HCR

23

<TARGET><BILL>HCR 23</BILL><SUBJECT>HCR 23</SUBJECT><COMM>HRES27</COMM></TARGET>

ALASKA STATE LEGISLATURE

HOUSE FINANCE COMMITTEE

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HCR 23 – Establishing the Alaska Arctic Policy Commission

Sponsor Statement

The Alaska Northern Waters Task Force (ANWTF) was established in 2010 to identify the opportunities and challenges of a changing Arctic. Arctic Nations are anticipating the development of northern shipping routes, mineral extraction, oil and gas exploration, commercial fisheries, and tourism. Some of this change has already started to occur. The ANWT completed its final report on January 30, 2012. The report includes recommendations in six Arctic policy areas: Governance, Oil & Gas Development, Marine Transportation, Fisheries, Infrastructure, and Research. The report is by far the broadest and most detailed statement of Alaska's Arctic policy to date, yet much work remains to fully expound upon all the diverse issues that the Task Force brought forward.

While the United States has an official written Arctic Policy (National Security Presidential Directive (NSPD)-66), Alaska does not. Most of the other Arctic Nations and the Northwest Territories already have established Arctic policies. As the jurisdiction that makes the United States an Arctic nation and as the only U.S. state that is home to Arctic residents, Alaska needs an Arctic policy of its own. Alaska needs to position itself now regarding the nation's Arctic policy – Alaska cannot take that leadership role without understanding what its own priorities should be. This is especially critical considering the United States will be chairing the Arctic Council from 2015-2017. The Arctic Policy Commission will provide the legislature an opportunity to remain engaged in the ongoing Arctic dialogue and to help shape future Alaskan Arctic policy.

Toward this end, HCR 23 creates in the legislative branch an Alaska Arctic Policy Commission. The 16-member Commission would include:

- 3 senators appointed by the Senate President (one acting as Co-Chair)
- 3 representatives appointed by the House Speaker (one acting as Co-Chair)
- 1 member from the executive branch appointed by the Governor
- 9 members appointed jointly by the President and the Speaker representing:
    - The federal government
    - A tribal entity
    - The mining industry
    - The oil & gas industry
    - The University of Alaska
    - Fisheries
    - A local government
    - A coastal community
    - An international Arctic organization

Over the course of two years, the Alaska Policy Commission will hold meetings in Arctic areas of the state as well as Anchorage and Fairbanks. The Commission is tasked with providing preliminary recommendations on Alaska's Arctic policy by January 30, 2014 and delivering a final report by January 30, 2015.

Conceptual Amendment #1

by Seaton

Page 3 line 6

following ~~follows~~.

"of which B through I will be Alaska residents"

Conceptual Amend #2 by Herron

BACKGROUND: US IS AN ARCTIC NATION...

Whereas it is the policy of US to involve the Arctic's indigenous communities in decisions that affect them (i.e. Alaska)

Concept #2

FISCAL NOTE

STATE OF ALASKA
2012 LEGISLATIVE SESSION
DRAFT DRAFT DRAFT DRAFT DRAFT

Bill Version: **HCR 23**
Fiscal Note Number:
() Publish Date:

Identifier (file name): HCR23-LEG-COU-2-3-12 DRAFT
Title: "Establishing and relating to the Alaska Arctic Policy Commission"
Sponsor: House Finance Committee
Requester: House Finance Committee

Dept. Affected: Legislature
Appropriation: Legislative Council
Allocation: Council & Subcommittees
OMB Component Number: 783

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	FY13 Appropriation Requested	Included in Governor's FY13 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY13**	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**
Personal Services	131.1		131.1	67.2			
Travel	125.1		123.0	2.0			
Services			20.0				
Commodities							
Capital Outlay							
Grants, Benefits							
Miscellaneous							
TOTAL OPERATING	**256.2**	**0.0**	**274.1**	**69.2**	**0.0**	**0.0**	**0.0**

FUND SOURCE		(Thousands of Dollars)						
1002	Federal Receipts							
1003	GF Match							
1004	GF	256.2		274.1	69.2			
1005	GF/Prgm (DGF)							
1037	GF/MH (UGF)							
1178	temp code (UGF)							
	TOTAL	**256.2**	**0.0**	**274.1**	**69.2**	**0.0**	**0.0**	**0.0**

POSITIONS							
Full-time							
Part-time							
Temporary							

CHANGE IN REVENUES							

Estimated SUPPLEMENTAL (FY12) operating costs _____ *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY13) costs _____ *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Why this fiscal note differs from previous version (if initial version, please note as such)

Initial Version

Prepared by: Jessica Geary, Finance Manager — Phone: 465-6626
Division: Legislative Affairs Agency — Date/Time:
Approved by: Pamela Varni, Executive Director — Date:
Legislative Affairs Agency

(Revised 1/17/2012 OMB)

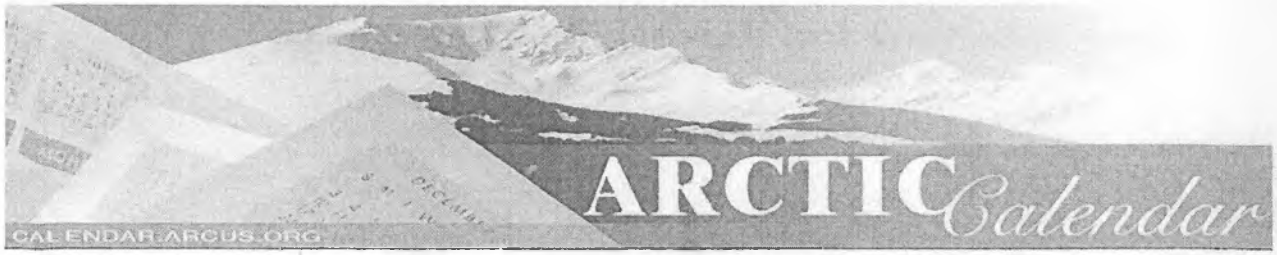
FISCAL NOTE

STATE OF ALASKA
2012 LEGISLATIVE SESSION

BILL NO. HCR 23

Analysis

HCR 23 establishes the Alaska Arctic Policy Commission in the Legislative Branch. The Commission consists of 16 members composed of six Legislators, one member of the Executive Branch and nine public members. Travel funding is included in this fiscal note. Meetings will be held in Barrow, Nome, Kotzebue, Unalaska, Fairbanks, and Anchorage at Legislative Information Offices or local government facilities at no rental cost to the Commission. One range 23 position will be hired to staff the Commission. Their salary is included in this fiscal note. Funding for professional services contracts is included in this fiscal note. The Commission shall develop an Arctic policy for the state and produce a strategy for the Implementation of an Arctic policy to address the areas of the state, including the economic, ecological, and security effects to benefit the state and its residents. Costs to teleconference meetings and print the proposals and reports due in January of 2014 and in January 2015 will be absorbed in the Legislative Affairs Agency Budget.



About the Calendar
Upcoming Events
Past Events
Submit Calendar Event

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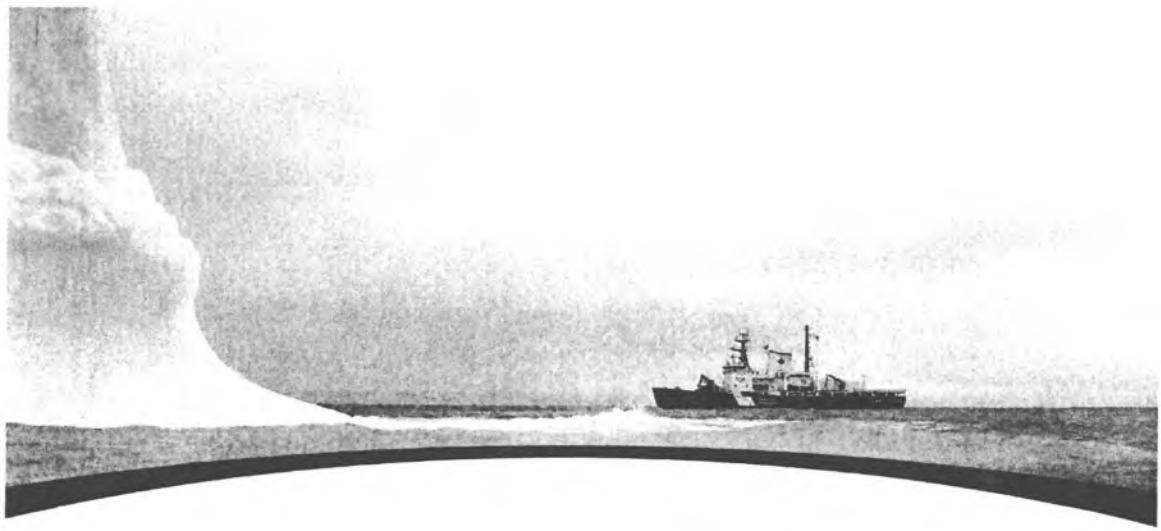
Arctic Calendar of Events | Results

February 14, 2012	**The Standing Committee of Parliamentarians of the Arctic Region (SCPAR)** *Stockholm, Sweden*
February 15, 2012	**Arctic Policy Forum** *Anchorage, Alaska*
February 15 – 17, 2012	**Community Earth System Model - Polar Climate Working Group Meeting** *Boulder, Colorado*
February 17, 2012	**SMOSIce User Workshop** *Hamburg, Germany*
February 18 – 19, 2012	**Workshop: R/V Sikuliaq Science Planning** *Salt Lake City, Utah*
February 20 – 24, 2012	**2012 Ocean Sciences Meeting** *Salt Lake City, Utah*
February 24, 2012	**Arctic Ocean Energy Development** *Washington, D.C.*
February 29 – March 3, 2012	**Alaska Anthropological Association 39th Annual Meeting** *Seattle, Washington*
March 7 – 9, 2012	**42nd International Arctic Workshop** *Winter Park, Colorado*
March 19 – 22, 2012	**Sea-Level and Adjustment of the Land: Observations and Models (SLALOM) 2012** *Athens, Greece*
March 28 – 30, 2012	**5th Western Alaska Interdisciplinary Science Conference and Forum: "Resilience in a changing world"** *Dillingham, Alaska*
April 12 – 13, 2012	**Leadership for the Arctic - An Interdisciplinary Academic Conference** *New London, CT*
April 19 – 22, 2012	**Arctic Science Summit Week 2012** *Montreal, Canada*
April 22 – 27, 2012	**European Geosciences Union General Assembly 2012** *Vienna, Austria*
April 22 – 27, 2012	**IPY 2012 "From Knowledge to Action" Conference** *Montreal, Canada*
April 26 – 27, 2012	**David C. Sego Symposium** *Edmonton, Alberta, Canada*
April 27 – 28, 2012	**USARC Commission Meeting** *Montreal, Canada*
April 30 – May 2, 2012	

	The Arctic Forum 2012 and the 24th ARCUS Annual Meeting *Washington, D.C.*
May 2 – 4, 2012	**American Polar Society 75th Anniversary Meeting and Symposium, "The Polar Regions in the 21st Century: Globalization, Climate Change and Geopolitics"** *New York, New York*
May 3, 2012	**Gateways North: Expansion, Convergence, and Change** *Manitoba, Canada*
May 7 – 11, 2012	**44th International Liege Colloquium on Ocean Dynamics** *Liege, Belgium*
May 15 – 17, 2012	**Canadian Hydrographic Conference: The Arctic, Old Challenges, New Approaches** *Scotiabank Conference Centre, Niagara Falls, Canada*
May 21 – 24, 2012	**32nd EARSeL Symposium 2012** *Mykonos Island, Greece*
May 22 – 24, 2012	**18th International Symposium on Polar Sciences** *Jeju Island, Republic of Korea*
May 27 – 28, 2012	**USARC Commission Meeting** *Montreal, Canada*
May 28 – June 1, 2012	**International Symposium on Seasonal Snow and Ice** *Lahti, Finland*
June 5 – 7, 2012	**69th Annual Meeting of the Eastern Snow Conference** *Claryville, New York*
June 12 – 14, 2012	**26th International Forum for Research into Ice Shelf Processes (FRISP)** *Utö, Stockholms Archipelago, Sweden*
June 12 – 14, 2012	**26th International Forum for Research into Ice Shelf Processes (FRISP)** *Uto, Stockholms Archipelago, Sweden*
June 17 – 22, 2012	**2nd Arctic Materials (Arctic M-2012) Symposium as part of the ISOPE 2012** *Rhodes, Greece*
June 17 – 22, 2012	**ISOPE-2012 Rhodes Conference; The 22nd International Ocean and Polar Engineering Conference** *Rhodes, Greece*
June 24 – 28, 2012	**2012 National Marine Educators Association Annual Conference** *Anchorage, Alaska*
June 24 – 29, 2012	**International Symposium on Glaciers and Ice Sheets in a Warming Climate** *Fairbanks, Alaska*
June 25 – 29, 2012	**Tenth International Conference on Permafrost** *Tyumen, Russia*
July 2 – 6, 2012	**8th international Workshop: Micromorphology of Glacigenic Sediments** *Queen Mary University, London, UK*
July 13 – 25, 2012	**SCAR 2012: Antarctic Science and Policy Advice in a Changing World** *Portland, Oregon*
July 29 – August 1, 2012	**The Arctic Imperative Summit** *Girdwood, Alaska*

August 5 – 10, 2012	**15th International Congress on Circumpolar Health** *Fairbanks, Alaska*
August 19 – 22, 2012	**"Sustainable Infrastructure Development In A Changing Cold Environment"; The Fifteenth International Specialty Conference on Cold Regions Engineering** *Quebec City, Canada*
August 24 – 28, 2012	**The Arctic Imperative Summit** *Girdwood, Alaska*
September 5 – 6, 2012	**37th Annual Meeting British Branch of International Glaciological Society** *Aberdeen, Scotland*
September 9 – 17, 2012	**Geomorphology and Quaternary Palaeogeography of Polar Regions** *St. Petersburg, Russia*
September 16 – 23, 2012	**5th International Workshop on Ice Caves** *Barzio and Milano, Italy*
September 17 – 20, 2012	**ICETECH 2012: International Conference and Exhibition on Performance of Ships and Structures in Ice** *Banff, Alberta, Canada*
September 24 – 29, 2012	**"20 years of Progress in Radar Altimetry" Symposium** *Venice-Lido, Italy*
October 24 – 28, 2012	**Arctic/Inuit/Connections: Learning from the Top of the World** *Washington, D.C.*



STATEMENT ON CANADA'S ARCTIC FOREIGN POLICY

Exercising Sovereignty
and Promoting Canada's
NORTHERN STRATEGY
Abroad

Government of Canada Gouvernement du Canada

Canada

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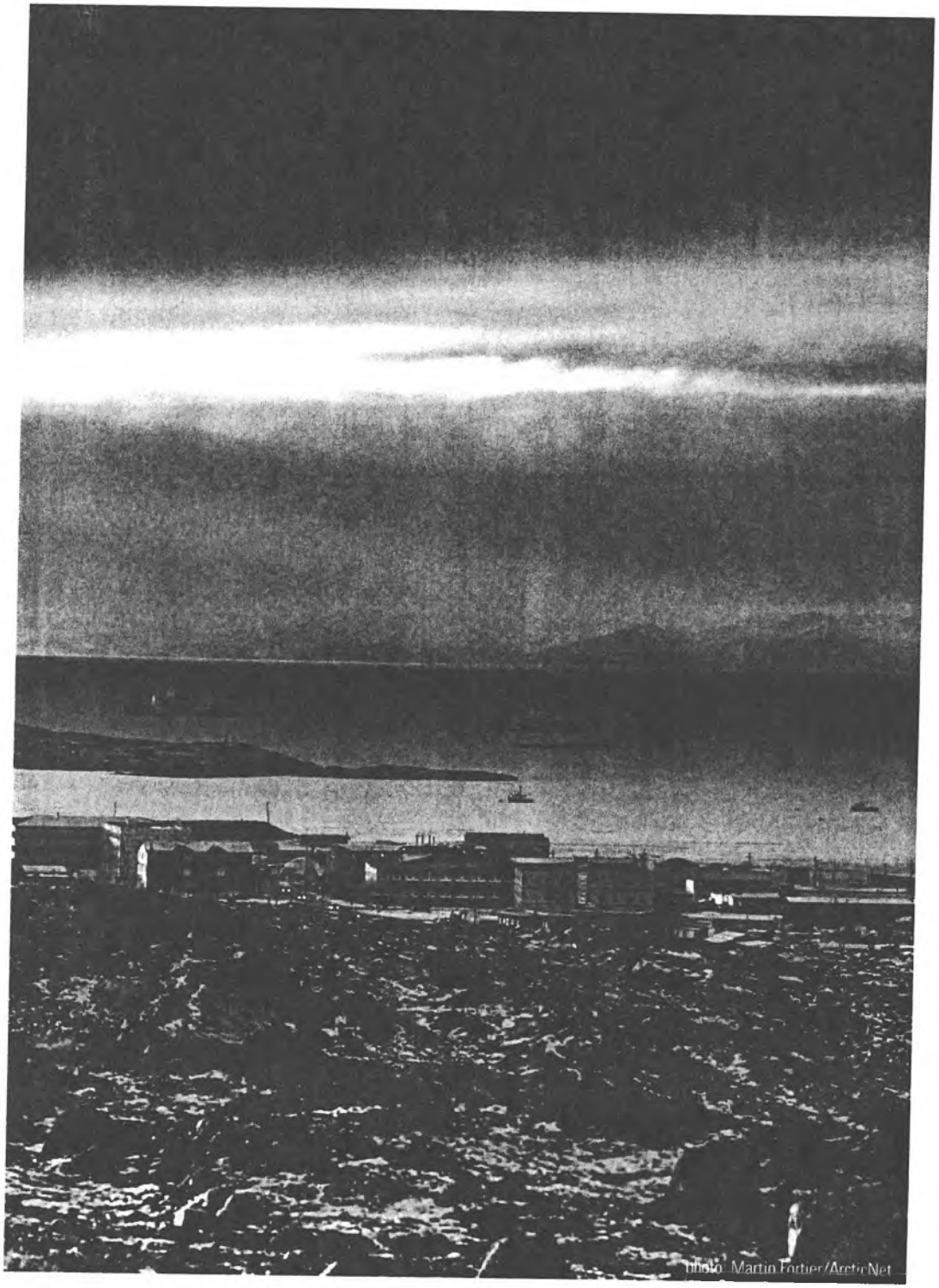
Photo: Martin Fortier/ArcticNet

Introduction

The Arctic is fundamental to Canada's national identity. It is home to many Canadians, including indigenous peoples, across the Yukon, the Northwest Territories and Nunavut, and the northern parts of many Canadian provinces. The Arctic is embedded in Canadian history and culture, and in the Canadian soul. The Arctic also represents tremendous potential for Canada's future. Exercising sovereignty over Canada's North, as over the rest of Canada, is our number one Arctic foreign policy priority.

