

In Arctic Waters

The diminishment of Arctic sea ice has led to increased human activities in the Arctic, and has heightened interest in, and concerns about, the region's future. The United States, by virtue of Alaska, is an Arctic country and has substantial interests in the region. The United States held the two-year, rotating chairmanship of the Arctic Council from April 24, 2015, to May 11, 2017. Record low extents of Arctic sea ice over the past decade have focused scientific and policy attention on links to global climate change and projected ice-free seasons in the Arctic within decades. These changes have potential consequences for weather in the United States, access to mineral and biological resources in the Arctic, the economies and cultures of peoples in the region, and national security. The five Arctic coastal states-the United States, Canada, Russia, Norway, and Denmark (of which Greenland is a territory)-have made or are in the process of preparing submissions to the Commission on the Limits of the Continental Shelf regarding the outer limits of their extended continental shelves. The Russian submission includes the underwater Lomonosov Ridge, a feature that spans a considerable distance across the center of Arctic Ocean. The diminishment of Arctic ice could lead in coming years to increased commercial shipping on two trans-Arctic sea routes-the Northern Sea Route close to Russia, and the Northwest Passage-though the rate of increase in the use of these routes might not be as great as sometimes

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anticipated in press accounts. International guidelines for ships operating in Arctic waters have been recently updated. Changes to the Arctic brought about by warming temperatures will likely allow more exploration for oil, gas, and minerals. Warming that causes permafrost to melt could pose challenges to onshore exploration activities. Increased oil and gas exploration and tourism (cruise ships) in the Arctic increase the risk of pollution in the region. Cleaning up oil spills in ice-covered waters will be more difficult than in other areas, primarily because effective strategies for cleaning up oil spills in ice-covered waters have yet to be developed. Large commercial fisheries exist in the Arctic. The United States is currently meeting with other countries regarding the management of Arctic fish stocks. Changes in the Arctic could affect threatened and endangered species, and could result in migration of fish stocks to new waters. Under the Endangered Species Act, the polar bear was listed as threatened on May 15, 2008. Arctic climate change is also expected to affect the economies, health, and cultures of Arctic indigenous peoples. Two of the Coast Guard's three polar icebreakers-Polar Star and Polar Sea-have exceeded their intended 30-year service lives, and Polar Sea is not operational. The Coast Guard has initiated a project to build up to three new heavy polar icebreakers. On May 12, 2011, representatives from the member states of the Arctic Council signed an agreement on cooperation on search and rescue in the Arctic. Although there is significant international cooperation on Arctic issues, the Arctic is increasingly being viewed by some observers as a potential emerging security issue.

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Some of the Arctic coastal states, particularly Russia, have announced an intention or taken actions to enhance their military presences in the high north. U.S. military forces, particularly the Navy and Coast Guard, have begun to pay more attention to the region in their planning and operations.

The Arctic: land of ice and the six-month day; irresistible goal for explorers and adventurers; enduring source of romance and mystery - and now also a poignant and unavoidable indicator of the impact of climate change. As the ice cap shrinks, the geography of the entire Arctic region changes: clear shipping channels replace immovable ice and inaccessible oil resources become available. What will be the long-term consequences of these cataclysmic changes - not only environmental but also social and political? How will the lives of the many individuals who depend upon the natural resources of the Arctic be changed? And how will the global powers who wish to exploit the region's many assets respond? *Cold Front* is not just another attempt to predict the outcome of global warming. Instead it offers a clear-sighted and penetrating investigation of the Arctic's pivotal role in international relations, placing the polar region in its historical, political and legal context. The thawing of the ice-cap creates huge opportunities for trade and transport - and therefore also for conflict between the Arctic nations. This important and timely addition to the literature on the region will be essential reading for anyone interested in humanity's effect on the Arctic - or the Arctic's effect on humanity.

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Ambient Noise in Arctic Waters

Guidelines for Ships Operating in Polar Waters

Memoirs

Marine Mammals of Eastern North Pacific and Arctic Waters

Arctic Marine Resource Governance and Development

Ambient noise was recorded by an eleven element hydrophone array and tape recorder beneath an ice floe during mid July 1973 in the Arctic ice pack between Greenland and Norway. Eight minute samples were taken at one hour intervals for a period of seven days. The scope of this project was to determine - if any - the dependence of spectrum and direction on environmental factors. However no dependence was found for depth, time of day, or day. (Modified author abstract). In the style of "The House That Jack Built," young readers can follow polar bears, walruses, seals, narwhals, and beluga whales as they chase each other in the water around an iceberg when suddenly an Inuit hunter appears.

