WRITTEN TESTIMONY OF
ANDREW HARTSIG, OCEAN CONSERVANCY
ARCTIC PROGRAM DIRECTOR

HEARING ON:
PREPARING FOR MARITIME TRANSPORTATION IN A CHANGING ARCTIC

SENATE COMMERCE COMMITTEE, SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD

December 6, 2018

I. Introduction

Good morning Chairman Sullivan, Ranking Member Baldwin, and Members of the Subcommittee. My name is Andrew Hartsig and I am the Arctic Program Director at Ocean Conservancy. Thank you for the opportunity to testify today about emerging marine transportation issues in the changing Arctic region and opportunities to promote safe shipping practices that accommodate increasing vessel traffic and safeguard Arctic communities and the marine environment.

Ocean Conservancy is a nonprofit marine conservation organization that works across sectors to address systemic challenges and find lasting solutions. Our Arctic program—which includes Alaska-based staff located in Anchorage, Eagle River and Juneau—focuses on preserving the resilience of Arctic and sub-Arctic marine ecosystems. We engage at local, state, national and international levels to address conservation challenges related to commercial fishing, offshore oil and gas operations, marine debris, climate change and vessel traffic, among others.

As an Alaska resident who has worked on marine issues in the Arctic for the past ten years, I have seen how rapidly the region is changing. The Arctic is experiencing some of the fastest warming on the planet—twice as fast as the rest of the world. Warming temperatures are melting permafrost and glaciers, disrupting marine ecosystems, and reducing the extent, thickness, and duration of seasonal sea ice cover. These changes, in turn, are having profound impacts on maritime transportation in the Arctic. Vessel traffic in the Arctic has already grown significantly, and is poised to increase rapidly in coming years as the ice-free season lengthens. As vessel traffic increases, so too does the potential for significant impacts to residents of the region and to the marine ecosystem.

Fortunately, we have a window of opportunity to put in place Arctic-appropriate measures and best practices that will increase safety and protect communities and the marine environment. First and foremost, we can take common-sense steps to prevent maritime accidents from happening in the first place. These steps include implementing targeted vessel routing measures, moving toward a more effective approach to Alternative Planning Criteria, tightening limitations on discharges into the water, supporting advancements in vessel tracking and communication, and improving nautical charts. Second, we can improve our ability to respond effectively if an accident does occur by increasing spill response equipment and training in local communities,

continuing to fund design and construction of new ice-breaking polar security cutters and supporting seasonal Arctic Shield operations and additional Coast Guard outreach activities in Arctic communities.

II. A Changing Arctic and Risks from Vessel Traffic

U.S. Arctic waters include an enormous area that stretches from the Aleutian Islands to the Beaufort Sea. These waters are remarkably productive and have great biological and cultural significance. The U.S. Arctic coast is home to the Aleut, Unangan, Yup'ik, Cup'ik, St. Lawrence Island Yup'ik, and Inupiaq peoples whose way of life, cultures and economies are inextricably linked to the marine ecosystem. Ocean Conservancy does not speak for these indigenous people, who have relied on these productive waters for hundreds of thousands of years, but we strongly believe that any discussion of the Arctic Ocean must prioritize their views.

The Arctic marine environment itself is diverse. The ocean around the Aleutian Islands remains ice-free all year long, but from St. Lawrence Island north, sea ice normally covers the ocean's surface for months at a time. These icy waters turn into a rich feeding ground each spring, when they host one of the largest marine mammal migrations on the planet. As sea ice melts, thousands of whales, hundreds of thousands of walrus and ice seals and millions of birds pass through the Bering Strait to feed, breed and give birth. To the south, waters of the southern Bering Sea and Aleutian Islands support the nation's richest and most productive commercial fisheries, as well as globally significant seabird colonies. The Pribilof Islands are breeding grounds for more than 50% of the world's population of northern fur seals.

This region is changing rapidly, putting these vibrant ocean ecosystems at risk. Human-caused climate change is reducing sea ice cover, causing villages to erode into the ocean, making subsistence hunting more difficult and dangerous and disrupting food chains. It is also facilitating other industrial activities—like oil and gas exploration and development and commercial fishing—in addition to increasing vessel traffic. While this hearing focuses on marine transportation, it is important to keep in mind this broader view as we consider how to manage vessel traffic in the region.