Our vision for the Arctic is a stable, rules-based region with clearly defined boundaries, dynamic economic growth and trade, vibrant Northern communities, and healthy and productive ecosystems. This Arctic foreign policy statement articulates how the Government of Canada will promote this vision, using leadership and stewardship. It elaborates on Canadian interests in the Arctic and how Canada is pursuing these.

New opportunities and challenges are emerging across the Arctic and North, in part as a result of climate change and the search for new resources. The geopolitical significance of the region and the implications for Canada have never been greater. As global commerce charts a path to the region, Northern resources development will grow ever more critical to Northern economies, to the peoples of the North and to our country as a whole. The potential of the North is of growing interest to Canada, to other Arctic states and, increasingly, to others far from the region itself.

While the opportunities are great, there are also important social, economic and environmental challenges. Some of these have important international dimensions. Over time, increased access to the Arctic will bring more traffic and people to the region. While mostly positive, this access may also contribute to an increase in environmental threats, search and rescue incidents, civil emergencies and potential illegal activities. How the region as a whole evolves will have major implications for Canada and our role as an Arctic power.

The Government of Canada has launched an ambitious Northern Strategy to respond to these opportunities and challenges. Our Northern Strategy lays out four areas where Canada is taking action to advance its interests both domestically and internationally and to help unlock the North's true potential: exercising sovereignty; promoting economic and social development; protecting our environmental heritage; and improving and devolving Northern governance. In pursuing each of these pillars in our Arctic foreign policy, Canada is committed to exercising the full extent of its sovereignty, sovereign rights and jurisdiction in the region.

> "The geopolitical importance of the Arctic and Canada's interests in it have never been greater. This is why our government has launched an ambitious Northern Agenda based on the timeless responsibility imposed by our national anthem, to keep the True North strong and free."
>
> Prime Minister Stephen Harper, August 28, 2008, Inuvik, Northwest Territories

Given our extensive Arctic coastline, our Northern energy and natural resource potential, and the 40 percent of our land mass situated in the North, Canada is an Arctic power. We are taking a robust leadership role in shaping the stewardship, sustainable development and environmental protection of this strategic Arctic region, and engaging with others to advance our interests.

As we advance the four pillars of our Northern Strategy, our international efforts will focus on the following areas:

- engaging with neighbours to seek to resolve boundary issues;
- securing international recognition for the full extent of our extended continental shelf;
- addressing Arctic governance and related emerging issues, such as public safety;
- creating the appropriate international conditions for sustainable development;

- seeking trade and investment opportunities that benefit Northerners and all Canadians;
- encouraging a greater understanding of the human dimension of the Arctic;
- promoting an ecosystem-based management approach with Arctic neighbours and others;
- contributing to and supporting international efforts to address climate change in the Arctic;
- enhancing our efforts on other pressing environmental issues;
- strengthening Arctic science and the legacy of International Polar Year;
- engaging Northerners on Canada's Arctic foreign policy;
- supporting Indigenous Permanent Participant organizations; and
- providing Canadian youth with opportunities to participate in the circumpolar dialogue.

Exercising Sovereignty

In our Arctic foreign policy, the first and most important pillar towards recognizing the potential of Canada's Arctic is the exercise of our sovereignty over the Far North. Canada has a rich history in the North, and Canada's sovereignty is the foundation for realizing the full potential of Canada's North, including its human dimension. This foundation is solid: Canada's Arctic sovereignty is long-standing, well established and based on historic title, founded in part on the presence of Inuit and other indigenous peoples since time immemorial.

> "In exercising our sovereignty...we are not only fulfilling our duty to the people who called this northern frontier home, and to the generations that will follow; we are also being faithful to all who came before us...."
>
> Prime Minister Stephen Harper, August 28, 2008, Inuvik, Northwest Territories

Canada exercises its sovereignty daily through good governance and responsible stewardship. It does so through the broad range of actions it undertakes as a government—whether related to social and economic development, Arctic science and research, environmental protection, the operations of the Canadian Forces or the activities of the Canadian Coast Guard and Royal Canadian Mounted Police. We exercise our sovereignty in the Arctic through our laws and regulations, as we do throughout Canada.

We are putting the full resources of the Government of Canada behind the exercise of our sovereignty, sovereign rights and jurisdiction in the Arctic. We are taking a whole-of-government approach. Since taking office, the Prime Minister and many federal cabinet ministers have made regular visits to Canada's North. Further evidence of the priority the Government of Canada is placing on the North was the meeting of G-7 finance ministers in Nunavut in February 2010.

Since 2007, the Government of Canada has announced a number of initiatives to enhance our capacity in the North and to exercise, responsibly, our sovereignty there. These include significant new commitments to allow Canada to better monitor, protect and patrol its Arctic land, sea and sky and to keep pace with changes in the region.

Within the next decade, Canada will launch a new polar icebreaker. This will be the largest and most powerful icebreaker ever in the Canadian Coast Guard fleet.

The *Canada First* Defence Strategy will give the Canadian Forces the tools it needs to provide an increased presence in the Arctic. Through this strategy, Canada is investing in new patrol ships that will be capable of sustained operation in first-year ice to ensure we can closely monitor our waters as they gradually open up and maritime activity increases. In order to support these and other Government of Canada vessels operating in the North, Canada is investing in a berthing and refuelling facility in Nanisivik.

Canada is also expanding the size and capabilities of the Canadian Rangers, drawn primarily from indigenous communities, that provide a military presence and Canada's "eyes and ears" in remote parts of Canada. A new Canadian Forces Arctic Training Centre is also being established in Resolute Bay.

Canada and the United States work together to better monitor and control Northern airspace through our cooperation in NORAD, the North American Aerospace Defence Command. Canadian Forces will also take advantage of new technologies to enhance surveillance capacity of our territory and its approaches.

Canadian Forces Operation Nanook, an annual sovereignty operation that takes place in Canada's Arctic, shows the government's commitment to protecting and demonstrating control over the air, land and sea within our jurisdiction. In 2010, Operation Nanook will include collaboration with the United States and Denmark in order to increase interoperability and exercise a collective response to emerging cross-border challenges.

This increased Canadian capacity demonstrates Canada's presence in the region and will also ensure that we are better prepared to respond to unforeseen events.

Moving forward, our international agenda will complement these efforts further. Three priority areas that Canada will pursue in the Arctic are: seeking to resolve boundary issues; securing international recognition for the full extent of our extended continental shelf wherein we can exercise our sovereign rights over the resources of the seabed and subsoil; and addressing Arctic governance and related emerging issues, such as public safety.

On the first priority, Canada will seek to resolve boundary issues in the Arctic region, in accordance with international law. Our sovereignty over Canadian Arctic lands, including islands, is undisputed—with the single exception of Hans Island, a 1.3-square-kilometre Canadian island which Denmark claims.

With regard to Arctic waters, Canada controls all maritime navigation in its waters. Nevertheless, disagreements exist between the United States and Canada regarding the maritime boundary in the Beaufort Sea (approximately 6,250 square nautical miles) and between Canada and Denmark over a small part of the maritime boundary in the Lincoln Sea. All disagreements are well managed, neither posing defence challenges for Canada nor diminishing Canada's ability to collaborate and cooperate with its Arctic neighbours. Canada will continue to manage these discrete boundary issues and will also, as a priority, seek to work with our neighbours to explore the possibility of resolving them in accordance with international law.

On the second priority, Canada will secure international recognition for the full extent of our extended continental shelf wherein we can exercise our sovereign rights over the resources of the seabed and subsoil. Most known Arctic natural resources lie within the exclusive economic zones of Arctic states—200 nautical miles extending from the coastal baselines. States have sovereign rights to explore and exploit living and non-living marine resources in their respective exclusive economic zones. Arctic coastal states also have existing rights to resources on their extended continental shelves beyond their exclusive economic zones.

The United Nations Convention on the Law of the Sea (UNCLOS) explicitly recognizes the rights of coastal states such as Canada over the natural resources of the seabed and subsoil beyond 200 nautical miles from their coastal baselines and sets out a process by which a state may determine the limits within which it may exercise those rights. Canada will make its submission to the United Nations Commission on the Limits of the Continental Shelf in December 2013 and is currently engaged in the scientific, technical and legal work needed to delineate the outer limits of its continental shelf. Autonomous underwater vehicles—with Canadian technology at their heart—are being used to collect some of the needed data. Canada is investing significantly to ensure that Canada secures international recognition for the full extent of its continental shelf in both the Arctic and Atlantic oceans.

The other Arctic coastal states also have extended continental shelves and are involved in a similar process. To maximize data collection in a challenging physical environment, encourage exchange of information and minimize future differences, Canada has been working closely with neighbouring Arctic Ocean coastal states. We will act on a priority basis to ensure Canada has a sound submission by the 2013 deadline. Any overlaps with the submissions of neighbouring states will be resolved through peaceful means in accordance with international law.

Beyond concrete steps on boundaries, Canada's sovereignty agenda will also address Arctic governance and related emerging issues, such as public safety. Increasingly, the world is turning its attention northward, with many players far removed from the region itself seeking a role and in some cases calling into question the governance of the Arctic. While many of these players could have a contribution to make in the development of the North, Canada does not accept the premise that the Arctic requires a fundamentally new governance structure or legal framework. Nor does Canada accept that the Arctic nation states are unable to appropriately manage the North as it undergoes fundamental change.

Canada, like other Arctic nations, stands by the extensive international legal framework that applies to the Arctic Ocean. Notably, UNCLOS, as referred to earlier, provides the legal basis for delineation of continental shelves and goes well beyond this to address the protection of the marine environment, freedom of navigation, marine scientific research, conservation and utilization of marine living resources, and other uses of the sea.

However, within this broad legal framework, new challenges are emerging. Until now, the Arctic Ocean's inaccessibility has meant that the region was largely insulated from the sort of safety and law enforcement challenges present in regions further south. However, decreasing ice cover will lead, over time, to increases in shipping, tourism and economic development in the Arctic Ocean region. While the full extent of the

changes will take many decades to realize, Canada and other Arctic Ocean coastal states must begin to prepare for greater traffic into the region, with sometimes negative effects.

Regional solutions, supported by robust domestic legislation in Arctic states, will be critical. Canada will work in concert with other Arctic nations through the Arctic Council[1] (the primary forum for collaboration among the eight Arctic states), with the five Arctic Ocean coastal states on issues of particular relevance to the Arctic Ocean, and bilaterally with key Arctic partners, particularly the United States.

We will need to consider how to respond to issues such as emergency response and search and rescue capability and potential future problems related to emergencies (including environmental), organized crime, and illegal trafficking in drugs and people. One very important initiative is the current effort within the Arctic Council to negotiate a search and rescue agreement for the Arctic. Information sharing, coordination of efforts, and pooling resources are all concrete ways in which partnership may be beneficial.

The recently held Arctic Ocean Foreign Ministers meeting was an important step not only in advancing our collaboration on continental shelf delineation but also in encouraging forward thinking on the emerging issues in the region. The meeting publicly demonstrated leadership and partnership by Canada and other coastal states on responsible management of the Arctic Ocean.

Protecting national sovereignty, and the integrity of our borders, is the first and foremost responsibility of a national government. We are resolved to protect Canadian sovereignty throughout our Arctic.

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[1] The Arctic Council brings together eight member states (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States) and six Arctic indigenous groups called Permanent Participants.

Promoting Economic and Social Development

Creating a dynamic, sustainable Northern economy and improving the social well-being of Northerners is essential to unleashing the true potential of Canada's North and is an important means of exercising our sovereignty.

"Not only is the North a land of raw and majestic beauty that has inspired generations of authors, artists and adventurers, and not only is it the home to a rich culture shaped through the millennia by the wisdom of Aboriginal people, but it also holds the potential to be a transformative economic asset for the country."

Prime Minister Stephen Harper, August 18, 2009, Iqaluit, Nunavut

The potential for wealth and job creation through resource development, both living and non-living, is great. Canada is the world's third largest diamond producer. It is estimated that one-fifth of the world's petroleum reserves lie in the Arctic. That is why the Government of Canada is investing significantly in mapping the energy and mineral potential of the North. Managed in a sustainable manner, Canada's incredible endowment, including living marine resources such as fisheries, will contribute to the prosperity of Northerners and all Canadians for generations. These resources can and will be a cornerstone of sustained economic activity in the North and a key to building prosperous indigenous and Northern communities.

In addition to investments in mapping in the North, the Government of Canada has made a wide variety of recent commitments related to promoting Northern social and economic development. These include measures to improve regulatory systems across the North, to address infrastructure needs including housing, to create the Canadian Northern Economic Development Agency, and to support improvement in indigenous skills and employment.

Ensuring sustainable development in the Arctic involves working closely with territorial governments and Northerners and through key international institutions like the Arctic Council to build self-sufficient, vibrant and healthy communities. The well-being of the people of the North—its inhabitants and communities—is fundamental.

Canada will actively promote Northern economic and social development internationally on three key fronts: take steps to create the appropriate international conditions for sustainable development, seek trade and investment opportunities that benefit Northerners and all Canadians, and encourage a greater understanding of the human dimension of the Arctic to improve the lives of Northerners.

First, Canada will take steps to create the appropriate international conditions for sustainable development in the Arctic, complementing domestic measures to support economic development. This involves understanding the opportunities and challenges of Arctic energy and resource development and developing regulations, guidelines and standards that are informed by Arctic science and research, including traditional knowledge. In no area is this more critical than in oil and gas development.

As an emerging clean energy superpower, Canada will continue to support the responsible and sustainable development of oil and gas in the North. Along with the rest of the international community, we have witnessed the terrible environmental, social and economic impacts of the oil spill in the Gulf of Mexico.

Canada recognizes and values the importance of working closely with other Arctic states and will take every step possible to prevent such an event in Canadian waters. Canada is showing leadership at home in Arctic safety and environmental requirements for offshore drilling through the review undertaken by the National Energy Board. Moreover, Canadians and our Arctic neighbours can be assured that no drilling will occur in Canada's deep Beaufort Sea until at least 2014.

Canada is a party to a number of bilateral and multilateral agreements and is actively engaged in various international forums, including the Arctic Council, on matters relating to the protection of the marine environment. In the wake of the oil spill in the Gulf of Mexico, we are furthering our collaboration at the appropriate levels, in particular with the United States and Denmark/Greenland in light of our common interests in the Arctic marine environment.

The 2007 Arctic Council Oil and Gas Assessment examined the impacts of current oil and gas activities in the Arctic and potential impacts related to possible future activities. The Oil and Gas Assessment found that while extensive oil and gas exploration activity and production have occurred in parts of the Arctic, much potential exists for future oil and gas development. Related risks need to be managed carefully. Canada made significant contributions to the Assessment.

The Arctic Council, with significant Canadian participation, updated its Arctic Offshore Oil and Gas Guidelines in 2009. These guidelines recommend standards, technical and environmental best practices, management policy and regulatory controls for Arctic offshore oil and gas operations. Canada will act on the request from the Arctic Council that all states apply these guidelines as minimum standards throughout the Arctic and will encourage others to do so as well.

Arctic shipping is another key area of focus. The 2009 Arctic Marine Shipping Assessment is the first comprehensive review of circumpolar shipping activities and provides important information about possible future shipping activities and their potential impacts. Among its findings, the Assessment noted that Arctic shipping has increased significantly, with more voyages to the Arctic and between Arctic destinations. However, the various Canadian internal waterways known as Canada's "Northwest Passage" are not predicted to become a viable, large-scale transit route in the near term, in part because mobile and unpredictable ice in the Passage poses significant navigational challenges and other routes are likely to be more commercially viable.

The Arctic Marine Shipping Assessment also provides guidance on enhancing Arctic marine safety, protecting Arctic peoples and environment, and building Arctic marine infrastructure. Based on these recommendations, the 2009 Arctic Council Ministerial supported the development of a mandatory polar code for shipping by the International Maritime Organization (IMO). As an IMO member, Canada will continue to play a leading role in the development of this code. We, along with other Arctic Council states, have also agreed to work together towards an international agreement on search and rescue operations for the Arctic by 2011.

Within the IMO context, Canada has also assumed responsibility for providing navigational warning and meteorological services to facilitate the safe management of marine traffic in two Arctic areas. These cover substantial areas of Arctic waters, including the Northwest Passage. Through this initiative, Canada will deliver services that help mitigate the risks associated with increased Arctic shipping. These services will also enhance environmental protection of the Arctic marine environment, support Northern residents in their maritime activities, and provide necessary services for coastal and marine-based resource development.

Canada is playing a key role in the creation of the Arctic Regional Hydrographic Commission to improve our understanding of the features of the Arctic Ocean and its coastal areas, essential knowledge for safe navigation. Canada has offered to host the Commission's inaugural meeting in fall 2010.

Second, Canada will continue to seek trade and investment opportunities that benefit Northerners and all Canadians.

Canada will enhance its trading ties with other Arctic states. We have recently implemented a free trade agreement with the European Free Trade Association (EFTA) member countries, which include Iceland and Norway. This agreement has the potential to enhance trade and investment between Northern regions of our respective countries. We are also seeking to build new trade ties with other Arctic states to create these

same links between our respective Northern regions. These Northern commercial relationships can serve as conduits to expand trade and investment relations not only with our immediate Northern neighbours but also with other states such as those in central Asia and Eastern Europe.

Improving air and sea transportation links to create enhanced access across the polar region can help encourage Arctic trade and investment opportunities. For instance, investments have been made to upgrade the Port of Churchill, Manitoba, to facilitate increased export options and the flow of two-way trade with other Northern ports.

Third, Canada will continue to encourage a greater understanding of the human dimension of the Arctic to improve the lives of Northerners, particularly through the Arctic Council. The Arctic Council's Arctic Human Development Report was the first comprehensive assessment of human well-being to address the entire Arctic region. Canada will continue to play a leadership role in Arctic Council initiatives in this area and to host the Secretariat for the Council's Sustainable Development Working Group. For example, the 2008 Arctic Indigenous Languages Symposium, organized by the Inuit Circumpolar Council with support from the Government of Canada, underlined the importance of preserving and strengthening indigenous languages.

Addressing human health issues in Northern communities is also critically important. Canada has been supporting efforts through the Arctic Council and International Polar Year research to better understand the issues and then develop and implement appropriate health policies. The results of international collaboration are all aimed at improving the health conditions of residents in the Arctic. Canada will play a lead role in the Arctic Council on a range of new health-related projects, including the development of a circumpolar health observatory, a comparative review of circumpolar health systems, and a comparative review of circumpolar nutritional guidelines.

Canada's commitment to Northern economic and social development includes a deep respect for indigenous traditional knowledge, work and cultural activities. Going forward, Canada will promote a better understanding of the interests, concerns, culture and practices of Northerners, including with regard to seals and polar bears. In this context, Canada is committed to defend sealing on the international stage. Seals are a valuable natural resource, and the seal hunt is an economic mainstay for numerous rural communities in many parts of Canada including the North.

