseeing Shell's 2012 Alaska offshore oil and gas exploration program. In particular, I admire the courage and professionalism of the Coast Guard emergency response personnel, who safely rescued all crew members of the KULLUK drilling rig after the rig lost its tow during a severe storm in the Gulf of Alaska at the end of last December.

I would like to start by emphasizing the strategic and economic importance of the Alaskan Arctic to the United States. The U.S. Arctic Outer Continental Shelf holds tremendous energy resource potential. For example, my agency, the Bureau of Ocean Energy Management, estimates that the Chukchi Sea contains more than 15 billion barrels of undiscovered recoverable oil, which is second only to the central Gulf of Mexico in terms of its offshore conventional energy potential.

The United States is a leader among Arctic nations in evaluating the economic and energy potential of safe and environmentally responsible offshore oil and gas development in the Arctic, as well as the multitude of challenges facing the region, including the consequences of rapid climate change. It is essential that the United States understand the resource potential of the Arctic, and offshore oil and gas exploration has a key role in developing that understanding.

However, exploration must be conducted cautiously, safely, and responsibly in light of the sensitive Arctic environment and the Alaska Natives who are closely connected to the Arctic Ocean for

subsistence and fundamental aspects of their culture and traditions.

DOI's recent review of Shell's 2012 Beaufort Sea and Chukchi Sea program, which I led, identified a number of principles for safe and responsible offshore oil and gas exploration in the Arctic for the future.

First, all phases of an offshore Arctic program, including preparations, drilling, maritime and emergency response operations, must be integrated and subject to strong operator management and government oversight.

Second, Arctic offshore operations must be well planned, fully ready, and have a clear objective in advance of the drilling season.

These first two principles are fundamental to working safely offshore Alaska. Arctic offshore operations are extremely complex, and there are substantial environmental challenges and operational risks throughout every phase of the endeavor.

Moreover, because of the inherent geographic, logistical and environmental challenges associated with working on the Arctic OCS, the operating plan and objectives of any offshore Arctic program must be well planned and designed to provide operational clarity, while also allowing for ample flexibility in light of variable and changing conditions and the need for safe demobilization.

Third, operators must maintain strong, direct management and oversight of their contractors.

Fourth, operators must understand and plan for the variability and challenges of Alaskan conditions. Reliable weather and ice forecasting play a significant role in ensuring safe operations offshore Alaska, including but not limited to the Arctic. Robust forecasting and tracking technology, information sharing among industry and government, and local knowledge and experience are essential to managing the substantial challenges and risks that Alaskan conditions pose for all offshore operations.

Finally, respect for and coordination with local communities are paramount. It is imperative that offshore exploration in the Arctic be harmonized with the needs of North Slope communities, including traditional subsistence use.

Our report also identified important principles for government oversight of offshore drilling activity in the Arctic that must be carried forward and further developed. The Federal Government, including DOI, Coast Guard, NOAA, EPA and others engaged in strong and in an unprecedented level of interagency coordination, information sharing, and cooperation related to the regulatory approval process and oversight of Shell's 2012 program. Senator Begich, I know this is an area that has been important to you and that you have championed. This is an area of success from the 2012 experience that should be carried forward and improved upon further in the future.

Finally, government and industry should continue to evaluate appropriate Arctic-specific standards relating to offshore operations. For example, operators working in the Arctic should be encouraged to enter into resource sharing and mutual aid agreements to provide each other with access to operational and emergency response resources. This is an issue Admiral Ostebo and I have discussed at some length. A cooperative model offers potential

logistical and commercial efficiency, as well as safety and environmental advantages and the reduction of cumulative operational risks and footprints, including air emissions.

Thank you, and I look forward to answering questions.
[The prepared statement of Mr. Beaudreau follows:]

PREPARED STATEMENT OF TOMMY P. BEAUDREAU, ACTING ASSISTANT SECRETARY,
LAND AND MINERALS MANAGEMENT, U.S. DEPARTMENT OF THE INTERIOR

Mr. Chairman and Members of the Subcommittee, I want to thank you for this timely hearing to examine the current and anticipated future offshore activity in the Arctic. On March 8, I delivered a report to Secretary of the Interior Ken Salazar regarding the review I led of Shell's 2012 Alaska Offshore Oil and Gas Exploration Program (Report), which the Department of the Interior (DOI) released to the public on March 14. I appreciate this opportunity to discuss this review, as well as long term planning with respect to offshore exploration in the Arctic.

Offshore oil and gas development is a key component of the Administration's all-of-the-above energy strategy to grow America's economy, reduce our dependence on foreign oil and to create jobs here at home. As is emphasized in the Report, the Administration is committed to supporting safe and responsible exploration of potential energy resources in frontier areas such as the Arctic. The Arctic holds substantial oil and gas potential, but also presents unique technical challenges as well as environmental and cultural considerations. The Bureau of Ocean Energy Management (BOEM) estimates that the Chukchi Sea Planning Area alone holds more than 15 billion barrels of undiscovered, technically recoverable oil and 76 trillion cubic feet of natural gas, which is second only to the Central Gulf of Mexico in terms of resource potential on the United States outer continental shelf (OCS). BOEM also estimates that the Beaufort Sea Planning Area holds more than 8 billion barrels of oil and 27 trillion cubic feet of natural gas. Offshore oil and gas exploration in the Arctic must proceed cautiously and in a way that is safe, responsible, and respectful of the unique environment and culture of the Arctic and its communities.

Prior to last summer, most exploration wells in Federal waters in the Beaufort and Chukchi Seas in the Alaskan Arctic were drilled during the late 1970s through the mid-1980s. Industry previously drilled a total of 30 exploratory wells in the Federal waters of the Beaufort Sea. Federal waters in the Chukchi Sea have a more limited history of exploration, with five exploration wells drilled between 1989 and 1991—all resulting in the discovery of hydrocarbons.

In 2012, DOI allowed Shell to move forward cautiously with limited drilling activities in the Beaufort and Chukchi Seas. Shell constructed top-hole sections for one well each in the Chukchi and Beaufort Seas. Shell's well at the Burger prospect in the Chukchi Sea was the first new well spud in that area in over two decades. Shell's 2012 offshore drilling program was subject to strong Federal oversight, including a range of Arctic-specific conditions and standards, such as requiring deployment of subsea containment systems as a prerequisite to drilling into hydrocarbon-bearing zones, limitations on the Chukchi Sea drilling season to provide time for open-water emergency response, a blackout on drilling activity during the subsistence hunts in the Beaufort Sea, and surrounding vessels with pre-laid boom during fuel transfers. DOI's Bureau of Safety and Environmental Enforcement (BSEE) had inspectors onboard both of Shell's rigs around the clock throughout drilling operations, and the U.S. Coast Guard was a constant presence in the Arctic as well.

We learned a great deal from activities last summer—from both the successes and the problems Shell experienced—and it is important that we use all of the information that we learned from last summer in planning for the future.

Review of Shell's 2012 Operations

On January 8, 2013, Secretary Salazar directed me to lead a high-level assessment of Shell's 2012 offshore drilling program in the Beaufort and Chukchi Seas, including a review of the problems that Shell experienced last year with the certification of its containment vessel, the ARCTIC CHALLENGER; the deployment test of its containment dome; and its two drilling rigs, the NOBLE DISCOVERER and the KULLUK.

The review team included BSEE Director Jim Watson, as well as senior leadership from BOEM and BSEE and a technical advisor from the U.S. Coast Guard. DOI retained the international consulting firm PricewaterhouseCoopers LLP (PwC) to provide expertise and support in reviewing issues related to safety and operational management systems. The review team received significant participation and contributions from the other Federal agencies involved in overseeing Shell's

2012 activities, including the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Coast Guard, the Environmental Protection Agency (EPA).

Shell cooperated with our review. Our review team conducted meetings and interviews with Shell and its contractors in Washington, D.C., Alaska, Washington State and Houston. The review team also met with Alaska State legislators and regulatory officials, the North Slope Borough, Alaska Native organizations, environmental groups, independent engineers and economists, marine contractors, and oil and gas companies.

On February 27, Shell announced its decision to pause exploration drilling activity for 2013 in both the Beaufort and Chukchi Seas to focus on preparation of equipment and plans before resuming its Arctic exploration program.

The Report's Findings

The review focused on Shell's safety management systems, its oversight of contracted services, and its ability to meet the strict standards in place for Arctic development. It found that Shell entered the 2012 drilling season without having finalized key components of its program, including its ARCTIC CHALLENGER containment system, which put pressure on Shell's operations and schedule and limited Shell from drilling into oil-bearing zones last summer. Weaknesses in Shell's management of contractors on whom they relied for many critical aspects of its program—including development of its containment system, emission controls to comply with air permits, and maritime operations—led to many of the problems that the company experienced.

Accordingly, the Report makes a number of findings with respect to Shell's activities last year, and offers principles and recommendations for Shell, other operators, and government to support planning for future operations.

First, the report found that all phases of an Arctic offshore program—including drilling, maritime and emergency response operations—must be integrated and subject to strong operator management and oversight. Before Shell resumes its Arctic program, the Report recommends that the company should submit to the Department of the Interior a comprehensive, integrated plan describing every phase of its operation from preparations through demobilization. Any future Arctic exploration program proposed by Shell should be well planned and finalized in advance of the drilling season.

Operators must also maintain strong, direct management and oversight of their contractors, and have rigorous management systems tailored to the Arctic environment. This was an area where Shell fell short—contributing in large part to many of the problems Shell experienced last year, including its inability to deploy a functioning containment system, violation of the emission standards set in its air permits, and problems with both of its drilling rigs, including the KULLUK which was grounded near Kodiak Island during a towing operation in the Gulf of Alaska. Accordingly, the Report recommends that Shell complete a full third-party management system audit that will confirm that the company's management systems are appropriately tailored for Arctic operations.

Offshore operators choosing to work in the Arctic must also recognize the reality of the unique challenges posed by the Arctic environment like extreme weather and limited infrastructure. Companies must understand and plan for the variability and challenges of conditions in Alaska, and work with people who are knowledgeable about and experienced with these tough conditions.

The Report also stresses the critical need for coordination—across the Federal Government and with State and local partners, as well as with companies, local communities and other stakeholders. Following the process initiated by the Alaska Interagency Working Group established by Presidential Executive Order 13580 for the coordination of permitting of domestic energy projects in Alaska, the Federal Government—including DOI, NOAA, the U.S. Coast Guard, EPA and others—engaged in a robust and unprecedented level of interagency coordination, information-sharing and cooperation related to the regulatory approval process and oversight of Shell's 2012 program. This process led to the more efficient and effective reviews of permits and approvals, stronger oversight of Shell's operations, better communication with local communities, greater awareness by Federal agencies of activities potentially impacting their areas of responsibility, and more efficient use of limited Federal resources. Public engagement by Federal agencies, including providing as much transparency and opportunity for public input as reasonably possible, is also important. This is an area of success from the 2012 experience that should be carried forward and improved upon in the future.

Developing a Region-Specific Model for Exploration in the Arctic Ocean

The Report also strongly recommends implementation of a region-specific model for offshore oil and gas exploration in the Alaskan Arctic. As Shell's 2012 experience has made absolutely clear, the Arctic OCS presents unique challenges associated with environmental and weather conditions, geographical remoteness, social and cultural considerations, and the absence of fixed infrastructure to support oil and gas activity, including resources necessary to respond in the event of an emergency. Shell's 2012 drilling program was subject to a number of Arctic-specific conditions and standards—including, among others, deployment of subsea containment systems as a prerequisite to drilling into hydrocarbon-bearing zones, limitations on the Chukchi Sea drilling season to provide time for open-water emergency response, a blackout on drilling activity during the subsistence hunts in the Beaufort Sea, and deploying pre-laid boom around vessels during fuel transfers. Shell also undertook additional measures, such as agreeing to transport out drilling muds and cuttings from its Beaufort Sea operation instead of discharging them into the ocean.

Government and industry should continue to evaluate the potential development of additional Arctic-specific standards in the areas of drilling and maritime safety and emergency response equipment and systems. The United States has a leading role among Arctic nations in establishing appropriately high standards for safety, environmental protection and emergency response governing offshore oil and gas exploration in the Arctic Ocean. It is incumbent, therefore, on the United States to lead the way in establishing an operating model and standards tailored specifically to the extreme, unpredictable and rapidly changing conditions that exist in the Arctic even during the open water season.

Finally, operators working in the Arctic should be encouraged to enter into resource sharing and mutual aid agreements to provide each other with access to operational and emergency response resources. The traditional operator-specific, "go it alone" model common with exploration programs in other regions is not appropriate for Arctic offshore operations. A cooperative, consortium-based model offers potential logistical and commercial efficiencies, as well as safety and environmental advantages through the reduction of cumulative operational risks and footprints (including air emissions). Following the *Deepwater Horizon* blowout and spill and after DOI's establishment of clear guidance requiring subsea containment in support of all deepwater drilling operations, industry pulled together resources, equipment and expertise to establish consortia designed to provide offshore operators with access to critical safety and emergency response equipment, such as capping stacks and other equipment necessary to respond to a subsea blowout. Arguably the need for mutual assistance and resource sharing covering both operational and emergency response assets and resources may be even greater in the Arctic.

Conclusion

The information we collect from offshore exploration will be critical to longer-term planning for the Arctic OCS. For example, any information about geology and resource potential that may be developed from exploratory drilling or from geological and geophysical (G&G) exploration will be utilized in potential future lease sales in the Beaufort and Chukchi Sea Planning Areas. As offshore oil and gas exploration moves forward, information can also be utilized in planning for near and long-term associated infrastructure, spill response preparedness, and safety and environmental standards.

Senator BEGICH. Thank you very much for your testimony.

Let me now move to Admiral Ostebo. Thank you very much for your continued interest in the Arctic and your robust work, especially in this last season. So, please, let me have you go and testify.

STATEMENT OF REAR ADMIRAL THOMAS P. OSTEBO, COMMANDER, U.S. COAST GUARD SEVENTEENTH DISTRICT

Admiral OSTEBO. Senator Begich, distinguished colleagues—Tommy, it's good to see you again. As always, I enjoy speaking on the great work that your Coast Guard is doing here in Alaska. I am pleased to discuss the Coast Guard's Arctic responsibilities and operations. This past summer we prepared for Arctic operations driven by increased offshore maritime activity and industry's planned drilling operations in the Chukchi and the Beaufort Sea.

Collaborating closely with Federal, local, state, and tribal government partners, we worked with industry to regulate all parties operating offshore. The lessons we have learned from this past year will inform our planning and strategy to ensure that we remain always ready to ensure safety, security and stewardship in the emerging maritime frontier of the Arctic.

Coast Guard operations in the Arctic last year consisted of Arctic Shield 2012, which will be an ongoing Coast Guard operation in perpetuity for the Arctic. The Coast Guard has been operating in the Arctic since 1867, when Alaska was just a territory. Then as now, our mission is to assist scientific exploration, chart the waters, provide humanitarian assistance to native tribes, conduct search and rescue, and enforce U.S. laws and regulations throughout the region.

In Alaska, the Coast Guard's aircraft and vessels monitor more than 950,000 square miles of water off the Alaskan coast to enforce U.S. laws. We patrol an even larger area of the North Pacific, as you know, sir, to stop large-scale high-seas drift net fishing and other illegal fishing practices, including foreign incursions into the U.S. EEZ. We also conduct marine safety and environmental protection missions throughout the region.

The Coast Guard continues to push forward to assess our capabilities to conduct operations in the Arctic. Since 2008, we have set up temporary forward operating locations on the North Slope, in Prudhoe Bay, Nome, Barrow, Kotzebue, to test our capabilities with cutters, boats, helicopters, communications equipment, and maritime safety and security teams. We also deployed our light icebreaking-capable ships, our 225-foot ocean-going buoy tenders to test our equipment, train our crews, and increase our awareness of the activity going on offshore.

Additionally, each year from April to November we have flown two sorties a month to assess maritime activities in the region and to ensure maritime domain awareness. To protect the Arctic environment, we are reaching out to industry and the private sector to address their significant responsibilities for pollution prevention, preparedness and response. Those engaged in offshore commercial activity in the Arctic must also plan and prepare for emergency response in the face of a harsh environment, long transient distances for air and surface assets, and limited response resources.

We continue to work to improve awareness, contingency planning and communications. We are also actively participating with Department of Interior-led interagency working group on coordination of domestic energy development and permitting in Alaska, established by Executive Order 13580, to synchronize the efforts of the Federal agencies responsible for overseeing safe and responsible development of Alaska's offshore energy opportunities.

While prevention is critical, the Coast Guard must also be able to manage the response to pollution incidents where responsible parties are not known or fail to adequately respond. Last year we exercised our Vessel of Opportunity Skimming System, VOSS, and our Spill Oil Recovery System, SORS, in the Alaskan waters as part of Arctic Shield 12 in the vicinity of Barrow.

Fisheries are also a concern in the region. The National Maritime Fisheries Service, based upon a recommendation from the

North Pacific Fisheries Management Council, which the Coast Guard participates in, has imposed a moratorium on fishing within the U.S. Exclusive Economic Zone north of the Bering Strait until an assessment of the practicality of sustained commercial fishing is completed.

The Coast Guard will continue to carry out its mission to enforce and protect living marine resources in the high latitudes. We are employing our Waterways Analysis and Management System to assess vessel traffic, which is continuing to grow, and the density to determine the need for improved aids to navigation and other safety requirements. We are also moving forward with the Bering Strait Port Access Route Study in coordination with our international partners, which is a primary analysis to evaluate vessel traffic management and appropriate ship routing measures in the Bering Strait.

The Coast Guard continues to support international multilateral organizations, studies, projects and initiatives. We are actively working with the Arctic Council, International Maritime Organization and other respected working groups. We are leading the U.S. delegation of the Arctic Council's All Spill Task Force, which is developing international instruments on Arctic maritime oil pollution preparedness and response, and are conducting joint contingency response exercises with Canada.

Last month, we hosted representatives from Russia, their State Maritime Pollution Control Salvage and Rescue Administration, to sign an expanded memorandum of understanding and joint contingency planning to foster cooperation between our two nations in the event of an oil spill in the region. We will continue to engage Arctic nations, international organizations, industry, academia, Alaska state, local, and tribal governments to strengthen our partnerships and agencies.

Our engagement with the Alaska Native tribes continues to be highly beneficial. We are working hard to ensure tribal equities are recognized and that the indigenous people and their way of life are protected. We look forward to continuing to strengthen our partnership with Alaska Natives.

Looking ahead, over the next 10 to 15 years, the Coast Guard's regional mission profile will continue to evolve. Increased human activity will increase the significance and the volume of maritime issues throughout the region, issues such as freedom of navigation, offshore resource exploration, and environmental preservation.

The Coast Guard's strategic approach will pursue the capabilities in the future to perform our statutory missions as necessary in the Arctic to ensure a safe, secure, and environmentally sustainable operation to take place. This strategy will be consistent with our services approach to performing maritime safety and security and stewardship functions across all of our 11 statutory missions.

Finally, the MODU KULLUK and NOBLE DISCOVERER, I need to mention the two of them. The Coast Guard certainly shares concerns regarding the recent grounding of MODU KULLUK, an event which highlights the rigors of operating in Alaskan waters. In January, I directed a marine casualty safety investigation into the facts and circumstances surrounding the grounding of the KULLUK. Members of the Coast Guard's investigation national

center of expertise are leading the investigation and coordinating with local Coast Guard commands to utilize the technical expertise necessary to find out what happened. The National Transportation Safety Board, the Bureau of Safety and Environmental Enforcement are also involved to examine all aspects of the vessel casualty.

Additionally, I also referred the casualty investigation of the drill ship Noble Discoverer, also operating in Alaska waters, to the Department of Justice for their review and potential follow-on action. Last week, I also referred a separate KULLUK investigation into potential violations from 2012 to the Department of Justice for their review and potential follow-on action. As the Coast Guard and the Department of Justice are still actively engaged in these investigations, it would not be appropriate for me to provide additional information at this time. However, as soon as the investigation is complete and final reports are issued, Senator, I will ensure that you get a copy of them, and your staff does as well.

In conclusion, Senator Begich and distinguished colleagues, the Coast Guard in Alaska will continue building its strategy using a whole-of-government approach that will inform national dialogue and policy and development of the Arctic region. While there are many challenges, the increasingly open Arctic Ocean also presents unique opportunities for our nation, and specifically for the people of Alaska. We look forward to working with the Congress on how the Coast Guard can continue to support our national Arctic objectives, protect its fragile environment, and remain *semper paratus*, always ready in the new ocean and for the people of Alaska.

Thank you, sir, for this opportunity to testify here today. I look forward to your questions.

[The prepared statement of Admiral Ostebo follows:]

PREPARED STATEMENT OF REAR ADMIRAL THOMAS P. OSTEBO, COMMANDER,
U.S. COAST GUARD SEVENTEENTH DISTRICT

Senator Begich and distinguished colleagues, thank you for the opportunity to join you today. I am pleased to discuss Coast Guard Arctic responsibilities and operations. This past summer we prepared for Arctic activity driven by the oil industry's planned drilling operations in the Chukchi and Beaufort Seas. Partnering closely with Federal, State, Local, and Tribal government partners, and working with industry as the regulated parties, the Coast Guard was ready for operations in the Arctic with Operation Arctic Shield. The lessons we learned this past year will inform our planning and strategy, to ensure we remain always ready to ensure the safety, security and stewardship of the emerging maritime frontier of the Arctic.

Mobile Offshore Drilling Unit (MODU) Kulluk Grounding—On-Going Investigation

The Coast Guard shares your concerns regarding the grounding of the MODU KULLUK on December 31, 2012, which highlights the rigors of operating in Alaskan waters. The Coast Guard last inspected the KULLUK on December 20, 2012. The Coast Guard inspected and certificated the newly constructed Offshore Supply Vessel AIVIQ on April 20, 2012.

In January, I directed a marine casualty safety investigation into the facts and circumstances surrounding the grounding of the KULLUK. Members of the Coast Guard's Investigation National Center of Expertise are leading the investigation, coordinating with local Coast Guard commands, and utilizing the technical expertise of the National Transportation Safety Board and the Bureau of Safety and Environmental Enforcement to examine all aspects of this vessel casualty. Furthermore, in order to provide timely feedback to the American public and the marine industry, the investigators have been authorized to make interim safety recommendations prior to the final release of the report.

As my investigating officer is still actively engaged in the investigation, it would not be appropriate to provide additional information at this time. As soon as the investigation is complete, and the final report is issued, I will ensure a copy is provided to you and your staff.

Additionally, in January I also referred the casualty investigation of the Drill Ship NOBLE DISCOVERER, also operating in Alaskan waters, to the Department of Justice (DOJ) for their review and potential follow-on action. Since the Coast Guard is actively assisting DOJ with the case, it would not be appropriate for me to provide information regarding this on-going investigation and I would refer any questions to DOJ.

The Coast Guard in Alaska and the Arctic Region

The Coast Guard has been operating in the Arctic Ocean since 1867, when Alaska was just a territory. Then, as now, our mission is to assist scientific exploration, chart the waters, provide humanitarian assistance to native tribes, conduct search and rescue, and enforce U.S. laws and regulations.

In Alaska, Coast Guard aircraft and vessels monitor more than 950,000 square miles off the Alaskan coast to enforce U.S. laws. We patrol an even larger area of the North Pacific Ocean to stop large-scale high seas drift netting and other illegal fishing practices, including foreign incursions into the U.S. Exclusive Economic Zone. We also conduct marine safety and environmental protection missions in the region.

To protect the Arctic environment, we are engaging industry and the private sector to address their significant responsibilities for pollution prevention, preparedness, and response. Recognizing that pollution response is significantly more difficult in cold, ice, and darkness, enhancing preventative measures is critical. Those engaging in offshore commercial activity in the Arctic must also plan and prepare for emergency response in the face of a harsh environment, long transit distances for air and surface assets, and limited response resources. We continue to work to improve awareness, contingency planning, and communications.

We are also actively participating in the Department of Interior-led interagency working group on Coordination of Domestic Energy Development and Permitting in Alaska (established by Executive Order 13580) to synchronize the efforts of Federal agencies responsible for overseeing the safe and responsible development of Alaska's onshore and offshore energy.

While prevention is critical, the Coast Guard must be able to manage the response to pollution incidents where responsible parties are not known or fail to adequately respond. In 2010, we deployed an emergency vessel towing system north of the Arctic Circle. We have also exercised the Vessel of Opportunity Skimming System (VOSS) and the Spilled Oil Recovery System (SORS) in Alaskan waters, but we had yet to conduct exercises north of the Arctic Circle until this summer. Both of these systems enable vessels to collect oil in the event of a discharge, however, these systems have limited capacity and are only effective in ice-free conditions. As part of Arctic Shield 2012, we conducted the furthest northern deployment and testing of the SORS in the vicinity of Barrow.

Fisheries are also a concern in the region. The National Marine Fisheries Service, based upon a recommendation from the North Pacific Fisheries Management Council, has imposed a moratorium on fishing within the U.S. Exclusive Economic Zone north of the Bering Strait until an assessment of the practicality of sustained commercial fishing is completed. The Coast Guard will continue to carry out its mission to enforce and protect living marine resources in the high latitudes.

We are employing our Waterways Analysis and Management System to assess vessel traffic density and determine the need for improved aids to navigation and other safety requirements. We are also moving forward with a Bering Strait Port Access Route Study, in coordination with our international partners, which is a preliminary analysis to evaluate vessel traffic management and appropriate ship routing measures.