At present, the bulk of ship traffic through the Arctic region occurs on the Great Circle Route, which connects the west coast of North America to East Asia and passes near or through the Aleutian Islands. Further north, ships, tugs and barges play a vital role delivering fuel and other goods and materials to Arctic communities and industrial endeavors, such as Red Dog mine and North Slope oil and gas projects. The Department of the Interior has also proposed future oil and gas lease sales in U.S. Arctic waters. If those lease sales come to pass, exploration and development would add significant vessel traffic in the region.

In addition, Arctic transit routes between East Asia and Western Europe are emerging—at least for certain sectors of the shipping industry—as viable alternatives to traditional routes that run through the Suez or Panama canals. The Arctic Ocean itself is projected to experience ice-free summers by mid to late century, which could create a new trans-polar route over the top of the globe. All of these Arctic transit routes pass through the Bering Strait. According to a 2016 Coast Guard study, Bering Strait transits increased from 220 in 2008 to 540 in 2015. Marine-based

tourism is also increasing in the Arctic. Cruise companies are investing heavily in purpose-built expedition cruise ships for Arctic voyages, with nearly 30 new vessels expected to launch by 2022.

III. Toward Safer Arctic Shipping

Increased vessel traffic in the Arctic—whether from tourism, transit traffic or destination shipping—puts the region at increased risk. An accident in the remote Arctic could easily turn into a nightmare scenario for search and rescue agencies, especially if it involved a passenger ship. An accident could also cause an oil spill, including a major spill like the 2004 *Selendang Ayu* disaster that released roughly 350,000 gallons of oil and diesel into Aleutian Island waters. Vessel traffic can also result in strikes on marine mammals, introduction of invasive species from ballast water or hull fouling, discharge of greywater and sewage into the water, emission of pollutants into the air, increases in subsea noise and potential conflicts with subsistence users.

With ship traffic in the U.S. Arctic poised to grow rapidly, it is time to implement regionally-appropriate management measures and best practices that are designed to increase safety and reduce the risk of harm to communities and the Arctic environment.

A. Prevention is the first line of defense

Prevention should be the first line of defense in icy Arctic waters—as well as other cold-water regions such as the Great Lakes. The Arctic is subject to seasonal darkness, severe weather and strong ocean currents. It is extremely remote and has minimal infrastructure. When vessels have accidents in these remote waters, search and rescue efforts are a serious challenge. Cleaning up a significant oil spill is extraordinarily difficult and only marginally effective. In many instances, stormy sea conditions and poor weather may preclude response efforts for extended periods of time, further reducing effectiveness. When 3,000 gallons of persistent oil spilled into the waters off Shuyak Island this spring, it took three days to get response vessels on-scene due to poor weather—and that spill was less than 50 miles from the Coast Guard station on Kodiak.

No single silver bullet will prevent all shipping accidents and impacts, but a suite of regionally appropriate mitigation measures and best practices can go a long way. These measures and practices include targeted vessel routing measures, a consistent and effective approach to Alternative Planning Criteria, limitations on discharge, innovations in vessel tracking and communication, and improved charting.

Routing Measures

Vessel routing measures can be used to help prevent accidents in the maritime Arctic. Routing measures include various kinds of shipping lanes, Precautionary Areas (places where mariners should use extra care) and Areas to be Avoided (ATBAs) (places through which specific types of vessels should not travel).

The Coast Guard has already worked with the International Maritime Organization (IMO) to designate important routing measures in the U.S. Arctic. In the Aleutian Islands, there are now a series of ATBAs that establish 50 mile buffer zones around most of the islands. These buffer

zones encourage vessels transiting the Great Circle Route to maintain a safe distance from the coast, which not only helps keep vessels off the rocks, but also provides additional time to respond if a vessel loses propulsion.

In addition, the Coast Guard successfully completed a Port Access Route Study (PARS) in the Bering Sea, Bering Strait and southern Chukchi Sea. The Bering Strait PARS led to formal establishment of voluntary vessel traffic routes in this region. These routes encourage ships to travel along a predictable and consistent path, which helps prevent accidents. The designated routes have been surveyed to modern standards, so vessel masters can be confident they will have plenty of water under their keels. In addition to the establishment of vessel routes, the Bering Strait PARS led to the designation of three ATBAs around islands in the Northern Bering Sea. These ATBAs were developed with input from local communities and are intended, in part, to protect subsistence uses.