Protecting the Arctic Environment

The Arctic environment is being affected by events taking place far outside the region. Perhaps the most well-known example is climate change, a phenomenon which originates outside the Arctic but is having a significant impact on the region's unique and fragile environment. The resulting rapid reduction in Arctic multi-year sea ice has had, and will continue to have, profound consequences for the peoples and communities of the Arctic. What happens in the Arctic will have global repercussions on accelerating climate change elsewhere.

Strong environmental protection, an essential component of sustainable development, starts at home and is another important way in which Canada exercises its sovereignty in the North. Canada has long been at the forefront in protecting the Arctic environment. As far back as the 1970s, Canada enacted the Arctic Waters Pollution Prevention Act (AWPPA) to protect its marine environment, taking responsibility for enacting and enforcing anti-pollution and shipping safety laws applicable to a larger area of Arctic waters. In August 2009, the application of the AWPPA was extended from 100 to 200 nautical miles. In addition, regulations requiring vessels to report when entering and operating within Canadian Arctic waters have been finalized and are in force from July 1, 2010.

“Canada takes responsibility for environmental protection and enforcement in our Arctic waters. This magnificent and unspoiled region is one for which we will demonstrate stewardship on behalf of our country, and indeed, all of humanity.”

Prime Minister Stephen Harper, August 27, 2008, Tuktoyaktuk, Northwest Territories

These measures and others such as plans to establish a national marine conservation area in Lancaster Sound send a clear message to the world. Canada takes responsibility for environmental protection and enforcement in our Arctic waters. We are demonstrating stewardship in this magnificent ecological region.

Canada is committed to planning and managing Arctic Ocean and land-based activities domestically and internationally in an integrated and comprehensive manner that balances conservation, sustainable use and economic development—ensuring benefits for users and the ecosystem as a whole. We are acting domestically while cooperating internationally. Internationally, we will act in the following four ways: promote an ecosystem-based management approach with our Arctic neighbours and others; contribute to and support international efforts to address climate change in the Arctic; enhance efforts on other pressing international issues, including pursuing and strengthening international standards; and strengthen Arctic science and the legacy of International Polar Year.

First, Canada will continue to promote an ecosystem-based management approach with its Arctic neighbours and others.

In accordance with Canada's Oceans Act, Canada is working with land claim authorities, governments, industry and communities to implement an ecosystem approach in the Beaufort Sea and has identified ecologically significant marine species and places. This is part of a broader ecosystem approach in the Arctic by the Government of Canada that also includes activities related to the international co-management of species in the Arctic whose habitat crosses national borders (e.g. caribou, polar

bears and Arctic birds). These activities fall under international conventions and agreements such as the United Nations Convention on Biological Diversity, the Migratory Bird Treaty, and the Agreement on the Conservation of Polar Bears. International collaborative Arctic science and research is a fundamental aspect of the Government of Canada's participation in such agreements.

Canada and its Arctic neighbours are the stewards of unique wildlife such as polar bears. The Government of Canada recognizes the importance of indigenous knowledge and the need to use it in tandem with Western science in our efforts to better understand polar bears and their habitat.

Canada has signed a Memorandum of Understanding with the United States for the conservation and management of a shared polar bear population. In addition, Canada has developed agreements with other Arctic nations to jointly manage polar bears, narwhals and belugas. This work must continue in order to manage other shared species.

As part of its mandate, the Arctic Council has been playing a lead role in identifying large marine ecosystems in the region and determining best practices in ocean management. Canada will play a leadership role in the Arctic Council's Arctic Ocean Review which aims to strengthen and ensure the sustainable development of the Arctic Ocean. In pursuing strengthened Arctic Ocean stewardship, we will work with other interested partners and users of the Arctic Ocean as well as through regional and international organizations, including the Arctic Council and the IMO.

2010 is the International Year of Biodiversity and the Arctic is the focus of considerable attention. Canada will continue to lead the Arctic Council's Circumpolar Biodiversity Monitoring Program to ensure information on population status and trends for Arctic species and ecosystems is available and supports initiatives such as the Arctic Biodiversity Assessment. The Council has recently developed the Arctic Species Trend Index, which provides decision-makers with a valuable tool for managing and predicting Arctic wildlife populations. Tracking the index over time will facilitate this prediction of trends and identify species and groups experiencing rapid change.

Canada will continue to establish terrestrial and marine protected areas in the Arctic and monitor biodiversity and ecological integrity. Canada recognizes that ecologically sensitive areas are essential for the conservation of Arctic species including polar bears, caribous, migratory birds, and marine mammals and other aquatic species. These sensitive areas play a key role in the survival and recovery of species at risk. They also provide significant ecotourism opportunities to an expanding market of Canadians and international visitors.

Canada has made significant progress in establishing protected areas in over 10 percent of our North, designating 80 protected areas covering nearly 400,000 square kilometres. These areas include 11 national parks, six national wildlife areas and 16 migratory bird sanctuaries and will protect habitat for a wide variety of species.

Canada continues to plan for additional protected areas in the North and has an ambitious program to expand the national park system, including the creation of three new national parks. The Government of Canada is moving forward in consultation with communities and industry to add nearly 70,000 square kilometres to Canada's Northern protected areas network. Canada will be finalizing a Policy Framework for Canada's National Network of Marine Protected Areas that will guide marine protected area establishment, including the five marine ecoregions found in the Arctic. The creation of the majority of existing national parks in the Arctic proceeded hand-in-hand with land claim negotiations, as are all of the new national park proposals.

Second, Canada will continue to actively contribute to and support international efforts to address climate change in the Arctic, including both mitigation and adaptation in the Arctic. Climate change is having a disproportionate impact on the Arctic, and the Arctic Council's 2004 Arctic Climate Impact Assessment heightened global awareness of the problem.

Canada recognizes that climate change is a global challenge requiring a global solution. To that end, the government is committed to contributing to the global effort by taking action to reduce Canada's greenhouse gas emissions through sustained action domestically to build a low-carbon economy, working with our North American partners and constructively engaging with our international partners to negotiate a fair, environmentally effective and comprehensive international climate change regime based on the Copenhagen Accord. Canada has been, and continues to be, very active in these international negotiations, and will seek to ensure that consideration is given to the Arctic's unique set of climate change-related challenges in every relevant forum.

New evidence suggests that certain short-term factors are having an impact on the rate of climate change. The 2009 Arctic Council Ministerial approved the formation of a task force on "short-lived climate forcers" in the Arctic. While climate agents or forcers, such as black carbon,[2] contribute significantly to climate change, they can potentially be brought under control much more quickly than long-term contributors such as carbon dioxide. The task force will identify existing and new measures to reduce emissions of these forcers and will recommend further immediate action.

Canada has been, and will continue to be, active in climate change adaptation initiatives. Canada played an important role in the Arctic Council's recent Vulnerability and Adaptation to Climate Change in the Arctic project. Underlining the importance of community involvement in planning for and responding to climate change adaptation is one of Canada's key contributions. Canada recognizes that enhanced action on adaptation will be a significant component of the post-2012 climate change negotiations under the United Nations Framework Convention on Climate Change. Canada plays an active and constructive role in those discussions.

In support of these objectives, the Government of Canada has been working in close partnership with Northern communities and governments to assess risks, vulnerabilities

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2 Black carbon (soot and methane), released by car engines and fires, can darken ice and snow, increasing their rate of melting.

and opportunities related to a changing climate. Over the last two years, over 60 projects have been funded in the Canadian Arctic that have led to the development of community and regional adaptation plans, increasing knowledge and understanding of climate-related implications and the development of strong partnerships essential to implementing adaptation action.

Third, Canada will enhance its efforts on other pressing environmental issues, including pursuing and strengthening international standards, where appropriate. Canada will continue to engage in the negotiation of an international regime on access to genetic resources and the sharing of their benefits, under the Convention on Biological Diversity. Researchers around the world are interested in genetic resources found in extreme environments like the Arctic. We recognize the importance of these issues to Northerners and Northern communities.

Persistent organic pollutants and mercury, released far from the Arctic, have had serious impacts on Arctic peoples. Canada and the Inuit Circumpolar Council[3] played an important role in the negotiation of the Stockholm Convention on Persistent Organic Pollutants. Canada will continue to address the problems arising from these contaminants, including waste management practices in the North, and will engage actively in global negotiations to reduce mercury emissions.

Canada is setting an international example with the Federal Contaminated Sites Action Plan. The government is providing $3.5 billion over 15 years to address federal contaminated sites, with the majority of resources directed to contaminated sites in the North. Canada is contributing to the global effort to address mercury emissions with a plan to implement new environmental performance standards that will reduce greenhouse gas emissions and pollutants such as mercury from coal-fired electricity generating plants. An international agreement on the reduction of mercury emissions will help reduce the impact of mercury on the health and the environment of Canadians, particularly in the North.

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[3] Formerly the Inuit Circumpolar Conference

Fourth, Canada will contribute to strengthening Arctic science and the legacy of International Polar Year. Arctic science forms an important foundation for Canada's Northern Strategy, providing the knowledge necessary for sound policy and decision-making both on domestic and international issues. To ensure that Canada remains a global leader in Arctic science, the Government of Canada has committed to establishing a new world-class research station in the High Arctic that will serve Canada and the world, and work is proceeding on its development. The station will anchor a strong research presence in Canada's Arctic and to complement these efforts, Canada has also invested in upgrading existing research facilities in over 30 sites across the Arctic.

Canada made one of the largest single contributions of any country to International Polar Year and will be hosting its final wrap-up event in Montreal in April 2012. Canada is also taking a lead role in the Arctic Council's Sustaining Arctic Observing Networks project. Its purpose is to further international engagement in developing sustained and coordinated pan-Arctic observing and data-sharing systems, particularly related to environmental, social, economic and cultural issues.

Improving and Devolving Governance: Empowering the Peoples of the North

The Government of Canada is committed to providing Canadian Northerners with more control over their economic and political destiny. Canada is taking steps to endorse the United Nations Declaration on the Rights of Indigenous Peoples in a manner fully consistent with Canada's Constitution and laws. In recent decades, Canada's Northern governments have taken on greater responsibility for many aspects of their region's affairs. Progress is continuing in this area and represents another way in which Canada is exercising its sovereignty in the Arctic. Canada's North is also home to some of the most innovative, consultative approaches to government in Canada and the world. Through land claim and self-government agreements, indigenous communities are developing made-in-the-North policies and strategies to address their unique economic and social challenges and opportunities.

“We're committed to helping the region and its residents realize their true potential.”

Prime Minister Stephen Harper, March 10, 2008, Yellowknife, Northwest Territories

Canada recognizes and values the important role Northern governments, Arctic Indigenous organizations at the Arctic Council (known as Permanent Participant organizations) and other Northerners have played, and will continue to play, in shaping Canada's international actions. Canada's Arctic foreign policy bolsters our domestic efforts for strong governance in the North in the following three ways.

First, Canada will engage with Northerners on Canada's Arctic foreign policy. Through the Canadian Arctic Council Advisory Committee, Northern governments and Indigenous Permanent Participant organizations in Canada[4] will have the opportunity to actively participate in shaping Canadian policy on Arctic issues. We will continue to meet regularly in Canada's North to find common ground and work towards common objectives.

Second, the Government of Canada will continue to support Indigenous Permanent Participant organizations in Canada, including financially, to contribute to strengthening their capacity to fully participate in the activities of the Arctic Council. Furthermore, Canada will encourage other Arctic Council states to support the participation of their Permanent Participant organizations. Canada will also support the continued unique status of Permanent Participant organizations at the Arctic Council, which was created to provide for their active participation and full consultation. As interest by non-Arctic players in the work of the Council grows, Canada will work to ensure that the central role of the Permanent Participants is not diminished or diluted.

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[4] There are six Arctic Council Permanent Participant organizations, of which three have significant membership in Canada. These are the Inuit Circumpolar Council, the Gwich'in Council International, and the Arctic Athabaskan Council.

Third, Canada will provide Canadian youth with opportunities to participate in the circumpolar dialogue. The Canadian Arctic Council Advisory Committee chose three young Canadians to attend the 2009 Arctic Council Ministerial meeting. Their participation enhanced the contribution of the Canadian delegation at this meeting, and this successful initiative is one that Canada will continue to support.

The Way Forward

The rapid pace of change and growing importance of the Arctic requires that we enhance our capacity to deliver on Canada's priorities on the international scene. Facing the challenges and seizing the opportunities that we face often require finding ways to work with others: through bilateral relations with our neighbours in the Arctic, through regional mechanisms like the Arctic Council, and through other multilateral institutions.

The United States is our premier partner in the Arctic and our goal is a more strategic engagement on Arctic issues. This includes working together on issues related to the Beaufort Sea, on Arctic science, on Aboriginal and Northern issues, and on a common agenda that we might pursue when first Canada and then the United States chairs the Arctic Council starting in 2013. We are also working with Russia, Norway, Denmark, Sweden, Finland and Iceland to advance shared interests such as trade and transportation, environmental protection, natural resource development, the role of indigenous peoples, oceans management, climate change adaptation and scientific cooperation.

However, the key foundation for any collaboration will be acceptance of and respect for the perspectives and knowledge of Northerners and Arctic states' sovereignty. As well, there must be recognition that the Arctic states remain best placed to exercise leadership in the management of the region.

Canada was the first chair of the Arctic Council (1996-98) and will be chairing the Council again starting in 2013. The Arctic Council is the leading multilateral forum

through which we advance our Arctic foreign policy and promote Canadian Northern interests. It is a consensus-based, high-level intergovernmental forum that promotes the environmental, social and economic aspects of sustainable development and environmental protection in the Arctic region. The unique structure of the Council brings both the eight Arctic states and the six Arctic Indigenous Permanent Participants together around a common agenda—enhancing the strength and effectiveness of this unique multilateral forum.

Canada will engage with Northern governments and Permanent Participants to ensure that the Arctic Council continues to respond to the region's challenges and opportunities, thus furthering our national interests.

From Canada's perspective, the Council needs to be strengthened to ensure that it is equipped to address tomorrow's challenges. Canada will act on several fronts.

First, we will pursue a greater policy dialogue within the Council. The Council has traditionally played a strong role in science, research, monitoring and assessments, and the development of guidelines (e.g. for oil and gas) in some select areas. Canada will play a proactive role as the Council moves forward to encourage the implementation of guidelines, the development of "best practices" and, where appropriate, the negotiation of policy instruments. The current negotiation of a regional search and rescue agreement (the first ever attempt at a binding instrument under the rubric of the Arctic Council) will serve as an important test case and will inform the scope for future policy endeavours. Canada will also work to ensure that the research activities of the Council continue to focus on key emerging issues to ensure that solid knowledge underpins the policy work of the Council.

Second, Canada will lead efforts to develop a more strategic communications role for the Arctic Council. As the profile of the Arctic increases, the image of the Council and information about the broad range of cutting-edge work that it is doing need to

be bolstered. In this vein, a greater outreach role for the Council will increase both the understanding of the interests of Arctic states and people, and of the Council and its mandate.

Third, Canada will work with other member states to address the structural needs of the organization. While the current informal nature of the body has served Canada well for many years, the growing demands on the organization may require changes to make it more robust. Canada will work with other Arctic states to develop options, including with respect to the role of the Council, related "secretariat" functions, and funding issues.

Beyond the Arctic Council, Canada will work through other multilateral institutions such as the International Maritime Organization and the United Nations Framework Convention on Climate Change towards global solutions to issues like polar shipping regulations and climate change. Arctic-specific organizations such as the Standing Committee of Parliamentarians for the Arctic Region, the Northern Forum, and the University of the Arctic are important partners on a variety of issues.

The increasing accessibility of the Arctic has led to a widespread perception that the region could become a source of conflict. This has led to heightened interest in the Arctic in a number of international organizations including NATO and the Organization for Security and Co-operation in Europe. Canada does not anticipate any military challenges in the Arctic and believes that the region is well managed through existing institutions, particularly the Arctic Council. We will continue to monitor discussion of Arctic issues in other international forums and intervene when necessary to protect Canada's interests.

Canada is taking other steps to demonstrate leadership, such as the 2010 Arctic Ocean Foreign Ministers meeting. In addition, a new Arctic regional policy and program centre at Canada's Embassy in Norway has been established, strengthening our

on-the-ground interaction and influence in the region. This Canadian International Centre for the Arctic Region is part of a broader concerted effort to support Canada's foreign policy goals and commercial linkages through analysis, advocacy and outreach—further enhancing Canada's presence on Arctic issues abroad.

Conclusion

Through our Arctic foreign policy, we will deliver on the international dimension of our Northern Strategy. We will show leadership in demonstrating responsible stewardship while we build a region responsive to Canadian interests and values, secure in the knowledge that the North is our home and our destiny.

Through our Arctic foreign policy, we are also sending a clear message: Canada is in control of its Arctic lands and waters and takes its stewardship role and responsibilities seriously. Canada continues to stand up for its interests in the Arctic. When positions or actions are taken by others that affect our national interests, undermine the cooperative relationships we have built, or demonstrate a lack of sensitivity to the interests or perspectives of Arctic peoples or states, we respond.

Cooperation, diplomacy and respect for international law have always been Canada's preferred approach in the Arctic. At the same time, we will never waver in our commitment to protect our North.

"The True North is our destiny...To not embrace its promise now at the dawn of its ascendancy would be to turn our backs on what it is to be Canadian...As Prime Minister Diefenbaker said...in 1961, 'There is a new world emerging above the Arctic Circle.' It is this world, a new world for all the peoples of the Arctic regions that we in Canada are working to build."

Prime Minister Stephen Harper, August 2008, Inuvik, Northwest Territories

[National Security Presidential Directives - NSPDs]

NSPD-66 / HSPD-25

the White House
President George W. Bush

National Security Presidential Directive and Homeland Security Presidential Directive

January 9, 2009

NATIONAL SECURITY PRESIDENTIAL DIRECTIVE/NSPD – 66
HOMELAND SECURITY PRESIDENTIAL DIRECTIVE/HSPD -- 25

MEMORANDUM FOR THE VICE PRESIDENT
THE SECRETARY OF STATE
THE SECRETARY OF THE TREASURY
THE SECRETARY OF DEFENSE
THE ATTORNEY GENERAL
THE SECRETARY OF THE INTERIOR
THE SECRETARY OF COMMERCE
THE SECRETARY OF HEALTH AND HUMAN SERVICES
THE SECRETARY OF TRANSPORTATION
THE SECRETARY OF ENERGY
THE SECRETARY OF HOMELAND SECURITY
ASSISTANT TO THE PRESIDENT AND CHIEF OF STAFF
ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY
DIRECTOR OF THE OFFICE OF MANAGEMENT AND BUDGET
DIRECTOR OF NATIONAL INTELLIGENCE
ASSISTANT TO THE PRESIDENT FOR NATIONAL SECURITY AFFAIRS
COUNSEL TO THE PRESIDENT
ASSISTANT TO THE PRESIDENT AND DEPUTY NATIONAL SECURITY ADVISOR FOR INTERNATIONAL ECONOMIC AFFAIRS
ASSISTANT TO THE PRESIDENT FOR HOMELAND SECURITY AND COUNTERTERRORISM
CHAIRMAN, COUNCIL ON ENVIRONMENTAL QUALITY
DIRECTOR OF THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
COMMANDANT, U.S. COAST GUARD
DIRECTOR, NATIONAL SCIENCE FOUNDATION

SUBJECT: Arctic Region Policy

I. PURPOSE

A. This directive establishes the policy of the United States with respect to the Arctic region and directs related implementation actions. This directive supersedes Presidential Decision Directive/NSC-26 (PDD-26; issued 1994) with respect to Arctic policy but not Antarctic policy; PDD-26 remains in effect for Antarctic policy only.