The Coast Guard continues to support international and multilateral organizations, studies, projects and initiatives. We are actively working with the Arctic Council, International Maritime Organization and their respective working groups. We are leading the U.S. delegation to the Arctic Council Oil Spill Task Force that is developing an International Instrument on Arctic Marine Oil Pollution Preparedness and Response. We are also conducting joint contingency response exercises with Canada and we maintain communications and working relationships with Canadian and Russian agencies responsible for regional operations including Search and Rescue, law enforcement and oil spill response. We maintain bilateral response relationships with Canada and Russia, and last month we hosted representatives from the Russian State Marine Pollution Control Salvage and Rescue Administra-

tion to sign an expanded Memorandum of Understanding and Joint Contingency Plan to foster closer cooperation in oil spill response. We will continue to engage Arctic nations, international organizations, industry, academia and Alaskan state, local and tribal governments to strengthen our partnerships and inter-operability.

Our engagement with Alaska Native Tribes continues to be highly beneficial. Our continued partnership has made our operations safer and more successful. We are working hard to ensure tribal equities are recognized, and that indigenous peoples and their way of life are protected. We look forward to continuing to strengthen our partnerships with our Alaskan Native partners.

The Coast Guard continues to push forward and assess our capabilities to conduct operations in the Arctic. Since 2008, we set up small, temporary Forward Operating Locations on the North Slope in Prudhoe Bay, Nome, Barrow and Kotzebue to test our capabilities with boats, helicopters, and Maritime Safety and Security Teams. We also deployed our light-ice capable 225-foot ocean-going buoy tenders to test our equipment, train our crews and increase our awareness of activity. Additionally, each year from April to November we have flown two sorties a month to evaluate activities in the region.

Looking ahead over the next 10–15 years, the Coast Guard’s regional mission profile will continue to evolve. Increasing human activity will increase the significance and volume of maritime issues, such as freedom of navigation, offshore resource exploration, and environmental preservation. While summer sea ice is forecast to diminish further in the coming decades, the region will still be largely ice covered in the winter. Thus, ice will continue to present hazards even in the summer time.

The Coast Guard in Context of National Arctic Policy

U.S. Arctic policy is set forth in the 2009 National Security Presidential Directive 66/Homeland Security Presidential Directive 25. For the past four years, as we are today with Arctic Shield 2012, we have been conducting limited Arctic operations during open water periods. However, we face many challenges looking into the future. Some Arctic operations demand specialized capabilities and personnel trained and equipped to operate in extreme climates. Our assessments of the Nation’s requirements for operating in ice-laden waters will consider infrastructure requirements to support operations, and requirements for personnel and equipment to operate in extreme cold and ice.

Given the scope of these challenges, we have been conducting oil-in-ice research since 2010 to evaluate, develop, and test equipment and techniques that can be used to successfully track and recover oil in any ice filled waters, and have explored promising technologies, such as heated skimmers. The Coast Guard’s strategic approach is to ensure we pursue the capabilities in the future to perform our statutory missions so we can ensure the Arctic is safe, secure, and environmentally sustainable. This strategy is consistent with our Service’s approach to performing its *Maritime Safety, Security, and Stewardship* functions.

Conclusion

Arctic Shield 2012 was an appropriate plan to meet projected mission requirements this past year. Moving forward, we will continue building our strategy using a whole-of-government approach that will inform national dialogue and policy development for this critical region.

While there are many challenges, the increasingly open Arctic Ocean also presents unique opportunities. We look forward to working with the Congress on how our Coast Guard can continue to support our national Arctic objectives, protect its fragile environment and remain *Semper Paratus*—Always Ready in this new ocean.

Thank you for the opportunity to testify today. I look forward to your questions.

Senator BEGICH. Thank you very much, Admiral.

Let me move now to Pete Slaiby, who is the Vice President of Shell exploration.

STATEMENT OF PETER E. SLAIBY, VICE PRESIDENT, SHELL ALASKA

Mr. SLAIBY. Thank you very much, Senator Begich, Mr. Chair. I am Pete Slaiby, Vice President of Shell Alaska. I appreciate the opportunity today regarding this opportunity to testify about our activities in the Arctic. My presence here is no doubt related to Shell’s exploration program offshore Alaska in 2012. The program

does involve marine activity. Today I will describe Shell's 2012 drilling operations in the Chukchi and the Beaufort Seas, with a focus on this maritime activity, and the activities that supported those operations. Then I am going to very briefly highlight some of the government and industry initiatives that contribute to the dialogue about maritime activities in the Arctic.

I have put recommendations for policymakers in my written testimony, but because of time I won't be able to testify or speak to that today.

In 2012, Shell drilled a portion of two wells, one in the Beaufort and one in the Chukchi, what we call top holes. Although the wells didn't reach hydrocarbon objectives because of the time constraints, they did mark an historic reentry into the U.S. Arctic offshore. These were the first wells drilled in open water offshore Alaska in more than 15 years and the first step to validating the enormous offshore resource potential.

Shell's drilling program, supported by our logistics teams, oil spill response assets, and with serious attention to stakeholder expectations, was carried out safely and successfully. Let me say that again. Our drilling operations were completed safely and successfully. After the drilling ceased, we demobilized our vessels, including the DISCOVERER, the NOBLE DISCOVERER and the KULLUK drilling rigs, south of the U.S. Arctic theater. It was while leaving the theater of operations that issues with the DISCOVERER were identified by the Coast Guard and the KULLUK ran aground. These incidents are the subject of ongoing government investigations and I will not talk about them today.

I would like to acknowledge publicly the efforts of over 700 men and women who worked 24/7 on behalf of Shell and the incident command to ensure that that incident, the KULLUK grounding, did not escalate. Shell's offshore and onshore response teams put forward a Herculean effort in a very short amount of time. That included immediate escalation in the notifications to the appropriate government agencies, deployment of Shell air and marine assets, 19 tugs and approximately 20 aircraft, forward mobilized personnel to the impacted communities, and a suite of oil spill response equipment into the region.

As you are aware, Mr. Chairman, no people were harmed, and there was minimal impact to the environment as the result of the KULLUK grounding. Finally, the assets I referred to played a key role in the recovery of the KULLUK, in many ways mirrored the marine and air assets that we have available during our drilling operations in the Arctic in 2012.

Of course, the story wouldn't be complete without me acknowledging a couple of people in the room. Admiral Ostebo and the work that the Coast Guard played in that was absolutely key, as well as Captain Mehler. The amount of time that we spent together over New Year's in the Marriott was significant, and I feel that I know a lot about both of those gentlemen as well.

We were also very, very happy to have spent and had a successful relationship with the people of Kodiak. One of the things I will share with you, Mr. Chair, is that during that time we did bring people in from Old Harbor in those areas, and they frankly said, you know, you have a very, very difficult situation here. You have

the KULLUK on the beach, and we appreciate the fact that you have stood up 700 people, but we don't think that you will ever be able to get that rig off the beach.

Of course, in my position, you can't predict what will happen. But I did promise that we would do everything we could to move the rig off the beach. So I am equally pleased that we were able to do what we did and promise what we did through the work of the Coast Guard, Shell, State of Alaska, the communities, and Smith Salvage. I'm very, very pleased that we were able to do what was arguably one of the most difficult marine salvage operations attempted on the Alaskan coast.

Now, let me focus on some of the efforts on Shell's 2012 exploration program that relate to marine operations and highlight some of the steps we took to ensure that these operations were completed safely and successfully.

Going into the Alaskan Arctic, we understood that there was limited infrastructure. We assembled and brought the majority of the assets that we required, both onshore and offshore, with us. We did so with a commitment of setting the bar higher for an environmentally responsible program in the Arctic. We pursued the goal of having the smallest possible footprint and no significant influence or impact on the North Slope communities and the traditional hunting activities. At every step, we worked with Federal agencies, the State of Alaska, local governments and, most importantly, stakeholders on the North Slope to develop a program that aspired to the highest technical, operational, and environmental standards.

Let me give you a few facts and figures on the marine and aviation logistics as far as accomplishments. They included approximately a quarter of a million miles traveled in 2012 by 23 vessels; 500 vessel-to-vessel transfers; 3,250,000 gallons of ultra-low sulfur diesel transferred; 10 vessels built and six modified in shipyards across the U.S.; 250,000 tons of cargo transferred at sea; 20,000 protected species observations—walrus, seals, whales, et cetera—that continue to develop a very important data base; 11,877 personnel transfers; jobs for Alaskans; 562 rotary wing and 535 fixed wing flights. In short, we secured the tools and technologies needed to keep people safe and conserve the environment.

As you are aware, maritime activities in the Arctic will increase and routes will open and oil and gas activity expand across the Arctic. Oil and gas development is underway, as you alluded, in the U.S., as well as offshore Russia, Canada, Norway and Greenland. Governments are considering appropriate policy responses through various international organizations such as the Arctic Council.

Industry is contributing to the dialogue through a range of assessments and assignments and joint venture industry programs that increase knowledge about the Arctic. Such government and private sector initiatives must continue.

I hope these remarks are useful and informative, and I thank the Senator for the opportunity today.

[The prepared statement of Mr. Slaiby follows:]

PREPARED STATEMENT OF PETER E. SLAIBY, VICE PRESIDENT, SHELL ALASKA

Mr. Chairman, I am Pete Slaiby, Vice President of Shell Alaska. I appreciate the opportunity to testify today regarding maritime activities in the Arctic. My presence

here is no doubt related to Shell's exploration program off the coast of Alaska—a program that involves maritime activity.

Today, I will describe Shell's 2012 drilling operations in the Chukchi and Beaufort Seas with a focus on the maritime activities that supported those operations. Then, I will highlight some of the government and joint government-industry initiatives that will contribute to the dialogue about maritime activity in the Arctic. Finally, I will offer some recommendations for policymakers to consider.

Shell Alaska 2012

In 2012 Shell drilled portions of two wells—one well in the Chukchi and one in the Beaufort. Although the wells did not reach the hydrocarbon objective, they did mark an historic re-entry into the U.S. Arctic offshore. They were the first wells drilled in the open water offshore Alaska in over 15 years; and the first step to validating the enormous offshore resource potential. Shell's drilling program, supported by our logistics team, oil spill-response assets, and with serious attention to stakeholder expectations, was carried out safely and successfully. Let me say that again—our drilling operations were completed safely and successfully.

After drilling ceased, we demobilized our vessels, including the Discoverer and Kulluk drilling rigs south of the U.S. Arctic theatre. It was while leaving the theatre of operations that issues with the Discoverer were identified by the U.S. Coast Guard and the Kulluk ran aground. These incidents are the subject of ongoing government review, and therefore, I will not talk about them.

I would like to acknowledge, publicly, the effort of the over 700 hundred men and women who worked 24/7 on behalf of Shell and Incident Command to ensure the incident did not escalate. Shell's onshore and offshore response teams put forward a herculean effort in a time of need. That includes the immediate escalation and notifications to the proper agencies, deployment of Shell air and marine assets (19 tugs/vessels and 20 aircraft), forward-mobilized personnel to impacted communities and a suite of oil-spill-response equipment to the region.

As you are aware, Mr. Chairman, no people were harmed, and there was minimal impact to the environment as a result of the Kulluk's grounding. Finally, the assets I referred to that played a key role in the recovery of the Kulluk, in many ways, mirrored the marine and air assets we assembled and had available during our drilling operations in the Arctic in 2012.

Now, I will focus in some detail on aspects of Shell's 2012 exploration program that relate to maritime operations; and highlight some of the steps we took to ensure that these operations were safe and successful.

Going into the Alaska Arctic, we understood that there was limited infrastructure. We had to assemble and bring the majority of onshore and offshore infrastructure with us. And we did so with a commitment to setting the bar for an environmentally responsible Arctic program. We pursued the goal of having the smallest possible footprint and no significant negative impact on North Slope communities and their traditional subsistence hunting activities.

At every step, we worked with Federal agencies, the State of Alaska, local governments and most importantly, the residents of Alaska's North Slope, to develop a program that aspired to the highest technical, operational and environmental standards.

Let me give you some facts and figures on our marine and aviation logistics accomplishments.

- Marine: 240,000 total nautical miles travelled in 2012 by 23 vessels
- 500 vessel-to-vessel personnel transfers
- 3,250,000 gallons of Ultra-Low Sulfur Diesel transferred
- 10 vessels built or modified in 6 shipyards
- 25,000 tons of cargo moved at sea
- 20,000 protected species observations (whales, walrus, seals, etc..) from vessels and aircraft
- 11,877 personnel transfers
- 562 rotary-wing and 535 fixed-wing flights

In short, we secured the tools and technology needed to keep people safe and conserve the environment.

Additionally, Shell undertook a number of programs and initiatives—all designed to ensure safe and responsible maritime operations. The following programs and initiatives played an enormous role in our 2012 program, and I will describe them in more detail after listing them.

- Shell Ice and Weather Advisory Center (SIWAC)

- Vessel Tracking System
- Simultaneous Operations Center
- Conflict Avoidance Agreement
- Oil Spill Contingency Agreement
- Communications Centers/Subsistence Advisor Program

SIWAC—Shell Ice and Weather Advisory Center

Shell's commitment to ensuring safe and responsible maritime operations is underpinned by our investment in ice and weather forecasting systems. Shell developed and now operates the Shell Ice and Weather Advisory Center (SIWAC) and has done so since 2007. SIWAC is an integrated ice hazard detection and forecasting service that has evolved to be the most comprehensive and focused ice and weather operation covering the offshore and coastal areas from the Gulf of Alaska to the Canadian Beaufort. SIWAC staff integrate a constant stream of weather, sea, and ice data from many sources, including satellite imagery, Metocean buoy, field observers, high frequency Radar sites, and publically available data; Shell also planned and executed a total of 23 dedicated ice reconnaissance missions in 2012.

At no time was the value of these professionals more evident than when we made the decision to move off the Burger well site in the Chukchi Sea one day after we commenced drilling. As frustrating as that was, it was the right call and one made possible by the world-class ice and weather forecasting we employ in the U.S. Arctic.

Mr. Chairman, as you are acutely aware, Shell takes additional steps to ensure that others can benefit from these Arctic forecasts.

For example, in 2012 SIWAC entered into a collaborative agreement with NOAA to share both near real-time and archived environmental data, such as buoy data and sea ice charts, which improves forecast products produced by NOAA for the U.S. Arctic. Moreover, Shell also maintains a data-sharing agreement with NOAA regarding hydrography. The sea floor in the Beaufort and Chukchi Seas continues to be mapped, as Shell vessels transit these seas we collect hydrographic data and provide it to NOAA. We also engage in discussions to focus on mapping priorities.

Vessel Tracking

Mr. Chairman, 23 Shell vessels traveled 240,000 nautical miles in the course of mobilization, demobilization, and season operations. Shell's marine activities to support operations in the Beaufort and Chukchi seas are bounded by a number of factors, including compliance with air and other permits and authorizations, management of protected species interactions, whaling blackout commitments, and significant steaming distances—many of which I will further describe. When active, Shell vessels provided real-time position data via vessel tracking systems to BOEM, the USCG, and the Alaska Marine Exchange. Shell vessel movement data was remotely monitored for internal safety, compliance, and operational reasons, and this data was also used in a Shell-developed Graphical Information System which allowed data such as ice interpretations and temperature to be overlaid on maps.

Communication Centers and Subsistence Advisor Program

Shell also carried out significant activities to communicate our operational and maritime activities with local communities, allowing us to minimize impacts on their subsistence and cultural activities. For example, Shell employed Subsistence Advisors in the local communities. Through twice-daily calls, we learned what hunting activities were occurring, how animals were migrating, and received feedback that helped us plan and adjust our operations so as to avoid interference and impacts. This worked very well and allowed for real-time adaptation. Shell also funded the operation of Communications Centers in each of the coastal communities. All Shell vessels called in to these centers every six hours around the clock, to state current location, current activities, and planned activities. These communications were made public, free and available to anyone who wanted information. This worked well for Shell and helped supply information to communities.

SIMOPS—Simultaneous Operations Center

To enhance communication with the greater maritime communities and regulators, Shell also operated a forum for managing Simultaneous Operations in Barrow to facilitate mutual aid and conflict avoidance. In this forum, Shell staff brought forward information from the Subsistence Advisors and vessel tracking programs, incorporated data from other parties and conducted a daily information exchange via teleconference. All entities with operational activities—USCG, other agencies, communities—could use the forum for information exchange to keep tabs on Shell's activities, as well as other shipping activities to the extent possible. We have run this for the last five years, and it has worked well.

CAA—Conflict Avoidance Agreement

As previously noted, Shell understands the importance of subsistence to local communities and has negotiated and signed key agreements to minimize our impacts on them. For example, Shell signed and abided by a Conflict Avoidance Agreement with the Alaska Eskimo Whaling Commission, which allowed operations following certain criteria and outside blackout times. This agreement also required zero discharge of drilling muds and cuttings and other treated waste streams in the Beaufort, the communication centers in coastal villages, protected species observers on marine vessels and overflights, transit and logistical requirements during the hunt, and providing assistance to whalers in the event of an emergency. Protected Species Observers have been used on all our vessels and have a critical role, being tasked with observing and reporting protected species and advising the vessel master to take appropriate mitigations, such as altering course and/or reducing vessel speed.

Good Neighbor Policy or Oil Spill Contingency Agreement

Shell has a “Good Neighbor Policy”, also known as the Oil Spill Contingency Agreement, among Shell, the Alaska Eskimo Whaling Commission, the North Slope Borough, and Inupiat Community of the Arctic Slope whereby Shell agrees to provide the financial and/or logistical support to facilitate an affected community’s subsistence hunt in the event such hunt is impacted by an oil spill from Shell’s exploration drilling.

Science

In the scientific arena, Shell has a long history of investing in environmental studies necessary to properly characterize and assess potential impacts to important ecological areas of the Chukchi and Beaufort Seas and the terrestrial areas of the North Slope. Shell invested \$35 million in environmental monitoring and research in 2012 alone, and we plan to continue our work in anticipation of future drilling. Shell also has an agreement with the North Slope Borough to invest annually \$5 million in science projects related to oil and gas activities offshore.

The bottom line is this: Shell continues to go above and beyond in putting a structure and systems in place that managed our operations in a safe and responsible manner and served to build confidence in our programs among stakeholders closest to the resource and, I’m proud to say, strong relationships built on trust. Most of what I just described to you was not required by government regulation, but reflects a corporate desire to do things right. All of these activities—as well as the professionalism of the people who carried them out—contributed to safe and successful offshore maritime and drilling operations.

Shell will also continue to be an active collaborator with intergovernmental scientific planning and review boards, and Shell is pleased that Dr. Michael Macrander, our science team lead for the Arctic, is a member of the National Academy of Science’s panel on Emerging Research Questions in the Arctic

Arctic Maritime Activity: Challenges Going Forward and Policy Responses

Marine activity in the Arctic will increase as northern routes open and oil and gas activity expands across the Arctic. Oil and gas development is happening in the U.S. Arctic, as well as offshore Russia, Canada, Norway, and Greenland. Governments are considering the appropriate policy responses through various international organizations, such as the Arctic Council. Industry is contributing to the dialogue through a range of assessments and joint industry programs that increase knowledge about the Arctic. Such government and private sector initiatives should continue and be coordinated. There is a shared goal to ensure that as maritime operations expand in the Arctic they go forward safely.

Policymakers should consider the following:

Strong support for the Arctic Council—The Arctic Council is proving to be a viable forum for Arctic nations to come to agreement on mutually beneficial programs that can make a significant contribution to maritime safety and protection of the environment. The Arctic Council has several relevant working groups, such as the Arctic Monitoring & Assessment Programs; Emergency Prevention, Preparedness & Response and the Task Force on Oil Spill Preparedness and Response; Protection of the Arctic Marine Environment; and Sustainable Development Working Group. Given the proximity of oil and gas basins and the likelihood of oil and gas development stretching across national borders, the Arctic Council is best positioned to encourage harmonization of regulatory standards covering industrial development in the Arctic. This will facilitate development by reducing costly duplication or conflicting requirements in a single development basin.

Ratification of the Law of the Sea Treaty—The U.S. is one of the few countries in the world that has not ratified the Treaty. Broad and diverse industry groups and companies support ratification.

Support Industry Efforts to Set Arctic Shipping Standards. IMO is currently developing a draft International code of safety for ships operating in polar waters (Polar Code), which would cover the full range of design, construction, equipment, operational, training, stability, search and rescue and environmental protection matters relevant to ships operating in the waters surrounding the two poles.

Support Additional Arctic Scientific Research and Technology Development. Technology development is essential for taking safe operational practice and making it safer and enhancing mitigations to further protect the environment. These are areas where Shell invests. Shell is supporting the ongoing Arctic oil spill response joint industry project that is advancing capability in this important area.

Revenue Sharing for Alaska

I want to acknowledge the effort you and Senator Murkowski are spearheading in Washington D.C. to extend OCS revenue sharing for Alaska. Current law provides that revenue from OCS leases in the Gulf of Mexico is shared with the Gulf States of Alabama, Louisiana, Mississippi and Texas. It is not fair that revenue from OCS leases off the coast of Alaska is not shared. Congress should approve legislation that gives Alaska a portion of the Federal revenue generated by production on current and future leases.

Revenues shared with Alaska could then be available to invest into coastal marine infrastructure such as ports and harbors, community-based support equipment, airports and other shore-based logistic infrastructure available for all marine users to benefit.

Conclusion

I hope these remarks are useful and informative. Thank you, Senator Begich. I am happy to answer questions.

Senator BEGICH. Thank you very much, Pete, and thank you for the recommendations in your written testimony. I'll ask you some questions on that in just a second.

What I'd like to do is ask Tommy Beaudreau first a series of questions. I know at a quarter till we have to sign you off to hook up another VTC, so I'll try to go through my questions fairly rapidly here, if you can bear with me.

First is, as we're working through the sequestration, the budget cuts that were automatically implemented throughout all the different agencies, do you see those reductions and sequestration having an impact in doing permits in a timely manner for 2014?

Mr. BEAUDREAU. So sequestration, as you know, Senator, presents enormous challenges across the Federal Government, and that's certainly true of agencies for which I am responsible, in particular BOEM and BSEE. BOEM and BSEE are nothing if not can-do agencies. I expect that we will do our utmost, as we always have, to complete our work in a very thorough way, demand compliance with our high standards, but complete our work promptly as well.

This will require a lot of resource management and, frankly, I am concerned about the potential impact of sequester. Remember the history of MMS and the reason BOEM and BSEE are in existence in the first place. MMS was a severely under-resourced agency. We have worked with Congress in connection with our reform efforts to remedy that in large part, and I am concerned that sequester presents a step backward from that.

But we will continue to do everything we can to fulfill our responsibilities, and do so thoroughly, and do so promptly.

Senator BEGICH. Let me, if I can follow up on that, I know you now have new requirements to do the—you took over what EPA

used to do on air permits for drilling. Is that also now—I guess the first question is have you been able to gear up under these conditions of sequestration, and are you seeing also a potential of a slow-down in that process? As you know, that's a new piece of your equation taken from EPA. Can you give me a little comment on that, or is that similar to what you have just described for the sequestration overall?

Mr. BEAUDREAU. Well, it's similar, but we are very far along in establishing our air quality program with respect to the Arctic OCS. That requires and we have conducted very close work with EPA. The EPA was quite far along, actually, in reviewing air permits emissions from, for example, Conoco Phillips. So we have been able to piggyback from that work moving forward, which I think has been great assistance to the program.

As you know, Senator, there are significant differences between the air quality program administered under the Outer Continental Shelf Lands Act and EPA's authorities. So we are carrying forward the quality of the air quality analysis through a combination of application of our regs, as well as NEPA, but also implementing what I hope will be a very efficient and clear process.

So there are budget challenges associated with all of this, but we are trying to address those challenges bureau-wide, not merely in the region.

Senator BEGICH. Will you be able to—and I'm going to move to another subject here in a second, but just to finish up on the budgetary issues, will you be able to at some point, from your department or from the broader perspective of the Interior Department, be able to report to us here is where you think there might be slow-downs or impacts enough where we can get a longer-term picture? Because, as you know, you know it better than probably most in your department because you are from Alaska, that the timetable of how you do this permitting is critical, because you can literally be off a few months and change a year or a year-and-a-half of development because of the timetable of development that occurs here in Alaska versus the Gulf of Mexico, as an example.

Will you be able to report to us at some point?

Mr. BEAUDREAU. Yes, I am absolutely willing to continue communicating on a real-time basis with this issue. Permitting in Alaska presents the challenge you describe. You have to have a very efficient and timely process given the limited drilling window. From a regulatory perspective, it also offers certain advantages in that the volume is not as large as, say, the Gulf of Mexico, for example, and you are able to do some advance planning, particularly now that, for example, Shell has paused its program. So we are really looking at 2014 potentially for Shell, as well as for Conoco Phillips. So that offers, in my mind, opportunity for advance planning, including around internal resources.

Senator BEGICH. Let me ask you two other quick questions, and then, while you were talking, a thing flashed across here telling us we have just minutes left with you. You can't see that. We can only see it.

[Laughter.]

Mr. BEAUDREAU. That wasn't my doing.

Senator BEGICH. I know.

[Laughter.]

Senator BEGICH. It's a new technology. I like it now. You guys probably love this from your end of testimony. You get this little sign that flashes up. I know it wasn't your doing.