The Soviet Union in Arctic Waters: Economic and Legal Dimensions

Oil Spills in Arctic Waters

Environmental Jurisdiction in Arctic Waters - the Extent of Article 234

In Arctic Seas: the Voyage of the Kite with the Peary Expedition

Changes in the Arctic

Relates the different theories about the Soviet Union's increasing naval interest in arctic waters. Discusses the security implications for the northern flank of

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NATO, especially for Norway.

Online publication: <https://pub.norden.org/temanord2020-506/> Abstract [en]

The Arctic is undergoing rapid climate change, and the shrinking sea ice opens up possibilities of exploring more of the Arctic Ocean for economic development, including new sea routes. Maritime activity and particularly commercial shipping, including cruise ship tourism, cargo transportation and fishing vessels, is projected to increase substantially. There are evident risks to human safety and environmental security related to an increase of shipping in the Arctic. This report focuses on how the Nordic countries can together work towards increase environmental security in Arctic waters and reduce risks associated with increased shipping activity in the region.

Analysis of Ambient Noise in Arctic Waters

Notes on the Tides Along the South Hudson Bay and West James Bay Coasts

Submarines in Arctic Waters, by I. Kolyshkin

Oil Spills in Arctic Waters: an Introduction and Inventory of Research Activities and USARC Recommendations

The Operational Legal Challenges of Naval Operations in Canada's Arctic Waters

This book is a compilation of research on oil spills in ice-covered Arctic waters and

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recommendations for future work. We identify research entities in governmental, nongovernmental, industrial, and private organizations, and provide an inventory of research projects. Given that much work is currently in progress, we provide only a snapshot in time, and an introduction to the topic. While an in-depth evaluation of the research results, a prioritization of research and development gaps, and a critical examination of the connection between research and oil spill response capability are undoubtedly important topics, they are beyond the scope of this effort. We hope that our foray into this subject encourages others to address these critical topics. Finally, the US Arctic Research Commission (USARC) closes this paper with recommendations for additional research on the topic of oil spills in ice-covered Arctic waters.

Presents an overview of spill response systems and how Arctic environmental factors may limit their effectiveness, especially during certain times known as "response gaps."

Naval Operations in Arctic Waters

Together with a Transcript of the Log of the Kite

Preliminary Report on Heat Transfer from Pipelines in Arctic Waters for Polar Gas Project

All at Sea in Arctic Waters

Convoy!

Memoirs of Soviet northern fleet submarine commander in World War II. Translation.

Ships operating in the Arctic and Antarctic environments are exposed to a number of unique risks. Poor weather conditions and the relative

lack of good charts, communication systems and other navigational aids pose challenges for mariners. The remoteness of the areas makes rescue or clean-up operations difficult and costly. Cold temperatures may reduce the effectiveness of numerous components of the ship, ranging from deck machinery and emergency equipment to sea suction. When ice is present, it can impose additional loads on the hull, propulsion system and appendages. The Guidelines for ships operating in polar waters aim at mitigating the additional risk imposed on shipping in the harsh environmental and climatic conditions that exist in polar waters. This publication should be of interest to maritime administrations, ship manufacturers, shipping companies, cruise and tour operators, education institutes and others concerned with the safe operation of ships in polar waters.

Thermal Requirements of Divers and Submersibles in Arctic Waters

S.S. Manhattan in Arctic Waters

In Arctic Waters

Symposium on the Ecology of Pelagic Fish Species in Arctic Waters and Adjacent Seas

Shipping in Arctic Waters

Includes bibliographical references.

This book is a compilation of research on oil spills in ice-covered Arctic waters and recommendations for future work. Research entities in governmental, nongovernmental, industrial, and private organizations are identified. An introduction to the topic is provided. In this book, the U.S. Arctic Research Commission (USARC) recommended to the federal government an invigorated oil spill research effort in the Arctic and a funding strategy that did not require new fiscal appropriation. Considering the potential for increased energy exploration and production in deeper, offshore waters, as well as an anticipated escalation in shipping in a rapidly evolving marine environment, the risks of oil spills remain a real and growing challenge. In developing these recommendations, USARC worked closely with the federal Interagency Coordinating Committee on Oil Pollution Research (ICOPR), stakeholders, and the public.