B. This directive shall be implemented in a manner consistent with the Constitution and laws of the United States, with the obligations of the United States under the treaties and other international agreements to which the United States is a party, and with customary international law as recognized by the United States, including with respect to the law of the sea.

II. BACKGROUND

A. The United States is an Arctic nation, with varied and compelling interests in that region. This directive takes into account several developments, including, among others:

1. Altered national policies on homeland security and defense;

2. The effects of climate change and increasing human activity in the Arctic region;

3. The establishment and ongoing work of the Arctic Council; and

4. A growing awareness that the Arctic region is both fragile and rich in resources.

III. POLICY

A. It is the policy of the United States to:

1. Meet national security and homeland security needs relevant to the Arctic region;

2. Protect the Arctic environment and conserve its biological resources;

3. Ensure that natural resource management and economic development in the region are environmentally sustainable;

4. Strengthen institutions for cooperation among the eight Arctic nations (the United States, Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, and Sweden);

5. Involve the Arctic's indigenous communities in decisions that affect them; and

6. Enhance scientific monitoring and research into local, regional, and global environmental issues.

B. **National Security and Homeland Security Interests in the Arctic**

1. The United States has broad and fundamental national security interests in the Arctic region and is prepared to operate either independently or in conjunction with other states to safeguard these interests. These interests include such matters as missile defense and early warning; deployment of sea and air systems for strategic sealift, strategic deterrence, maritime presence, and maritime security operations; and ensuring freedom of navigation and overflight.

2. The United States also has fundamental homeland security interests in preventing terrorist attacks and mitigating those criminal or hostile acts that could increase the United States vulnerability to terrorism in the Arctic region.

3. The Arctic region is primarily a maritime domain; as such, existing policies and authorities relating to maritime areas continue to apply, including those relating to law enforcement.[1] Human activity in the Arctic region is increasing and is projected to increase further in coming years. This requires the United States to assert a more active and influential national presence to protect its Arctic interests and to project sea power throughout the region.

4. The United States exercises authority in accordance with lawful claims of United States sovereignty, sovereign rights, and jurisdiction in the Arctic region, including sovereignty within the territorial sea, sovereign rights and jurisdiction within the United States exclusive economic zone and on the continental shelf, and appropriate control in the United States contiguous zone.

5. Freedom of the seas is a top national priority. The Northwest Passage is a strait used for international navigation, and the Northern Sea Route includes straits used for international navigation; the regime of transit passage applies to passage through those straits. Preserving the rights and duties relating to navigation and overflight in the Arctic region supports our ability to exercise these rights throughout the world, including through strategic straits.

6. Implementation: In carrying out this policy as it relates to national security and homeland security interests in the Arctic, the Secretaries of State, Defense, and Homeland Security, in coordination with heads of other relevant executive departments and agencies, shall:

a. Develop greater capabilities and capacity, as necessary, to protect United States air, land, and sea borders in the Arctic region;

b. Increase Arctic maritime domain awareness in order to protect maritime commerce, critical infrastructure, and key resources;

c. Preserve the global mobility of United States military and civilian vessels and aircraft throughout the Arctic region;

d. Project a sovereign United States maritime presence in the Arctic in support of essential United States interests; and

e. Encourage the peaceful resolution of disputes in the Arctic region.

C. **International Governance**

1. The United States participates in a variety of fora, international organizations, and bilateral contacts that promote United States interests in the Arctic. These include the Arctic Council, the International Maritime Organization (IMO), wildlife conservation and management agreements, and many other mechanisms. As the Arctic changes and human activity in the region increases, the United States and other governments should consider, as appropriate, new international arrangements or enhancements to existing arrangements.

2. The Arctic Council has produced positive results for the United States by working within its limited mandate of environmental protection and sustainable development. Its subsidiary bodies, with help from many United States agencies, have developed and undertaken projects on a wide range of topics. The Council also provides a beneficial venue for interaction with indigenous groups. It is the position of the United States that the Arctic Council should remain a high-level forum devoted to issues within its current mandate and not be transformed into a formal international organization, particularly one with assessed contributions. The United States is nevertheless open to updating the structure of the Council, including consolidation of, or making operational changes to, its subsidiary bodies, to the extent such changes can clearly improve the Council's work and are consistent with the general mandate of the Council.

3. The geopolitical circumstances of the Arctic region differ sufficiently from those of the Antarctic region such that an "Arctic Treaty" of broad scope -- along the lines of the Antarctic Treaty -- is not appropriate or necessary.

4. The Senate should act favorably on U.S. accession to the U.N. Convention on the Law of the Sea promptly, to protect and advance U.S. interests, including with respect to the Arctic. Joining will serve the national security interests of the United States, including the maritime mobility of our Armed Forces worldwide. It will secure U.S. sovereign rights over extensive marine areas, including the valuable natural resources they contain. Accession will promote U.S. interests in the environmental health of the oceans. And it will give the United States a seat at the table when the rights that are vital to our interests are debated and interpreted.

5. Implementation: In carrying out this policy as it relates to international governance, the Secretary of State, in coordination with heads of other relevant executive departments and agencies, shall:

   a. Continue to cooperate with other countries on Arctic issues through the United Nations (U.N.) and its specialized agencies, as well as through treaties such as the U.N. Framework Convention on Climate Change, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Convention on Long Range Transboundary Air Pollution and its protocols, and the Montreal Protocol on Substances that Deplete the Ozone Layer;

   b. Consider, as appropriate, new or enhanced international arrangements for the Arctic to address issues likely to arise from expected increases in human activity in that region, including shipping, local development and subsistence, exploitation of living marine resources, development of energy and other resources, and tourism;

   c. Review Arctic Council policy recommendations developed within the ambit of the Council's scientific reviews and ensure the policy recommendations are subject to review by Arctic governments; and

   d. Continue to seek advice and consent of the United States Senate to accede to the 1982 Law of the Sea Convention.

D. **Extended Continental Shelf and Boundary Issues**

1. Defining with certainty the area of the Arctic seabed and subsoil in which the United States may exercise its sovereign rights over natural resources such as oil, natural gas, methane hydrates, minerals, and living marine species is critical to our national interests in energy security, resource management, and environmental protection. The most effective way to achieve international recognition and legal certainty for our extended continental shelf is through the procedure available to States Parties to the U.N. Convention on the Law of the Sea.

2. The United States and Canada have an unresolved boundary in the Beaufort Sea. United States policy recognizes a boundary in this area based on equidistance. The United States recognizes that the boundary area may contain oil, natural gas, and other resources.

3. The United States and Russia are abiding by the terms of a maritime boundary treaty concluded in 1990, pending its entry into force. The United States is prepared to enter the agreement into force once ratified by the Russian Federation.

4. Implementation: In carrying out this policy as it relates to extended continental shelf and boundary issues, the Secretary of State, in coordination with heads of other relevant executive departments and agencies, shall:

    a. Take all actions necessary to establish the outer limit of the continental shelf appertaining to the United States, in the Arctic and in other regions, to the fullest extent permitted under international law;

    b. Consider the conservation and management of natural resources during the process of delimiting the extended continental shelf; and

    c. Continue to urge the Russian Federation to ratify the 1990 United States-Russia maritime boundary agreement.

E. **Promoting International Scientific Cooperation**

1. Scientific research is vital for the promotion of United States interests in the Arctic region. Successful conduct of U.S. research in the Arctic region requires access throughout the Arctic Ocean and to terrestrial sites, as well as viable international mechanisms for sharing access to research platforms and timely exchange of samples, data, and analyses. Better coordination with the Russian Federation, facilitating access to its domain, is particularly important.

2. The United States promotes the sharing of Arctic research platforms with other countries in support of collaborative research that advances fundamental understanding of the Arctic region in general and potential Arctic change in particular. This could include collaboration with bodies such as the Nordic Council and the European Polar Consortium, as well as with individual nations.

3. Accurate prediction of future environmental and climate change on a regional basis, and the delivery of near real-time information to end-users, requires obtaining, analyzing, and disseminating accurate data from the entire Arctic region, including both paleoclimatic data and observational data. The United States has made significant investments in the infrastructure needed to collect environmental data in the Arctic region, including the establishment of portions of an Arctic circumpolar observing network through a partnership among United States agencies, academic collaborators, and Arctic residents. The United States promotes active involvement of all Arctic nations in these efforts in order to advance scientific understanding that could provide the basis for assessing future impacts and proposed response strategies.

4. United States platforms capable of supporting forefront research in the Arctic Ocean, including portions expected to be ice-covered for the foreseeable future, as well as seasonally ice-free regions, should work with those of other nations through the establishment of an Arctic circumpolar observing network. All Arctic nations are members of the Group on Earth Observations partnership, which provides a framework for organizing an international approach to environmental observations in the region. In addition, the United States recognizes that academic and research institutions are vital partners in promoting and conducting Arctic research.

5. Implementation: In carrying out this policy as it relates to promoting scientific international cooperation, the Secretaries of State, the Interior, and Commerce and the Director of the National Science Foundation, in coordination with heads of other relevant executive departments and agencies, shall:

a. Continue to play a leadership role in research throughout the Arctic region;

b. Actively promote full and appropriate access by scientists to Arctic research sites through bilateral and multilateral measures and by other means;

c. Lead the effort to establish an effective Arctic circumpolar observing network with broad partnership from other relevant nations;

d. Promote regular meetings of Arctic science ministers or research council heads to share information concerning scientific research opportunities and to improve coordination of international Arctic research programs;

e. Work with the Interagency Arctic Research Policy Committee (IARPC) to promote research that is strategically linked to U.S. policies articulated in this directive, with input from the Arctic Research Commission; and

f. Strengthen partnerships with academic and research institutions and build upon the relationships these institutions have with their counterparts in other nations.

F. **Maritime Transportation in the Arctic Region**

1. The United States priorities for maritime transportation in the Arctic region are:

   a. To facilitate safe, secure, and reliable navigation;

   b. To protect maritime commerce; and

   c. To protect the environment.

2. Safe, secure, and environmentally sound maritime commerce in the Arctic region depends on infrastructure to support shipping activity, search and rescue capabilities, short- and long-range aids to navigation, high-risk area vessel-traffic management, iceberg warnings and other sea ice information, effective shipping standards, and measures to protect the marine environment. In addition, effective search and rescue in the Arctic will require local, State, Federal, tribal, commercial, volunteer, scientific, and multinational cooperation.

3. Working through the International Maritime Organization (IMO), the United States promotes strengthening existing measures and, as necessary, developing new measures to improve the safety and security of maritime transportation, as well as to protect the marine environment in the Arctic region. These measures may include ship routing and reporting systems, such as traffic separation and vessel traffic management schemes in Arctic chokepoints; updating and strengthening of the Guidelines for Ships Operating in Arctic Ice-Covered Waters; underwater noise standards for commercial shipping; a review of shipping insurance issues; oil and other hazardous material pollution response agreements; and environmental standards.

4. Implementation: In carrying out this policy as it relates to maritime transportation in the Arctic region, the Secretaries of State, Defense, Transportation, Commerce, and Homeland Security, in coordination with heads of other relevant executive departments and agencies, shall:

   a. Develop additional measures, in cooperation with other nations, to address issues that are likely to arise from expected increases in shipping into, out of, and through the Arctic region;

   b. Commensurate with the level of human activity in the region, establish a risk-based capability to address hazards in the Arctic environment. Such efforts shall advance work on pollution prevention and response standards; determine basing and logistics support requirements, including necessary airlift and icebreaking capabilities; and improve plans and cooperative agreements for search and rescue;

   c. Develop Arctic waterways management regimes in accordance with accepted international standards, including vessel traffic-monitoring and routing; safe navigation standards; accurate and standardized charts; and accurate and timely environmental and navigational information; and

   d. Evaluate the feasibility of using access through the Arctic for strategic sealift and humanitarian aid and disaster relief.

G. **Economic Issues, Including Energy**

1. Sustainable development in the Arctic region poses particular challenges. Stakeholder input will inform key decisions as the United States seeks to promote economic and energy security. Climate change and other factors are significantly affecting the lives of Arctic inhabitants, particularly indigenous communities. The United States affirms the importance to Arctic communities of adapting to climate change, given their particular vulnerabilities.

2. Energy development in the Arctic region will play an important role in meeting growing global energy demand as the area is thought to contain a substantial portion of the world's undiscovered energy resources. The United States seeks to ensure that energy development throughout the Arctic occurs in an environmentally sound manner, taking into account the interests of indigenous and local communities, as well as open and transparent market principles. The United States seeks to balance access to, and development of, energy and other natural resources with the protection of the Arctic environment by ensuring that continental shelf resources are managed in a responsible manner and by continuing to work closely with other Arctic nations.

3. The United States recognizes the value and effectiveness of existing fora, such as the Arctic Council, the International Regulators Forum, and the International Standards Organization.

4. Implementation: In carrying out this policy as it relates to economic issues, including energy, the Secretaries of State, the Interior, Commerce, and Energy, in coordination with heads of other relevant executive departments and agencies, shall:

   a. Seek to increase efforts, including those in the Arctic Council, to study changing climate conditions, with a view to preserving and enhancing economic opportunity in the Arctic region. Such efforts shall include inventories and assessments of villages, indigenous communities, subsistence opportunities, public facilities, infrastructure, oil and gas development projects, alternative energy development opportunities, forestry, cultural and other sites, living marine resources, and other elements of the Arctic's socioeconomic composition;

   b. Work with other Arctic nations to ensure that hydrocarbon and other development in the Arctic region is carried out in accordance with accepted best practices and internationally recognized standards and the 2006 Group of Eight (G-8) Global Energy Security Principles;

   c. Consult with other Arctic nations to discuss issues related to exploration, production, environmental and socioeconomic impacts, including drilling conduct, facility sharing, the sharing of environmental data, impact assessments, compatible monitoring programs, and reservoir management in areas with potentially shared resources;

   d. Protect United States interests with respect to hydrocarbon reservoirs that may overlap boundaries to mitigate adverse environmental and economic consequences related to their development;

   e. Identify opportunities for international cooperation on methane hydrate issues, North Slope hydrology, and other matters;

   f. Explore whether there is a need for additional fora for informing decisions on hydrocarbon leasing, exploration, development, production, and transportation, as well as shared support activities, including infrastructure projects; and

   g. Continue to emphasize cooperative mechanisms with nations operating in the region to address shared concerns, recognizing that most known Arctic oil and gas resources are located outside of United States jurisdiction.

H. **Environmental Protection and Conservation of Natural Resources**

1. The Arctic environment is unique and changing. Increased human activity is expected to bring additional stressors to the Arctic environment, with potentially serious consequences for Arctic communities and ecosystems.

2. Despite a growing body of research, the Arctic environment remains poorly understood. Sea ice and glaciers are in retreat. Permafrost is thawing and coasts are eroding. Pollutants from within and outside the Arctic are contaminating the region. Basic data are lacking in many fields. High levels of uncertainty remain concerning the effects of climate change and increased human activity in the Arctic. Given the need for decisions to be based on sound scientific and socioeconomic information, Arctic environmental

research, monitoring, and vulnerability assessments are top priorities. For example, an understanding of the probable consequences of global climate variability and change on Arctic ecosystems is essential to guide the effective long-term management of Arctic natural resources and to address socioeconomic impacts of changing patterns in the use of natural resources.

3. Taking into account the limitations in existing data, United States efforts to protect the Arctic environment and to conserve its natural resources must be risk-based and proceed on the basis of the best available information.

4. The United States supports the application in the Arctic region of the general principles of international fisheries management outlined in the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of December 10, 1982, relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks and similar instruments. The United States endorses the protection of vulnerable marine ecosystems in the Arctic from destructive fishing practices and seeks to ensure an adequate enforcement presence to safeguard Arctic living marine resources.

5. With temperature increases in the Arctic region, contaminants currently locked in the ice and soils will be released into the air, water, and land. This trend, along with increased human activity within and below the Arctic, will result in increased introduction of contaminants into the Arctic, including both persistent pollutants (e.g., persistent organic pollutants and mercury) and airborne pollutants (e.g., soot).

6. Implementation: In carrying out this policy as it relates to environmental protection and conservation of natural resources, the Secretaries of State, the Interior, Commerce, and Homeland Security and the Administrator of the Environmental Protection Agency, in coordination with heads of other relevant executive departments and agencies, shall:

   a. In cooperation with other nations, respond effectively to increased pollutants and other environmental challenges;

   b. Continue to identify ways to conserve, protect, and sustainably manage Arctic species and ensure adequate enforcement presence to safeguard living marine resources, taking account of the changing ranges or distribution of some species in the Arctic. For species whose range includes areas both within and beyond United States jurisdiction, the United States shall continue to collaborate with other governments to ensure effective conservation and management;

   c. Seek to develop ways to address changing and expanding commercial fisheries in the Arctic, including through consideration of international agreements or organizations to govern future Arctic fisheries;

   d. Pursue marine ecosystem-based management in the Arctic; and

   e. Intensify efforts to develop scientific information on the adverse effects of pollutants on human health and the environment and work with other nations to reduce the introduction of key pollutants into the Arctic.