Let me ask you, because Conoco Phillips will be doing a different type of drilling. I think it's a jack-up rig and how the blowout preventers are situated. They're not down on the ocean floor. They're on the rig itself.

Maybe you can't answer this yet. Are you going to require Conoco Phillips to have a containment dome similar to what Shell has done, or are you going to just utilize the blowout preventers on the surface? Give me a sense there. Maybe you can't answer this yet because it is still in process, but can you give me a little sense there on that?

Mr. BEAUDREAU. Yes. Generally, we're going to look for the same things from Conoco Phillips that we looked for with respect to Shell's operation, which is a performance standard around the ability to address any loss of well control at the source. That is extremely important, particularly in the Arctic environment, where opportunities for a spill response in the event of a loss of well control are limited by the remoteness of the geography, encroachment of sea ice, and a host of other factors.

So we will be working very closely with Conoco Phillips on their ability to perform with respect to source control. We don't prescribe a one-size-fits-all solution to this issue, but we will be very demanding on this issue.

Senator BEGICH. I will end with this, and again, I want to thank you for your testimony, thank you for participating. I know we will have more questions for you we will present through the record. But I think this is a simple question, and that is the interagency working group, I'm assuming that it is working well, and if you have recommendations, not necessarily right now but if you have recommendations to improve that, I would be very interested in hearing that at some point, because I know it's something I am very obviously active around. I think it's been working, but maybe you can give a quick comment on that, and then we will look for recommendations later.

Mr. BEAUDREAU. Yes, it is working quite well. The focus and the genesis of the working group was around permitting issues. That remains one of the core focuses of the working group. But we are taking it further under Deputy Secretary Hayes' leadership to improve the overall quality, as well as the efficiency of Federal oversight in Alaska, including coordination with the public and stakeholder outreach.

As you know, we, in executing our statutory responsibilities, place a significant interest in public outreach and outreach with Native communities. There are real opportunities through the working group to ensure that that input is shared broadly through the Federal Government, as well as to minimize the burden on local communities from all the Federal agencies seeking their input. So there are real opportunities there that we will be carrying forth.

Senator BEGICH. Thank you very much, Tommy. Right across, you cannot see it, it says, "This meeting will end in 1 minute," so your timing was perfect.

[Laughter.]

Senator BEGICH. So let me just say thank you very much. Thank you for testifying. I appreciate you doing this by VTC. We, of course, as you know, in Alaska, it's not unusual for us to do this, and I think it worked very well. So I thank you for your testimony and thank you for participating. I think they will do something to you momentarily and you will vanish from our screen, but I'm going to continue with the two other folks here. So, thank you again for being here.

Mr. BEAUDREAU. Thank you, Senator.

Senator BEGICH. We are still on screen, so be careful what you do.

[Laughter.]

Senator BEGICH. Let me ask Admiral Ostebo, you had a couple of things that I thought were interesting to me, and one is—you mentioned this not only in your last testimony last year we had, but also here, the ongoing concern of—you know, oil and gas development is important, but in the sense of shipping, the amount of movement of ships in the Arctic and the Bering Sea is increasing at a dramatic pace, more than I think most people in the country realize, and that creates unique challenges.

There was one note I made, and it was on the International Maritime Organization polar code, which is all about what is the standard we will all operate under in this region. Can you give me an update on kind of where that is at?

For folks that are here, and also listening, this is not just about shipping. It's also the many vessels that Pete Slaiby talked about that he utilized. They all have to transit through there. So it's a multifaceted use of that area.

But tell me how that is coming about and what we see as long-term to make sure that we have some standards, because a lot of those ships are foreign flagged, and we have no clue about their capacity, their condition. Hopefully we know what they have in them, but even that may be of concern. So give me your thoughts on where we are on that and where we think we might be going.

Admiral OSTEBO. Yes, Sir. Sir, that's a great question, and it hits a number of facets I can cover in one, hopefully not too long response.

You mentioned, sir, almost 500 vessels went through the Bering Strait last year. Twenty-two of them were Shell's. The rest of them belong to somebody else. Who did they belong to, where were they going, what were they carrying, what were their qualifications, were there mariners on board, what was the material condition of the ships varied greatly. If it was a ship that was leaving from a U.S. port going to another U.S. port, if it was a shipping or a barge combination that was engaged in U.S. traffic and trade, we had a lot of oversight on that. But if it is, as you said, a foreign flagged vessel with a foreign crew going from one foreign port on the north side of Russia, for example, to Singapore or China, there is very little that the U.S. can demand and very little that the Coast Guard

can do to become informed about that or to demand certain standards of care on board those ships.

To address that problem, what is being done through the IMO is this idea of let's have a polar code that addresses not only the standards of operation—

Senator BEGICH. IMO is International Maritime Organization.

Admiral OSTEBO. International Maritime Organization under the United Nations. So to take a look at what would be the appropriate material conditions and requirements on ships that operate in the Arctic, hull thickness, propulsion requirements, endurance requirements, firefighting requirements, those kinds of safety standards.

Senator BEGICH. So safety requirements.

Admiral OSTEBO. Safety of life at sea we call it, SOLAS requirements. What would those look like in the Arctic? What would be the prudent set there? Also, what would be a prudent set of qualifications for the mariners that operate those? Would they have to be ice pilots? Would they have to have a certain amount of training to operate in the Arctic? Both of those things would have to go together. Obviously, having the greatest ship in the world with inappropriately trained folks, it doesn't really help you out. They both have to come together.

That is moving forward. The Coast Guard is heavily involved in structuring that. But as you know, sir, as a major international agreement, it takes time to move that forward. Since the time that that initiative began, things have changed in the Arctic. So things like the offshore mobile drilling rigs, they are not necessarily covered. The carbon footprint for ships is not necessarily covered. There is going to be an opportunity to go back and modify some of our requirements in the polar code, but currently it's primarily about safety of life at sea, firefighting and response capabilities on board the ship, and the mariner qualifications, and it is moving forward slowly through the IMO process.

Senator BEGICH. And do you feel the other countries are participating in a way that is going to produce an end product?

Admiral OSTEBO. Yes, sir. The other Arctic nations I think are working very closely and collaboratively together. One of the things that we see happening through the Arctic Council and through some observer status is that a lot of other countries that might not—you wouldn't normally think of involved in the Arctic are working hard to have their contributions put in there. For example, I recently met with the Singapore Ambassador, and he is very interested in influencing the polar code. So the more people that come to this, as you know, from a committee perspective, it's harder to do, Senator.

Senator BEGICH. Very good. Let me ask you on this same subject, and I know it's a concern, but tell me, as the Admiral for the 17th District, both are probably concerns of oil and gas development and shipping, but what is the bigger of the two over the long haul here?

We are about to have someone else—OK, hang on one second.

Helen, you are on the next panel. We haven't gotten to you yet, so be patient. You can sit there patiently, or you can come back to the screen when we call on you. But just so you know, you are on screen. So whatever you do, we will be watching you.

[Laughter.]

Senator BEGICH. It's your choice. So don't feel like you have to sit there and watch us go through this. We are closing out the second panel, or first panel here. So, thank you very much for being here.

So, what is the biggest risk? One of the things I've said is the shipping is what I'm always worried about. There are multiple standards on oil and gas industry from many different agencies, but on shipping it makes me more nervous. Tell me where do you see the risk in the Arctic and the Bering Sea, because they are connected in the way of the transportation route.

Admiral OSTEBO. Senator, first, in my job, I am worried about everything.

Senator BEGICH. I knew that answer.

Admiral OSTEBO. So I never sleep. And certainly when it comes to environmental issues, it's hard to say whether a gallon of oil on the water is not a problem or is a problem. Anything going in the water that shouldn't be there is a concern to us, including anything that produces a sheen on the U.S. waters is something that we need to be involved with.

With that said, when I look at risk, and when I look at the resources that I have, you have to take that risk apart a little bit. There is the consequence side of risk, how big the consequence is from something that happens, and the likelihood of something happening. So when I look at likelihood and I look at the numbers of ships that are coming through the Bering, and I look at the number of incidents we've had in the Alaskan waters—fires, emissions, collisions, groundings, people falling overboard—when the KULLUK incident happened, we had 15 other cases going on in the State of Alaska at the same time.

Senator BEGICH. At the same time.

Admiral OSTEBO. At the same moment, the same day. When I look at the numbers of groundings that we have, we have one which I brought some pictures of that is very much a big concern to me today with a Pacific producer who is aground on Kodiak Island. The highest probability—

Senator BEGICH. Hold on a second, Admiral. I want to make sure that—they are working on it, so go ahead.

Admiral OSTEBO. The highest probability of incidents is clearly in the increased maritime traffic across the board. That is clearly the number one spot.

Senator BEGICH. Is it because it is so multifaceted that you don't have one person to go to to say, OK, here is what we need to do?

Admiral OSTEBO. If you look at the work that we had working with industry last year, we knew where all their ships were. We were all over them. We had people on board them. We inspected them. They were all covered by AIS. They were very informed—

Senator BEGICH. You had a higher standard.

Admiral OSTEBO. A higher standard. It was like we gang-tackled that problem of drilling two holes in the Arctic last year, and they brought a lot of resources with them. You had two drilling rigs. Like I said, there were 22 vessels out there. All those other vessels were there to support that. You don't have that when you have a liquid condensate vessel coming from the North Slope of Russia through the Bering Strait, unannounced, with unknown crew and

millions of gallons of product on board. Those things can seriously bother me. I don't know what route they are taking, and they show up on our screen randomly.

Senator BEGICH. Let me ask two quick questions, and then I'll move to Pete Slaiby, and then I'll close out. But again, I thank you for your patience here.

With the activity that occurred this year, and you mentioned the comment that Arctic Shell is kind of in perpetuity at different levels, depending on activity, I'm assuming.

Admiral OSTEBO. Yes, sir.

Senator BEGICH. Do you feel like 2014, again, anticipating that Shell will be back in the waters, as well as potentially Conoco Phillips, that you are prepared even under the sequestration levels that we are at, or is that a risk factor that we have to calculate in and do what we can, obviously, on our end? And that may have been an answer to the question by the question I gave you, but tell me what you are thinking for 2014. With sequestration, with Shell, Conoco Phillips potentially, now you have two kind of overlapping inside that region.

Admiral OSTEBO. Senator, I would submit that Coast Guard activities in the region are going to grow and be persistent, obviously changed by the amount of activity that goes on there, and oil and gas exploration is one part of that. If there is no more oil and gas exploration in the Arctic, the Coast Guard's presence will continue to grow there with all this other activity we have talked about.

So we are attenuating our efforts based on the need that we see. Clearly, the summer of 2013, this coming summer, the Coast Guard will be there. We will have a national security cutter up there. We are looking to move a buoy tender up there. We're going to do some more experiments and exercise work. We have a whole list of things we're going to continue to do, although oil and gas exploration is not going to be taking place like it did last year. So you can rest assured—

Senator BEGICH. There will still be activity there, but just on the level of training and testing, and also being aware because there is other activity outside of oil and gas going on.

Admiral OSTEBO. Yes, sir. And this also actually gives us an opportunity to focus more on the Bering Strait. So we'll put a lot of assets in there, and we will continue with our outreach with the local communities up there that we have started and that I think is going very well.

In the summer of 2014, if Shell decides to drill, if Conoco Phillips shows up to drill, if our Canadian friends decide to move forward, as they are planning on doing, if our Russian friends decide to do the same, and with Pt. Thompson—I think it is important for a lot of folks to realize that Pt. Thompson is opening up. There are some 30 or 40 barges with a whole city that is going to go there to open up that field. That is all going to be from offshore. That is all going to be international traffic that brings that there. Equipment that's built in China and Singapore and other places will all have to come in, and the Coast Guard will be all over that because that provides lots of opportunity for accidents.

So the Coast Guard will be there in the summer of 2013 and the summer of 2014 and beyond, a lot more I would suspect in the summer of 2014.

Sequestration. Clearly, as Director Beaudreau brought up, sequestration is an issue for all of us, and the Coast Guard, particularly District 17, is working hard to figure out how best to manage the risks and the impacts of sequestration. We have a reduction in our flight hours, and our offshore maritime activity is being reduced because of that. The exact impacts, I will be getting a briefing before the end of this week, actually tomorrow, from my staff on how exactly they will recommend I adjust to that.

Now, as far as 2014 goes in sequestration, Senator, as you know, that could be a million years from now.

Senator BEGICH. Right. In Senate time, it is.

Admiral OSTEBO. Everything is changing. So we had a continuing resolution, then we had sequestration, now have a new continuing resolution, and we are still trying to balance all those books and see how we can do it.

I will finally end with this is the Coast Guard issue, Senator, and not just my issue here in District 17. It is an all-hands-on-deck event for the United States Coast Guard around the Nation. So forces do flow from elsewhere as we look to balance the Coast Guard activities to Alaska to address this. So it's not just myself out here trying to figure this out on my own. Thank you very much.

Senator BEGICH. Thank you very much.

Pete, thank you very much for being patient here. I know that because of limitations of the reports that are being done and the work that is done by different agencies that you responded to on the KULLUK, let me ask you if I can ask you maybe a general question. You had an incredible operation at—I think it was the Marriott, if I remember right, the incident command, and you had lots of pieces to it, lots of people, lots of other activities. In your process—and again, if you can't comment now, but in the process of when you prepare the reports for the different agencies, are you going to talk about what you can do to improve that, or was it what you thought it would be, or what can you tell us now?

It seemed to be a lot of people, and I know you're probably doing an internal analysis, I'm assuming, of how that went, where are some tweaks or where changes could be made. Can you comment on any of that at this point, or is that something that has to be limited because of the work you are doing with the Justice Department, as well as the Interior Department and the Coast Guard?

Mr. SLAIBY. We can comment on the response itself. It's really, I think, more out with the investigation.

Senator BEGICH. Sure.

Mr. SLAIBY. We were very happy that we were able to stand up and bring all those folks together basically over New Year's and the period thereafter. As we said, actually a little over 700 people. We were able to mobilize assets that we had, frankly, put away for the winter. Our oil spill response capacity was located both in Seward and Dutch Harbor, tremendous responses from some of our local companies here.

You know, over the years, we had done a lot of oil spill training with folks at ASRC, their energy services, with UIC, with Alaska Clean Seas. And very, very quickly, within a matter of two or 3 days, we were literally able to take the snow off some of these assets in Seward and bring them up and mobilize them. Between the assets that were mobilized in Dutch and Seward, I think we were able to address a lot of the concerns the stakeholders had, that the incident command had, in a very short order.

One of the things that worked very well, obviously, because of the proximity to Kodiak, was the access to the helicopters and the crews on those rescue helicopters. If this were to have been an incident in the Slope, we would have been a little closer to where our air assets were.

And finally I will say as well for my industry partners. Clearly, the Coast Guard came through. We had a number of vessels that we were able to pull through, but we called and got a helicopter released from our colleagues at Exxon Mobil in 17 minutes from the time we made the call.

Senator BEGICH. So as you examine it and as you move forward, you will probably do some internal recommendations as you improve or enhance it. Is that a fair statement?

Mr. SLAIBY. We worked an awful lot with the Coast Guard, again Captain Mehler and Admiral Ostebo will testify. We had a number of full call-out drills last year. We had two drills going into 2012 where we actually flew a number of folks up from out of state to help us in there. So we had practiced what was going on, and fortune favors the prepared. I do feel that the success we had in getting the KULLUK off the rocks was due to the work we had done with the Coast Guard, with the State of Alaska, and with other Federal agencies.

Senator BEGICH. Let me ask you two quick questions, and then I'm going to have to close things off. But one, you did a conflict avoidance agreement with the whaling captains in the communities up there. How do you feel that worked out? Obviously, this would be from your perspective. But how do you think that worked, that kind of sitting down and working this out? Tell me your thoughts on that.

Mr. SLAIBY. We think it worked pretty well. You know, we had talked in my testimony, Senator, about the fact that we weren't able to get our wells through hydrocarbon sessions. We obviously had reasons that we couldn't do that. But one of the things we had to work with was the whaling activities in the Beaufort, and we had agreed through the conflict avoidance agreement that we would not engage in activities during whaling on Cross Island, and what's going on in Kaktovik as well. It's very difficult to do, but it's something we said we would do, and we honored.

Senator BEGICH. Now the last question, regarding the inter-agency working group. You had stated the last time we had a hearing, your desire—your sense was that it was working, but your desire was to determine how you make this more permanent so it's not just at the whim of the current president or what might happen administratively. Is that still your position, to see this more permanent so there is some long-term structure?

Mr. SLAIBY. Yes, absolutely. I think the work that Deputy Secretary Hayes did was excellent, and I'm sure Deputy Secretary Beaudreau will continue down the same line. But we do need to make it sustainable through a number of different operators, through Conoco and Statoil and eventually others that might come on. I think the work that it's doing does need to survive political transitions—

Senator BEGICH. Personnel and political—

Mr. SLAIBY. Yes, but it has been. It has been a sea change practically in how things have been done. I also think that in a time of sequester and in a time when we are really looking to up the quality of permits, you are getting a better quality program at potentially a more efficient cost structure, and everybody benefits with that in place.

Senator BEGICH. Very good. Let me end there, and I do have some other questions. I will just submit them for the record, if that's OK.

Mr. SLAIBY. Thank you very much, Senator.

Senator BEGICH. I appreciate all of you being here. And again, thank you for giving your testimony. We have your written testimony, and then I know Pete Slaiby gave some recommendations, and I am probably going to correspond with you on some of those thoughts there.

Mr. SLAIBY. Thank you very much, Senator.

Senator BEGICH. Thank you all very much. We will dismiss this panel.

We will have the next panel assemble very quickly here. Helen, we will be going to you first, so be prepared here. Thank you very much. Give us a second here to set up. Thank you very much.

Our next panel, if staff can set those up, great. We have one, two, three, four, five, and we'll try to go through those.

Helen Brohl, Executive Director of U.S. Committee on Marine Transportation System.

Mr. Ed Page, Executive Director of the Marine Exchange of Alaska.

Ms. Eleanor Huffines, Manager, U.S. Arctic Campaign, Pew Charitable Trusts.

Matt Ganley, Vice President, Bering Straits Native Corp.

And we've had an additional one.

And then Mr. Jack Omelak, of Nanuuq Commission. Thank you very much.

Let me go ahead and again thank the panel for being here. Thank you for participating. Again, you got a sense if we can keep your testimony close to 5 minutes each, that would be appropriate, and we'll start right off the bat. Again, this is our second panel, again talking about the Arctic in a broader sense. Again, we appreciate Helen Brohl, Executive Director, U.S. Committee on Marine Transportation Systems, being here on video teleconference.

As I mentioned earlier, Helen, before you got on, that due to sequester and other budget reductions, we couldn't have you here in person. You're missing 70-degree summer weather here, no snow. But we think this is great that you're able to participate. The last testimony we had from Tommy Beaudreau went very well. It works very clean. So again, thank you for your willingness to testify here,

and it saves a little money to the Federal Government. We like doing that. So again, appreciate your time.

I'll open with you, and if you want to go ahead with your testimony, we greatly appreciate it.

**STATEMENT OF HELEN BROHL, EXECUTIVE DIRECTOR,
U.S. COMMITTEE ON THE MARINE TRANSPORTATION SYSTEM**

Ms. BROHL. Thank you, Mr. Chairman. I'm just testing. Can you hear me okay, sir?

Senator BEGICH. We can hear you perfect.

Ms. BROHL. Thank you so much. Chairman Begich, thank you for the opportunity to provide testimony today to you and the Senate Commerce Committee's Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard's field hearing in Anchorage. Thank you again for allowing us to participate by VTC from our headquarters in Washington.

The Committee on the Marine Transportation System, or CMTS, originated as a Federal cabinet-level interagency committee established at the direction of the President in 2004. This past December, Congress institutionalized the Committee in statute in the Coast Guard and Maritime Transportation Act of 2012.

The CMTS includes 28 member departments, independent agencies and White House offices, including DHS, the Coast Guard, and the Department of Interior. The Secretary of Transportation serves as the Chair.

The CMTS is identified as the U.S. Marine Transportation System and is within the purview of over 35 individual Federal agencies. The purpose of the CMTS is to assess the adequacy of the marine transportation system, which includes ports, waterways, channels, and their intermodal connections; and to promote the integration of the MTS with other modes of transportation and other uses of the marine environment; and coordinate recommendations with regard to Federal policies that impact the MTS.

The United States is an Arctic nation. As climate change, including the loss of sea ice, creates a more accessible Arctic, we must conserve the need for future action and guidance that will facilitate safe and efficient navigation, permit supplies and property, reduce the risk of environmental damage to the region, and preserve the way of life of the Native Alaskan tribes.

So the U.S. Arctic MTS should be capable of meeting the safety, security, and environmental protection needs of present and future Arctic stakeholders and activities.

Under Section 307 of the Coast Guard Authorization Act of 2010, the CMTS was directed to coordinate the establishment of domestic transportation policies in the Arctic. This coordination includes the consideration of national policies and guidance related to safe and secure maritime shipping in the Arctic.

To advance this coordination, the CMTS created an interagency action team to oversee the development of a draft report titled, "U.S. Arctic Marine Transportation System: Overview and Priorities for Action 2013." This draft report is currently on the CMTS website at www.cmts.gov for public inspection with a 45-day public comment period which ends on April 22. The CMTS expects to fi-

nalize the report once public comments have been compiled and assessed.

The draft CMTS Arctic MTS Report identifies existing Arctic MTS policies; assesses present and projected uses of the Arctic; describes the essential components of a U.S. Arctic MTS; describes the potential benefits of a U.S. Arctic MTS; provides an evaluation of the current condition of the U.S. Arctic MTS; and recommends actions through which CMTS agencies can, working with stakeholders, strengthen the MTS to meet the Nation's goals for safe Arctic economic activity and environmental protection.

As part of its assessment, the CMTS identified five components and 16 sub-elements of the U.S. Arctic MTS. The five main components include: navigable waterways, which includes things like places of refuge for ships; physical infrastructures such as geodetic control infrastructure; MTS information infrastructure such as hydrographic surveys; MTS response surveys such as escort services and icebreaking; and vessels, including crew standards and training.

For each of the 16 sub-elements within these five components, the draft report provides a description of the issue, its status, associated challenges, current Federal activities, and future Federal actions needed. These issue papers are located under Chapter 3 and also identify non-Federal partners.

Taken together, the Arctic MTS issue papers recognize the Arctic MTS as a nascent system that would need considerable public/private investment to support increased Arctic traffic if projected future growth in regional and trans-Arctic shipping is realized.

As it has been stated, changing conditions in the Arctic create an opportunity for the United States to develop a new Arctic marine transportation system. Working cooperatively with Federal, state, local and tribal authorities, the MTS may be sustainably managed to the benefit of all stakeholders.

CMTS, in its draft U.S. Arctic MTS Overview and Action report, puts forward short-term and long-term recommendations, and a comprehensive strategy to address the development of the Arctic MTS and supporting elements across all MTS components and stakeholders. I would like to note that many of these recommendations are complementary to the soon-to-be-released National Ocean Policy Implementation Plan.

If an Arctic MTS is to be developed, the CMTS recognizes the interdependent nature of marine transportation system elements and recommends that the United States first focus to improve the Arctic MTS in two primary MTS component areas. These are information infrastructure, including sea ice and marine weather forecasts, mapping and charting, communications, and AIS coverage; and response services, including environmental response management, search and rescue, and ice-breaking capability.

While not yet final, an appropriate mix of MTS services is called for in the MTS report to bridge existing gaps and provide a safe, secure, and environmentally sound MTS to address the full range of issues impacting the U.S. Arctic and the Arctic region at large.

Thank you, Mr. Chairman. I appreciate again the opportunity to testify, and I'll be happy to answer any questions you may have.

[The prepared statement of Ms. Brohl follows:]

PREPARED STATEMENT OF THE UNITED STATES COMMITTEE ON THE MARINE
TRANSPORTATION SYSTEM

I. Introduction

The U.S. Committee on the Marine Transportation System (CMTS) appreciates the opportunity to participate in the Senate Commerce Committee, Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard's field hearing in Anchorage, Alaska to discuss Arctic maritime safety.

The United States is an Arctic nation. As climate change, including the loss of sea ice create a more accessible Arctic, we must consider the need for future action and guidance that will facilitate safe and efficient navigation, prevent loss of life and property, and reduce the risk of environmental damage in the region. Safe marine transportation is fundamental to each of these pursuits. For this reason, a U.S. Arctic Marine Transportation System (MTS) should be capable of meeting the safety, security and environmental protection needs of present and future Arctic stakeholders and activities.

II. CMTS and the Coordination of Domestic Arctic Transportation Policies

The Committee on the Marine Transportation System (CMTS) originated as a Federal cabinet-level, interagency committee established at the direction of the President in 2004. Congress institutionalized the Committee in statute (P.L. 112-213) in December 2012. The CMTS has 28 member departments, agencies and White House offices. The Secretary of Transportation serves as its Chair. The movement of people and goods through the U.S. MTS is within the purview of many individual Federal agencies and programs. As specified in P.L. 112-213, the purpose of the CMTS is to assess the adequacy of the marine transportation system (including ports, waterways, channels, and their intermodal connections); promote the integration of the marine transportation system with other modes of transportation and other uses of the marine environment; and coordinate recommendations with regard to Federal policies that impact the marine transportation system.