With the completion of the Bering Strait PARS, the Coast Guard is considering a similar process in the more northerly waters of the Chukchi and Beaufort seas. Ocean Conservancy strongly supports a Chukchi/Beaufort PARS. It is the logical next step and will help establish safer shipping corridors that stretch from the Aleutians to the Central Arctic Ocean.

When it begins the Chukchi/Beaufort PARS process, the Coast Guard must conduct meaningful outreach to communities, tribes, and other Alaska Native organizations to help ensure that outcomes from the process are supported by and meet the needs of those who live in the region. In addition, the Coast Guard should coordinate with Canadian counterparts to ensure vessel traffic routes align at the U.S./Canadian border. Finally, the Coast Guard should keep in mind the highly seasonal and dynamic nature of the Chukchi and Beaufort seas. Seasonal or dynamic measures could be designed specifically for these unique Arctic waters. Such management measures would move in space and or time to account for changes in sea ice, marine mammal migration and concentrations, and subsistence hunting of marine mammals.

Alternative Planning Criteria

In U.S. Arctic waters, long distances between ports and coastal villages can make it impossible to satisfy certain requirements for vessel response plans mandated by regulations implementing the Clean Water Act and Oil Pollution Act of 1990. As a result, Coast Guard regulations provide for the use of Alternative Planning Criteria (APC).

In situations where standard vessel response plan requirements are not feasible, the Coast Guard's APC regulations allow vessel owners and operators—or independent organizations that represent owners and operators—to apply for permission to use alternative ways of preventing and responding to a worst-case discharge. Ocean Conservancy applauds the Coast Guard's recognition that prevention measures—such as routing measures and 24/7 vessel tracking—can play a vital role in APC programs.

While Ocean Conservancy supports the concept of APCs, the Coast Guard's implementation of the APC program in Alaska could be improved. The Coast Guard's approach has created a situation where different Coast Guard-approved APC organizations vary significantly with respect to the amount—and location—of oil spill response equipment they provide. This system not only fails to maximize oil spill prevention and response resources, it threatens to create a

"race to the bottom" that will ultimately reduce the amount of money available to invest in the build-out of response resources in the region.

Ocean Conservancy appreciates the Senate's attention to this matter in the recently-passed Coast Guard Reauthorization package. Among other things, that legislation requires any APC approved for the Arctic to verify that operators have conducted in-region training and that equipment has been tested and proven capable of operating in the region. We also look forward to the Coast Guard's report on its implementation of APCs, which should provide insights that can help improve prevention and response measures in the Arctic.

Discharge

Absent effective mitigation measures, the growth in Arctic vessel traffic will increase the amount of pollutants that ships discharge into the region's waters. These discharges can include graywater, sewage, marine debris, and the other chemicals, all of which can contain pollutants that have negative effects on marine wildlife, fish, and other resources. The Arctic may be uniquely vulnerable to the impacts of discharge from vessels. For example, the Bering Strait is extremely shallow and pollutants may not disperse as quickly as they do elsewhere. The abundance of wildlife and the critical importance of this wildlife to indigenous peoples of the region also heighten the risks associated with discharge from vessels.

International rules, including the Polar Code, restrict some forms of discharge in some portions of the Arctic. However, significant gaps remain. For example, international law does not regulate the discharge of graywater—a category that includes wastewater from dishwashers, showers, laundry machines, washbasin drains and similar facilities—even though graywater can be just as detrimental to the marine environment as raw sewage. Ocean Conservancy supports more stringent restrictions on discharge of pollutants from ships in Arctic waters to prevent adverse impacts to Arctic peoples and wildlife.

Vessel tracking and communication

Accurate and timely tracking of marine traffic can help ensure problems are spotted and addressed early. Similarly, efficient communication of relevant information can help ship operators and other maritime users avoid hazards and conflicts, including potential conflicts with subsistence users. In recent years, improvements to maritime navigation and communications technologies likely played a key role in preventing shipping accidents. These technologies continue to advance, and there are opportunities to collaborate with vessel operators on data needs and technology requirements as well as coastal communities to harness those advancements to make even more progress.

Both satellite- and VHF-based Automatic Identification System (AIS) technologies are already used to track vessels as they travel through U.S. Arctic waters. AIS technologies are capable of transmitting more data, including information about weather, sea ice, or the presence of marine mammals and or subsistence hunters. Moreover, AIS technologies—in concert with Geographic Information Systems (GIS) and integrated electronic display systems—can ensure that mariners receive this information only when it is relevant. Ocean Conservancy encourages the Coast Guard and other federal agencies to support and facilitate the use of these and similar technologies as important tools to prevent and mitigate the impacts of maritime accidents.