IV. Resources and Assets

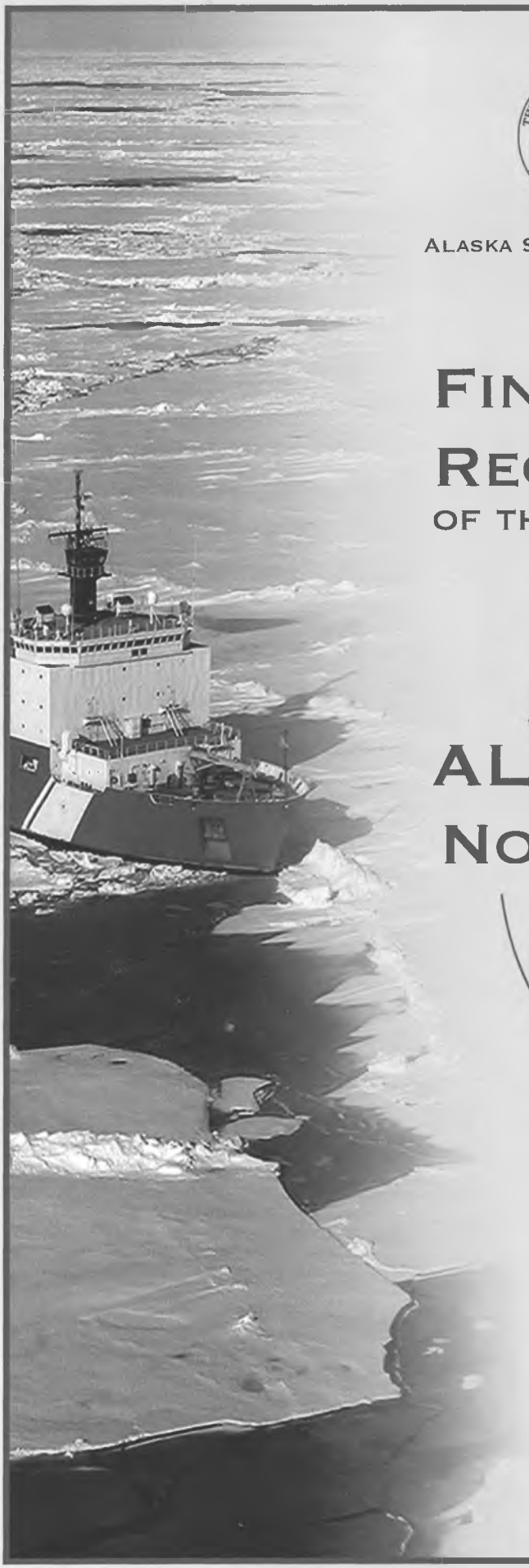
A. Implementing a number of the policy elements directed above will require appropriate resources and assets. These elements shall be implemented consistent with applicable law and authorities of agencies, or heads of agencies, vested by law, and subject to the availability of appropriations. The heads of executive departments and agencies with responsibilities relating to the Arctic region shall work to identify future budget, administrative, personnel, or legislative proposal requirements to implement the elements of this directive.

GEORGE W. BUSH

# # #

[1] These policies and authorities include Freedom of Navigation (PDD/NSC-32), the U.S. Policy on Protecting the Ocean Environment (PDD/NSC-36), Maritime Security Policy (NSPD-41/HSPD-13), and the National Strategy for Maritime Security (NSMS).

Source: The White House



Alaska State Legislature

Findings & Recommendations of the

Alaska Northern Waters Task Force

January, 2012

src: USCG

ALASKA STATE LEGISLATURE

FINDINGS & RECOMMENDATIONS OF THE

ALASKA NORTHERN WATERS TASK FORCE

JANUARY, 2012

Contents

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Executive Summary

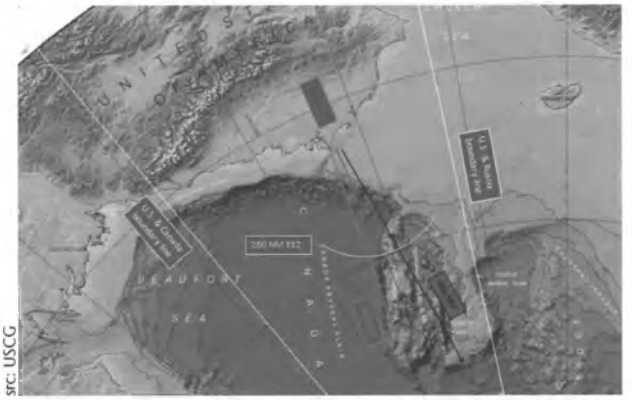
Diminishing sea ice and the intensifying worldwide race for natural resources has rapidly increased international interest in the Arctic. Arctic Nations are anticipating the development of northern shipping routes, mineral extraction, oil and gas exploration, commercial fisheries, and tourism. For Alaska, the economic benefits over the long term could be substantial. But how will we confront the challenges and opportunities awaiting us in the Arctic while also providing for sustainable communities and protecting the environment?

In 2010, the Alaska State Legislature established the Alaska Northern Waters Task Force (ANWTF) to identify opportunities to increase the state's engagement with these issues. On both the state and federal level, the task force has found many urgent needs. The following are its topmost recommendations:

1. Statewide public testimony gathered by the task force made it clear that the state and federal governments must provide Alaskans with meaningful opportunities to participate in Arctic policy and Outer Continental Shelf development decisions. Many local government officials, tribal government representatives, and individuals expressed a need for timelier, more frank, and more thorough information from state and federal authorities regarding policies and activities off Alaska's coasts. The task force believes that consistent, structured communication and consultation—particularly with those Alaskans likely to be most impacted by evolving conditions—is the best way to build consensus, advance responsible policies, and stimulate broadly beneficial economic development.

2. The state of Alaska has only just begun to grapple with the challenges and opportunities developing in the far north. It is imperative the state be strategically involved and in a leadership role in the development of policies affecting the state, its communities, and citizens. It is therefore among the task force's highest priorities to press for the creation of a commission to develop a comprehensive state strategy for the Arctic. As the Arctic changes, the decisions Alaska faces will continue to evolve and grow in complexity. An Alaskan Arctic Commission will enable Alaska to more effectively respond to unfolding developments and will jumpstart Alaska's preparations to ensure that the interests of the state and its people are protected.

3. The ANWTF recommends that the Alaska State Legislature and the state of Alaska continue to urge the United States Senate to ratify the United Nations Convention on the Law of the Sea (UNCLOS). Joining the more than 160 nations that have ratified UNCLOS will enable the U.S. to legitimize its claims to resources in areas of the Continental Shelf that extend beyond the 200-mile Exclusive Economic Zone. To quote President George W. Bush, who, like President Barack Obama, supports U.S. ratification of the convention, "It will give the United States a seat at the table when the rights that are vital to our interests are debated and interpreted."



src: USCG

Map shows the extent of the US Continental Shelf off Alaska's Arctic coast.

The following pages summarize top recommendations among the many task force findings in areas including Arctic governance, oil and gas development, marine transportation, infrastructure, fisheries, and research. The full report of the task force, including these and additional recommendations in-depth, follows.

Governance

Changes in the Arctic make it necessary to evaluate the adequacy of existing Arctic governance structures and to consider adjusting these systems or creating new ones to better suit developing needs. At the international level, Arctic Nations must strengthen their relations and enhance regulatory frameworks and policy mechanisms to address pressing issues. We in Alaska must ensure that our Arctic residents and the state of Alaska have a strong voice in these matters.

1. The ANWTF supports the development and implementation of a comprehensive U.S. Arctic strategy. This strategy should ensure that national interests are balanced with Alaska state interests, so that commitments to safeguard the environment and the wellbeing of the region's communities and cultures accompany all plans to advance economic development.

2. The ANWTF recommends that the state of Alaska

and the United States participate in the adoption of international agreements for shipping, fisheries, oil and gas development, and other transboundary issues. It is in our interest to ensure all parties develop resources in the region safely and responsibly.

3. The ANWTF recommends the state of Alaska and the Alaska State Legislature support greater international cooperation through the Arctic Council. Having recognized that the Arctic Council is the world's predominant intergovernmental forum for Arctic governance, the ANWTF recommends greater state engagement with the council and its working groups and encourages the council's member countries to support expanding its mandate as an institution for forging multilateral agreements among Arctic Nations.

Oil and Gas Development

A warming Arctic provides new opportunities and challenges for oil and gas development. The U.S. Geological Survey estimates that 13 percent of the Earth's undiscovered oil reserves and 30 percent of undiscovered gas reserves are in the Arctic.

1. The ANWTF recommends that the state of Alaska and the United States develop a framework for the identification, acquisition, and sharing of data and other information to support leasing, permitting, and other agency decisions.

2. The ANWTF recommends that the state of Alaska and the United States support continued improvement in the ability of industry and the government to prevent, contain, control, clean up, and remediate spills in the Arctic. These measures should include contingency plans and response capabilities for all large commercial vessels operating in Arctic waters, including vessels travelling internationally in "innocent passage."

3. The ANWTF recommends that the University of Alaska establish an oil spill research center.

Marine Transportation

Maritime powers have been searching for a shorter route from the Atlantic to Asian waters for centuries. The warming Arctic raises the feasibility of two such routes: the Northern Sea Route, north of Russia, and the Northwest Passage, north of Canada and Alaska. Shipping traffic—already increasing—is expected to surge in the decades ahead. We must take steps to establish secure and environmentally sound marine transportation in the region as soon as possible.

1. The ANWTF recommends that the United States, with the participation of the state of Alaska, work with the international community to finalize the Polar Code for ships operating in Arctic waters and examine whether to establish an offshore vessel routing scheme for circumpolar marine traffic, including through the Aleutians.

2. The ANWTF supports increasing short- and long-range navigational aids in the North American Arctic and extending Automatic Identification System

src: commons.wikimedia.org

(AIS) vessel tracking across the North Slope waters to Tuktoyaktuk, in the Northwest Territories.

3. The ANWTF endorses completing the Aleutian Islands Risk Assessment and recommends that the state of Alaska continue to support and participate in the United States Coast Guard Port Access Route Study.

Fisheries

As sea ice diminishes and some commercial fish species move into northern waters, interest in fisheries north of the Bering Strait has increased. However, currently there is not nearly enough information available to make sustainable management of commercial fisheries possible there, and in 2009 the North Pacific Fishery Management Council approved a moratorium on fishing in these waters. The ANWTF believes the state of Alaska and the U.S. government should continue in its precautionary policy, but the moratorium should not cause Alaska to postpone research into viable commercial fisheries north of the Bering Strait.

1. The ANWTF recommends greatly increasing fisheries-related research and monitoring in the region.

2. The ANWTF encourages the state of Alaska and the U.S. government to continue actively negotiating fisheries-related transboundary accords with other nations.

3. The ANWTF recommends that the state of Alaska and federal authorities prepare strategies to maximize the degree to which local communities and resident Alaskans will benefit from the development of commercial fisheries in waters north of the Bering Strait.

Infrastructure

Immediate investment in Arctic infrastructure is a foremost priority for Alaska and the entire United States. Increased human activity related to shipping, oil and gas development, commercial fishing, and tourism will require, at a minimum, new ports and safe harbors, equipment and facilities for oil spill response, additional Polar Class icebreakers for the U.S. fleet, and improved charting and mapping.

1. The ANWTF recommends the Alaska State Legislature and the state of Alaska continue to urge the federal government to forward base the United States Coast Guard in the Arctic and to fund the construction of additional icebreakers and ice-capable vessels for the U.S. fleet.
2. The task force recommends the state of Alaska and the federal government continue efforts to develop deep-draft ports and additional safe harbors in northern waters as soon as possible.
3. The ANWTF supports increased funding to expedite the National Ocean and Atmospheric Administration's (NOAA) Hydrographic Arctic mapping. The task force particularly supports updated mapping of coastal navigation routes and entrance routes to coastal villages.

Research

Worldwide climate change is already having an impact on the Arctic, where temperatures are rising twice as quickly as those in more southern latitudes. Profound transformations are underway in its complex ecosystems. These changes are expected to trigger unprecedented degrees of human activity in the region. As a consequence, transformation in the far north will accelerate all the more, not just environmentally, but also on socioeconomic levels. Under these circumstances, the need for wide-ranging scientific research and monitoring in the Arctic has never been more pressing. We must continue to gather essential baseline information about the environment and its dynamics in order to become better able to discern shifting conditions. In turn, our understanding of the implications of changes there will increase, and we will improve our ability to prepare for and mitigate impacts.

1. The ANWTF recommends that the state of Alaska and the federal government identify priorities for Arctic research. By ranking priorities funding can be targeted more effectively and research can be better coordinated. Major knowledge gaps will be closed far more quickly.
2. The ANWTF recommends improving the exchange of research information and integration of data management. Faster and more extensive integration of data collected by state and federal agencies, academics, and industry would yield enormous benefits for all stakeholders.
3. The ANWTF recommends increased long-term monitoring of the Arctic, including routine surveys of key chemical, physical, and biological parameters of the Beaufort and Chukchi Seas and associated coastal plains. In order to better understand, quantify, and predict the effects of changes in both marine and terrestrial Arctic ecosystems, Alaska must increase our long-term monitoring of a wide range of environmental characteristics.

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Alaska State Legislature

Alaska Northern Waters Task Force

January, 2012 Report

www.anwtf.com

The Alaska Northern Waters Task Force would like to thank the many communities throughout the state that welcomed us and took the time to help us understand the issues they face. The task force thanks the specialists, dedicated public servants, local leaders, and concerned citizens who addressed our group. Presenters gave their time and traveled great distances to share their knowledge. The task force would also like to acknowledge the work of the late Bill Noll, who with others began the conversation that ultimately led to the creation of the task force.

This report contains information on many topics and identifies a number of opportunities and concerns. It also includes recommendations to prepare communities and state government for changes in the Arctic. In a number of instances there is already work underway that may address the opportunity or concern that underlies a recommendation. In those cases, the recommendation should be read as encouraging the good work that is already being done, whether that work is being done by local communities, state and federal agencies, universities, companies, or other organizations and individuals.

A quote from a resident of Wales, Alaska, on the Bering Strait:
"From here we can see into tomorrow."

Introduction

The Arctic is warming at twice the rate of the rest of the planet.[1] The years 2005 to 2010 were the warmest measured there since record keeping began around 1880. Recent predictions foresee an entirely ice-free Arctic summer within four decades.

Diminishing sea ice and the intensifying worldwide demand for natural resources has rapidly increased international interest in the far north. In addition to the eight Arctic Nations—the United States, Russia, Canada, Iceland, Denmark (Greenland), Norway, Finland, and Sweden—other governments are eyeing the economic potential of the resource rich region. They include China, Japan, South Korea, and the European Union.[2]

These nations and others are anticipating the development of northern shipping routes that will bring savings in time and fuel costs, and they recognize a new frontier for mineral extraction, oil and gas exploration, commercial fisheries, and tourism. There are many challenges accompanying these opportunities, including the preservation of communities and cultures confronted with thawing glaciers and permafrost, intensifying storm surges and coastal erosion, and declining populations of migratory animals.[3]

In 2010, the Alaska State Legislature established the Alaska Northern Waters Task Force (ANWTF) to increase the state's engagement with these issues.[4] The task force studied a vast quantity of scientific, social, and economic research. It consulted with more than 65 experts from universities, the U.S. military, non-governmental organizations, and dozens of state and federal agencies.[5] During twelve meetings in Juneau, Anchorage, Barrow, Wainwright, Kotzebue, Nome, Wales, Bethel, and Unalaska, the task force listened to thoughtful testimony delivered by hundreds of Alaskans, many already impacted by transforming conditions.[6]

In some areas of planning and preparation Alaska and the federal government lag behind other Arctic Nations. On both the state and federal level, the task force has identified numerous urgent needs, many of them deeply intertwined.

For example, to prepare for dramatically increased shipping—whether through the Northwest Passage or through the Northern Sea Route—Alaska must begin developing deep draft ports and safe harbors in northern waters as soon as possible; support the completion of the United States Coast Guard (USCG) Port Access Route Study; and encourage the development of a Bering Strait vessel traffic separation scheme. Moreover, the USCG needs to establish bases considerably nearer to the Arctic, and all involved parties must increase research to understand possible impacts on Arctic communities and the marine life on which they depend.

The subject of icebreakers provides perhaps the most telling example of policy shortcomings at the federal level. As of 2011, Russia had a fleet of eight active nuclear powered icebreakers, with plans to launch a ninth by 2015. Intent on being a player in trans-Arctic shipping, China owns the world's largest non-nuclear icebreaker and has funded construction of a second that will be ready by 2013. Sweden, Finland, Canada, South Korea, and Japan are also adding to their icebreaking fleets. However, the United States has just one active icebreaker—the USCG vessel Healy. Meanwhile, the 1970s-era icebreaker Polar Star has been sidelined in "Caretaker" status in Seattle since 2006, and its sister ship, the Polar Sea, has been decommissioned. Despite persistent appeals from many quarters—including from Alaska Lieutenant Governor Mead Treadwell, former chair of the United States Arctic Research Commission—Congress has not yet legislated funding to add new polar class icebreakers to the United States fleet.

The state of Alaska has only just begun to grapple with these and many other pressing issues. Although a number of individuals in state government have duties important to resolving issues and advancing opportunities described in this report, no one person is tasked with coordinating or prioritizing these efforts as part of an overarching Arctic strategy. Apart from the Alaska Northern Waters Task Force, there have never been personnel in state government—not even a single individual—focused exclusively on these complex concerns. It is therefore among the task force's highest priorities to press for the creation of a commission to develop a comprehensive state strategy for the Arctic. As the Arctic changes, the decisions Alaska faces will continue to evolve and grow in complexity. An Alaskan Arctic Commission re-

1. For the purposes of this report the Arctic is defined using the definition found in the Arctic Research and Policy Act (ARPA). See Appendix A.
2. China and South Korea have increased their research in the area, are constructing icebreakers, and have established a permanent research station at Svalbard.
3. To learn more about recent environment changes see National Oceanic and Atmospheric Administration's (NOAA) newest report card. Richter-Menge, J., M.O. Jeffries and J.E. Overland, Eds., 2011: Arctic Report Card 2011. http://www.arctic.noaa.gov/reportcard..
4. See Appendix B for the full text of House Concurrent Resolution 22. See Appendix C for the Alaska Northern Waters Task Force member's biographies and Appendix D for the member roster.
5. See Appendix E for a list of the presenters.
6. See Appendix F for the list and dates of the hearings.

sponsible for these issues on state, national, and international levels will enable Alaska to more effectively respond to unfolding developments and will jumpstart our preparations to ensure that the state and its peoples' interests are protected long into the future.

This report summarizes the Alaska Northern Waters Task Force's recommendations on Arctic issues affecting Alaska. The recommendations are in the following six areas:

- **Governance**
- **Planning & Infrastructure Investment**
- **Oil & Gas Development**
- **Fisheries**
- **Marine Transportation**
- **Research**

Membership And Duties Of The Task Force

The Alaska Northern Waters Task Force includes state legislators, leaders from Arctic communities, and representatives of key federal and state agencies.

Members of the task force are as follows:

- Representative Reggie Joule, Chair, Kotzebue
- Senator Bert Stedman, Vice-Chair, Sitka
- Senator Lyman Hoffman, Bethel
- Representative Bob Herron, Bethel
- Larry Hartig, Commissioner, Alaska Dept. of Environmental Conservation
- Chuck Greene, Vice-President, NANA Corp., Kotzebue
- Chris Hladick, City Manager, Unalaska
- Edward Itta, Former Mayor, North Slope Borough
- Dave Kubiak, Chair, Alaska Marine Conservation Council, Kodiak
- Denise Michels, Mayor, Nome

Alternate members of the task force include:

- Senator Donald Olson, Golovin
- Representative Bryce Edgmon, Dillingham
- Cora Campbell, Commissioner, Department of Fish & Game
- Richard Glenn, Vice President, Arctic Slope Regional Corporation, Barrow

The United States Coast Guard served as the federal liaison and was represented by Rear Admiral Christopher Colvin until May 19, 2011. Upon Rear Admiral Colvin's departure, Rear Admiral Thomas Ostebo served as the federal liaison.