Under section 307 of the Coast Guard Authorization Act of 2010, the CMTS was directed to coordinate the establishment of domestic transportation policies in the Arctic. This coordination includes the consideration of national policies and guidance related to safe and secure maritime shipping in the Arctic. To advance this coordination, the CMTS Coordinating Board created a nine-member interagency subcommittee (integrated action team or "IAT") led by the Maritime Administration, National Oceanic and Atmospheric Administration, and the U.S. Coast Guard.

The IAT oversaw development of a draft report titled *U.S. Arctic Marine Transportation System: Overview and Priorities for Action 2013*. The CMTS has made the draft report available for public inspection with a 45-day public comment period ending April 22, 2013. The draft report is available on the CMTS website, www.cmts.gov. The CMTS expects to finalize the report once public comments have been compiled and assessed.

Briefly, the draft report:

- Identifies existing Arctic MTS Federal policies;
- Assesses present and projected uses of the Arctic, and reported implications for U.S. transportation policies and a U.S. Arctic MTS;
- Describes the essential components of a U.S. Arctic MTS that would provide for safe, secure, environmentally sustainable and reliable navigation;
- Describes the potential benefits of a U.S. Arctic MTS for maritime commerce, indigenous peoples and communities, and the environment;
- Provides an evaluation of the current condition of the U.S. Arctic MTS, including physical and information infrastructure and human capital; and,
- Recommends actions through which CMTS agencies can, working with stakeholders, strengthen the U.S. Arctic MTS to meet the Nation's goals for safe Arctic economic activity and environmental protection.

Current and Future State of Arctic Shipping

Commercial shipping activity in the U.S. Arctic is primarily regional; it is centered on the limited use of maritime transport of natural resources from the Arctic. The most recent and reliable data provided by the U.S. Coast Guard and the Alaska Marine Exchange reports that "for 2008 to 2012, total annual vessel traffic in the Arctic region grew from 120 to 250 regional transits. The growth rate was highest for tanker vessels, with tugs and other cargo vessels being the second and third largest categories of movements. Bering Strait transits from 2008 to 2012 rose from 220 to 480.

An ice-diminished Arctic is now creating growth potential for commercial shipping on trans-Arctic routes. Various media reports suggest that Russia is interested in developing a Northern Sea Route (NSR) for transit between Europe and Asia. According to the *Barents Observer*, (<http://barentsobserver.com/en/arctic/2012/11/46-vessels-through-northern-sea-route-23-11>) 46 vessels transited this NSR in 2012. A significant increase in Arctic marine traffic via the NSR could eventually raise the geostrategic profile of the Bering Strait. The draft report concludes that while the number of vessels in the Arctic is relatively small when compared to the tens of thousands of vessels that come in and out of U.S. ports on an annual basis, maritime shipping in and through the U.S. Arctic is on the rise.

During ice-diminished periods and in ice-free locations, the most economic means of maritime transportation of general cargo and supplies to communities is usually by tug and barge. Shallow draft Alaska tug and barge businesses haul fuel, gravel and supplies to Prudhoe Bay, Red Dog Mine and Alaska coastal communities (predominately Alaska Native villages). Tugs support offshore oil and gas operations for ice management and towing duties. Tugs and barges also support and help respond to pollution events. The need for tug and barge operations will continue as local communities grow and, in some cases, relocate due to coastal erosion.

Offshore oil exploration and eventually, production, will depend on safe marine transportation for vessels that staff the drill site, move the resources from site to customer, and, in the event of an incident, support a spill response or other emergency. For example, in advance of summer 2012 offshore Arctic exploratory drilling programs in the Beaufort and Chukchi Seas, Shell Oil Company received conditional approval for its exploration plans from the Bureau of Ocean Energy Management and full approval on its Oil Spill Response Plans from the Bureau of Safety and Environmental Enforcement (BSEE). Both programs included a flotilla of up to 22 vessels to drill, supply the 14 Darya rigs, and support oil spill response. Shell plans to delay exploration in 2013, but continue exploration in 2014. ConocoPhillips, which also holds leases in the Chukchi Sea, is making similar preparations for potential exploratory drilling in 2014.

Within the U.S. Arctic, marine-based tourism is currently very limited. Only Hapag-Lloyd Cruises offers voyages through the Northwest Passages with stops at ports within the U.S. Arctic in Nome, Point Hope and Barrow, AK.¹ Cruising in such cold, remote waters poses special challenges to normal contingency planning. In an ice-diminished Arctic, the rise of tourism and passenger traffic, as well as commercial shipping, may require adjustment to existing safety regulations as well as forward basing of Federal and state response and rescue capabilities.

In the U.S. Arctic, fishing is currently concentrated in the Bering Sea. The North Pacific Fisheries Management Council has closed the Arctic Management Area in U.S. waters in the Beaufort and Chukchi Seas. If increasing temperatures and changing ocean conditions shift distribution of some fish species into the Beaufort and Chukchi Seas, sustainable harvests north of the Bering Sea may in time be authorized, possibly resulting in a commensurate increase in fishing operations; thus, creating another future source of increased vessel traffic in U.S. Arctic waters.

IV. Components and Current Condition of a U.S. Arctic Marine Transportation System (MTS)

As part of its assessment of Arctic marine transportation, the CMTS identified five components and 16 elements of a U.S. Arctic marine transportation system. Based on traditional components and elements of other U.S. regional marine transportation systems, the components and elements needed to develop a U.S. Arctic MTS would include:

Navigable Waterways

- Places of Refuge for Ships
- Areas of Heightened Ecological Significance

Physical Infrastructure

- Ports and Associated Facilities
- Geodetic Control Infrastructure

MTS Information Infrastructure

- Hydrographic Surveys
- Shoreline Mapping
- Aids to Navigation (AtoN)
- Communications
- Marine Weather and Sea Ice Forecasts

- Real-Time Navigation Information
- Automatic Identification System (AIS)

MTS Response Services

- Vessel Escort and Icebreaking
- Environmental Response Management
- Search and Rescue/Emergency Response

Vessels

- Polar Code/Guidelines for Ships Operating in Arctic Ice-Covered Waters
- Crew Standards/Training

For each of these 16 U.S. Arctic MTS elements the draft report provides an issue description, its status, challenges, current Federal activities, and future Federal actions needed. These issues papers also identify non-federal partners.

V. Current Condition of the Arctic MTS

Taken together the Arctic MTS issue papers recognize the Arctic MTS as a nascent system that would need considerable public/private investment to support increased Arctic traffic if projected future growth in regional and trans Arctic shipping is realized. This is particularly true in the U.S. Chukchi and Beaufort Seas. Less than 1 percent of charted navigationally significant Arctic waters have been surveyed with modern technology to determine depths and depict hazards to navigation. There are no harbors of refuge or deep-water port facilities in this region, and there are no aids to navigation north of the Bering Strait, except for eight buoys supporting the Red Dog mine.

There have been advances in Automatic Identification System (AIS) coverage of vessel movements in the Bering Strait and along the North Slope and insurance-driven concerns are motivating the shipping industry to address region-specific safety concerns. There are currently 19 AIS receiving stations for the Bering Sea including the Aleutian Islands and 11 AIS receiving stations for the Bering Sea northward. All of these AIS stations are operated by the Marine Exchange of Alaska, data from which is made available to the USCG. Additionally, the Coast Guard (USCG) continues to push forward and assess its capabilities to conduct operations in the Arctic. Since 2008, USCG set up small, temporary Forward Operating Locations on the North Slope in Prudhoe Bay, Nome, Barrow and Kotzebue to test their capabilities with boats, helicopters, and Maritime Safety and Security Teams. They also deployed light-ice capable 225-foot ocean-going buoy tenders to test their equipment, train crews and increase awareness of activity. Additionally, each year from April to November USCG has flown two sorties a month to evaluate activities in the region.

Similar to navigation charting, an Arctic MTS will depend on timely Arctic weather forecasts and sea ice predictions. Currently reliable Arctic forecasts are available two to three days out, compared with five to seven-day predictive capabilities in the rest of the United States. Atmospheric and oceanographic observations, including useful forecasts of marine weather and sea ice for the Arctic Ocean, are the fundamental information necessary to support MTS services.

Lastly, the harsh Arctic conditions impose unique requirements for safe vessel operation, especially in the ice-covered waters of the higher latitudes. Governmental agencies and commercial companies engaged in maritime operations in the U.S. Arctic will need ice-capable vessels to safely navigate in ice-covered waters. While there are no specialized qualifications, training or certifications currently in existence for crews of vessels that operate in polar waters, the U.S. is participating in IMO Polar Code development that will provide guidelines for crew standards, including specialized qualifications, training and certification guidelines. Foreign ice-breaking vessels are allowed to work in ice-covered U.S. waters under an exemption that expires in 2017.

VI. Conclusion

As climate change, including the resulting loss of sea ice create a more accessible Arctic, there is a corresponding Federal responsibility to review beneficial opportunities for commerce, specifically regional and trans Arctic maritime transportation.

Compared to maritime transit around the rest of the continental United States, the Arctic is an intensely harsh operating environment, with extreme cold, heavy fog, severe storms, and the added elements of unpredictable ice flows and changing sea ice conditions.

Changing conditions in the Arctic create an opportunity for the United States to develop a new Arctic MTS. Working cooperatively with federal, state, local and trib-

al authorities, the MTS may be sustainably managed to the benefit of all stakeholders. Each stakeholder must responsibly embrace their respective role to ensure optimal use of resources, and with collective dedication to protect indigenous cultures, rare and endangered wildlife, and the environment. CMTS, in its draft U.S. Arctic MTS: Overview and Priorities for Action report, puts forward short term and long term recommendations, and a comprehensive strategy to address the development of the Arctic MTS and supporting elements across all MTS components and stakeholders. I would like to note that many of these recommendations are complementary to the soon-to-be-released National Ocean Policy Implementation Plan. (NOC) If an Arctic MTS is to be developed, the CMTS recognizes the interdependent nature of marine transportation system elements, and recommends that the United States first focus efforts to improve the Arctic MTS in two primary MTS component areas:

- MTS Information Infrastructure, including sea ice and marine weather forecasts, mapping and charting, communications, and AIS coverage, and
- MTS Response Services, including environmental response management, search and rescue, and ice breaking capability.

While not yet final, an appropriate mix of MTS services, actions and notice and comment regulation is called for in the Arctic MTS report to bridge existing gaps and provide a safe, secure and environmentally sound MTS to address the full range of issues impacting the U.S. Arctic and the Arctic region at large.

Thank you again for the opportunity to participate in this hearing, Chairman Begich. I would be glad to respond to any questions you may have.

Senator BEGICH. Thank you very much. It came across very well and we could hear you perfect. So again, thank you. Be patient as we go through a couple more testimonies, and then I'll come back to you first for questions. So we will recognize your time and limitations.

The next person I have is Ed Page, Executive Director of the Marine Exchange of Alaska. I have visited your facility and it's impressive, what you're doing down there. So, please.

**STATEMENT OF CAPTAIN EDWARD PAGE, USCG (RETIRED),
EXECUTIVE DIRECTOR, MARINE EXCHANGE OF ALASKA**

Mr. PAGE. Thank you, sir. Thank you for the opportunity to speak today on these pressing issues in Alaska.

Having served in the maritime profession in Alaska for over 24 years as a prior Coast Guard Officer and presently as the Executive Director of the Marine Exchange of Alaska, I have seen firsthand the changes in maritime activity in Alaska and appreciate the importance of ensuring safe, environmentally sound maritime operations in the Arctic.

I have sailed on Coast Guard vessels, oil tankers, container ships, fishing vessels, tugs, oil exploration support vessels, oil spill response vessels, cruise ships, and cargo ships in Alaskan waters. I can attest to the fact that operating in water does, in fact, present some unique challenges, and having responded to search and rescue cases where mariners have perished, as well as numerous oil spills, including the Exxon Valdez oil spill, I have recognized the need for having better information on vessels' locations or maritime awareness, which is the common term used, capable of both prevention and response to maritime casualties.

Senator BEGICH. Hold it, Ed.

[Telephone.]

Senator BEGICH. Sorry, Ed. Please go ahead.

That will embarrass Jim for a long time.

[Laughter.]

Mr. PAGE. While serving as Captain of the Port for Los Angeles Long Beach, the Coast Guard and I, in my capacity as Captain of the Port, partnered with the legacy Marine Exchange of Southern California, which is also a nonprofit organization, and the State of California to build and operate a vessel traffic system for that port area that utilized a 25-mile radar, which certainly is not adequate for Alaska waters.

But the model of shared marine history and government partnership is, in fact, a model that has been taken and brought up to Alaska. But due to the enormity of our state, the Marine Exchange of Alaska utilized emerging and newer technologies, including the use of automatic identification systems, or AIS is the acronym, a satellite tracking technology that is largely funded today by the maritime industry, the State of Alaska, and the Coast Guard.

It was adopted by the IMO, the International Maritime Organization. Most vessels engaged in international trade are required to be equipped with AIS transponders that broadcast the vessel location, type, speed, course, and other valuable information several times a minute over VHF radio frequencies. This substantially enhances maritime safety as it is received and processed by other vessels in the area, as well as by shore and satellite AIS receivers, and this information is disseminated to the Coast Guard, state agencies, and to the maritime community.

In 2005, the Marine Exchange built and operates today over 95 AIS receiver sites in Alaska and throughout the Arctic, out to the Aleutian Islands and down to Ketchikan. This system is providing historical and real-time information on vessels' locations and has been used in coordinating responses to vessel distress and to locate vessels that are the source of oil spills. Most recently, it was used by the Coast Guard and Shell during the fuel platform KULLUK incident in Alaska.

The system also monitors compliance with vessel speed restrictions in well-protected areas. It triggers alerts to prevent the presence of both high-profile vessels and aircraft in the flight path of the Kodiak Airport, and alarms when a vessel sets anchor on an underwater fiber cable serving Alaska so they can know where to effect the repairs.

In fact, Shell Oil has been one of the more proactive users of the system and has employed the Marine Exchange to send alerts when their contracted vessels approach a vicinity of areas that are restricted by permits issued to do the drilling. When a vessel approaches these restricted areas, the Marine Exchange's 24-hour operation center alerted both the vessel operator and Shell. As a result of this proactive measure, there were no incursions in Ledger Bay this past year.

The Marine Exchange's Arctic network has provided information on vessel activity over the last several years to the Coast Guard and to other agencies to assess the extent of increasing traffic and the risks that they present. Our system tracks vessels and reaches across through Russian waters and receives the AIS transmissions of all vessels equipped with AIS that are transiting the Bering Strait to and from the Arctic. So many reports that you see and the graphics of traffic through the Arctic, as you well know, Senator, are from the Marine Exchange's vessel tracking system.

While it is often somewhat difficult to find actual traffic activity because there are many different ways of counting vessels and metrics and whether a ship is a tug and what-have-you, as noted earlier, it is somewhere in the neighborhood of 400 vessels that have gone through the Bering Straits this past year. It is reflecting a modest increase over the last several years, as we contracted for about 5 years now. Each year there are more vessels going across and different types of vessels going across, and most recently exploration vessels, and of course Russia is now bringing more vessels across the top.

While the risks presented by maritime traffic in the region do exist, I think they are somewhat modest when you compare it to the ports of Seattle and San Francisco and L.A., provided that in those places, where there is Coast Guard monitoring, oversight and presence, there is also the same in the Arctic. Certainly, the Coast Guard is much like a policeman on the highway. Their presence influences the behavior of vessel operators and ensures compliance with various regulations and safety standards.

I feel this is an appropriate time to start implementing this risk reduction mechanism, not after an accident but before they happen. So this focus and a hearing such as this are certainly appropriate and timely. When we reflect back, there was no government surveillance when the Exxon Valdez ran aground in 1989 because the vessel was sailed past the Coast Guard's radar coverage. Of course, today there is complete coverage provided by AIS of Prince William Sound. So it is under the watchful eye of the Coast Guard, and vessels' behavior is influenced accordingly.

Here is where I find some improvement in maritime safety in the Arctic can be realized, expanding the Coast Guard AIS carriage requirements for vessels to all commercial vessels, and not only to vessels engaged in international trade. There were regulations drafted some four years ago by the Coast Guard to address this issue. In fact, other nations around the world have done so. But today, the regulations do not require most of those vessels operating up in the Arctic on domestic trade, the Shell vessels in particular, they are not required to have AIS. The vessels are exceeding the regulatory requirements by having AIS on board and allowing that visibility.

Regulations should be published, the draft regulations should be published to provide a level playing field to make sure all vessels operating in the Arctic have AIS. This in turn will allow the Coast Guard to monitor surveillance and ensure compliance with the various safety requirements. This concept comports with the 1989 International Arctic Maritime Shipping Assessment that recommended—I believe it was 1999, actually, or 2009, sorry—that recommended all commercial vessels operating in the Arctic be equipped with AIS. So it is not just Ed Page saying this. Others have also found merit in AIS.

AIS is also from the outset designed to provide two-way communications. In other words, you can disseminate safety information over the same system. It has greater range, it's clear, it's digital, and it can provide more information. In our case, we have developed, working with the Alaska Ocean Observing System that provided some support and funding, the capability—we bought the

equipment, and we tested it, and we have demonstrated it works—to send ice information and weather information to vessels over AIS.

However, we can't receive the permits to do it. So even though we can't turn it on, and we have turned it on and tested it, but we can't legally turn it on to send information out because we can't get the permits to do so even though it has been done in Europe. I believe that the agency should be more proactive in facilitating this ability to provide safety information to vessels through this newer technology. That would enhance maritime safety in this region, as well as other regions.

Last, I believe the implementation of long-delayed Coast Guard non-tank vessel regulations, which seem to be having some movement as of late, will reduce the risk and consequences of oil spills as the regulation will require cargo and other non-tank vessels to contribute to the commercial oil spill prevention and response capabilities in Alaska. Right now, these regulations only apply to tankers, and they are footing the bill, and they pay for the response capability. But we can expand capabilities if and when non-tank vessels are also required. Of course, this is a law that was passed by Congress 10 years ago, I believe. So I think it's time to implement the regulations.

While our work is not done at the Marine Exchange, there are many more AIS stations that we need to build and increase the range of, as well as fully implement the weather sensors and weather transmitters and safety information to vessels, those capabilities. If it was not for the Coast Guard, the State of Alaska and the marine industry's shared commitment to improve maritime safety, this system simply would not exist. This private/public partnership is a cost-effective solution that no other government agency or contractor was willing or able to do, and this operation and maintenance of the 24-hour operation center and extensive tracking network is provided at a total cost of about \$2.5 million per year.

Those are the end of my comments, sir.

[The prepared statement of Mr. Page follows:]

PREPARED STATEMENT OF CAPTAIN EDWARD PAGE, USCG (RETIRED), EXECUTIVE
DIRECTOR, MARINE EXCHANGE OF ALASKA

Introduction

Good morning Chairman Rockefeller and distinguished members of the Subcommittee. It is my pleasure to be here today to discuss the preparedness and response in the Arctic and the opportunities and challenges of increased maritime activity.

Having served in the maritime profession in Alaska for over 24 years as a prior Coast Guard officer and presently as Executive Director of the Marine Exchange of Alaska I have seen firsthand the changes in maritime activity in Alaska and appreciate the import of ensuring safe and environmentally sound maritime operations in the Arctic. I have sailed on Coast Guard vessels, oil tankers, container ships, fishing vessels, tugs, oil exploration and support vessels, oil spill response vessels, cruise ships and cargo ships in Alaska waters and can attest to the fact operating in Alaska presents unique challenges. Having responded to search and rescue cases where mariners have perished and numerous oil spills, including the EXXON VALDEZ oil spill, I have recognized the need for having better information on vessels' locations or maritime domain awareness to aid both prevention of and response to maritime casualties. While serving as Captain of the Port for Los Angeles/Long Beach the Coast Guard partnered with the legacy Marine Exchange of Southern

California and the State of California to build and operate a Vessel Tracking System for that port area that utilized a 25 mile range radar to track vessels. This successful model of shared marine industry and government partnership has been replicated in Alaska, however, due to the enormity of this state, the Marine Exchange of Alaska utilizes emerging vessel tracking technologies of Automatic Identification Systems or AIS and satellite tracking that is largely funded by the maritime industry, the State of Alaska and the Coast Guard.

As adopted by the International Maritime Organization (IMO) most vessels engaged in international trade are required to be equipped with AIS transponders that broadcast the vessel's location, type, speed, course, destination and other valuable information several times a minute over VHF radio frequencies. This data substantially enhances maritime safety as it is received and processed by other vessels in the area as well as by shore and satellite AIS receivers and disseminated to the Coast Guard, state agencies and the maritime community. Since 2005, the Marine Exchange of Alaska has built and operates over 95 AIS receiving sites in Alaska that have provided historical and real time information on vessels locations. This vessel tracking system has been used to aid coordinating responses to vessels in distress and to locate vessels that are the source of oil spills. Most recently it was used by the Coast Guard and Shell during the drill platform KULLUK incident in Alaska. This system also monitors compliance with vessel speed restrictions in whale protected areas, triggers alerts to prevent the presence of both high profile vessels and aircraft in the flight path of an airport and alarms when a vessel sets anchor on an underwater fiber cable serving Alaska.

Shell Oil has been one of the more proactive users of this system and has employed the Marine Exchange to send alerts when their contracted vessels approach the vicinity of areas restricted by permits. When a vessel approached these restricted areas the Marine Exchange 24 hour operations center alerted both the vessel operator and Shell. As a result of this proactive measure, there were no incursions in Ledyard Bay this year.

The Marine Exchange's Arctic network has provided information on vessel activity over the last several years to the Coast Guard and other agencies to assess the extent of increasing traffic. The system's range reaches across to Russia and receives the AIS transmissions of all vessels transiting the Bering Strait to and from the Arctic. While it is difficult to define the level of traffic in the Arctic as there are various metrics that are being used, the Marine Exchange system received data from approximately 350 commercial vessels transiting the Bering Strait in 2012, reflecting a modest increase in traffic over the last several years. In light of receding ice, Russia's increased maritime activity and oil exploration operations we anticipate maritime traffic will continue to grow. The risks presented by maritime traffic in this region are modest and manageable provided there is Coast Guard monitoring, oversight and presence. This is the time to implement risk reduction measures. There was no government surveillance when the Exxon Valdez sailed past the Coast Guard's radar coverage in Prince William Sound in 1989. There is complete AIS surveillance of the area today.

Areas where improvements in maritime safety in the Arctic can be realized are in expanding the Coast Guard AIS carriage requirements to all commercial vessels and not only vessels engaged in international trade. Draft regulations were published four years ago to address this but were never finalized. Presently, responsible U.S. vessels operating in the Arctic are exceeding the Coast Guard regulations and are equipped with AIS. The regulations will level the playing field and require all commercial vessels to be equipped with AIS that in turn aids Coast Guard monitoring and surveillance. This comports with the 1989 International Arctic Maritime Shipping Assessment that recommended all commercial vessels operating in the Arctic be equipped with AIS.

AIS is designed to provide two way communications, and in Europe and some areas of the U.S. AIS is being used to transmit weather and safety information. While the Marine Exchange has secured funds from the Alaska Ocean Observing System to develop the ability to transmit environmental information including weather and the presence of ice or whales via AIS, the permitting agencies have not processed our requests to allow transmitting this and other safety information via the Alaska AIS network. While we have developed the technology, procured, installed and tested the equipment to do this, we don't have permission to turn it on. We need NOAA, the Coast Guard and FCC to expedite processing our permit requests.

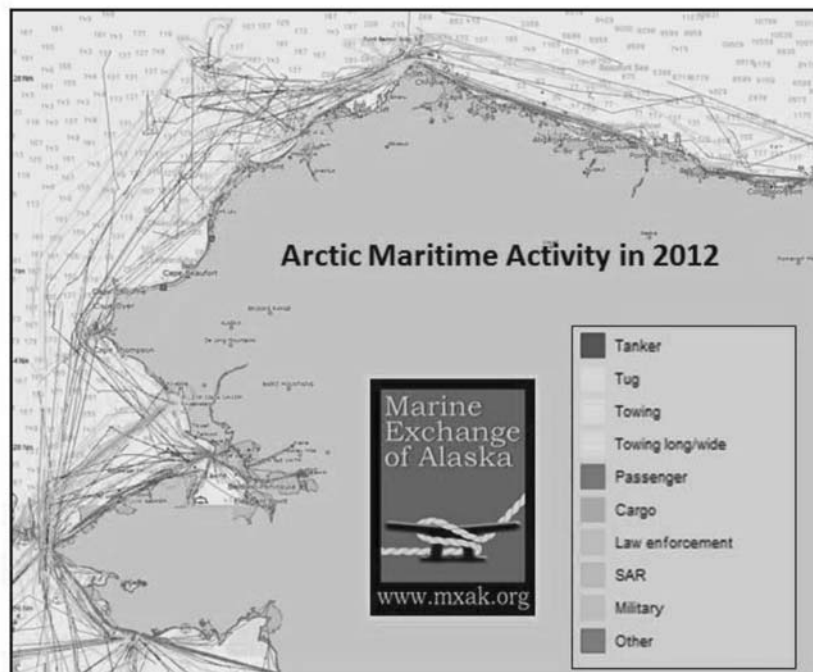
Lastly, implementation of the long delayed draft Coast Guard non-tank vessel regulations will reduce the risk and consequence of oil spills as they will require cargo and other non-tank vessels to contribute to the commercial oil spill prevention and response capabilities in Alaska.