Charting

Accurate, up-to-date nautical charts should be a foundation of maritime domain awareness, but just a tiny percentage of the U.S. Arctic has been charted to modern standards. In their Arctic Vision and Strategy, NOAA has acknowledged that "confidence in the nautical charts of the region is extremely low," and that "[m]ost Arctic waters that are charted were surveyed with obsolete technology, some dating back to the 1800s." This problem is not merely hypothetical. In 2015, a vessel supporting Shell's oil exploration efforts was damaged when it grounded in poorly charted waters near Unalaska. The following year, a Norwegian tanker ran aground on an uncharted shoal near Nunivak Island.

Ocean Conservancy appreciates the federal government's commitment to improve and modernize Arctic charting and acknowledges the significant progress that has already been made. In recent years, NOAA's Office of Coast Survey has released new or updated charts for some targeted Arctic waters, with more on the way. More recently, Congress reauthorized the Hydrographic Services Improvement Act, including $10 million for Arctic hydrographic surveys.

We appreciate these advances and the hard work that has made them possible. We also recognize that the U.S. Arctic is vast and it will take an aggressive effort, secure funding, and efficient prioritization of resources to tackle the work of modernizing Arctic nautical charts.

B. Response

The first priority in preparing for increased vessel traffic should be prevention—stopping maritime disasters before they can happen. However, it is also necessary to continue to improve response capabilities to ensure we are prepared for accidents that might happen.

Building Community Response Capacity

Residents of the Arctic region should receive priority consideration in determining how to best build out response capacity in the U.S. Arctic. In the event of a shipping accident, residents of coastal communities are likely to be first responders and are likely to be most directly affected by the impacts of a spill. To help mitigate these burdens, all Arctic communities should receive spill response equipment that is appropriate to the local environment as well as training in the proper use of that equipment. These steps would bolster response capacity and could also provide jobs for residents of local communities. Additional funding for regionally appropriate response resources in U.S. Arctic communities would help increase preparedness.

Polar Security Cutters

New icebreakers, or polar security cutters, are an important part of any plan to improve response capacity. As Arctic sea ice diminishes and maritime activity in the region grows, the need for additional icebreaking capacity will only become more acute. In addition to Alaska and the rest of the Arctic, icebreaking capacity is also important in sub-Arctic and cold-water regions, such as the Great Lakes, which also experience seasonal ice. The anticipated increase in U.S. icebreaking capacity will fill a critical gap in maritime infrastructure and enable the Coast Guard to better meet national security, search and rescue, law enforcement, environmental protection, and other critical Arctic missions—365 days a year.

Ocean Conservancy appreciates Congress's commitment to expand U.S. icebreaker capacity, both via maintenance of the Polar Star and via acquisition of new polar security cutters. New polar security cutters represent a long-term investment in our Arctic. As the Coast Guard moves toward acquisition of these vessels, it can develop designs that minimize air pollution, water pollution, and underwater noise. Acquisition of new vessels provides an opportunity for the Coast Guard to showcase world-class design and engineering.

Arctic Shield

In the Arctic, the nearest permanent Coast Guard station is in Kodiak, more than 950 air miles from the Beaufort Sea. However, for multiple years, U.S. Coast Guard District 17 has deployed personnel and resources to the Arctic during the open water season to conduct safety and security operations in the region. These "Arctic Shield" activities have included search and rescue, emergency response, trainings, community outreach and law enforcement.

Seasonal deployment of Coast Guard resources and personnel to the Arctic is critical to ensure preparedness. In continuing this effort, the Coast Guard can and should strengthen its outreach to residents of Arctic communities, including meaningful consultation with Alaska Native Federally-recognized Tribes regarding activities and policies that take place in or affect Arctic waters. Congress should ensure that Coast Guard District 17 has secure, consistent funding to continue and strengthen Arctic Shield operations and to undertake more robust outreach to Arctic communities and organizations.

IV. Conclusion

The decisions we make today will affect the Arctic for years to come. If we make management decisions based on the best available science and technology, engage the range of stakeholders living and operating in the region, focus on targeted preventative measures and continue to build-out regionally appropriate response capabilities, we can ensure that safety and environmental protection measures keep pace with the rapidly changing maritime transportation sector.

Thank you again for the opportunity to be here today. I appreciate your time and I look forward to the Subcommittee's questions.