The duties of the task force are as follows:

1. Assess and facilitate creation of a state and federal commission responsible for overseeing the development of state and federal northern ocean waters;
2. Facilitate regional coordination, cooperation, and outreach regarding the creation of the commission to keep local stakeholders informed and to incorporate their input into the process;
3. Identify and coordinate efforts of mutual concern for federal, state, and local agencies, as well as international interests, in the creation of the commission; and
4. Conduct hearings in the Arctic and Sub-Arctic regions of Alaska.

Agendas, presentations, recordings of hearings, and other pertinent information regarding the task force can be found at the following website: www.anwtf.com.

Governance

"Most of the Arctic, like most of the world, is commonly owned. With ownership comes the obligation to manage our resources for the benefit of the total. To do that, we must understand the reality, the richness, and the responsibility of the North."

—Former Alaska Governor Wally Hickel

Introduction

The Arctic is transforming, largely due to a changing climate and increased globalization of economic activities. These rapid changes make it necessary to explore the adequacy of existing Arctic governance structures and to consider adjusting these systems or creating new ones to better suit developing needs. Arctic Nations must enhance cooperation at regional and international levels as they each develop and refine their regulatory frameworks and policy mechanisms on Arctic issues. Alaska must ensure its Arctic residents and the state of Alaska have a strong voice in these matters.

Developing the resource rich Arctic in a way that maintains sustainable communities and limits adverse impacts to the environment will require unprecedented cooperation among Arctic Nations. This level of cooperation will require changes in how Arctic Nations think about sovereignty and territorial boundaries on both land and water. Traditional sector-based regulation will not effectively safeguard the environment from damage. Each Arctic Nation must recognize that how they develop their resources can impact not only themselves but also their neighbors. Working together, the Arctic Nations can foster productive, sustainable development while respecting the entire region's fragile ecosystems and the cultures and quality of life of its inhabitants.

Over the past year, it has become apparent to the ANWTF that the United States lacks a national vision for the Arctic and has no comprehensive strategy for its future. The state of Alaska has supported environmentally sound resource development in the Arctic and elsewhere in the state as the primary means to provide for an economy and jobs for all Alaskans. The ANWTF believes it would benefit the state, as discussions on Arctic issues and opportunities continue with the federal government and internationally, to collect the different elements of state policies relating to the Arctic into one definitive document. Substantial efforts are necessary on both the national and state level to prepare for changes in the Arctic and to ensure responsible stewardship of the U.S. Arctic far into the future.

National and International Actions

1. The ANWTF Recommends that the Alaska State Legislature and the State of Alaska Continue to Urge the United States Senate to Ratify the United Nations Convention on the Law of the Sea.

The Alaska State Legislature and Governor Sean Parnell are on record supporting the United States Senate ratification of the United Nations Convention on the Law of the Sea (UNCLOS). The United States is the only major maritime power and the only Arctic Nation that is not a party to the convention. More than 160 nations and the European Union have joined UNCLOS. Congressional ratification will substantially benefit our country's economic and national security interests. The ANWTF strongly encourages the state of Alaska to continue to support ratification, and it appreciates the efforts of Senators Mark Begich and Lisa Murkowski, who are working with their colleagues in the U.S. Senate to ratify UNCLOS.

International cooperation in the Arctic must be strengthened with the force of law recognized by all Arctic parties. Public testimony and comments from international, national, and state representatives indicate that legal frameworks are already in place for Arctic governance over certain matters.[1] The Law of the Sea Convention provides a mechanism to resolve disputes.

An annex to the convention negotiated under President George H. W. Bush and finalized in 1994 put to rest concerns regarding diminished national sovereignty. Since then, every U.S. president has endorsed ratification. On May 15, 2007, President George W. Bush said, "[Ratification] will secure U.S. sovereign rights over extensive marine areas, including the valuable natural resources they contain. Accession will promote U.S. interests in the environmental health of the oceans. And it will give the United States a seat at the table when the rights that are vital to our interests are debated and interpreted."

Ratification of UNCLOS will enable the U.S. to peacefully legitimize its Extended Continental Shelf claims in the Arctic and gain access to additional oil and gas reserves. Under the convention, nations can submit claims to submerged lands and the resources there if they demonstrate that their continental margin extends beyond the 200-mile Exclusive Economic Zone (EEZ). UNCLOS also secures open sea lanes for maritime commerce and corridors for submarine cables and pipelines.

1. Global agreements related to Arctic issues include the United Nations Framework Convention on Climate Change, the Stockholm Convention on Persistent Organic Pollutants, the Treaty of Spitsbergan, which provides for access to the Svalbard Archipelago, and the International Maritime Organization's guidelines for shipping. Regional agreements also exist, such as the joint management agreement between Norway and Russia regarding fishing and the agreement between Canada and the United States regarding co-management of the Porcupine Caribou Herd.

United States military, national security, and business interests support ratifying UNCLOS. By failing to act, the United States jeopardizes its effectiveness in shaping future ocean policies, risks its ability to improve its strategic position in the Arctic, and imperils economic opportunities afforded under the convention. The United States should ratify UNCLOS as quickly as possible.

2. The ANWTF Supports the Continued Development of a Comprehensive United States Arctic Strategy, Including Necessary Funding For Its Implementation.

A comprehensive U.S. Arctic strategy must be developed to implement current domestic Arctic policy. This strategy should carefully balance national interests with Alaska state interests. Commitments to safeguard the environment and preserve the traditions and wellbeing of the region's communities and cultures should accompany all strategies for economic development. Alaska should not only support this effort but also contribute to it, given that Alaska's residents are clearly among those Americans who know the U.S. Arctic best.

On January 9, 2009, President George W. Bush adopted a U.S. Arctic Policy through National Security Presidential Directive 66 (NSPD-66) and Homeland Security Presidential Directive 25 HSPD-25).[1] Under the Obama Administration, this policy still stands. In addition to addressing national security and homeland security needs, it calls on the U.S. to:

- Protect the Arctic environment and conserve its biological resources;
- Ensure that natural resource management and economic development in the region are environmentally sustainable;
- Involve the Arctic's indigenous communities in decisions that affect them; and
- Enhance scientific monitoring and research into local, regional, and global environmental issues.

The policy also endorses ratification of UNCLOS and calls for continuing participation in the Arctic Council; negotiation of agreements with other Arctic Nations regarding increased human activity in the region; and continuing cooperation with other countries on Arctic issues through the United Nations.

On July 19, 2010, building on President Bush's directive, President Obama signed an Executive Order[2] establishing the first ever National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes, which adopts the Final Recommendations of the Interagency Ocean Policy Task Force (IOPTF)[3] and directs federal agencies to implement these recommendations.

A cabinet-level National Ocean Council (NOC) has been created to carry out the National Policy. It has established a Governance Coordinating Committee to formally engage with states, tribes, and local governments. Mark Robbins, Associate Director of the Office of the Governor in Washington, D.C., was selected in consultation with Governor Parnell to represent the Alaska region on the 18-member committee.

The implementation of Coastal and Marine Spatial Planning—a comprehensive, ecosystem-based approach for coordinating sustainable uses of our oceans and coasts—is among the NOC's priority objectives. The council has called for the creation of nine regional planning bodies—consisting of federal, state, and tribal authorities—to develop coastal and marine spatial plans. According to the existing framework, Alaska will be a region unto itself, with its own planning body.

As the NOC moves forward and U.S. Arctic policy becomes further defined, the state of Alaska should work with federal agencies to ensure that state interests and the interests of Alaska's Arctic communities are fully recognized and incorporated.

3. The ANWTF Recommends that the State of Alaska and the United States Encourage and Participate in the Adoption of International Agreements for Shipping, Fisheries, Oil and Gas, and Other Transboundary Issues.

Arctic Nations will benefit from agreements to ensure all parties develop resources in the region safely and responsibly. Cooperation between the United States, Canada, and other Arctic Nations in areas including marine research, seafloor mapping, and vessel tracking is encouraging, but more such accords are needed. Marine life, oil spills, and shipping accidents do not respect national boundaries.

The ANWTF recommends that international standards related to Arctic oil and gas infrastructure be established among all Arctic Nations. These should include requirements for the design, construction, transportation, installation, operation, and removal of offshore structures. An international agreement on oil spill response standards is also essential. Reflecting the level of risk such development brings to the region, these standards should be particularly rigorous. Both the Arctic Council and the International Organization for Standardization have begun work toward these goals. In May 2011, the Arctic Council established a

1. The full text of the Arctic Policy can be found at: http://www.fas.org/irp/offdocs/nspd-66.htm

2. The full text of the Presidential Executive Order can be found at: http://www.whitehoUSe.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes

3. The full text of the Interagency Ocean Policy Task Force Final Recommendations can be found at: http://www.whitehoUSe.gov/files/documents/OPTF_FinalRecs.pdf

task force to develop an international instrument on Arctic marine oil pollution preparedness and response. The recommendations are to be presented jointly at the next Ministerial meeting in 2013. In light of oil and gas development already underway in some regions of the Arctic, the ANWTF encourages finalization of this work as soon as possible.

The U.S. government should also continue international negotiations regarding the management of Arctic marine life. Northern fisheries are covered by international agreements in waters within the 200-mile Exclusive Economic Zones of coastal nations. However, high Arctic waters beyond those limits are unregulated. We must reach agreements with other Arctic Nations to cooperatively research fish stocks and sustainably manage transboundary marine life of all kinds. These accords should be finalized as soon as possible, before commercial fishing expands into the high Arctic.

As part of any marine life agreement, the Arctic Nations should consider establishing an international fisheries management organization for the Arctic. The state of Alaska and its Arctic communities should be represented in any such organization that is formed.

4. The ANWTF Recommends that the Alaska State Legislature and the State of Alaska Support and Encourage Greater International Cooperation through the Arctic Council and Inuit Circumpolar Council-Alaska.

There is a need for on-going, proactive, international cooperation on Arctic issues. Having recognized that the Arctic Council is the world's predominant intergovernmental forum for Arctic governance, the ANWTF recommends greater state engagement with the council and its workgroups and encourages its member countries to support expanding its mandate as an institution for forging multilateral and mutually beneficial agreements among Arctic Nations.

Established in 1996, the Arctic Council is an intergovernmental group that includes representatives from the governments of Canada, Denmark (including the Faroe Islands and Greenland), Finland, Iceland, the Russian Federation, Norway, Sweden, and the United States.[1] The chairmanship of the council alternates between the member states every two years. Presently, Sweden holds the chair. In 2013 Canada will assume the chairmanship, and in 2015 it moves to the United States.

The state of Alaska is represented at Arctic Council and Senior Arctic Official meetings. The state also monitors and contributes to Arctic Council work groups and task forces.

No other international body provides a forum for such a diversity of perspectives on matters related to the Arctic. In particular, northern indigenous peoples play an active role in the council's activities. Organizations granted Permanent Participant status by the council include the Aleut International Association (AIA)[2], Arctic Athabascan Council (AAC)[3], Gwich'in Council International (GCI)[4], Inuit Circumpolar Council (ICC), Russian Association of Indigenous Peoples of the North (RAIPON), and the Saami Council. Permanent Participants enjoy full consultation rights in Arctic Council deliberations and decisions.

The Arctic Council's work is supported by experts in six working groups who conduct research and prepare analyses to inform the deliberations of the council and other international bodies. Their areas of concentration include sustainable development, Arctic monitoring and assessment, Arctic contaminants, protection of the marine environment, emergency prevention and preparedness, and conservation of flora and fauna.

In May of 2011, the members of the Arctic Council formalized a search and rescue agreement that details Arctic emergency response.[5] It is the first binding legal instrument to have originated with the organization. The Arctic Council also created a task force to develop an international instrument on Arctic marine oil pollution preparedness and response, and the Emergency Preparedness Prevention and Response work group initiated a project to develop a summary of best prevention practices for marine oil pollution. The director of the Division of Oil Spill Prevention and Response, within the Alaska Department of Environmental

1. For more information on the Arctic Council go to: http://www.arctic-council.org

2. The AIA is based in Anchorage. For more information on the AIA go to: http://www.aleut-international.org/index.html

3. The AAC is comprised of 18 Canadian and Alaskan village members, with more than half being Alaskan. For more information on the AAC go to: http://www.arcticathabaskancouncil.com/aac/?q=node/5

4. For more information on the GCI go to: http://www.gwichin.org/

5. The details of the Search and Rescue agreement can be found at: http://arctic-council.npolar.no/en/meetings/2011-nuuk-ministerial/docs/

Conservation (DEC), has been an active participant on the U.S. delegation working on these documents. Potentially, these efforts will serve as models for mutual support and cooperation among Arctic Nations.

Because the Arctic Council has been instrumental in moving the international agenda forward, it makes sense for the state of Alaska to continue to support and participate in its efforts. In order to strengthen the Arctic Council, the ANWTF makes the following recommendations:

- The ANWTF recommends that the US government support expanding the Arctic Council's mandate to include discussions on environmental security. Given greater authority, the council will be better able to advance agreements on shipping, commercial fishing, environmental protection, and oil and gas development.
- The ANWTF agrees with Aspen Institute and the Arctic Governance Project Steering Committee[1] findings that stronger and more stable funding should be secured for the Arctic Council. In turn, the council would be better equipped to provide resources to its Permanent Participants for increased involvement in council forums.
- The ANWTF also supports enlarging the number of non-Arctic nations that enjoy Observer status at the Arctic Council, however, not in such a way that would weaken the influence granted to the council's Permanent Participants.
- The state of Alaska should continue participation in the Emergency Prevention and Preparedness Working Group and Task Force of the Arctic Council and become active in other Arctic Council initiatives by attending related forums. Presently, the state of Alaska moderates bimonthly meetings for an Arctic Council Ad Hoc Working Group. This serves in large part to allow the U.S. Department of State to provide updates on Arctic Council activities and receive input from Alaskans. The state should continue these periodic reports and otherwise work to keep Alaskans informed of progress in these endeavors.

Additionally, the task force recommends the state of Alaska and the Alaska State Legislature support the efforts of the Inuit Circumpolar Council (ICC).[2] Founded in 1977 by the late Eben Hopson of Barrow, Alaska, the Inuit Circumpolar Council has grown into a major international non-government organization representing approximately 150,000 Inuit of Alaska, Canada, Greenland, and Chukotka (Russia). In addition to holding Permanent Participant status with the Arctic Council, the ICC holds Consultative Status II at the United Nations. ICC-Alaska represents Inuit from Alaska at the Circumpolar Council.

ICC Alaska's long involvement with the Arctic Council is a valuable asset. In order to enhance collaboration on matters of mutual interest before the Arctic Council and the ICC, the state of Alaska and the Alaska State Legislature should establish means for regular communications with ICC-Alaska and grow a better working relationship.

State and Local Involvement

1. The ANWTF Recommends that the Alaska State Legislature Create a Commission to Develop an Alaskan Arctic Strategy.

Many complex issues are emerging in the Arctic that hold enormous ramifications for Alaska's future. The state of Alaska and others have only just begun to grapple with these challenges and opportunities.

The Alaska State Legislature should create a commission to develop a comprehensive, long-term Arctic strategy to help guide and coordinate the many critical decisions Alaska faces in the years ahead. The Alaskans assembled for this commission should properly reflect the wide diversity of stakeholders in the U.S. Arctic.

This commission's responsibilities should include coordinating efforts between the Legislature, the Administration, and Alaska's Congressional Delegation to effectively communicate Alaska's needs concerning the Arctic to the U.S. federal government. The commission should also work to enhance the state's engagement at the international level, both to keep the state responsive to relevant developments and to ensure that Alaska's manifold interests are understood and acknowledged by all others concerned with the region.

2. The ANWTF Recommends that the Responsibilities of an Alaska Arctic Strategy Commission Include Substantial Communication and Consultation with Alaskans.

The commission formed to create an Alaskan Arctic strategy should adopt formal processes for Alaskans to receive information and provide input on Arctic and oceans issues. During ANWTF hearings in coastal communities across the state, it was clear that Alaskans must be provided opportunities to participate in Arctic policy and Outer Continental Shelf development decisions. Many local government officials, tribal government representatives, and individuals expressed a need for timelier, more frank, and more thorough information from state and federal authorities regarding policies and activities off our coasts.

The task force believes that consistent structured communication and consultation—particularly with those Alaskans

1. . For the full Arctic Governance Project Report go to: http://img9.cUStompublish.com/getfile.php/1219555.1529.wyaufxvxuc/AGP+Report+April+14+2010[1].pdf?return=arcticgovernance.cUStompublish.com

2. . More information about ICC can be found at: http://library.arcticportal.org/99/

likely to be most impacted by evolving conditions—is the best way to build consensus, advance responsible policies, and stimulate broadly beneficial economic development.

3. The ANWTF Recommends that Communities and Organizations in Alaska's Arctic Communities Consider Forming an Arctic Working Group.

Residents across Alaska's Arctic should consider forming an Arctic working group to build region-wide consensus on priority issues and advance their interests at the state, national, and international levels. Through such a working group, Arctic communities and organizations would be able to collaborate on positions that clearly address local needs, including the preservation of essential indigenous traditions and ways of life. The working group could also serve a valuable communications role, helping to keep its constituent communities abreast of related issues in Alaska, in Washington D.C., and abroad.

The task force holds a community meeting.

The formation of such a working group would be particularly timely, given that the chairmanship of the Arctic Council moves to Canada in 2013 and, in turn, to the U.S. in 2015. This should provide North American interests excellent opportunities to advance their objectives.

4. The ANWTF Recommends that the State of Alaska Continue the Dialogue Regarding a Coastal Zone Management Program.

The Alaska State Legislature should continue to discuss re-establishing a coastal zone management program as a mechanism for coordination, consultation, and consensus building with coastal communities and the federal government on matters of resource development.

5. The ANWTF Recommends that Alaska Continue Participating in the Pacific Northwest Economic Region's Arctic Caucus.

The Pacific Northwest Economic Region (PNWER) is a non-partisan forum for regional planning whose membership includes governmental, business, and non-profit representatives from Alaska, Idaho, Montana, Oregon, and Washington in the U.S., and Alberta, British Columbia, Saskatchewan, Yukon Territory, and Northwest Territories in Canada.

In 2009, PNWER members from Alaska, Yukon, and Northwest Territories formed the Arctic Caucus in order to explore issues of common interest, including development opportunities and responsible environmental safeguards. The caucus's current priorities include strategies to maximize opportunities for North American interests when the two-year chairmanship of the Arctic Council moves to Canada in 2013 and to the U.S. in 2015.

Residents of Wales bringing in fish during a task force visit to the community.

Alaska should continue to support the participation of its members in the PNWER Arctic Caucus as advocates for Alaska's interests.

Oil and Gas Exploration and Development

Introduction

According to a 2008 U.S. Geological Survey (USGS) report, "The extensive Arctic continental shelves may constitute the geographically largest unexplored prospective area for petroleum remaining on Earth." The USGS estimates that 13% of the world's undiscovered oil reserves and 30% of the undiscovered gas reserves are in the Arctic.[1] To put that into perspective, if these estimates are accurate, it would be the equivalent of adding two Saudi Arabias to the world's global reserves.