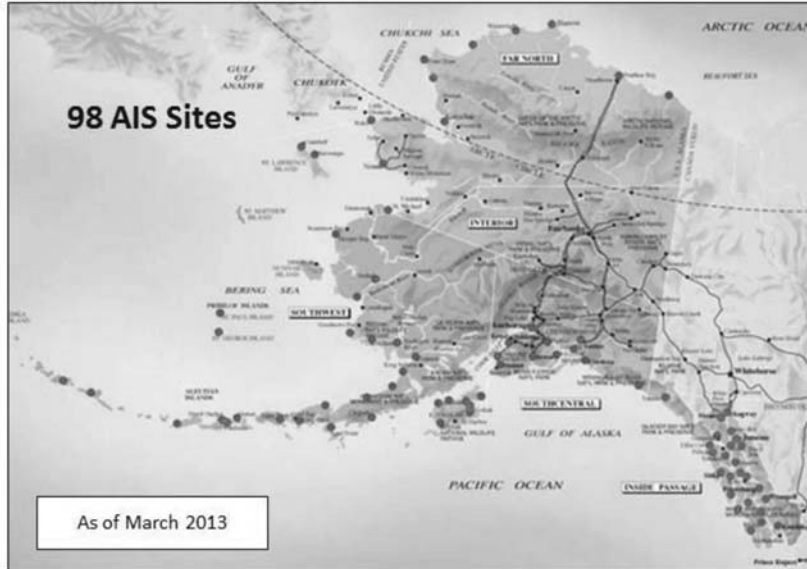
Conclusion

While the Marine Exchange's work is not done, and many more AIS stations augmented with weather sensors and AIS transmitters will need to be built and maintained, if not for the Coast Guard, State of Alaska and the marine industry's shared commitment to improve maritime safety, the Alaska maritime safety net would not exist. This private public partnership is a cost effective solution that no other government agency or contractor was willing or able to do. The operation, maintenance, expansion of this extensive Alaska vessel tracking system and 24x7 monitoring is provided at a total cost of \$2.5 million per year.

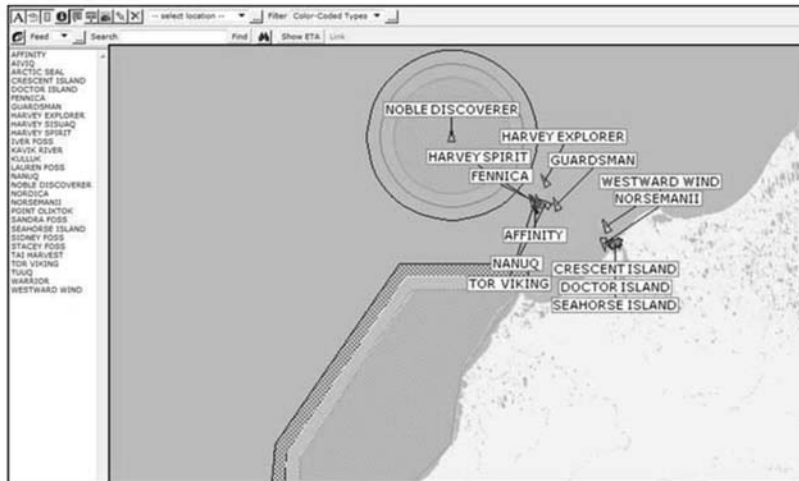
Enclosures:

1. Arctic Maritime Activity in 2012 and AIS Sites in Alaska
2. Tracking of Oil Exploration Fleet and other vessels in Alaska





Shell Exploration Fleet Monitoring in 2013



Alaska Maritime Traffic March 24, 2013

Senator BEGICH. Thank you very much, Ed.
Next we have Eleanor Huffines, Manager, U.S. Arctic Campaign,
Pew Charitable Trusts.
Eleanor?

STATEMENT OF ELEANOR HUFFINES, MANAGER, U.S. ARCTIC PROGRAM, THE PEW CHARITABLE TRUSTS

Ms. HUFFINES. Thank you, Senator. Thank you very much for the opportunity to be here today. As an initial matter, Pew is very appreciative of your continued focus on the Arctic. In fact, in a July 2012 letter, the President, you and Senator Murkowski rightly identified the need for the U.S. to develop a comprehensive U.S. Arctic policy to better address the challenges and opportunities we're facing in the region. And so we're very supportive of that initiative.

The future of the Arctic does not need to be an endless battle of perceived tradeoffs between culture, environment and economics. Developing a plan that addresses the full range of human activities and interactions with the environment creates an opportunity to assess and address the multiple stressors already present or projected to start or increase from vessel traffic, offshore energy, and shipping.

To be effective, Pew believes the comprehensive U.S. Arctic policy must be driven by four guiding principles. Many of these principles have been mentioned in testimony earlier today, but we believe they are so significant they should be repeated, so I apologize for some of the repetition you all will experience.

First, local communities must have a meaningful voice in decisionmaking. Residents of Arctic communities are an integral part of the region's rich ecosystem. The Federal Government must ensure meaningful opportunities for local governments, tribes, co-management organizations, regional non-profits and ANCSA corporations are involved from the beginning of decisionmaking.

The Federal Government is required to consult fully with Alaska Native tribes on a government-to-government basis, and any governance framework needs to incorporate consultation and traditional knowledge well in advance of management decisions, including a strategy for sharing information and providing feedback about indigenous concerns back to them in the region before the decisions are announced.

Second, a comprehensive U.S. Arctic policy should include an understanding that ecosystem health is essential for maintaining a subsistence way of life and that areas of the ocean are important for maintaining the ecosystem, integrity and function of those areas must be safeguarded.

For many residents of the Arctic, there is a direct connection between the continued health of the marine environment and the health of their food supply, their culture and themselves. The Federal Government must take a careful look at the potential impact to subsistence resources and show its commitment toward ensuring these resources are protected.

Areas within an ecosystem are not equal in ecological terms. Some areas contribute disproportionately to ecosystem structure and functioning. Important ecological areas may include places that are important for subsistence that are used for maintaining the viability of a species or contribute disproportionately to an ecosystem's productivity, biodiversity or resilience. The Federal Government needs to undertake a process to identify and protect these areas in the Bering, Beaufort, and Chukchi Seas.

Third, science must guide decisionmaking. To make informed management decisions, it will be critical to have a better understanding of the cumulative effects of climate change, ocean acidification, and industrial stresses on the marine environment and how these stresses interact with one another to affect the ecosystems, species, and the people of the region. Developing a vigorous and lasting monitoring program will be essential to generate reliable information and reduce the degree of uncertainty in the knowledge of our Arctic ecosystem.

There has been significant progress in the past two years in information and data gathered in efforts by both government and industry, including synthesis efforts like PacMARS and SOAR. Yet despite these efforts, the Arctic marine environment remains a difficult place to study and understand. Senate Bill 272, your bill, the Arctic Research Monitoring and Observing Act of 2013, offers several solutions to these challenges. If passed, the bill's provisions could perform the backbone of a long-term research and monitoring program, something that Pew has long advocated for in the Arctic.

And finally, as part of the government's commitment to developing Alaska resources cautiously and subject to the highest safety and environmental standards, Arctic-specific oil spill prevention and response standards must be developed and applied to all companies operating in the region, for all industrial activities, including offshore oil and gas and vessel traffic. These standards should account for an area's remote location, lack of infrastructure, and unique operating conditions due to severe and changing climate.

The Ocean Energy Safety Advisory Committee recommendations and the Department of Interior's review represent a welcome first

step toward identifying necessary safety and system improvements. These four core principles should serve as the foundation for any U.S. Arctic policy or management decision.

Given the limited amount of time here today, I cannot do the region, the people, or the issues justice, so I respectfully request that you refer to our written testimony for very specific recommendations on strengthening Alaska's offshore oil and gas program and enhancing vessel traffic in the Bering Strait—not the traffic, the safety of the traffic in the Bering Strait and Arctic Ocean. Thank you.

[The prepared statement of Ms. Huffines follows:]

PREPARED STATEMENT OF ELEANOR HUFFINES, MANAGER, U.S. ARCTIC PROGRAM,
THE PEW CHARITABLE TRUSTS

Chairman Begich, thank you for the invitation to participate in today's hearing. My name is Eleanor Huffines, and I am testifying in my capacity as the Manager of the U.S. Arctic program for The Pew Charitable Trusts.

The Pew Charitable Trusts applies a rigorous, analytical approach to improve public policy, inform the public, and stimulate civic life. Pew's U.S. Arctic program promotes science and community-based conservation that reduces risks to the Arctic from climate change and industrial development, including oil and gas activities, commercial fishing, and industrial shipping. The program works closely with scientists, Alaska Natives, the U.S. government, local communities, and conservation groups to achieve key policy goals for protecting the health of the Arctic ecosystem.

You have invited me here today to discuss two broad topics: first, industry and Federal preparedness for Arctic offshore oil and gas development, as well as what lessons can be drawn from Shell's 2012 drilling season; second, the challenges and opportunities that an increase in Arctic activity and development present for environmental and natural resources stewardship.

As an initial matter, Pew is grateful for your continued focus on and attention to the Arctic. Alaska's Arctic waters are unlike other areas of the ocean. Sea ice covers the northern Bering, Chukchi, and Beaufort seas for much of the year. The region is subject to severe weather, but it is also remarkably productive. Fish and wildlife—including a wide variety of marine mammals and seabirds—make extensive use of Arctic waters. The Bering Strait in particular is a vital migration corridor for many species. Residents of Arctic communities have lived an irreplaceable way of life that has existed and endured across thousands of years. They are an integral part of the region's rich ecosystem.

Arctic marine waters face more acute changes than other ocean regions. The Arctic is warming at twice the rate of the rest of the planet¹ and will almost certainly be one of the first regions substantially impacted by ocean acidification. The warming is having immediate, compounded effects on Arctic people and ecosystems, including coastal erosion, altered weather patterns, and loss of important habitat. The most dramatic of these impacts is the incredible loss of Arctic sea ice. Arctic communities rely on sea ice for hunting, fishing, and other activities necessary for survival. Sea ice also serves as a platform for birthing seals, feeding walrus, roaming polar bears, and other Arctic life. The loss of sea ice cover opens the Arctic to an expansion of industrial activities that, unless sensibly regulated, will further threaten the region.

The challenges posed by these changes are immense, and they call for a more cooperative and forward-thinking approach than has been employed in the past. The current approach, in which some individual agencies consider approval of projects in isolation and without full consideration of the projects' cumulative impacts, or how they fit into a broader conservation or development strategy, is not adequate. In a July 13, 2012, letter to President Obama, you and Senator Murkowski rightly urged the administration to develop a comprehensive U.S. Arctic strategy to better address the challenges and opportunities facing the region.

¹James A. Screen, Ian Simmonds. The central role of diminishing sea ice in recent Arctic temperature amplification. *Nature*, 2010; 464 (7293): 1334 Available at: <http://www.nature.com/nature/journal/v464/n7293/full/nature09051.html>

I. Core Elements of a Comprehensive U.S. Arctic Policy

The future of U.S. Arctic waters need not be an endless battle over perceived trade-offs between culture, environment, and economics. Instead, careful planning and management can reduce losses and increase gains wherever possible, providing a better overall outcome than the single-minded pursuit of one goal to the exclusion of other interests. Sound economic development can support cultural programs. Environmental oversight can reduce the likelihood of accidents, simultaneously avoiding catastrophic costs and severe environmental damage. The cultural tradition of respect for hunted animals is a strong conservation ethic that benefits the ecosystem, including its human inhabitants.

Developing a plan that addresses the multiple needs and aspirations of cultural, environmental, and economic interests requires the involvement of more than just one organization or even one sector. Including the full range of human activities and their interactions within the environment creates the opportunity to assess and address multiple stressors already present or projected to start or increase, including climate change, offshore energy, vessel traffic, and fisheries.

Core elements to a comprehensive U.S. Arctic Policy should include but not be limited to the following principles:

A. *Ensure local communities have a meaningful voice in decision-making.*

Arctic indigenous residents have valuable knowledge about their home and its resources that can help inform planning and decision-making. Their experience and their traditional way of life—passed down through untold generations—have given them great knowledge of their environment and the species with which they share it.

Gathering and using traditional knowledge will require both a precautionary and adaptive approach. The Federal Government should make a better effort to ensure that traditional knowledge truly informs the decision-making process in the Arctic environment. To be meaningful, traditional knowledge should be incorporated *before* committing to management decisions that may adversely affect subsistence resources. Arctic peoples' ocean-based subsistence activities are central to their culture and sense of identity. In this context—where a management mistake could have cascading effects that jeopardize subsistence and cultural traditions—extra caution, such as the consideration of deferrals, is warranted.

In the end, residents of the Arctic must live with the consequences of Arctic policy and management decisions. For all these reasons, the Federal Government must ensure meaningful opportunities for participation by local communities, governments, tribes, co-management organizations, Alaska Native Claims Settlement Act (ANCSA) corporations, and similar Alaska Native organizations. The Federal Government is required to consult fully with Alaska Native tribes on a government-to-government basis. Any governance framework needs to incorporate consultation well in advance of management and include a strategy for sharing information and providing feedback about indigenous resident's concerns.

B. *Protect ecosystem health important for a subsistence way of life; safeguard areas of the ocean important for maintaining ecosystem integrity and function.*

Subsistence resources have long provided a source of healthy food for Arctic communities. Subsistence foods are high in nutritional value and protect against health problems such as high blood pressure, obesity, diabetes, and cardiovascular disease. Subsistence hunting is an important aspect of the Inupiaq and Yup'ik culture. Negative impacts to subsistence resources, such as reduced abundance or contaminated habitats, could decrease food security, encourage consumption of store-bought foods with less nutritional value, and deteriorate the cultural fabric of Alaska Native communities. Thus, when industrial activities adversely affect subsistence resources, they also harm the people who value those resources. For many residents of the Arctic, there is a direct connection between the continued health of the marine environment and the health of their food supply, their culture, and themselves. The Federal Government must take a careful look at potential impacts to subsistence resources and show its commitment towards ensuring these resources are protected.

Areas within an ecosystem are not equal in ecological terms; some areas contribute disproportionately to ecosystem structure and functioning, including use by human populations. Important ecological areas may include areas of the ocean that are used for subsistence purposes; have distinguishing ecological characteristics; are important for maintaining habitat heterogeneity or the viability of a species; or contribute disproportionately to an ecosystem's health, including its productivity, biodiversity, functioning, structure, or resilience. Among scientists, there is general consensus that time and/or place restrictions designed to protect high value habitat are one of the most effective means of reducing potential impacts and disturbance.

The current understanding of ecological functioning in the Chukchi, Beaufort, and Bering seas indicates that a number of sensitive marine habitats are especially important to the region's ecological functioning. The Federal Government needs to undertake a process to identify and protect these habitats.

C. Science must guide decision-making.

To make informed management decisions, it will be critical to have a better understanding of the cumulative effects of climate change, ocean acidification, and industrial stresses on the marine and terrestrial environments, and how these stresses interact with one another to affect the ecosystems, species, and people of the region. Developing a vigorous and lasting research and monitoring program is essential to generate reliable information, including trends, and reduce the degree of uncertainty in our knowledge of Arctic ecosystems.

Perfect knowledge, like zero risk, is unattainable. Nonetheless, some standards can be applied. The ability to assess impacts requires sufficient knowledge about an ecosystem to be able to identify functional relationships between species and the physical environment. As climate change alters patterns in the Arctic, we also need to be able to anticipate changes and plan accordingly to develop procedures for adjusting policies and regulations in light of new information.

There have been significant advancements in the past two years, both in information and data gathered and in commitments to further cooperate to bolster science and understanding of ocean and coastal resources in the Arctic. These advancements include the Interagency Arctic Research Policy Committee (IARPC) Fiscal Year 2013–2017 Arctic Research Plan, the Pacific Marine Arctic Regional Synthesis of the Northern Bering, Chukchi, and Beaufort seas (PacMARS) and the Synthesis of Arctic Research (SOAR).

Yet despite these efforts, the Arctic marine environment remains a difficult place to study and understand. It is cold, remote, and covered with sea ice for over half the year. Conditions vary greatly from one year to the next, making it difficult to generalize from the results of a single field season or to detect patterns across multiple years. And now the Arctic is undergoing rapid and profound environmental change due to global warming. This new information must be integrated with existing scientific and traditional understanding developed over past decades to develop an improved understanding of present and future conditions.

Senate Bill 272, *“The Arctic Research, Monitoring, and Observing Act of 2013,”* offers several solutions to these challenges:

- First, the bill calls for the establishment of a permanent Arctic science program to conduct research, monitoring, and observing activities in the region—both to promote productive and resilient ecosystems and to facilitate effective natural resource management.
- Second, it proposes funding a merit-based grant program to support new scientific research and field-work in the Arctic.
- Third, it would fund and support long-term ocean observing systems and monitoring programs in the Arctic Ocean, Bering Sea, and North Pacific.

If Congress passes Senate Bill 272 and it is implemented effectively, the bill's provisions could form the backbone of a long-term, integrated research and monitoring program for the Arctic—something that Pew has long advocated.

II. Strengthening Alaska's Offshore Oil and Gas Program

Pew believes that decisions about whether, where, and how oil and gas activities are conducted in the U.S. Arctic Ocean must be based on sound scientific information, thoughtful planning, and with the full involvement of the people most affected. A balanced and careful approach to offshore development in the Arctic must account for environmental protection and for the social, cultural, and subsistence needs of Alaskan communities.

The Federal Government can take steps now to ensure that offshore Arctic development is done as safely and sustainably as possible.

First, it must incorporate world-class, Arctic-specific safety, spill prevention, and response standards into Federal regulations that apply to every company operating in the region. These standards should account for the area's remote location, lack of infrastructure, and unique operating conditions due to the severe and changing climate. Equipment and techniques used in temperate waters are simply not transferable to the Arctic.

The Federal Government must also protect areas that are biologically important or used for hunting and fishing by indigenous communities. The local communities should have a voice on what kind of development is appropriate, where it should take place, and what safeguards are needed. Alaska Natives' traditional knowledge

and concerns should be a critical piece of any decisions about development in the Arctic. Regional Citizens' Advisory Councils provide one model for citizen engagement and oversight of development of Arctic energy resources.

The Federal Government should recognize that for science and conservation to guide decision-making, a long-term monitoring program must be put in place and sustained to assess the cumulative effects of multiple, interacting stresses. Such stresses include changes in climate, plus noise and pollution from vessel traffic and drilling operations, which can disrupt habitat, migration patterns, and communications for whales and other marine mammals.

A. Lessons Learned and the Need for Arctic Specific Standards

In the wake of the *Deepwater Horizon* blowout in the Gulf of Mexico, the United States, along with other Arctic countries such as Canada and Greenland, examined whether existing regulatory standards for arctic oil and gas exploration and development were sufficient to prevent a similar disaster and whether there was capability to respond to a major oil spill in ice-infested waters. The United States commissioned a committee, the Ocean Energy Safety Committee (OESC), to examine current Department of the Interior (DOI) regulations for Outer Continental Shelf (OCS) oil and gas exploration, development, and production operations and make recommendations.

The Ocean Energy Safety Committee concluded that there is a need to modernize DOI regulations to include Arctic-specific standards for oil spill prevention, safety, containment, and response preparedness in the Arctic OCS, among other recommendations that more broadly applied to all OCS operations. On January 25, 2013, Ocean Energy Safety Committee Chairman Dr. Tom Hunter submitted the Committee's formal recommendations to the Department of the Interior for consideration and action. Pew supports the Ocean Energy Safety Committee's recommendations.

Also in January of this year, Secretary Salazar launched an expedited assessment of Shell's 2012 Alaska offshore drilling program after a Shell oil rig ran aground near Alaska's Kodiak Island on New Year's Eve. The KULLUK was on its way to the Pacific Northwest from its Arctic drilling site when its tow vessel lost power, the towlines broke, and the rig hit the rocks.

It wasn't the drilling season's sole mishap. Both the KULLUK and a second rig, the NOBLE DISCOVERER, are now being towed to Asia for inspection and repairs. A U.S. Coast Guard investigation of the NOBLE DISCOVERER found 16 violations of safety and pollution-control regulations. A U.S. Department of Justice criminal investigation is now under way based on the violations.

But the issues go beyond any single accident or oil company. The KULLUK ran aground in the Gulf of Alaska only 50 miles from the closest U.S. Coast Guard station, yet the current targets for drilling lie 1,000 miles farther north in the Arctic Ocean. Helicopters, planes, and vessels were on hand to evacuate the crew of the KULLUK and assist in the salvage. But farther north, there are no major ports, airports, or roads. Hurricane-force winds, subzero temperatures, shifting sea ice, and long periods of fog and darkness could shut down a rescue operation or spill response altogether.

On March 14, 2013, Secretary Salazar announced the findings of the review. Pew supports DOI's seven key findings and recommendations. Specifically:

1. All phases of an offshore Arctic program—including preparations, drilling, maritime, and emergency response operations—must be integrated and subject to strong operator management and government oversight.
2. Arctic offshore operations must be well-planned, fully ready, and have clear objectives in advance of the drilling season.
3. Operators must maintain strong, direct management and oversight of their contractors.
4. Operators must understand and plan for the variability and challenges of Alaskan conditions.
5. Respect for and coordination with local communities is essential.
6. Continued strong coordination across government agencies also is essential.
7. Industry and government must develop an Arctic-specific offshore model for oil and gas development.

The Department of Interior findings reinforce the importance of taking a regionally specific approach to offshore oil and gas exploration the Arctic. The Federal Government must recognize and account for the unique challenges of this region, which holds energy potential, but where issues like environmental and climate con-

ditions, limited infrastructure, and the subsistence needs of North Slope communities demand specialized planning and consideration.

C. Arctic Standards for Oil Spill Prevention and Response

The Ocean Energy Safety Advisory Committee (OESC) recommendations and Department of Interior's (DOI) review represent a welcome first step toward identifying safety and systems failures in Alaska's offshore drilling program. Only by taking additional steps to strengthen Federal review and regulation of these operations, however, can the Federal Government show its commitment to responsible Arctic Ocean development.

Common operating practices and Arctic-specific standards should be established and met before any operator is approved to explore or develop. Examples of Arctic specific standards for oil spill prevention and response include but are not limited to:

1. *Purpose Built Polar Class Drilling Rigs and Associated Support Vessels*—DOI should require drilling rig performance standards for Arctic OCS operations. These standards should include rigs that are built-for-purpose and meet Polar Class,² or equivalent,³ standard and third party audits of the rig before it is used. The drilling rig is a critical component of a safe drilling program; however, DOI regulations do not currently include Arctic-specific criteria for rigs used in exploration drilling.

The situation of most concern is a late season well blowout that requires drilling to continue into late fall-early winter ice, which will require Polar Class rigs. While the plan may be to avoid interaction with the ice by implementing an ice monitoring and rig retreat plan, drilling rig retreat will not be an option when a blowout occurs and relief well rig must remain in position to drill a relief well in the weather and ice conditions that may be present.

This recommendation is consistent with the International Maritime Organization's (IMO) Guidelines for Ships Operating in Arctic Ice-Covered Waters; the Canada National Energy Board (NEB) Filing Requirements for Offshore Drilling in the Canadian Arctic,⁴ and with the National Commission on the BP *Deepwater Horizon* Oil Spill recommendations, where the Commission recommended the safety and environmental management system requirements for drilling to include third party audits.⁵

Additionally, operators should be required to provide a sufficient number of Polar Class and icebreaking vessels in the U.S. Arctic Ocean region to support safe operation, provide towing assistance, and to support source control and spill response operations. These vessels should include a sufficient number of shallow draft vessels capable of operating in ice-infested waters.

2. *Seasonal Drilling Restrictions*—DOI's regulations should also include seasonal drilling limitations for periods when oil spill response is not possible in the Arctic. More specifically, Arctic offshore operations drilling through hydrocarbon bearing zones should be limited to periods of time when the drilling rig and its associated oil spill response system is capable of working and cleaning up a spill in Arctic conditions, minus the time required to drill a relief well before ice encroaches on the drill site and the time required to clean up the spilled oil from the last day that a spill could occur.

Drilling restrictions that limit OCS offshore operations in the Arctic to summer periods ensures there is sufficient time left in the operating season to cap a blown out well, drill a relief well, and clean up spilled oil in open water, thereby providing a critical margin of safety in the proposed plan. Seasonal drilling restrictions, with these specific components, are not included in existing regulations.

Routine drilling operations that extend to the very last day that it is safe to drill do not allow time to respond to a well control event before winter conditions set in and equipment must leave the Chukchi and Beaufort seas because it becomes unsafe to operate in ice, freezing conditions, and darkness. A spill in the Chukchi and Beaufort seas not contained by freeze-up could continue unabated through the winter could have catastrophic long-lasting consequences.

²International Association of Classification Societies, Requirements Concerning Polar Class (2011).

³International Maritime Organization, Guidelines for Ships Operating in Arctic Ice-Covered Waters (2010).

⁴Canada National Energy Board (NEB), Filing Requirements for Offshore Drilling in the Canadian Arctic, 2011, page 27.

⁵National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling Report, Recommendation A3 (January 11, 2011) (recommending that the safety and environmental system requirements for drilling be expanded to include third-party audits at three to five year intervals and certification).