Conflict Ahead in Arctic Waters

Security Implications for the Northern Flank of NATO

Submarines in Arctic Waters (memoirs)

Background and Issues for Congress

Submarines in Arctic Waters

Identifies Canada's claims to jurisdiction in Arctic waters for the purpose of the exploration, production and

transportation of hydrocarbons from the continental shelf. Those claims are then placed in the context of rights enjoyed by Canada at international law.

Published in 1893, this book recounts Robert Peary's 1891 Greenland expedition and the subsequent return voyage in 1892.

A comparison of the Northeast, Northwest and Trans Polar Passages

An Inventory of Research Efforts

Cold Front

Vulnerable marine ecosystems (VMEs): Coral and sponge VMEs in Arctic and sub-Arctic waters - Distribution and threats

Illegal Fishing in Arctic Waters. Catch of Today - Gone Tomorrow ?

An enthralling narrative account of the drama of Allied convoy protection and warfare on some of the most dangerous seas in the world.

The most comprehensive and richest study undertaken so far of the factors and conditions that will determine the scope and range of shipping and shipping activities in Arctic waters now and in the future. Furthermore, it is the first study comparing the

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three Arctic transportation corridors, covering a variety of interacting and interdependent factors such as: - geopolitics, military affairs, global warming, sea ice melting, international economic trends, resources, competing modes of transportation, environmental challenges, logistics, ocean law and regulations, corporate governance, jurisdictional matters and rights of indigenous peoples, arctic cruise tourism and marine insurance.

A Review of Methods to Track Oil in Arctic Waters

Animals That Live in Arctic Waters (English)

Guidelines for Transfer of Refined Oil and Oil Products in Arctic Waters (TROOP)

Reducing risks and increasing environmental security in Arctic Waters: How can the Nordic countries enhance cooperation?

A Comparison of the Northeast, Northwest and Trans Polar Passages

There are a lot of animals living in Arctic waters! This book features animals that live in the waters around Nunavut, such as the narwhal and the ringed seal.

This report presents results from the NovasArc project that has collated data on the distribution of vulnerable marine ecosystems (VMEs) in Arctic and sub-Arctic waters. Eleven VMEs were identified, based on management goals for coral

and sponge communities. Many of the vulnerable marine ecosystems (VMEs) in the study area has a wide distribution. Soft and hard bottom sponge aggregations, hard bottom gorgonians, sublittoral sea pen communities, and cauliflower corals are predicted to cover > 20% of the study area shallower than 1000 meters. Of the anthropogenic activities in the study area bottom trawling represents the main threat to the VMEs. The compilation of trawling activity in the study area shows that fisheries mainly occurs shallower than 1000 meters and that 50 to 60% of the seafloor is not targeted. However, 30% of the seafloor has experienced intermediate to very high fishing effort. In general, the VMEs shows a larger overlap with fishing when the risk analysis is based on areas with an optimal habitat suitability. Using this conservative threshold to model the distribution of VMEs the results indicate that most VMEs have experienced an intermediate to high level of fishing in less than 40% of their distribution area in the whole study area.

Polar Gas Project Heat Transfer from Pipelines in Arctic Waters

The International Legal Context of Petroleum Operations in Canadian Arctic Waters

Region I: Arctic waters

SYMPOSIUM ON THE ECOLOGY OF PELAGIC FISH SPECIES IN ARCTIC WATERS AND ADJACENT SEAS- COUNCIL FOR THE EXPLORATION OF THE SEA.

The Soviet Union in Arctic Waters

This book is based on presentations from the Conference 'Arctic Marine Resource Governance' held in Reykjavik Iceland in October 2015. The book is divided into four main themes: 1. Global management and institutions for Arctic marine resources 2. Resource stewards and users: local and indigenous co-management 3. Governance gaps in Arctic marine resource management and 4. Multi-scale, ecosystem-based, Arctic marine resource management'. The ecosystem changes underway in the Arctic region are expected to have significant impacts on living resources in both the short and long run, and current actions and policies adopted over such resource governance will have serious and ultimately irreversible consequences in the near and long terms.

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Drama in Arctic Waters

Oil Spill Response Challenges in Arctic Waters

Planting the Flag in Arctic Waters: Russia's Claim to the North Pole