The USGS estimate includes:

- 90 billion barrels of oil.
- Nearly 1,700 trillion cubic feet of natural gas.
- 44 billion barrels of natural gas liquids.

These amounts are in addition to the 240 billion barrels, or about 10 percent of the world's known petroleum reserves, that have already been discovered. [2]

Eighty-four percent of these new amounts estimated by USGS are predicted to be located offshore. The report puts one third of the estimated oil in the circum-Arctic region of Alaska and the Alaska Outer Continental Shelf (OCS). The Chukchi and Beaufort Sea areas off Alaska's north coast rank behind the Gulf of Mexico for domestic resources.[3]

The state of Alaska and a number of the companies that have operations here have decades of experience in exploring and developing oil reservoirs in the Arctic. Although most of the production (over 15 billion barrels) has come from wells on the North Slope, there have also been 78 wells drilled in the Arctic Ocean, 33 wells in the Bering Sea, and 695 wells in Cook Inlet. The safety and environmental record associated with exploration and development work has largely been good, with no major spills or casualties.

However, the challenges of operating in the Arctic must always be respected. As exploration and perhaps development extend farther offshore and farther from existing operations on the North Slope, these challenges will intensify. Careful evaluation of risks and implementation of mitigation measures will be critical each step of the way, and constant vigilance will be a mandate.

New OCS exploration and development will occur in steps over time, with perhaps a decade or more between the discovery of any new reservoir and its development. Current exploration plans limit drilling on the OCS to open water periods, with a buffer before seasonal ocean ice starts to form again in the fall. This allows a period of time for addressing drilling problems or spills without the additional complication of ice. Once a well goes into production it would likely be operating year-round, as would any associated pipelines and other facilities needed to move the oil to shore for processing and transportation to markets. It will be important to use the time leading up to the production phase to identify any new measures that should be taken to minimize the risk of spills.

The state of Alaska must also track the exploration and development of oil and gas resources occurring elsewhere in the Arctic, including offshore areas near Norway, Greenland, Iceland, Russia, and Canada. Norway and Russia already have producing wells off their shores. The Baltic Sea, which freezes annually, is a major transportation corridor for shipment of crude oil by tanker through ice-infested waters. State-of-the-art, purpose-built ice-breaking tankers equipped with emergency towing systems, advanced mechanical recovery systems for oil in ice, and recovered oil storage capacity provide valuable insights for operating in broken ice. The experience of Russia, where there are ice conditions similar to conditions in Arctic Alaska, may also prove instructive. We must also look at the risks to Alaskan waters and shores from spills in the Canadian Arctic and from tankers passing from Russia to Pacific ports. Canada could be looking at deep water drilling in the Eastern Beaufort Sea off their shore in the near future. The Canadian National Energy Board (NEB) has recently completed a review of offshore drilling practices based on lessons learned from the Gulf of Mexico spill and other recent incidents. The NEB report contributes additional valuable knowledge for how to safely operate in the Arctic. Lastly, cooperation with other Arctic Nations, and with individual states and provinces, could help enhance abilities to prevent and respond to spills.

There will also be continuing production from existing and new reservoirs on the North Slope, including perhaps from

1. See USGS Circum-Arctic Resource Appraisal website at http://energy.USgs.gov/arctic/.
2. USGS Fact Sheet 2008-3049: Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle; at http://pubs.U.S.gs.gov/fs/2008/3049/.
3. Department of the Interior, "Estimated Undiscovered, Economically Recoverable Resources," http://www.doi.gov/whatwedo/energy/ocs/upload/UERR-map-2012-2017-80-NoYear-Note.pdf.

unconventional oil sources such as shale formations. New technologies and systems may be needed to tap these reservoirs, and with them, new methods and means for regulators to oversee the safety of these operations and provide environmental protection.

The Trans-Alaska Pipeline System (TAPS) has been transporting crude oil from the North Slope to Valdez for over three decades. Continued production on and around the North Slope is extending the operating life of TAPS beyond its original design life. This is necessitating modifications up and down TAPS. Another challenge to the continued safe operation of TAPS is the decline in the flow of oil through the system. The flow is currently (2011) at about 600,000 barrels per day, less than one third of the average daily flow at peak production in the late 1980s. Lower flow rates mean less heat in the line and a longer time for the oil to travel from the North Slope to Valdez. With cooler oil in the line there is less time the line can be shut down or slowed down in winter before ice and wax formation begin to occur in the system, possibly making it impossible to safely restart the line until systems thaw in the summer season. There is the need to consider, among other measures, adding heat to certain areas of the line to avoid longer periods of shutdown or slowdown of TAPS.

There is the prospect of the commercialization of natural gas produced from the North Slope and nearby areas. Although there aren't the same environmental risks associated with the production, storage, and transmission of natural gas as there are with crude oil, there are other environmental concerns. One of these is greenhouse gas (GHG) emissions associated with the production, transmission, and eventual burning of natural gas. There is much interest around the world in moving to natural gas as an affordable yet less carbon-intense fuel for heat and power. The gas produced on the North Slope varies by production field. Prudhoe Bay gas contains about 12 mol% carbon dioxide, which is one of the primary GHGs and is not marketable. If the U.S Congress or EPA chose to regulate the emissions of GHGs, the carbon dioxide in the North Slope gas may have to be removed and re-injected underground rather than released to the atmosphere. It takes a lot of energy to produce energy. It is likely a much larger quantity of natural gas would be burned on the North Slope to power the compressors, generators, and other equipment needed to produce and move the gas. There would be a volume of GHG released from the burning of this fuel. Lastly, there is the carbon in the natural gas that would be released when it is burned by the ultimate consumers of the gas. The U.S. Environmental Protection Agency currently does not have limits on the concentrations of GHGs that are allowable in the atmosphere (thus what amounts may be emitted), and the U.S. does not impose any kind of tax or fee on GHG emissions. If this changes, it could affect the economics of a North Slope natural gas project.

The ANWTF heard from a number of stakeholders during field hearings conducted in Barrow, Wainwright, Kotzebue, Wales and Nome about the potential benefits and detriments of Arctic oil and gas exploration and development. There was broad concern about the likelihood of a large oil spill and the impacts it could have on the fragile Arctic environment. Such a spill could impact subsistence and other cultural practices of the local people for decades. Stakeholders reminded the ANWTF of the need to be cautious and respectful of the environment and to learn from the local knowledge of the people who have lived sustainably in the Arctic for many generations.

The ANWTF also heard from scientists about the need for better scientific knowledge of Arctic ecosystems, the stresses that may already be present from the current climatic warming, and what additional impacts marine transportation and drilling could have on the Arctic. They also described the need to advance mechanical recovery of oil in water, particularly where ice is also present, and other response options.

The ANWTF recognizes that as draft plans, leases, permits, and other proposed authorizations are put together and distributed for public and agency review, it will be vitally important to have the input of local knowledge and the best science, and where there are critical gaps in our knowledge, to acknowledge this and work diligently to timely and constructively address these gaps.

The ANWTF recognizes and appreciates the many efforts that are already underway by local governments, organizations, federal and state agencies, universities, and industry to develop ways to make future activities in the Arctic safer and more protective of the environment and culture of indigenous people. It is intended that the recommendations below support the continuation and possible enhancement of these efforts, including through better coordination and cooperation among local people, all levels of government, international organizations, and industry to maximize the sharing of knowledge and the arrival at positive outcomes.

1. The ANWTF Recommends that the State of Alaska and the United States Develop a Framework for the Identification, Acquisition, and Sharing of Data and Other Information to Support Leasing, Permitting, and Other Agency Decisions.

The many decisions that will be made by federal and state agencies regarding OCS leasing, exploration, and development will be based on data and other information, some of which may not currently exist or be readily accessible. This creates the risk that agency decisions could be delayed while important information is collected or that agency decisions

could go forward without consideration of all relevant information. There is also the need to monitor for impacts in the Arctic from increased activity and to take these impacts into consideration in future permitting decisions. Good coordination among federal and state agencies and other organizations involved in data collection, data integration, and scientific research will help assure that any data or science gaps will be identified and timely addressed.

To this end, the ANWTF recommends:

- State and federal agencies with responsibilities relating to OCS leasing, exploration and development, and oil spill prevention, preparedness, and response collaborate to identify future research that would contribute key data or knowledge to enhance and augment the permitting processes in a timely manner.
- Federal and state agencies, universities, and others coordinate and enhance the sharing and accessibility of scientific data and local knowledge. Data and local knowledge that are important to future decisions relating to OCS activities should be reasonably accessible to the public, researchers, and industry and government agencies. Creating reliable syntheses of studies and reports may also be helpful in providing a broader understanding of important facts and avoiding a duplication of effort.
- Federal and state agencies survey current efforts to develop baseline information and track potential changes in key biological and physical conditions relevant to the sustainability of Arctic ecosystems and species, including walrus, ice seals, bowhead whales, fish, birds, and other marine mammals that inhabit the Beaufort and Chukchi Seas. Identify any additional monitoring that would be helpful in making future resource decisions or responding to spills and other accidents. Identify potential means for collecting these data.
- Greater involvement by the state of Alaska and its universities in international, regional (with Russia and Canada), national, and statewide collaborations on Arctic scientific research. This includes active participation with the U.S. Arctic Research Commission and with U.S. agencies involved with the work of the Research Commission, the North Pacific Research Board, and the North Slope Science Initiative, among others.

2. The ANWTF Recommends that the State of Alaska and the United States Support Continued Improvement in the Ability of Industry and Government to Prevent, Contain, Control, Clean-up, and Remediate Spills into Arctic Waters.

Any spill of oil or hazardous substances into open water is a challenge to clean up. The Arctic environment creates additional challenges, such as ice cover and broken ice conditions. Mechanical recovery of oil is the primary cleanup strategy in both state and federal oil spill planning requirements. Other response options, such as igniting the volatile portions of spilled oil (in-situ burning) or applying dispersants, may reduce the impacts of the oil on the environment. In-situ burning was developed in Alaska to augment removal of oil in broken ice to accommodate offshore drilling in state waters. The state has developed guidelines for the use of this response tool, and its usefulness has been demonstrated in the Gulf of Mexico spill and recent industry tests in cold water ice conditions. The window for use of in-situ burning in Arctic conditions is actually extended by cold temperatures, which reduces volatilization. Improvements to mechanical recovery of oil in ice using brush and oleophilic technologies are progressing. Submerged application of dispersants in the Gulf of Mexico significantly reduced the volume of dispersants needed when compared to conventional surface applications. More research will allow continued advancements in spill response technologies to better understand the benefits, or detriments, of the use of mechanical recovery, in-situ burning, and dispersants.

All of the above points to the importance of doing what we reasonably can to prevent spills from ever happening. Realistically, the probability of a spill ever occurring will not get all the way to zero. Thus, it is necessary to be prepared to respond to spills in ways to minimize their consequences. Damages from spills will be reduced if the spill is contained within a smaller area and the source of the spill is stopped quickly. Still, some risk will remain that a spill in open water could not be contained quickly and would migrate towards coastal areas. This creates the need to be able to respond to a spill that covers a large area, encompassing different environments (offshore open ocean, near shore areas, tidelands, estuaries, and shorelines) requiring different response tactics. Virtually all marine spills in Alaska are supported with an on-water response capability because of the lack of road access to coastal shorelines. This requires federal, state, and local governmental entities to work together on spills that cross multiple jurisdictional boundaries. It also raises questions about how industry and agencies will support a response that could last weeks if not longer, particularly in the Arctic, where there is less infrastructure in place.

Russia and Canada are Alaska's neighbors and share the goals of preventing spills and responding effectively to those that may occur. Bilateral agreements between Russia and the United States for combating pollution in the Bering and Chukchi Seas and between Canada and the United States for Dixon Entrance and the Beaufort Sea are the means for coordinating joint efforts to prevent, prepare for, and respond to incidents which may threaten or cause transboundary marine pollution. The state of Alaska also has jurisdiction over state waters and is coupled to the federal response sys-

tem through the Unified Plan for Response to Oil and Hazardous Substance Releases and a formal Memorandum of Agreement. With increased shipping through the Arctic and Bering Strait and oil and gas development being planned for the Chukchi Sea and both the Canadian and U.S. portions of the Beaufort Seas, it is essential that the state and the U.S. Coast Guard aggressively advance international cooperation and coordination for preparedness and response with Russia and Canada.

To this end, the ANWTF recommends:

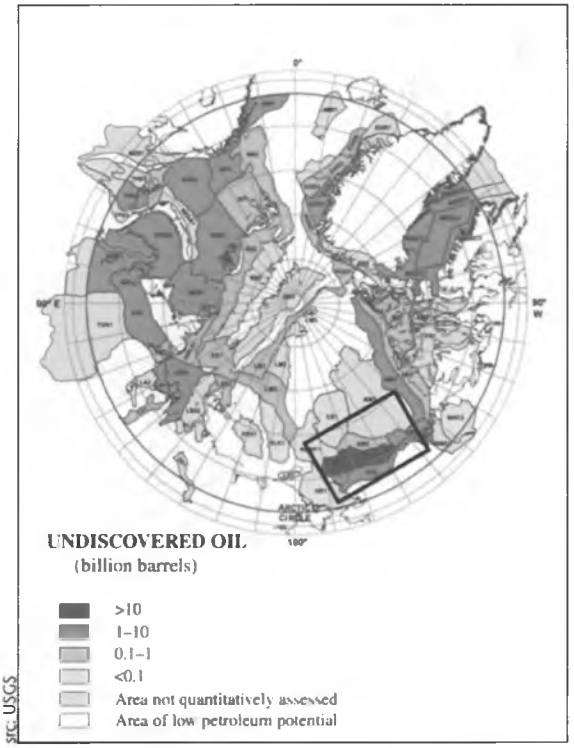
- State and federal agencies with direct responsibilities for oil spill prevention, preparedness, and response work cooperatively with industry, local officials, and other stakeholders to develop a framework to periodically share information on their respective efforts to reduce the probability and severity of oil spills in the Arctic. The purpose would not be to duplicate current agency or industry efforts to comply with federal and state law, but rather to enhance communication and transparency on issues of mutual concern and seek additional synergies and means for improving oil spill prevention, preparedness, and response.
- Update current agreements or memoranda of understanding among state and federal agencies that describe the state of Alaska's role in the review and consideration of spill prevention and response provisions in federal OCS exploration and contingency plans.
- State and federal agencies should enhance oil spill preparedness and response through forums by which on-scene coordinators and incident commanders in Alaska can provide recommendations for improvement based on operational experience.
- State and federal agencies should work jointly under the existing bilateral agreements to formally plan, prepare, and drill for mutual aid and a joint international response with Russia and Canada for transboundary spills which may impact Alaskan waters.
- Enhance coordination among state and federal agencies, industry, and stakeholders in the preparation of government regional response plans and facility-specific plans prepared by industry.
- State and federal agencies and industry should be encouraged to work with people in coastal communities where spills could occur to incorporate local knowledge into the spill contingency plans and to enhance local initial response capabilities.
- State and federal agencies should timely address any outstanding science or other issues relating to the use of in-situ burning or dispersants in responding to spills in marine waters. The Unified Plan for Alaska should provide for pre-approval of the use of in-situ burning and dispersants in accordance with appropriate findings and consultations by the federal and state on-scene coordinators.
- The state of Alaska, which has primary jurisdiction over the flow lines that carry the mixture of crude oil, water, gas, and other material from the wellhead to a processing facility where the oil is extracted, should continue to develop and implement its current program to oversee the safe operation and maintenance of these lines and encourage development of practicable means to reliably monitor for leaks from these lines. This will become all the more critical as the number of subsea or buried flow lines (as well as surface flow lines) may likely increase in the future. Pipeline leak detection helps identify leaks early and avoid small leaks that could continue undetected for longer periods of time, resulting in larger spills.
- State and federal agencies should work with Alyeska Pipeline Service Company, its owners, and other stakeholders to timely identify and address risks associated with operating TAPS at decreasing flows. The pipeline is critical to bringing North Slope oil to market and crosses hundreds of miles of Arctic environment.
- The state of Alaska should encourage collaborations among companies operating on the OCS to share best practices, fund research, and establish goals, expectations, and voluntary monitoring and reporting programs that drive the industry towards continuous improvement in increasing safety and reducing environmental risks.
- The state of Alaska should also encourage collaborations among industry and government, both at international and domestic levels, to develop better means to track and mechanically recover oil in ice and broken ice conditions in the Arctic. There are a number of existing collaborations that the state should continue to encourage, including the Joint Industry Partnership.
- The state agencies with primary responsibilities for well safety, control, spill response, and leasing (the Alaska Oil and Gas Conservation Commission, the Alaska Department of Environmental Conservation, and the Alaska Department of Natural Resources) should continue to coordinate their efforts relating to well safety and control risks, response planning standards, and the evaluation of the value of establishing state requirements for safety and environmental management systems.
- DEC should maintain its relationships with neighboring jurisdictions to exchange information and share resources to reduce the risk of spills. This includes participating in mutual aid agreements, transboundary spill planning, training exercises, and research.

3. The ANWTF Recommends that the State of Alaska Set a Goal to be a Leader in the Safe Exploration and Production of Oil and Gas in the Arctic.

Over the last three decades, companies operating on the North Slope and in Cook Inlet pioneered a number of important technologies and programs in the oil and gas industry. These include advancements in extended-reach drilling and enhanced oil recovery, to name two. The TAPS, when it was completed over 30 years ago, was considered an outstanding engineering accomplishment. Over the past 20 years, the state, along with federal agencies, industry, response cooperatives, and local oversight organizations, has developed and maintained oil spill planning, preparedness, and response capabilities for Cook Inlet and Prince William Sound that are models for what can be achieved with innovation, commitment, and cooperation.

Alaska is home to indigenous people who have lived here sustainably for thousands of years and have a deep respect and understanding of the natural Arctic environment. They have been important contributors to the success of scientists studying the area and the companies that work there.

Alaska should be a leader in any development of oil and gas resources in the Arctic. The University of Alaska is well positioned to support this effort along with state agencies. Currently, the University of Alaska Fairbanks (UAF) is proposing to establish a research center focused on oil spill prevention and preparedness in the Arctic. Experts across the university are already engaged in numerous research projects related to Arctic oil spills; the center would help consolidate these efforts. This center will allow UAF to partner with state and federal agencies, industry, and other academic institutions on their work.



Assessment units of the Circum-Arctic Oil and Gas Assessment, color-coded according to the mean estimated undiscovered, technically recoverable oil resources. The black rectangle outlines the approximate location of the Alaska North Slope and Beaufort and Chukchi Seas OCS areas. Modified from Gautier and others (2009) by the U.S. Geological Survey.