There are no specific regulations requiring operators to follow seasonal drilling limitations for Arctic operations. Although DOI effectively applied seasonal drilling limits to Shell's 2012 Chukchi Sea OCS Drilling Project⁶, similar limits have not been imposed on all projects. For example, DOI did not apply seasonal drilling limits to Shell's 2012 Beaufort Sea OCS Drilling Project allowing drilling and relief well operations to be scheduled into dangerous multi-year ice conditions of October, November and early December. Therefore, there is a need to establish standards that would be applied consistently across all projects.

3. Capping and Containment System and Relief Rig Located in the Arctic and Rapidly Deployed—DOI's regulations should also mandate the requirement to have an Arctic well capping and containment system and an Arctic relief well rig located in the Arctic to provide immediate oil spill source control capability. More specifically, Arctic oil and gas operators should own, or have on contract, a relief well rig and capping and containment system that is capable of being onsite and ready to commence operations within 24 hours.

The capping and containment system should be built to arctic engineering specifications. The system should include Polar Class vessels to ensure it can remain onsite during ice conditions that may be encountered during the entire period of operation. Additionally, the system should be staffed by trained and qualified personnel with Arctic experience who are capable of completing a well control operation in Arctic conditions. Finally, the system should be subject to independent third party expert review and an arctic engineering expert, prior to the drilling season.

The Arctic relief well rig should be capable of drilling a relief well at the proposed location for the period of time required to complete the relief well. The Arctic design should be equivalent to, or more robust, than the rig used to drill the original well requiring relief well assistance. The relief well rig must be a second rig. The operator cannot assume that the primary drilling rig where the well blowout occurred is capable of moving away from the well blowout and drilling its own relief well. The period of time required for relief well drilling should be defined as the period between the first day the well is spudded and when the well is plugged, abandoned, and secured with at least two well control barriers, plus an additional period of at least 60 days or longer if indicated by a site-specific analysis. Both Canada and Greenland have a two-rig drilling policy and required that a relief well rig be located in the same area of drilling at the same time.^{7,8}

DOI regulations do not currently require a capping and containment system or a designated relief well rig. In the Arctic, there is a very limited time window to drill a relief well. The size of a worst-case well blowout and the amount of oil spilled into the environment will be a function of the time required to transport a relief well rig to the drilling site and drill the relief well. While well capping may arrest the blowout prior to drilling a relief well, this is not always the case.

4. Adequate Trained Personnel and Equipment to Respond to a Spill in Arctic Conditions—Arctic response equipment, including mechanical and *in-situ* burning materials, and training standards should be established to ensure there is sufficient in-region capability to respond to the oil spill in Arctic conditions.

The OSRP should include evidence that the operator either owns, or has under contract, adequate in-region Arctic-grade equipment and personnel trained and qualified to operate that equipment and capable of cleaning up the entire spill.

Arctic-grade equipment should include, but not be limited to: Arctic-grade skimmers, ice-boom, viscous oil pumps, winterization enclosures and heating systems to protect equipment and prevent freezing, systems to thaw frozen equipment, Polar Class vessels (icebreakers, storage and recovery vessels), shallow draft vessels capable of operating in ice-infested water and able to provide nearshore response access, landing craft capable of accessing remote shores where docks are not present, and cold-weather Personnel Protective Equipment.

Personnel should have training and qualifications in arctic mechanical response, *in-situ* burning, and deployment and operation, and vessel captains and pilots should have experience navigating in the Arctic.

DOI regulations do not currently require any specific standards for Arctic mechanical response equipment or training. Canada, by comparison, requires that an

⁶“BOEM Issues Conditional Approval for Shell 2012 Chukchi Sea Exploration Plan” <http://www.boem.gov/BOEM-Newsroom/Press-Releases/2011/press12162011.aspx>

⁷Canada National Energy Board (NEB), Filing Requirements for Offshore Drilling in the Canadian Arctic, 2011.

⁸Government of Greenland, Bureau of Minerals and Petroleum, Approval of up to 7 (Seven) Exploration Wells in Accordance with Section 15 of Licences 2002/15, 2005/06, 2008/11 and 2011/16, Cairn Energy License Approval Letter, May 2011

operator demonstrate, including field exercises in arctic conditions, that its oil spill response equipment and personnel are trained and equipped to work in the Arctic.⁹

5. Equipment Tests and Drills in Arctic Conditions—DOI’s regulations should also include Arctic offshore field tests to verify spill response tactics and strategies *prior* to OCS operations. Oil and gas operators should be required to conduct field tests prior to conducting OCS operations to verify that arctic spill response techniques, equipment, and methodologies will be effective and are the best available technology for use in the Arctic environment. Field tests should be conducted in the environments they plan to operate in and in areas where a spill from their operations could reach. Each tactic and strategy relied upon in an oil spill response plan should be field-tested and verified as a viable oil spill removal strategy prior to conducting OCS operations where there is a risk of spilling significant oil.

Equipment that has not been tested in Arctic conditions already including mechanical equipment and capping and containment systems should be physically tested in the arctic conditions that the applicant may need to use the system in prior to the drilling season and proven to be successful and reliable for the intended purpose.

There are currently no requirements for operators, or the Oil Spill Removal Organizations (OSROs) they utilize, to field test and verify that its proposed “on-paper” tactics and strategies are efficient and effective in the Arctic prior to starting drilling operations.

To verify that Arctic oil spill response techniques, equipment, and methodologies will be adequate and effective in an actual response, operators should plan for and conduct field tests in a range of Arctic conditions, including broken ice.

D. Need for More Comprehensive Review of Alaska’s Offshore Program

The previous recommendations address one narrow aspect of Alaska’s offshore oil and gas program: oil spill prevention and response standards specific to the Department of Interior. As part of the government’s commitment to developing Alaska’s energy resources cautiously and subject to the highest safety and environmental standards, all Federal agencies with oversight responsibilities must thoroughly review standards for other aspects of the offshore program.

Federal agencies should also make information available to the public in a timely fashion and on a proactive basis. Relatively simple steps—like publishing letters, approvals, and data on agency websites and committing to accepting public comments on spill response plans—would go a long way toward building trust and improving public participation in the decision-making process.

At stake is not only the safety of workers, but also a rich and complex ecosystem found nowhere else in the United States. The Arctic Ocean is home to bowhead whales, walrus, polar bears, and other magnificent marine mammals as well as millions of migratory birds. A healthy ocean is important for the continuation of hunting and fishing traditions practiced by Alaska Native communities for time immemorial.

III. Enhance Vessel Traffic Safety Through the Bering Strait and in the Arctic Ocean

The Bering Strait is the gateway in and out of the western Arctic Ocean for migrating marine mammals and seabirds. A mere 50 nautical miles at its narrowest point, this exceptional place provides habitat and migrating routes for beluga and bowhead whales; more than 50 species of seabirds and their massive breeding colonies; ringed, spotted and bearded seals; walrus; and forage fish such as arctic cod and arctic char. Indigenous Arctic communities have subsisted and nurtured a culture intertwined intimately with these waters and resources for thousands of years.

The Bering Strait is already experiencing increasing vessel traffic, and that trend is expected to continue and accelerate in the future. The growth in Arctic marine operations is due in large part to natural resource development within the region and the Arctic’s growing economic ties to the global economy. At a meeting in Nome on vessel traffic, U.S. Coast Guard Commander James Houck noted that 480-plus vessels transited the Bering Strait in 2012.¹⁰ Ships include tankers, cargo ships, container ships, tugs, offshore supply vessels, landing craft, fishing vessels, passenger vessels, offshore drill ships, oil spill response vessels, and cruise ships of var-

⁹Canada National Energy Board (NEB), Filing Requirements for Offshore Drilling in the Canadian Arctic, 2011, pages 22–23.

¹⁰CMDR Houck presentation: <http://seagrant.uaf.edu/conferences/2013/bering-strait-maritime/program.php>

ious sizes. While vessel activity is light compared to other regions of the world, the capacity to provide aid and support for these vessels is extremely limited.

Vessels navigating these narrow passages pose numerous threats. They may discharge oil, waste, or ballast water that contains invasive species. Marine mammals are susceptible to vessel noise, which could alter their behavioral and migratory patterns. Vessels could strike marine mammals such as the slow-moving bowhead whale, particularly during twice-yearly migration times when the majority of the Western Arctic population moves through this corridor. They may have an accident, lose steerage or become grounded—posing a threat or danger to personnel aboard. Also of real concern is the potential for interfering with subsistence activities and/or compromising the safety of hunters, some of whom travel 100 miles from shore in small boats. Lastly, vessel traffic may disrupt ecosystem integrity and function, which is vital to indigenous Arctic communities; a healthy ecosystem supports the marine mammals and fish populations that ensure a strong subsistence way of life.

Given the cultural, ecological, and economic importance of the region, the consequences of an accident are considerable. We are at a critical point at which to begin developing an appropriate standard of care for vessel traffic in the region. Local communities should be actively involved and play a leadership role with other stakeholders in this effort. It cannot be emphasized enough that any mandatory or voluntary measures should be developed with the involvement of the tribal governments, regional Alaska Native non-profit organizations, co-management organizations, and ANCSA corporations.

Below are some concepts and ideas that should be further explored to enhance vessel traffic safety:

A. Improve and Update Tools to Enhance Safer Voyage Planning

As a first step to help prevent accidents, mariners should have access to accurate and updated information.

1. *Update Nautical Charts*—Hydrographic charting in the Bering Strait and Arctic Ocean are inadequate and those that exist are outdated, with the majority of charting occurring prior to 1970.¹¹ In a recent report the U.S. Committee on the Marine Transportation System stated that “less than one percent of navigationally significant Arctic waters have been surveyed with modern technology to determine depths and depict hazards to navigation.”¹²

2. *Improve Forecasting*—Weather, sea ice, and sea state are critical elements to safe voyage planning in Arctic waters. This information, however, is not widely available. Improving forecasting is listed amongst the top priorities in the National Oceanic and Atmospheric Administration’s Arctic Vision and Strategy.¹³

3. *Add and Supplement Community Information in the Coast Pilot*—NOAA’s Office of Coast Survey issues the Coast Pilot, a series of nautical books that provide information that is difficult to show on a nautical chart. Topics covered include, for example, currents, tide and water levels, weather, sea ice, dangers, and routes.¹⁴ Coastal communities should be consulted regarding what information to add. They have knowledge from traveling local waters, often farther offshore than most mariners in the lower latitudes, and could help further safe routes and hazards not currently included in the most recent edition. Communities may, for example, want to include local VHF channels for mariners to communicate and/or additional information on seasonal species migrations or important seasons when communities will be on the water.

4. *Require Additional and Continued Research, Monitoring and Observation*—Balanced management of Arctic waters will require more complete information about species and ecosystem functioning, followed by continued monitoring and observa-

¹¹LT Matt Forney, NOAA, Office of Coast Survey, presentation at the Bering Strait Maritime Symposium. Feb. 2013. <http://seagrant.uaaf.edu/conferences/2013/bering-strait-maritime/program.php>

¹²U.S. Committee on the Marine Transportation System, “U.S. Arctic Marine Transportation System: Overview and Priorities for Action 2013.” (2013). Available at: http://www.cmts.gov/downloads/CMTS_Draft_Arctic_MTS_Overview_and_Priorities_Paper_for_Public_Co_mment-Feb2013.pdf

¹³Priorities include: forecast sea ice, strengthen foundational science to understand and detect Arctic climate and ecosystem changes, improve weather and water forecasts and warnings, enhance international and national partnerships, improve stewardship and management of ocean and coastal resources in the Arctic, and advance resilient and healthy Arctic communities and economies. Available at: http://www.arctic.noaa.gov/docs/NOAAArctic_V_S_2011.pdf

¹⁴Office of Coast Survey, United States Coast Pilot. <http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm>

tion of key species and processes. This information will not only benefit resource management but also vessel traffic management to better facilitate safe shipping. As traffic increases and the climate changes, ongoing input from local communities and scientific information will be important to measure and mitigate impacts.

B. Implement Measures to Mitigate Marine Impacts from Vessel Traffic

Mandatory measures to regulate vessels through the Bering Strait may need to go through a lengthy, international process. Voluntary measures, however, are achievable in the short term and have been effective in other areas of the United States. Listed below are examples of measures, some of which have been discussed by the U.S. Coast Guard¹⁵ that could be utilized to reduce impacts from increasing vessel traffic in the Bering Strait and Arctic Ocean.

1. *Shipping Lanes*—Shipping lanes are designed to confine vessel traffic to specific areas. This helps create regular traffic patterns while avoiding potentially dangerous locations or culturally or environmentally sensitive areas. Shipping lanes also help avoid accidents because vessels follow expected routes. This measure is commonly used in narrow straits and areas of vessel congestion such as harbor entrances. Shipping lanes also ensure that vessels maintain a safe distance offshore in case a problem affects maneuverability. This gives the vessel's crew time to make repairs, set anchor, or get assistance before drifting aground.

2. *Areas To Be Avoided (ATBAs)*—If shipping lanes tell vessel where to go, “areas to be avoided” tell mariners where they should never go. These areas may be designated because of marine hazards, such as shoals or strong currents. They may also be designated for environmental and cultural reasons. In a remote region such as the Bering Strait, “areas to be avoided” may also be used to keep sufficient space between vessels and shorelines to reduce the chance that a disabled vessel drifts ashore before help can arrive.

3. *Vessel speed*—For some hazards, including ship-to-ship collisions and ship strikes of whales, vessel speed is a crucial factor in the damage that may occur. For example, whales are far less likely to be killed by large vessels (cargo ships, tankers, large cruise liners) traveling 12 knots or slower than by large vessels moving faster.¹⁶ In areas with limited maneuvering room for avoiding hazards, speed restrictions can greatly reduce impacts and risks. Vessel speed can be monitored using commercially available vessel tracking devices. Vessel speed restrictions are being used, in concert with routing measures, in the northeast Atlantic to help reduce ship strikes of the endangered North Atlantic Right Whale.¹⁷

4. *Ship Reporting (Automated Vessel Tracking, Reporting Location to Local Hunters, Reporting Hazards Such As Sea Ice or Marine Mammals)*—Most vessels now are required to have automatic tracking systems on board (Automated Information Systems, or AIS), which allow their progress to be monitored. Reporting systems may create an additional requirement to announce when the vessel enters and leaves designated areas or enters and exits a shipping lane. (This can be automated.) Additional communication requirements could include, for example, making an announcement on local radio channels in case there are hunters out in boats, or checking with a local communication center upon arriving within radio range of that location, or describing hazards, such as sea ice or marine mammal aggregation, to other vessels.

Current AIS technology allows for “watchdog” alarms to be triggered when vessels cross a line of demarcation or enter a specific area. The information on the vessel can be automatically transmitted to other vessels, government agencies, and other entities. The U.S. Coast Guard monitors vessel movements and can identify ships that appear to be having trouble of some kind. This can help a timely emergency response. The AIS can also be used to inform vessels that they are outside shipping lanes or to transmit safety or other information as needed. In some places such as the Malacca Strait, these systems have received extensive funding from the shippers themselves. In the Bering Strait region and coastal areas of the Beaufort and Chukchi seas, if receiving equipment is made available, AIS also can be used by

¹⁵ CMDR Houck, “Rules of the Road—A Bering Strait Overview”, presentation at the Bering Strait Maritime Symposium. Feb. 2013. <http://seagrant.uaf.edu/conferences/2013/bering-strait-maritime/program.php>

¹⁶ Gende, S. *et al.*, “A Bayesian approach for understanding the role of ship speed in whale-ship encounters” 2011. *Ecological Applications*, 21(6), pp.2232–2240.

¹⁷ NOAA Fisheries, Office of Protected Species: “Reducing Ship Strikes to North Atlantic Right Whales” <http://www.nmfs.noaa.gov/pr/shipstrike/>

local communities to track vessel movement to help ensure the safety of subsistence hunting boats and other small craft used locally.

C. Enhance Emergency Preparedness

1. Increase Spill Response Planning and Capability—Spill response planning and capacity should be met by professional oil spill removal organizations and enhanced community capability. Communities should be equipped and trained to use spill response equipment and aid in protecting shoreline resources. Regional Citizens' Advisory Councils can provide communities with a structure to review spill response planning, as well as train and practice responding to oil spills. Non-tank vessels should be required to have approved vessel response plans. These response plans will require increase capacity along the coasts. Oil Spill Removal Organization (OSROs) capacity should be enhanced to meet this demand.

2. Deep Water Port and Emergency Towing Capacity—There are no major ports in western Alaska or along the Arctic coastline. There should be additional emergency towing systems available along the Bering Strait coast as well as on the North Slope. A deep water port in the Northern Bering Sea could provide a place to station a tug to assist distressed vessels.

D. Foster International Cooperation

The Bering Strait's international jurisdiction should not prevent the United States from taking careful, preventative measures to reduce and also prepare for an emergency. In the long term, however, it is important that the United States continue to foster a cooperative relationship with Russia and work towards a mutual set of measures to help manage this narrow strait.

The Arctic Council's Search and Rescue Agreement is a good step towards ensuring international cooperation in these shared waters. Additionally, the United States should continue to play a leadership role in the development of a mandatory Polar Code at the International Maritime Organization. The Polar Code is an important tool, setting international standards for vessels fit to travel in Arctic waters. In addition to vessel design and strength, however, measures should be included that set baseline standards for discharge, waste, noise and light pollution, and interaction with marine mammals.

Pew strongly supports ratification of the U.N. Convention on the Law of the Sea. The oceans have been called, "the last global commons," and their sustained global health can best be maintained by a stable, universally accepted convention that promotes the key interests of the United States, its allies and its trading partners. Ratification would ensure our ability to participate in interpreting and applying the convention to the changing realities of the global maritime environment and preserves our ability to protect our domestic interests, including our extended continental shelf claims.

IV. Conclusion

The United States is in the unique and privileged position of being an Arctic nation. This privilege brings with it national obligations. We must ensure that strategy, policies, and adequate Federal resources are in place today in order to effectively manage and prepare for these challenges tomorrow. The consequences of losing a treasure like the Arctic are simply unacceptable.

Senator BEGICH. Thank you very much, and you did have some good suggestions in your written testimony, so I appreciate that. Thank you.

What I'd like to now ask is Matt Ganley, Vice President of Bering Straits Native Corporation. Matt?

**STATEMENT OF MATT GANLEY, VICE PRESIDENT,
RESOURCES AND EXTERNAL AFFAIRS,
BERING STRAITS NATIVE CORPORATION**

Mr. GANLEY. On behalf of the shareholders and the Board of Directors of Bering Straits Native Corporation, which I will refer to as BSNC, just to shorten things, I thank you for the opportunity to present testimony related to developments in Alaska's Arctic waters.

I am Matt Ganley, Vice President of Resources and External Affairs for Bering Straits Native Corporation. I have worked in Western Alaska, Northwest Alaska for the past 30 years, the last 20 of those years with Bering Straits Native Corporation.

Bering Straits Native Corporation is a regional corporation established pursuant to ANCSA or the Alaska Native Claims Settlement Act of 1971. The region encompasses the Seward Peninsula and adjacent waters, including Sledge Island, King and Diomed Islands, and the shorelines of two seas, as well as the whole shoreline of Norton Sound. Seventeen villages are within the BSNC regional organization.

Traveling north to south along the shoreline, we have Shishmaref on the Chukchi Sea; Wales and Diomed on Bering Strait; Teller and Brevig Mission on the eastern boundary of Port Clarence; Nome on the Bering Sea; then further east to Solomon, Golovin, Koyuk, and south to Shaktoolik, Unalakleet, Stebbins and St. Michael, all within Norton Sound.

Recent developments, including diminished sea ice, increased vessel traffic through the Northern Sea Route and Northwest Passage, and oil and gas exploration in the Beaufort and Chukchi, including Russian waters to the West, have rapidly brought the Bering Straits region into sharp focus. Though certainly challenging, we view these developments with concern as well as guarded optimism.

Over the past 2 years, agencies and organizations have held meetings to discuss numerous topics related to increased shipping and vessel traffic in the northern waters. From one gathering to the next, I watched as the anxiety level has risen among participants at these meetings who are attending as representatives from the coastal communities in Bering Straits. Discussions and reports detailing spill and disaster response needs, increased traffic-related exploration, as well as the potential for offshore oil development, have not addressed a glaring gap between the information scenarios presented and the utility of that information for the resident stakeholders.

Strategies, however, have been developed. Specifically, I will refer to a state program called the Geographic Response Strategy, which, if implemented in a material sense, would place the tools and expertise in the hands of the communities to respond at a local level to fuel spills and unanticipated discharges near shore marine waters. Staging of the necessary hardware in communities, combined with the proper training, would provide communities with an investment in what is occurring in their neighborhoods. It would also give communities an active role in protecting their subsistence resource base, the very thing that the residents are the most anxious about.

I offer the GRS as an example because it highlights something that the BSNC has been emphasizing in recent discussions related to the Arctic ports. There is no single location or, for that matter, response plan that is going to fulfill the many needs facing industry, government, or the residents of the Arctic. The extent of the coastline, the lack of intermodal transportation, the extreme environment, and the relative absence of sufficiently deep water require a non-centralized, modular approach to infrastructure development

in the Arctic. Rather than focus on a single port-for-port development with the intent of constructing the Arctic port, we encourage agencies, planners and government, both state and Federal, to promulgate rules that encourage private development, as well as the public-private partnerships discussed in the recent port studies.

It would also be prudent when legislation is developed to be certain that, one, not all of the resources are invested for political expediency at one location; and two, that the options available for port development, particularly in the private sector, are not unnecessarily restricted through new or additional administrative regimes.

Since its creation in 1971 with the passage of the Alaska Native Claims Settlement Act, BSNC has endeavored to anticipate what would occur in the region with regards to resource development and commerce. This was the underlying intent of ANCSA and the corporate structure imposed by the Act.

BSNC selected the lands located at Point Spencer, commonly known as Point Clarence in 1976 pursuant to Section 14(h)(8) of ANCSA, and we subsequently prioritized this tract 10 years ago. It was selected with the understanding that the BSNC would accept conveyance at such time as it became available. Until 2010, the year that the Coast Guard decommissioned the Loran facility, Port Clarence served as an important link in the communication navigation system for Alaska's waters. We have been working with the Coast Guard and have had initial discussions with the Department of Natural Resources to determine the most expedient manner to have the property conveyed to BSNC to fulfill the corporation's ANCSA entitlement.

As we all know, there are currently no adequate staging, support, and disaster response facilities in the area of Bering Strait, and BSNC intends to utilize this property for infrastructure development that will positively benefit the shipping safety, search and rescue capability, security, and economic development in the region. It will also provide jobs and economic opportunities in one of the most economically depressed areas in the United States. We believe Port Clarence can be responsibly developed in partnership with private industry to meet the needs of marine safety and national security throughout Alaska's northern Arctic waters.

Thank you, Senator, for allowing this testimony.
[The prepared statement of Mr. Ganley follows:]

PREPARED STATEMENT OF MATT GANLEY, VICE PRESIDENT, RESOURCES AND
EXTERNAL AFFAIRS, BERING STRAITS NATIVE CORPORATION

On behalf of the Shareholders and Board of Directors of Bering Straits Native Corporation (BSNC), I thank Senator Begich for the opportunity to present testimony related to developments in Alaska's Arctic Waters. I am Matt Ganley, Vice President of Resources and External Affairs for Bering Straits Native Corporation and have worked in western and northwest Alaska for the past 30 years-the last 20 of those years with Bering Straits Native Corporation.

Bering Straits Native Corporation is the regional corporation established by the Alaska Native Claims Settlement Act of 1971. Our region encompasses the Seward Peninsula and adjacent waters, including Sledge, King and Diomed Islands, and the shorelines of two Seas as well the whole shoreline of Norton Sound. Seventeen villages are within the BSNC regional organization. Most of the communities lie along the coastline: from Shishmaref on the Chukchi Sea; Wales and Diomed (Inalik) in Bering Strait; Teller and Brevig Mission on the eastern boundary of Port Clarence; Nome on the Bering Sea; then further east to and Solomon, Golovin,

Koyuk, and south to Shaktoolik, Unalakleet, Stebbins and St. Michael on eastern Norton Sound.

Recent developments, including diminished sea ice, increased vessel traffic through the Northern Sea Route and Northwest Passage, and oil and gas exploration in the Beaufort and Chukchi (including Russian waters to the west), have rapidly brought the region into sharp focus. Though certainly challenging, we view these developments with concern as well as guarded optimism.

Over the past two years agencies and organizations have held meetings to discuss numerous topics related to increased shipping and vessel traffic in Northern waters. From one gathering to the next I have watched as the anxiety level has risen among participants at the meetings who are attending as representatives from the coastal communities of Bering Strait. Discussions and reports detailing spill and disaster response needs, increased traffic related to exploration as well as the potential for offshore oil development have not addressed a glaring gap between the information and scenarios presented, and the utility of that information for the resident stakeholders. Strategies have been developed-specifically the Geographic Response Strategies report-which, if implemented in a materiel sense, would place the tools and expertise in the hands of the communities to respond at the local level to fuel spills and unanticipated discharges in near shore marine waters. Staging of the necessary hardware in the communities, combined with proper training would provide communities with an investment in what is occurring in their neighborhoods. It would also give communities an active role in protecting their subsistence resource base: the very thing our residents are most anxious about.

I offer the GRS example because it highlights something that BSNC has been emphasizing in recent discussions related to Arctic ports. There is no single port location or, for that matter, response plan that is going to fulfill the many needs facing industry, government and residents in the Arctic. The extent of the coastline, the lack of intermodal transportation, the extreme environment, and the relative absence of sufficiently deep water require a non-centralized, modular approach to infrastructure development in the Arctic. Rather than focus on a single point for port development with the intent of constructing The Arctic Port, we encourage agencies, planners and government (State and Federal) to promulgate rules that encourage private development as well as the public-private partnerships discussed in recent Port Studies. It would also be prudent when legislation is developed, to be certain that 1) Not all of the resources are invested, for political expediency, at one location and 2) that the options available for port development, particularly in the private sector are not unnecessarily restricted, through new or additional administrative regimes.

Since its creation in 1971 with the passage of the Alaska Native Land Claims Settlement Act, BSNC has endeavored to anticipate what would occur in our region with regards to resource development and commerce. This was the underlying intent of ANCSA and the corporate structure imposed by that Act. BSNC selected the lands located on Point Spencer, commonly known as Port Clarence in 1976 (case file number AKFF023051), pursuant to Section 14(h)(8) of the Alaska Native Claim Settlement Act, and subsequently prioritized this tract of approximately 2300 acres. It was selected with the understanding that BSNC would accept conveyance at such time as it became available. Until 2010, the year that USCG decommissioned the Loran facility, Port Clarence served as an important link in the communication and navigation system for Alaska's waters. We have been working with the USCG and have had initial discussions with the State Department of Natural Resources to determine the most expedient manner to have the property conveyed to BSNC to fulfill our corporation's ANCSA entitlement.

There are currently no adequate staging, support, and disaster response facilities in the area of Bering Strait and BSNC intends to utilize this property for infrastructure development that will positively benefit the safety, security, and economic development of the region. It will also provide jobs and economic opportunities to one of the most economically depressed areas in the United States. We believe Port Clarence can be responsibly developed in partnership with private industry to meet the needs of marine safety and national security in Alaska's Arctic waters.

Senator BEGICH. Thank you very much. And again, I'll have questions for several of you.

The next person is Jack Omelak, Alaska Nanuuq Commission Executive Director.

Thank you very much, Jack, for being here.

**STATEMENT OF JACK OMELAK, EXECUTIVE DIRECTOR,
ALASKA NANUUQ COMMISSION AND MEMBER,
ARCTIC MARINE MAMMAL COALITION**

Mr. OMELAK. Can everybody hear me?

Senator BEGICH. Yes.

Mr. OMELAK. First of all, good morning, Senator Begich. It's a pleasure to meet you. I appreciate the opportunity to testify on this behalf.

My name is Jack Omelak. I am the Executive Director of the Alaska Nanuuq Commission. We represent 15 coastal villages from Kaktovik to St. Lawrence Island in the domestic and international management of polar bears.

Recently, the Alaska Nanuuq Commission took part in the formation of the Arctic Marine Mammal Coalition. The members of this coalition include the Alaska Nanuuq Commission, the Alaska Eskimo Whaling Commission, the Eskimo Walrus Commission, the Alaska Beluga Whale Committee, and the Ice Seal Committee. We primarily represent the groups through the Bering Strait into the Beaufort Sea.

I'd just like to speak briefly. I'm going to go ahead and abridge my verbal presentation. I've given you a complete written testimony. But I'd like to speak briefly on some points of concern to the groups in regards to the increasing traffic through the Straits.

Of course, our concerns are about the potential impacts in regards to our long-term food security. That's primarily the reason why we decided to come together and form the AMMC. Our goal as this coalition is to speak more efficiently as a unified voice. We all know about how difficult it is to reach stakeholders. This is one of the primary reasons why we decided such an agency should be formed, to increase the communication between local stakeholders and people such as yourself.

So in 2012, in September, we got together and met, formed the coalition, and then sent a letter to the U.S. Coast Guard 17th District making recommendations on vessel management measures as part of the process to develop the port access route study. A copy of this letter is also attached to my written testimony.

So the main points that we agreed to in this letter was that we felt it would be necessary to establish areas to be avoided, protecting the subsistence use areas of coastal communities. We also think we need to deploy receivers and computer monitors in villages so that residents can track vessels using the AIS system which was spoken to earlier.

Ship strikes on whales, especially bowheads, are very serious concerns to residents of our whaling communities. For this reason, we would like to see recommendations for speed restrictions for vessels transiting the Bering and the Anadyr Straits during the spring and fall migratory periods.

To protect marine mammals during biologically important activities, we would like to see recommendations for speed restrictions and possible diversionary measures in the presence of feeding marine mammals. I'd like to note here that these recommendations for speed restrictions and diversionary measures is patterned after mitigation measures in the Alaska Eskimo Whaling Commission's Open Water Season Conflict Avoidance Agreement.

This new coalition's work is focused primarily on commercial traffic vessels, but I think it's relevant to state that the oil and gas operators working in the Arctic have been willing to adhere to these measures during vessel transit for many years.

Also, to maintain the health of our waters, we feel very strongly that commercial vessels should be required to treat the Bering, Chukchi and Beaufort Seas as zero discharge zones for ballast water and vessel waste.

Given the lack of infrastructure and the relatively limited Coast Guard presence, providing emergency response training and equipment to our coastal communities should be part of any program aimed at emergency response in the Arctic.

And finally, Senator, we all know that it's absolutely critical that funding for these types of issues are addressed.

We're committed to the safety and well-being of our residents, our subsistence resources, as well as the many humans transiting our ocean now and in the future.

I'm pleased to report that on January 30 of this year, the Arctic Marine Mammal Coalition received a response to our letter from Admiral Ostebo. The Admiral's letter offers several very helpful recommendations for opportunities to pursue the types of management measures we have recommended. The Admiral also expressed interest in further collaboration with our communities and our coalition. We're grateful for this response and intend to pursue on behalf of our subsistence hunters both the Coast Guard's recommendations and the Admiral's offer of further collaborations. This letter is attached to my comments.

Thank you again, Senator, for the opportunity, and on behalf of the marine mammal hunters of our Arctic coastal communities, I'd like to express our sincere gratitude for your recognition of the fact of allowing us to be here to give testimony today. Thank you.

[The prepared statement of Mr. Omelak follows:]

PREPARED STATEMENT OF JACK OMELAK, EXECUTIVE DIRECTOR, ALASKA NANUUQ
COMMISSION AND MEMBER, ARCTIC MARINE MAMMAL COALITION

Good morning, Senator Begich. Thank you for the opportunity to speak here today.

My name is Jack Omelak. I am the Executive Director of the Alaska Nanuuq Commission. The ANC is a member of the newly formed Arctic Marine Mammal Coalition, or AMMC. The members of the AMMC are the five principal marine mammal hunter groups from the Bering Straits Region north through the Beaufort Sea. Those are: the ANC, the Alaska Eskimo Whaling Commission, the Eskimo Walrus Commission, the Alaska Beluga Whale Committee, and the Ice Seal Committee.

I would like to speak briefly on points of concern to our hunter groups as we observe the ever-increasing numbers of large oceangoing vessels in our coastal waters. These concerns extend, as well, to the many large vessels transiting our waters that are out of sight of our coastal communities. Our concerns about the potential adverse impacts of this increasing traffic to our subsistence resources, the ecosystem of our waters, and our longterm food security led our groups to come together. Our goal as a coalition is to speak with one voice on the need for rational management of this traffic, both domestically and internationally.

On September 20, 2012, the members of the AMMC sent a letter to the U.S. Coast Guard's 17th District, making recommendations on vessel management measures as part of the process to develop a Port Access Route Study. A copy of this letter is attached to my written testimony.

To touch briefly on the main points agreed to by the members of the AMMC and set forth in that letter:

- It will be necessary to establish Areas To Be Avoided, to protect the subsistence use areas of our coastal communities. One very important area is to the west of St. Lawrence Island.
- We need to deploy receivers and computer monitors in our villages so that residents can track vessels, using the Automated Information System.
 - The ability to monitor vessel movements and communicate with ships will be important in helping us to protect subsistence hunting opportunities.
 - The communications centers set up along the Beaufort and Chukchi Sea coasts by oil and gas operators are logical places to begin deployment of AIS monitoring equipment.
- Ship strikes on whales, especially bowhead whales, are a very serious concern to the residents of our whaling communities. For this reason, we would like to see recommendations for speed restrictions for vessels transiting the Bering and Anadyr Straits during the spring and fall migratory periods.
- To protect marine mammals during biologically important activities, we would like to see recommendations for speed restrictions and possible diversionary measures in the presence of feeding whales, walrus, seals, and polar bears. We also would like to see similar restrictions near any aggregations of these same species.
- I would like to note here that this recommendation for speed restrictions and diversionary measures is patterned after mitigation measures in the Alaska Eskimo Whaling Commission's Open Water Season Conflict Avoidance Agreement. The AMMC's work is focused primarily on commercial vessel traffic. But it is significant that the oil and gas operators working in the Arctic have been willing to adhere to these measures during vessel transit for many years.
- To maintain the health of our waters, we feel very strongly that commercial vessels should be required to treat the Bering, Chukchi, and Beaufort Seas as zero discharge zones for ballast water and vessel waste.
- Given the lack of infrastructure and limited Coast Guard presence, providing emergency response training and equipment to our coastal communities should be part of any program aimed at emergency response in the Arctic.
- And finally, Senator, as you know all too well, funding for these initiatives will be critical to their success and to the safety and wellbeing of our residents and our subsistence resources, as well as the many humans transiting our ocean, now and in the future.

I am pleased to report that on January 30th of this year, the AMMC received a response to our letter from Admiral Ostebo of the 17th Coast Guard District. The Admiral's letter offers several very helpful recommendations for opportunities to pursue the types of management measures we have recommended. The Admiral also expressed an interest in further collaboration with our communities and our coalition. We are grateful for this response and intend to pursue, on behalf of our subsistence hunters, both the Coast Guard's recommendations and the Admiral's offer of further collaboration.

I have attached the Admiral's letter to my comments.

Thank you, again, Senator for giving me the opportunity to speak here today. On behalf of the marine mammal hunters of our arctic coastal communities, I would like to express our appreciation for your recognition of the fact that the issues discussed here go to the heart of our survival. And I would like to personally thank you for allowing our hunters' voice to be heard in this public forum.

U.S. DEPARTMENT OF HOMELAND SECURITY
Juneau, AK, 30 JAN 2013

United States Coast Guard
Commander Seventeenth District

Dear Arctic Marine Mammal Coalition Members:

I would like to provide a response to your letter of September 20, 2012, which included a variety of questions and concerns regarding vessel operations in Arctic waters. I fully understand the importance of your concerns, and hope that you recognize this understanding through our ongoing Coast Guard efforts to engage with Tribes, Alaska Native Organizations, and other groups and residents of the Arctic region.

As you noted in your letter, we have been working to obtain input for the International Maritime Organization (IMO) Polar Code revision, as well as the Bering Strait Port Access Routing Study (PARS). It is important to note the role that the Coast Guard's 17th District plays in both of these initiatives as they are not quite the same. Coast Guard Headquarters in Washington, DC serves as the "action office" that is responsible both for soliciting input for the IMO Polar Code initiative as well as eventually promulgating any resulting regulations that are developed.

In contrast, District 17 in Alaska has the lead role in completing the Bering Strait PARS. Once completed, the PARS study recommendations will need several additional levels of approval within the Federal Government before it can be considered for adoption at the IMO. We continue to work with other Federal agencies on topics of importance in the Arctic, and I will also forward this letter to those relevant agencies for specific items noted below that are under their jurisdiction. Due to the range of issues in your letter, I will specifically address each item below for clarity:

1. *Migration and Vessel Transit Routes near Saint Lawrence Island:* The Coast Guard does anticipate that Areas to be Avoided (ATBA) will be included as PARS study recommendations, although the precise locations and sizes are still being developed. In addition to minimizing impacts to marine mammals, Areas to be Avoided also provide additional response time in the event that a vessel becomes disabled and may drift aground. The Coast Guard understands the rationale for your input to route all traffic to the east of St. Lawrence Island, but the commercial traffic in this area includes vessels destined for both the United States and Russia, including a significant amount of traffic that runs along both the US/Russian maritime border and along the Russian Coast. Routing more traffic to the East of St. Lawrence Island will add significant distance to some transits and we do not have a good sense yet if this type of ship routing scheme would be supported by the Russian Federation or at the IMO.
2. *Open Water Transits in the Beaufort/Chukchi 35 Miles Offshore to Avoid Open-Leads:* The Coast Guard is familiar with the subsistence uses in these areas, as well as other initiatives such as the Conflict Avoidance Agreement, that are in place to mitigate impacts. Amplifying information regarding the specific types of vessels that this type of measure would apply to would be very useful. There are instances in some locations where Areas to be Avoided are established to provide a "buffer zone" this wide, or even wider for certain types of vessels, such as tank vessels carrying petroleum products. We request clarification if your recommendation is intended to include all destination traffic, such as research vessels, or tugs/barges delivering supplies to coastal villages. Please keep in mind that most IMO approved ship routing measures are not mandatory, and if overly cumbersome routing measures are adopted, there is the possibility that vessels will elect not to participate.

The Coast Guard does believe that there is a need for an enhanced level of governance regarding the issues associated with growing levels of marine traffic throughout Arctic waters. In many other areas of the country, Harbor Safety Committees have been established that bring together stakeholders from industry, the Coast Guard, Ports, other government agency representatives, and stakeholders that represent local interests. This might be a future alternative that the AMMC would like to consider and help establish. The Coast Guard would be very willing to participate in a project of this nature if initiated by the AMMC or other stakeholders.

3. *Avoiding Marine Mammal Feeding Areas:* The measures you list, where vessels reduce speed and/or divert away from marine mammals are part of the commonly accepted practices for managing vessel interactions with these species. "Takes" of marine mammals by vessels operating in U.S. territorial waters under both the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) are liberally defined and include vessel operations which disrupt feeding behavior patterns, so laws and regulations are already in place to deal with vessels that fail to take appropriate actions upon encountering aggregations of or feeding marine mammals.
4. *10 Knot Seasonal Speed Restrictions in the Anadyr and Bering Straits:* The Coast Guard understands the rationale for additional protections during times when whale migrations occur. We are also well aware that ship strikes are of particular concern for the Bowhead Whale, based on many conversations in which your members have imparted traditional knowledge on the topic. Based on our conversations with our headquarters staff who routinely work with the IMO, we believe that an attempt to impose a vessel speed limit through an international instrument will not likely be successful, as the IMO does not rec-

ognize speed restrictions as an accepted ship routing measure. In locations elsewhere in the country where speed restrictions have been imposed, those regulations were promulgated by NOAA's National Marine Fisheries Service, and not the Coast Guard. We will continue to work with NOAA as our PARS process continues and forward your comments to the appropriate office here in Juneau. Please also keep in mind that before any recommendations resulting from PARS are forwarded to IMO, the recommendations will also undergo a review under the National Environmental Policy Act which will include consultations with NOAA and USFWS under both the MMPA and Section 7 of the ESA.

5. *Bering, Chukchi, and Beaufort Sea Discharge Zones*: We have submitted your letter to Coast Guard Headquarters for addition to the docket for the Polar Code initiative. .
6. *Vessel-Subsistence Hunter Communications*: Regulations such as the Bridge to Bridge Radiotelephone Act and communications equipment carriage requirements promulgated under the Safety of Life at Sea Convention (SOLAS) already ensure that nearly all commercial vessels maintain and use VHF marine band radios in order to facilitate safe vessel operations worldwide. While the Coast Guard is not currently contemplating an IMO sanctioned vessel reporting system as part of the PARS recommendation, we do believe that a voluntary set of practices, such as ships making "Securite" calls to announce their presence at defined points along their route would go a long way toward ensuring that anyone engaged in subsistence activity could remain aware of commercial vessels in the area through use of a VHF radio. Any additional input on specific locations where vessel Securite calls would be most beneficial would be appreciated.
7. *Automatic Identification System (AIS)*: The Coast Guard generally supports deployment of AIS systems as they enhance navigation safety and provide the agency with enhanced awareness of what is occurring in our maritime domain. These systems cost money, however, and at some point, a balance point is reached where the cost/benefit of deploying these systems on smaller vessels may not be warranted. At present, the Coast Guard intends to require AIS on all commercial vessels greater than 65 feet in length. This is not to say that smaller vessels would be prohibited from installing AIS. On the contrary, we would encourage voluntary use of AIS on all vessels operating in the region. The question of who has access to the AIS information can also be contentious. Your comments will also be included in the docket for the Polar Code.
8. *Bering Strait Subsistence Impact Fund*: The Bering Strait is an international strait, so there are limits to the jurisdiction that can be exerted over foreign vessels that enjoy the rights of freedom of navigation outside 12 nautical miles, and innocent passage through the Bering Strait within 12 nautical miles of the coast. Thus, development of a management authority with jurisdiction over all vessel traffic in the Bering Strait or mandating Subsistence Impact Fund contributions would be problematic. Additionally, establishing this type of fund is outside the Coast Guard's authority.
9. *Emergency Response Training and Equipment Funding*: Funding for emergency response equipment and training is available to Alaska communities through grants to local government entities from the Alaska Division of Homeland Security and Emergency Management, which manages certain grant funds as available from the U.S. Department of Homeland Security, Federal Emergency Management Agency. We recommend that you work with local community governments regarding this opportunity. More information can be found on the Alaska Division of Homeland Security and Emergency Management Website at: <http://www.ready.alaska.gov>.
10. *Alaska Marine Mammal Observers*: While the Coast Guard does enforce laws pertaining to marine mammal observers, typically on board fishing vessels, new requirements for marine mammal observers are not within the Coast Guards regulatory purview. Your comments will be forwarded to NOAA's National Marine Fisheries Service.

As discussed above, I recognize that increased maritime activity in the Arctic may have an impact on residents of the Arctic region. I appreciate your candid acknowledgement that the Bering Strait PARS and development of the Polar Code will not fully address every concern. You may rest assured that your concerns about impacts to subsistence are heard and understood, and that where possible, the Coast Guard will work within our processes to protect subsistence activities to the extent that these two policy tools allow. In those areas where the Coast Guard's jurisdictional

role or responsibility is not exclusive, we will work our partnerships with other agencies to stress the importance of subsistence activities as decisions are made.

Please feel free to contact me regarding further issues, or my Tribal Liaison, Ms. Sudie Hargis. Additionally, Commander James Houck of my Waterways Management Branch is the Action Officer for the Bering Strait PARS. He is available to discuss this particular initiative in greater detail.

Sincerely,

THOMAS P. OSTEBO,
Rear Admiral,
U.S. Coast Guard.

Copy: Alaska Eskimo Whaling Commission
Alaska Beluga Whale Committee
Eskimo Walrus Commission
Alaska Nanuuq Commission
Ice Seal Committee

Senator BEGICH. Thank you very much. Thank you for your testimony. Thank all of you, all five of you, for your testimony.

Let me start, if I can, Helen—I know, again, time restrictions on the VTC, so let me ask you a couple of quick questions. I'm going to note that you had mentioned on MTS services two things that were important, response services as well as information sharing. That's kind of one of the two priorities that you wanted to do. Keeping that in mind, under the sequestration, for all agencies that are being impacted, how does this or will this impact your ability to move forward in that arena, those specific issues? But also, will it impact other work you're trying to do around the Arctic analysis and information you are gathering?

Ms. BROHL. Thank you, Mr. Chairman. Certainly, the limitation in funds has impacted the way in which you can address financial—for the entire national marine transportation system, as well as the Arctic MTS. In respect to MTS related to Federal agencies, they are addressing the ways in which they can make positive improvements under the limited funding.

It is our hope that the CMTS report and the infrastructure investment work that we are doing under another integrated action team under the CMTS provides foundational information from which agencies or the White House can determine their priorities under the limited funding.

Senator BEGICH. Let me ask you on the infrastructure, because we will have some additional questions here about infrastructure and ports, how—I know in Russia's case they are making some significant investments on the Northern Sea Route, establishing 10 rescue centers throughout the region. When you talk about the report and the work you are doing both with what we just talked about, the MTS, but also the other integrated agencies working together, do you see this as part of the need?

I think Matt said it very clearly. It's not about necessarily one port or one super port. It's about kind of a sequence of resources available. Is that how DOT sees it, or can you give me a sense here? I know the report is still being worked on with other agencies, but give me your sense of how you see the infrastructure for the Arctic, not only from an oil and gas perspective but the shipping and other things that might be going on.

Ms. BROHL. So, the CMTS is, obviously, interdepartmental, and while collectively we can make recommendations on priorities for infrastructure that we had mentioned, ultimately the individual de-

partments must deal with it under their own prioritization and the normal Federal budget process.

One of our goals in developing this report was really to collect all the information from all of the agencies and departments, all of the Federal policies, to have them in one spot in order to take that more holistic look, rather than just agency by agency. Ultimately, though, we hope that the White House work on a national strategy—excuse me—and Arctic strategy will help to reinforce those priorities from which a solid budget or a more holistic budget perhaps can be developed.

Senator BEGICH. I know that—

Ms. BROHL. I was going to say with regard to looking at what other nations are doing, we clearly looked through all the reports, the activities of the Arctic nations. It certainly informed our report by the basic information from which we determine what is the current and future trends for the Arctic. Certainly, we are aware of the infrastructure capabilities of, let's say, Russia with regard to icebreaking capabilities. But our report in particular is not an implementation plan. So we can't say exactly what percentage of dollars would go to the Arctic MTS, let alone the national MTS, as compared to individual priorities of respective agencies.

We can tell you, though, that there is a real groundswell within the Federal Government to address this in a holistic manner. Our report has informed other Federal reports, including the Integrated Arctic Management Report that may have been mentioned by the Department of Interior. It's informing the strategic Arctic strategy being followed by the national security staff at the White House. It is complementary to the National Ocean Policy Implementation Plan.

To get to your original point, there are restricted funds. There are lots of big issues to consider. We hope that our report provides enough basic information so that the powers that be can look at the whole, look at it as a system and prioritize accordingly.

Senator BEGICH. So just to make sure I got this right, I know that Under Secretary Hayes is working on a broader Arctic policy for the White House and developing that through the Secretary's office and the Interior Department. Yours will feed into that to some degree, along with others, to develop this longer-range policy that will include infrastructure as a piece of it. Is that a fair statement?

Ms. BROHL. Yes, sir.

Senator BEGICH. Very good. Thank you very much.

Let me move, if I can. Eleanor, thank you very much again for your recommendations in your written testimony. Give me a sense from your perspective as an NGO kind of looking and watching what is going on in the Arctic, do you think the relationship between the oil and gas industry and local communities has been adequate? And I will use Shell first, and that's the one that has kind of been on the ground the longest, I guess I would say. Others have been on the ground, but in Arctic development and engaging local communities. You think that's been adequate? Do you think there should be some standards that we need to implement in order to ensure that other companies do the same thing, or is that naturally happening because the pressures from local community

groups really are putting the pressure on them? Tell me your sense of that.

Ms. HUFFINES. Well, I can provide my sense, but I should say I obviously cannot speak for the communities of the hunters.

Senator BEGICH. Don't worry, I'm going to ask Jack the same question.

[Laughter.]

Ms. HUFFINES. Right. I'll share my perspective—

Senator BEGICH. If you answer wrong, Jack, I'll correct you.

[Laughter.]

Ms. HUFFINES. Jack, I hope you will correct me.

I will share what I have learned from people and what they have shared with me. I think there are some positive steps. One of the challenges is that—one of the success stories has been the conflict avoidance agreement, but that is very specific to bowhead whales in the Beaufort. So I think that is a model that has been successful, and the whalers will tell you that there have been some positive changes from that.

The difficulty is, as Jack mentioned, there are a great deal of very other important species for marine mammals, and for marine mammal subsistence hunters, and that doesn't get at the challenges of the migration through the Bering Strait and noise and cumulative effects. So I think there are models that have worked in isolated instances in isolated species, but looking more broadly at the cumulative effects of the traffic and more than one company in more than one sea, if you look at the Chukchi and the Beaufort and going through the Bering Strait, we have not yet been successful.

I also say that every community is different, and so every community has different perspectives. Some people will say there has been success, and some people will say there hasn't been. So I would reference that additional species, cumulative effects, additional consultation is still needed.

Senator BEGICH. Do you think what has been going on with the bowhead whale in the sense of the work with the whaling captains is a base model that can be used especially as we deal with shipping issues? Is that a model that might be utilized with shippers? And again, as an example of something that at least in the broader sense is working. There may be some fine-tuning to be done.

Ms. HUFFINES. Again, I would defer to Jack and the marine mammal co-management organizations. But I think as a model, it has at least produced some good mitigation measures. It hasn't addressed the broader issue of where in the ocean are subsistence areas, areas to be avoided in the broader context. That model addresses mitigation. It doesn't address the broader context of some places for resting and feeding critical habitat where there is no activity. So I think you need to do both mitigation and protection of some areas.

Senator BEGICH. And I think I know the answer to this, so I'm just going to say it, and I think I know your answer, and that is thank you for mentioning S. 272. But I think on all research, a continual known funding stream is what is critical, because without it—this is kind of a statement. I think your acknowledgement will be yes, but without it you have these ups and downs in research. So you might set a pattern, have some money for it, and then 2

years later, through whatever act of Congress, we delete it, and now that research gets interrupted, which is really, when you are trying to do this long-term research on habitat, it's a longer-term view, not a 1-year plan or a 2-year plan. It's multi-year. So is that how you see it? I just want to make sure I'm on the same path.

Ms. HUFFINES. No, I totally agree. I think one of the challenges, as the scientists will tell you, and they talked about this in the National Academy research project last week, is that in the Arctic in particular, there are varying seasons in varying years. So you really need a long-term monitoring, cumulative effects approach to really be successful in managing the resource.

Senator BEGICH. That's one of your four points, correct?

Ms. HUFFINES. Yes.

Senator BEGICH. Yes. OK, good. Let me, if I can, I will move to Jack, and after I'm done I'll go to Matt.

Jack, I want to follow up on that. Give me your perspective. I think your comments—and you had some good recommendations, and I think that's what triggered my thinking on this. My sense from your comments is that there is some activity going on with the whaling captains, but when you talk about the shipping corridor, there's not as much going on there with the shippers, and that's a glaring gap. Is that a fair statement?

Mr. OMELAK. Yes. Thank you, Senator. That's true. One of the things I wrote down here, it's relatively easy to sit up here and talk about things that are going wrong. It's much more difficult to provide solutions, but I'll give it a shot.

[Laughter.]

Senator BEGICH. Please come to Washington for a little while.

[Laughter.]

Mr. OMELAK. Anyway, so we agree. There are other agencies who have taken the lead on this, and I think the reason why we decided to form this marine mammal coalition and model it sort of after the relationship that the AWC has is, as co-management agencies, we are sort of bound to this limited perspective of Federal and international resource management.

So take, for instance, the Alaska Commission says we are concerned about increased shipping, development and its impacts on other things, and the Department of the Interior says that's something for the Department of Commerce. We take our issues to the Department of Commerce, and they say that's something for the Department of Interior.

Senator BEGICH. I feel your pain.

[Laughter.]

Mr. OMELAK. So we think this is an opportunity for the marine mammal coalition to address these broader impacts. The reason why this is so difficult is there are so many elements of society wrapped up into this international shipping. We haven't just got elements of culture, but economics as well, international relationships.

So in this marine mammal coalition, we understand how key it is in these changing times that Federal and international agencies need to speak with groups that sort of are unified, because we can't reach everybody. So the messages—we're trying to break out of our rigid resource management strategies and address these broader

issues. So we are going to follow the lead with the AWC. I hope I've answered your question.

Senator BEGICH. You just made me think of something. I know, Helen, I told you I wouldn't ask you another question, but I'm wondering is your group connected with the U.S. committee on the marine transportation system that Helen is part of? Helen, do tap into this group at all, this new organization that has kind of been formed?

Ms. BROHL. No, sir. We do not currently. We probably would tap through our member agencies such as NOAA or Department of Interior agencies. But I've made a note of it, including some of the other recommendations today. We are doing some strategic planning overall for the marine transportation system, and this is certainly information that I'll take back to those members.

Senator BEGICH. That's good. I was trying to make a connection here, because it seems that you have done something, Jack, that is very unique in a way to bring all these different organizations together. I know from our office, we deal with them individually. They come in, and one group has one view, and one has another view, and having them in a coordinated effort, especially around the shipping issue, I think is going to be very beneficial for us as we move forward on marine transportation through the Bering Sea, as well as connected to the Arctic in the broader sense, the Beaufort and Chukchi. So I am very impressed with the group.

I didn't mean to interrupt you, but you were about to say something additional.

Mr. OMELAK. I think there are two key points that I should mention. One, the Arctic marine mammal coalition was just formally established after ratification through our own agencies in December.

Senator BEGICH. OK, so very new.

Mr. OMELAK. We did produce this document of September.

And then second, we have begun the process—I think we've been working with the Coast Guard here.

Senator BEGICH. Excellent. You can count on our ability and whatever we can do to help. I'm glad you've done this from the longer viewpoint.

Because of time, Matt, let me ask you, I appreciate your comment regarding the idea of let's not make—I can't remember the exact words, but kind of a legislative fix versus pour it all into one port and hope it all works out. I think what I heard and gathered from your testimony is Port Clarence is one piece of the equation, but not the answer only by itself. But there is a sequence of ports that will ensure our ability to better manage the Bering Sea, and also, to be frank with you, to attract business to our shores rather than to the shores of Russia and elsewhere. Is that a fair statement?

Mr. GANLEY. Fair statement. I think there are a lot of environmental drivers there, too. The Strait itself, the ice-free period is a bit longer, so it makes sense for something to be there. And then, of course, with the drilling in the Chukchi and Beaufort, we have to have facilities and infrastructure there for response and safety.

Senator BEGICH. And if you can give me just a quick update, how is your—I know we attempted toward the end of the last session,

trying to move forward on a land swap and arrangement with the Coast Guard and others. Can you give me a sense? Is that moving forward?

Mr. GANLEY. Yes. What we're doing now is we are in a discussion phase with the Coast Guard. We have opened up formal discussions. The concern, of course, is budget, with everybody. But the concern also is what is the mission of the Coast Guard in the future, and I think the Admiral touched on that today. He does see this increasing presence with oil exploration or without it, because of the shipping. So they need to be—I really don't want to speak for the Coast Guard, but I think the need there is to assure some footprint there. So we are discussing—

Senator BEGICH. How to accomplish both.

Mr. GANLEY.—how to accomplish both. And from our standpoint at Bering Straits, safety is a huge issue. Response is a huge issue. There really isn't anything there now, and unless that land is brought in, into play in some way, and the only really expedient way to do that is conveyance of Bering Straits at this point in time, because we don't know what the budget is going to bring for other developments there.

Senator BEGICH. Let me ask you, and you might have caught my comments to the legislature regarding port development, and we introduced a piece of legislation to put together an Arctic port development strategy with loan guarantees up to \$3 billion worth, because we think the need is multifaceted in the Arctic and we can't just throw nickels and dimes at it and hope it all works out at the end of the day. We have to be robust about it.

I challenged the state legislature, which, of course, I'm sure they were excited to hear from me on this, that they need to put some money on the table, and I suggested upwards of \$2 billion, because when you do these port developments, it's a combination of private sector money, equity, some free capital, grants, and reasonable-cost loans. Is that a fair statement of how we could manage this?

I don't know how we build this network without some larger state participation. I know some legislators thought they were doing a lot with the last bond they did, and I supported the bond, but it seemed to be small in the big picture of what we need to do here, not just for the Bering Sea but all the other port activity throughout Alaska that is developing. These are not small projects.

Mr. GANLEY. No, these are not small projects. But I think the point needs to be made too here with Bering Straits' involvement, is that in discussions we thought, OK, as part of the ANCSA selection, this is going to be an important site. I think the elders, many of them that are gone now, knew this in the 1970s.

Senator BEGICH. The elders had a lot of wisdom that we should have paid attention to.

Mr. GANLEY. I think if the property had been released longer ago by the Coast Guard, if it was in Bering Straits' hands at this point in time, there would be something occurring there now.

Senator BEGICH. Some development would be happening.

Mr. GANLEY. There is enough interest on the part of industry to have the safeguards in place and have staging areas, and have lay-down yards. I think public funding, private-public partnerships, equity, these are all really—I mean, they are important long-range,

but I think there is enough momentum here with what's going on in the Arctic. As I said about a year ago, industry moves quite a bit faster than government.

Senator BEGICH. Even this building, one of the buildings in the UA campus—

Mr. GANLEY. Yes, and we are pursuing this. We think it is in the interest of the region and the Nation. And the shipping, I think we are in the same position as the Coast Guard. Regardless of oil development, the shipping is going to increase. We need to get things in place there that are going to be some economic advantages for the region. The region needs industry of some type, but also provide a safety net for what is occurring there as far as commerce goes.

Senator BEGICH. Very good. Before I ask Ed, I have one quick question for you.

Helen, your clock is about to expire, because I saw a one-minute thing come up in front of us, and I want to just thank you in advance for being here. Thank you for participating. We will have probably some additional questions for you for the record.

There we go. She was disconnected. I tried my best to be quick, but I have Senate-itis, which means everything is longer.

[Laughter.]

Senator BEGICH. But I thank her.

Ed, last question for you. So you think with the Bering Straits, there needs to be now a Bering Straits vessel traffic control center?

Mr. PAGE. I don't think—

Senator BEGICH. That was a pretty broad, sweeping question, but do you think you have the capacity where you are and some tweaks need to be added to it?

Mr. PAGE. The traditional vessel traffic center or vessel traffic monitoring centers or whatever around the country—Houston, Los Angeles, San Francisco, what have you—it's much more engaged, talking to mariners back and forth, have radar coverage. And for much more active ports, L.A. Long Beach, have 100,000 transits a year, versus maybe 1,000 here.

But the fortunate thing is that technology moved so quickly over the last several years that some of the things I talked about as far as keeping aircraft from hitting ships in Kodiak, or sending automatic e-mails to the Park Service when a cruise ship exceeds the speed limit for a whale-protected area, which never happens now because it's like having a ticket issued the moment you do it at a traffic light or something like that.

This technology of having alerts and alarms go off, and then through AIS can send a message back immediately through the program and say you are outside of the traffic lane, request advise, something along that nature, would have a dramatic positive impact on ensuring maritime traffic comports with whatever standards of care or traffic schemes or ATBAs and other risk reduction measures and environmental protection measures, all those. We have a higher level of compliance through technology than you ever could beforehand.

Senator BEGICH. Let me say for all of you on this panel, I have to say that each one of you gave recommendations which, I've done a lot of different hearings, and sometimes you get the testimony,

but it never leads, and then they say good luck. So I want to thank you all because you did give some very specific recommendations on technology, how to change some of the ways we operate; Helen, some of your ideas, and Eleanor, some of yours. Helen being online I think was important, because hearing this aspect of what we're talking about on a local level is important for us to deliver back to D.C. So I thank you all for your recommendations.

Jack, let me say that, again, I want to echo, thank you for putting your organization together. It is helpful on many levels, from a policymaker, I can tell you from NGO's, from agencies to private sector, to know that there is a place and a point that you can go to that attempts to represent—I don't want to say always because I know how that goes. It's like telling the fishing community everyone speaks with one voice. That doesn't happen. As the Chair of this subcommittee, knowing that, of fisheries.

But I want to thank you for doing that, and we look forward to your progression in that, and anything we can do to assist, we will be happy to do that.

Thank you all very much. I appreciate the time, and we are adjourned. The record will be open for two more weeks for additional questions and comments.

[Whereupon, at 12:03 p.m., the hearing was adjourned.]

A P P E N D I X

PREPARED STATEMENT OF CHRISTOPHER M. REDDY, PH.D.,
WOODS HOLE OCEANOGRAPHIC INSTITUTION

Chairman Begich and Members of the Subcommittee:

I am submitting this statement for the record to provide the Subcommittee with additional information regarding challenges associated with petroleum spills in Arctic waters. This statement reflects my personal professional views and does not represent those of the Woods Hole Oceanographic Institution.

I am a Senior Scientist in the Department of Marine Chemistry and Geochemistry at the Woods Hole Oceanographic Institution in Woods Hole, Massachusetts. I principally investigate marine pollution and have published more than 125 peer-reviewed scientific journal articles and several book chapters on the chemistry of oil, how it interacts with the natural environment, and related subjects. I have studied or am studying the aftermaths of oil spills that occurred in 1969, 1974, 1996, 2003, and two in 2007, as well as natural oil seeps off the coast of Santa Barbara, California, and for most of the last three years, the *Deepwater Horizon* oil spill. I am also investigating samples of sediments contaminated from the *Exxon Valdez* spill and leaking oil from a Japanese warship that sank in 1945.

Overlooked Factors

Drilling for oil in the Arctic poses many challenges and a high probability for oil spills. We need to frame oil spills much like buying a house: It's "location, location, location." The Arctic is a pristine, fertile, remote region that, if oiled, will be difficult and expensive to rescue and remediate. The volume released in a spill is only one factor in determining potential impacts. One must also include coastal geology, the organisms living within and outside the water column, water temperatures, and type of products spilled.

Let me shine a spotlight on the latter two factors, which are often overlooked. First, let's consider temperature. After spills, a significant amount of the product evaporates. This is generally considered a good thing because it mitigates negative impacts. However, in colder temperatures, as in the Arctic, hydrocarbons floating on oil films will evaporate more slowly, allowing them to persist longer in the environment. In addition, each individual hydrocarbon has unique properties that drive how and whether it will evaporate or dissolve. I have calculated that colder air and water temperatures create the conditions for more oil to stay in the water, where it can damage and kill wildlife, rather than evaporate.

Second, let's consider different types of products. Many people focus only on crude oil spills, such as the *Exxon Valdez*, during the recovery and transport of the product. But in the initial stages of exploration, I am more concerned about spills with diesel fuel, which drilling rigs, supply vessels, crew boats, cargo boats use for propulsion and machinery. Of course with reduced ice coverage, there will be an increase in commercial and cruise ship traffic.

The volumes are not trivial; drilling rigs can carry as many as one million gallons. Smaller vessels carry closer to 50,000 to 500,000 gallons. As the industry gets under way in the Arctic, high ship traffic poses high risk of diesel fuel spills and that risk will continue during operations. Only a few months ago, the Shell Alaska oil rig, the Kulluk, offered an example. On its way to Sitkalidak Island, it lost power and was dangerously close to running aground while carrying 150 thousand gallons of fuel and oil. Similarly, commercial and cruise ships can carry 500 thousand and 2 million gallons of fuel.

Compared with the 13 million and 160 million gallons of crude oil released by the *Exxon Valdez* or *Deepwater Horizon*, respectively, some would discount spills of 50,000 to one million gallons of diesel fuel as trivial. This is a misinformed view. Here is why.

My laboratory has studied three diesel fuel spills. The first occurred in 1969 when the barge *Florida* ran aground in Buzzards Bay, Massachusetts, causing a massive

kill of fish, worms, crustaceans, and mollusks within a few days. Marsh grasses died in weeks. Because the spill happened in September, local residents referred to this disaster as “Silent Autumn.” In addition to these short-term effects, it took five to seven years for marsh grasses to begin to regrow after this spill. Forty years later, the effects of this spill persist, as crabs, grasses, and mussels are significantly impaired by residual diesel at the site of the spill, relative to non-oiled marshes in the bay.

Another diesel fuel spill in 1974 several miles from the above spill resulted in massive erosion of the coastline due to the loss of marsh grasses and oil still detectable today. It is noteworthy that conventional wisdom, at the time of both of these spills, argued that the oil would be gone in days.

The third diesel fuel spill is more recent: the barge *North Cape*, which ran aground off the coast of Rhode Island in 1996, in a confined coastal area with features similar to the Alaskan coastline. This spill caused the deaths of 10 million lobsters, 2,000 birds, and 20 million surf clams and the closure of 200 square miles of shellfishing beds for as long as five months.

Crude oils spills are visually obvious but the very nature of this product allows it to be tracked and cleaned up more easily than diesel fuel. Crude oil can be boomed and skimmed, and crude oil-covered objects along shorelines can be removed. Diesel fuel, in contrast, is less viscous and harder to contain and recover. Once in the water, diesel fuel hydrocarbons are taken up by plants and animals and insinuated into ecosystems. Toxicity is always difficult to define, but in short, pound-for-pound, diesel fuel is significantly more lethal than crude oil with the potential to leave behind longer-lasting damage.

Prior to *Deepwater Horizon*, oil spill research had taken a back seat to other priorities such as homeland security and climate change science. To some degree, it also has been a victim of its own success. Lessons learned and knowledge gained from the devastating *Exxon Valdez* spill—along with passage of the Oil Pollution Act of 1990 (OPA 90), which provides a wide framework for diminishing the chances of spills and assessing damages and restoring the environment after a spill—have led to a significantly decreased numbers of spills. For example, before *Deepwater Horizon*, the annual number of oil spills greater than 5,000 gallons documented by the U.S. Coast Guard between 1991 to 2004 decreased from 55 to 14, with none more than 1 million gallons.

However, those lessons and that research did not prepare us for new and different potential problems of drilling in new and different areas, such as deep water. Research on the *Deepwater Horizon*, already done and to be done with BP settlement funds, will provide new knowledge and new mitigation strategies. But not all of that knowledge is transferrable to the Arctic. If we are to press ahead with drilling in the Arctic, as we did in deep water in the Gulf of Mexico, we should do our research before, not after, the fact. I recommend a greater sustained effort on Arctic research—starting with something as straightforward and basic as how spilled diesel fuel behaves in cold waters; where information is limited and based on spills in lower latitudes and warmer climes.

Basic understanding of the chemical and physical behavior of spilled oils, from diesel fuel to crude and in warm and cold conditions, is critical to developing measures to combat spills. Laboratory experiments have their place, but it is more accurate to reproduce real-world conditions. Hence, I recommend that controlled spills be performed as the best means to understand how oil behaves in the Arctic. This has been a significant hurdle due to several policies, but if handled properly like several European countries, offers critical information for making the most well informed decisions and assessing damages post spill.

I appreciate the opportunity to share my views with the Subcommittee and am available to discuss my recommendation or provide additional input upon request.

ALASKA ESKIMO WHALING COMMISSION
ESKIMO WALRUS COMMISSION
ALASKA BELUGA WHALE COMMITTEE
ALASKA NANUUQ COMMISSION
ICE SEAL COMMITTEE

September 20, 2012

DOCKET NUMBERS USCG-2012-0720 AND USCG-2010-0833

Dear Sir or Madam:

The undersigned federally-recognized and tribally authorized organizations: the Alaska Eskimo Whaling Commission, Alaska Beluga Whale Committee, Eskimo Walrus Commission, Ice Seal Committee, and Alaska Nanuuq (Polar Bear) Commission want to address the expected impacts of increased shipping traffic in the Arctic on our way of life and subsistence activities. Each of our organizations carries out co-management responsibilities under the Marine Mammal Protection Act for our subject species pursuant to management agreements with Federal regulatory agencies.

Our groups have come together to form a coalition (the Arctic Marine Mammal Coalition) to address shipping impacts with one voice. We have concluded that, unless effectively managed, increasing ship traffic in the northern Bering Sea, Bering Strait, Chukchi Sea, and Beaufort Sea (collectively "Arctic waters") has the very real potential to have significant adverse effects on marine mammals and subsistence activities which are vital to the health, safety, food security, and vitality of our communities.

The Arctic waters are important foraging and breeding habitat for the marine mammals that have sustained the Yup'ik, St. Lawrence Island Yupik, and Inupiat cultures of the region for at least 2,000 years. While some of the species are hunted year-round, spring and summer hunting of northward migrating marine mammals has always been a particularly critical component of the food security, and continued survival, for the communities of the Bering Strait region and the Chukchi and Beaufort Seas. Bowhead whales, beluga whales, walruses, ice seals, and polar bears are all hunted during the spring and early summer. Late summer and fall hunting of migrating bowhead whales has also long been essential to the Beaufort Sea villages. Sea ice changes in recent decades have altered many of these subsistence practices, leading to the emergence of fall and winter bowhead whale hunting along the Chukchi Sea coast and at St. Lawrence Island in the Bering Sea. However, the importance of the subsistence practices themselves remains undeniable. Currently, during much of each year, hunting vessels and marine mammals ply waters being increasingly used by large ocean-going vessels. Based on our long-standing and irreplaceable dependence on whales, walruses, seals, and polar bears, our primary concern is that increasing shipping traffic will reduce the availability of these animals, which continue to nurture the long-term health of our communities. Through the mitigation measures we suggest in this letter, we urge you to help us ensure that we do not bear the burden of risk from these new economic activities.

In addition, we are concerned about the threat to human life posed by large vessels steaming through our traditional hunting areas, where we hunt in small, open boats that are not easily visible and lack radar or other safety devices. The frequency and close proximity of large vessels to small hunting boats increases the probability of a collision. Such a collision would almost certainly result in serious injuries or loss of life for the hunters. These unforgiving conditions in which we already operate out of necessity to find food demand that the U.S. Government support mandatory measures to ensure that the increase in vessel traffic in Arctic waters does not adversely affect our subsistence activities. As the Coast Guard is aware, these subsistence activities, and the marine mammals on which they depend, are protected under Federal law. 16 U.S.C. 1361 *et seq.*

Our organizations support the ongoing efforts that the U.S. Government is participating in at the International Maritime Organization (IMO) to adopt a mandatory Polar Code, as well as the preliminary steps regarding vessel navigation being taken by the Coast Guard in beginning the Bering Strait Port Access Routing Study (BSPARS). We also support the Coast Guard's continuing dialog with the Russian Federation on these matters, and hope that the United States will continue to press the Russian Federation to adopt reciprocal measures to protect shared marine mammals and subsistence hunting throughout the region. In addition, our communities appreciate the U.S. leadership role in the IMO's adoption of a circular providing guidance on avoiding ship strikes on cetaceans (MEPC.1-Circ 674). We would like

to see each of these efforts expanded to include mandatory measures to protect subsistence activities and resources in Arctic waters.

In moving forward, we are fortunate to be able to draw on at least two prior experiences. In the North Atlantic, coordinated efforts among a wide array of stakeholders, government agencies, and the IMO greatly reduced the impacts on marine mammals from shipping. These efforts should be used to inform actions in the Bering Strait where there is the critical additional need of protecting the safety of subsistence hunters and their food security. The Alaska Eskimo Whaling Commission's (AEWC) twenty-seven years of experience working with the offshore oil and gas industry to successfully mitigate industrial threats to subsistence hunting for bowhead whales is similarly valuable. This experience culminated in the Conflict Avoidance Agreement (CAA), an important multi-use management process that has led to the industry-funded annual practice of negotiating an agreement between oil and gas operators and the AEWC that allows subsistence whalers and offshore oil and gas developers to share Arctic waters. Successful traffic management provisions of the CAA have been adapted for use here and are set forth below.

At the upcoming meeting of the IMO's Marine Environmental Protection Committee (MEPC), it is our understanding that environmental issues like voyage planning, underwater noise, marine mammal impacts, vessel discharges (both air and water), invasive species, and pollution response will all be considered. We are all agreed that environmental issues should be part of the mandatory Polar Code, and would like to see the U.S. Government advocate that MEPC support inclusion of mandatory provisions to address these environmental issues. In doing so it is important to note that changes in the environment affect subsistence resource distribution and thus our hunting practices, and also that changes in industry operations (for example an increase in traffic compared to prior years) can result in new or different measures being needed to protect subsistence hunters, so the U.S. Government should seek to include in the Polar Code, and any mandatory navigation measures, mechanisms to ensure regular consultation (ideally annual) between the U.S. Coast Guard and subsistence hunters to allow for adjustments to the measures when needed.

We request that the U.S. Government support an ongoing dialogue to continually identify emerging issues related to shipping in an already rapidly changing environment, and the following specific recommendations regarding mitigation measures that should be made mandatory immediately:

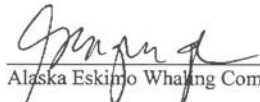
- (1) due to the presence of large number of marine mammals of several species and subsistence hunting crews during spring and fall migration, we recommend that international vessels should transit to the east of St. Lawrence Island and at least 10 miles offshore during the migration;
- (2) during periods of open water, vessels should transit at least thirty five miles offshore in the Chukchi Sea and Beaufort Sea to avoid the open-lead system and near-shore hunting;
- (3) when operating in the presence of feeding whales, walrus, seals and polar bears; and aggregations of these same species, vessels should reduce speed to less than 10 knots and/or divert away from the animals.
- (4) all vessels transiting the Anadyr Strait and Bering Strait should do so at no more than 10 knots from 1 April to 10 July and 1 October to 1 December each year;
- (5) The Bering, Chukchi, and Beaufort Seas should be zero discharge zones;
- (6) the Coast Guard should establish a communications scheme to ensure that vessels transiting the area have a means of communicating with subsistence hunters;
- (7) all vessels greater than 30 feet should be required to carry and report using an Automated Information System (AIS);
- (8) all vessels transiting the Bering Strait should be required to contribute to a fund, managed by this coalition, to support ongoing efforts to assess and mitigate adverse impacts from vessel transits upon subsistence;
- (9) funding for emergency response training and equipment should be provided to coastal communities to supplement search and rescue or accident response capability in the Arctic; and
- (10) Alaska marine mammal observers should be on all transiting vessels greater than 30 feet in the region between Kaktovik and St. Lawrence Island.

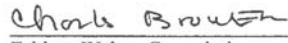
We recognize that the IMO's and Coast Guard's guidance for the Polar Code and BSPARS, respectively, are primarily focused on vessel and personnel safety. Neither policy tool fully encompasses the environmental or cultural needs that are necessary

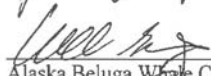
to ensure continued health of our villages. Consequently, we urge the U.S. Government to conduct and respond to a gap analysis, in consultation with our coalition, of key issues raised during these discussions that fall outside of the Polar Code or BSPARS, but could be addressed under alternate policy tools, such as through a Particularly Sensitive Sea Area designation.

We appreciate your patience while we worked to develop the necessary structure and organization in which to address these new challenges in our ancestral home. As noted above, each of our respective organizations has a cooperative agreement with Federal agencies regarding management of specific subsistence resources; these cooperative agreements include a consultation mechanism. Given the critical importance to our communities of the issues created by increased arctic shipping, we would like to engage, through this coalition, in an ongoing consultative process with the Coast Guard on these matters.

Respectfully,


Alaska Eskimo Whaling Commission


Eskimo Walrus Commission


Alaska Beluga Whale Committee


Alaska Nanuuq Commission


Ice Seal Committee