To this end, the ANWTF recommends:

- Development of the University of Alaska as a center of excellence for research of practical and deployable technologies that can be used by government agencies and industry to reduce the probability and severity of spills in Arctic waters, whether from vessels or fixed facilities such as drilling platforms and pipelines.
- Collaborations with local governments and other regional entities that will help integrate local knowledge with science and improve the understanding of the risks of offshore oil and gas operations in the Arctic.
- Alaska's continued participation in international and national venues, including Arctic Council working groups, where best practices and knowledge are shared, and where additional research can be done together.

4. The ANWTF Recommends that the State of Alaska Encourage Congress to Raise Liability Limits and Fund Oil-Spill-in-Ice Research.

The state of Alaska and the Legislature should encourage Congress to raise the liability limit for oil spills and increase the per incident pay out from the Oil Spill Liability Trust Fund. They should also encourage Congress to fund oil-spill-in-ice research by appropriating the Oil Pollution Act of 1990 resources as originally intended. DEC should participate in the Interagency Coordinating Committee on Oil Pollution Research (ICCOPR) established under the Oil Pollution Act to advocate for development of Arctic-specific oil spill research and development.

Marine Transportation

Introduction

Within the next ten to twenty years, the loss of perennial sea ice is expected to open Arctic waters for a part of each year to new shipping routes. Maritime powers have been searching for a shorter route from the Atlantic to Asia for centuries. The melting Arctic raises the possibility of two such routes:

- The Northern Sea Route runs along Russia's northern border from Murmansk to Providenya and could be used for trade between northeast Asia and northern Europe.
- The Northwest Passage runs through the Canadian Arctic Islands and the Alaskan Arctic Ocean and could be used for trade between northeast Asia and North America.

Source: Hugo AhleniUS, UNEP/GRID- Arendol

The economic benefits of these new routes could be significant. Of the two sea lanes, the Northern Sea Route holds particular promise due to superior depth, summers freer of ice, and comparatively direct routing. Therefore, it is anticipated that this will be the preferred Arctic sea lane in the near future. Ships sailing between East Asia and Western Europe could save more than 40% in transportation time and fuel costs by navigating this route instead of the Suez Canal.

Currently, most Arctic marine traffic is destinational, delivering goods and supplies to the Arctic or transporting minerals out of the region. In 2006, it was estimated that some 6,000 vessels operated in or transited the Arctic in tourism, minerals mining, oil and gas exploration, military operations, and other activities. Today this number has reached more than 7,000, and many nations are actively building more ships designed to operate in Arctic waters. Notably, traffic related to eco-tourism is expanding rapidly in the region. In 2004, an estimated 1.2 million passengers visited the Arctic; by 2007 this number had doubled.

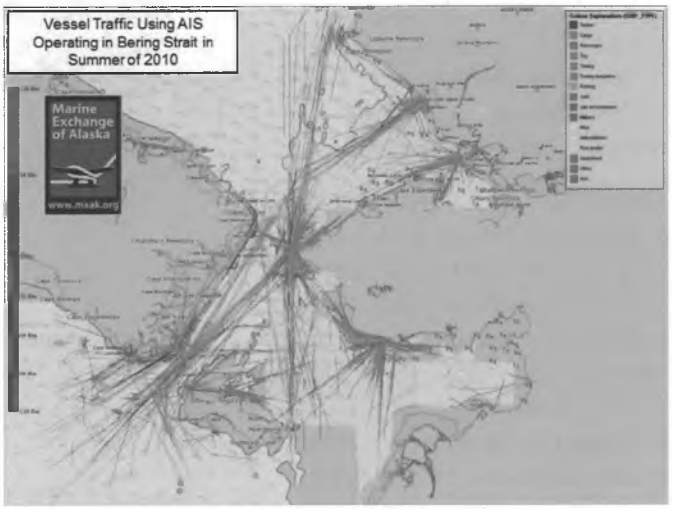
With increased shipping and marine traffic comes increased risk of vessel groundings, spills, collisions, pollutants, noise disturbances, and invasive species. This risk is particularly high due to the lack of detailed navigational charts, reliable weather forecasting, vessel traffic separation protocols, search and rescue infrastructure, and overall maritime domain awareness throughout the Arctic.

Based on these factors the ANWTF makes the following recommendations:

1. The ANWTF Recommends that the United States Work with the International Community to Finalize the Polar Code and Establish a Bering Strait Vessel Traffic Separation Scheme.

Maritime shipping is regulated through international treaties that establish standards for the safety and security of maritime operations. These standards are agreed upon through the International Maritime Organization (IMO), an agency of the United Nations.

Currently, ships navigating the Arctic are governed by the same requirements as any other open water ships. The IMO



Vessel Traffic in the Bering Strait Region during the summer of 2010 as depicted by the Marine Exchange of Alaska.

needs to finalize the Polar Code to supplement international maritime and environmental conventions that already apply in the Arctic. The Polar Code can provide additional requirements regarding rescue equipment, passenger safety, firefighting, ice navigation, and navigation in uninhabited areas. Additionally, the code can include requirements for ship construction, design, equipment, crew training, and operations. The IMO should also consider measures or regulatory frameworks to provide safety mechanisms for the regions of the central Arctic Ocean beyond coastal state jurisdiction.

The Polar Code is currently being drafted, and the rules are expected to be in force by 2014. The United States and Alaska should be actively involved in discussions with the IMO to ensure that Alaska's unique needs are met.

The United States and Russia need to begin a process with the IMO of establishing Bering Strait routing measures.

Clearly, all transient traffic in the future, regardless of the route taken, must transit the Bering Strait. This remote, narrow, and hazardous international strait is located in an environmentally sensitive area with little to no search and rescue or maritime disaster-response capability within 800 miles. Increased vessel traffic in the future will make this area particularly vulnerable to maritime disasters. It is only prudent that basic routing measures and vessel monitoring systems be put in place to reduce the risk of calamity in the Bering Strait.

2. The ANWTF Recommends the Establishment of Non-Tank Vessel Rules and Standards for Arctic Transit.

Today the most likely environmental threat to the Arctic is an incident involving a non-tank vessel. These are typically large commercial vessels with fuel tanks in excess of one million gallons of fuel and related hazardous cargos. These vessels make up the greatest percentage of transits, and they have proven over time to be the vessels most likely to experience an accident that puts them in jeopardy of sinking or running aground. Non-tank Vessel rules will require these vessels to meet more stringent standards of responsible-party requirements and allow government agencies to provide greater oversight.

Immediate implementation of the USCG Non-tank Vessel Response Plan (NTVRP) rules would advance development of a response capability as well as marine firefighting and salvage capacity in the Aleutians. This is critical in an area of the state that supports the largest commercial fishery in the country. This rule would require vessel response plans for non-tank vessels calling in U.S. ports. In combination with the tank vessel rule already in place, this rule would place the burden of providing sufficient salvage, firefighting, and response capabilities on all vessels passing through the Aleutians that call on U.S. ports. The requirement to comply with these rules would provide the necessary incentives for vessel owners/operators to fund increased salvage and spill response capabilities in the Aleutians. It may also be the means for financing an appropriate rescue tug for this economically and biologically important resource area.

3.The ANWTF Recommends that Navigational Charts and Other Aids to Navigation be Updated and Improved along with Vessel Tracking and Automatic Identification Systems (AIS).

For safe shipping, existing nautical charts for the Arctic need to be updated. In an effort to reduce the likelihood of accidents, an assessment of navigational needs should be undertaken to identify priority actions and target locations most likely to present hazards. Short and long range navigation aids will be needed, including buoys, iceberg and other sea-condition warning systems, high-risk-area vessel-traffic management systems, and improved communication technology.

Alaska currently has over 70 automatic identification stations that track vessels in Alaskan waters. The existing Automatic Identification System should be expanded across Alaskan northern waters beyond the Canadian border to Tuktoyuktuk. This should be a high priority. The current system—an international government/industry partnership—serves vital governmental and private sector needs by aiding safe, secure, efficient, and environmentally sound maritime operations. Expanding AIS will provide a clear record of transport across the U.S. Arctic waters, particularly for vessels servicing Canadian western Arctic communities or bound for transit through the Northwest Passage. AIS also provides emergency contact information, port data, locations of other vessels, and navigational information via the internet. Expanding the AIS network across the western Arctic will also allow for compliance under the International Maritime Organization Guidelines for Ships Operating in Polar Waters (Resolution A.1024(26)).

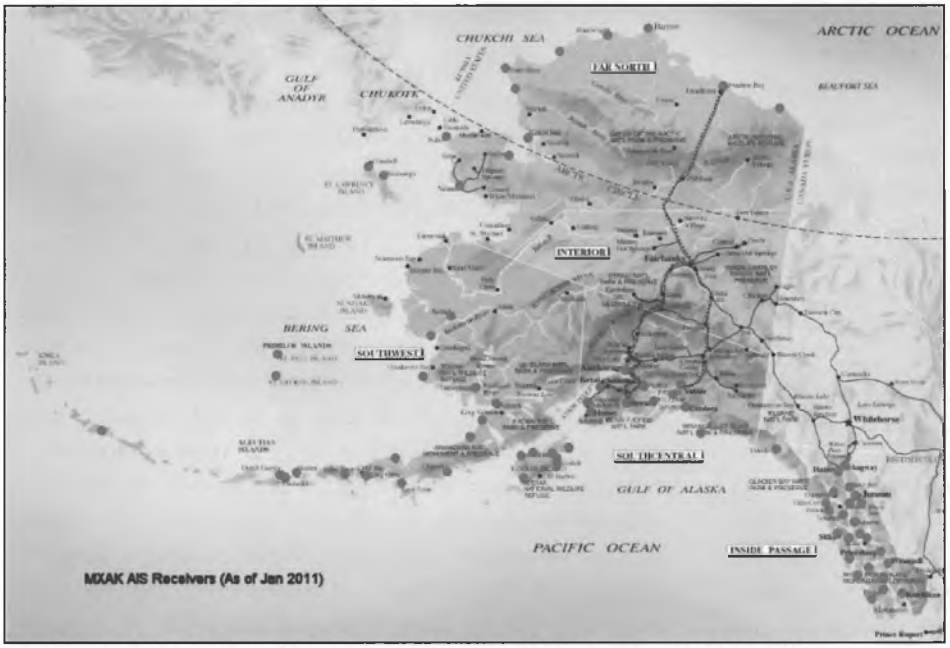
The Alaska State Legislature and the state of Alaska should continue to support the expansion of vessel tracking in the Arctic. The task force encourages the organizations and agencies involved in vessel tracking to pursue all channels of funding to increase their vessel tracking range.

4. Alaska Northern Waters Task Force Supports the National Oceanic and Atmospheric Administration's (NOAA) Hydrographic Arctic Mapping and Recommends that NOAA Also Include Detailed Near-Shore Bathymetric Mapping.

The ANWTF supports increased funding to expedite the mapping of the Arctic regions of Alaska, with particular support for updated mapping of coastal navigation routes and entrance routes to coastal villages.

The ANWTF concurs with the 2011 National Hydrographic Survey Priorities for Alaska. However, NOAA priorities for Alaska in the Bering Strait should be moved from priority two to priority one. The Bering Strait is the shipping choke point in Alaska's northern waters. It is imperative that up-to-date bathymetric information be provided for safe navigation. The ANWTF encourages the exchange of this information with the Russian government so that both governments have complete mapping of the entire strait.

The task force also supports NOAA's efforts to fund additional tidal observations to close the tidal data gap in accordance with the 2008 NOAA Network Gap Analysis for the National Water Level Observation Network. These increased observations will allow the joining of the digital mapping initiative vertical data with the Mean High Water and Mean Lower Low Water data that determine own-



Locations of the Marine Exchange of Alaska's AIS Receivers as of Jan 2011.

ership and jurisdiction of state, federal, Native, and private lands.

The ANWTF also encourages public release of bathymetric data collected by the U.S. Navy that would not threaten our national security, as well as public release of bathymetric data collected by private industry that would not threaten their proprietary economic interests.

5. The ANWTF Recommends that the Alaska State Legislature and the State of Alaska Continue to Support Maritime Training Centers in Alaska.

The need for trained and experienced mariners to operate in the Arctic is clear. The task force highly recommends the development of training programs throughout Alaska that can produce competent seafarers for safe operations in the Arctic. Specialized training—such as a USCG approved Ice Navigator curriculum that would implement the recommendations of the Arctic Marine Shipping Assessment and be consistent with the future requirements of the IMO Polar Code—is essential. In addition, qualifications, training, and experience standards for operation of icebreakers, arctic lightering operations, and high latitude navigation should be considered to ensure that increased maritime commerce in the Arctic is developed safely.

The ANWTF sees a real opportunity for Alaska to become the U.S. center of excellence in Arctic maritime training and seafarer development. Building on the state's strong university system, institutions such as the AVTEC Maritime Training Center, and practical training opportunities in Alaska's ice covered waters, this state is uniquely positioned to become an international leader in high latitude navigation safety training.

6. The ANWTF Supports Completion of the Aleutian Islands Risk Assessment; State of Alaska Participation in the U.S. Coast Guard Port Access Route Study; and Development of a Bering Strait Vessel Traffic Separation Scheme.

Aleutian Islands Risk Assessment

The Aleutian Islands Risk Assessment is a joint venture between the National Fish & Wildlife Foundation, the USCG, and the Alaska Department of Environmental Conservation. The project was organized in response to the grounding of the M/V Selendang Ayu in 2004 and the oil spill it caused. It is a multi-phase risk assessment of maritime transportation in the Bering Sea and the Aleutian Archipelago. Phase A of the Aleutian Island Risk Assessment has been completed.[1]

The study mainly focused on traffic following the great circle route through the Aleutian Islands and Bering Sea. The guiding principles applied to the analysis of risk reduction options were that prevention measures take priority over response measures and all measures should be realistic and practical.

The advisory panel assembled for the project developed recommendations for risk reduction options in two categories: those recommended for immediate implementation and those recommended for further study in Phase B of the assessment.

Options for immediate implementation include:

- Develop an enhanced vessel monitoring and reporting program;
- Enhance towing capabilities on USCG cutters, and increase cutter presence in the Aleutians;
- Stage additional emergency towing systems in the Aleutians.

1. The findings of the Aleutian Islands Risk Assessment can be found at http://aleutiansriskassessment.com/.

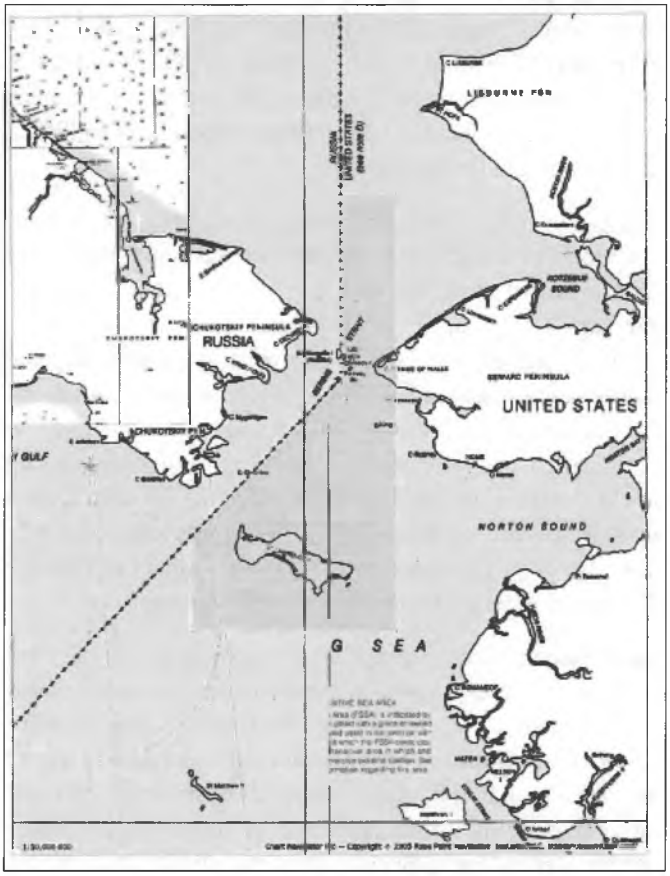
Options recommended for additional development or study in Phase B, prior to full implementation, include:

- Increase rescue tug capability in the Aleutians;
- Increase salvage and spill response capability in the Aleutians;
- Determine the boundaries of IMO Particularly Sensitive Sea Areas, and develop recommendations for associated protective measures;
- Strengthen the Aleutians Subarea Contingency Plan.

The ANWTF recommends that the risk assessment move forward with those risk reduction options that were identified by the advisory panel for immediate implementation. In addition, it is recommended that an additional risk reduction option be evaluated in Phase B of the project. A key consideration for reducing the risk of groundings and spills is offshore vessel routing for circumpolar traffic to provide timeframes for responding to disabled vessels. Offshore vessel routing has been successfully employed along the Pacific west coast and is a primary, cost-effective tool for reducing risk.

Bering Strait Port Access Route Study and Vessel Traffic Separation Scheme

The ANWTF recommends that the state of Alaska participate in and support the efforts of the USCG Port Access Route Study of the Bering Strait. Alaska should work with the USCG and Russia to bilaterally assess the risk of increased shipping through the Bering Strait and analyze the options for staging international assets to respond to that risk. The location of staging areas in Nome or other Alaska coastal locations should be considered for U.S. assets. Provideniya or other Russian coastal areas should be considered for Russian assets. This effort would contribute greatly to the development of any future IMO-led effort to establish internationally binding ship routing measures, such as a Bering Strait Vessel Traffic Separation Scheme.



The shaded region represents the Study Area for the USCG's Bering Strait Port Access Route Study as described in 75 FR 68568.

Planning and Infrastructure Investment

Introduction

A number of state initiatives are underway to look at the potential needs and feasibility of infrastructure projects in Alaska's Arctic region. These include the Alaska Department of Transportation and Public Facilities' (ADOTPF) Industrial Use Roads Study, several Arctic Ports studies, and similar work relating to possible land transportation links to Nome, Ambler, and the Umiat region.

Changes in temperature and precipitation are likely to hold enormous implications for both existing and future construction of all sorts. The ability to better predict and understand the effects of phenomena such as widespread thawing of permafrost will help Alaska prepare for considerable maintenance issues on existing roads, airports, buildings, and pipelines. Just as importantly, it will aid engineers when it comes to properly siting, designing, and constructing new infrastructure capable of withstanding future changes in their specific environments. These important concerns have also been examined in ADOTPF's "Impact of Climate Change on Alaska's Transportation Infrastructure."

These changes also pose significant challenges to some communities in Arctic coastal and riverine areas, most notably those located along the Bering and Chukchi Seas. A number of communities are threatened with increased rates of coastal erosion and flooding as a result of storm activity and battered shorelines once protected by shore-fast ice. These problems could become chronic as the climate warms, seasonal sea ice retreats, and destructive coastal storms become more frequent. These important concerns have been recognized in reports issued by the state of Alaska's Climate Change Subcabinet Immediate Action and Adaptation work groups.

Immediate investment in Arctic infrastructure is a foremost priority for Alaska and the entire United States. Alaska will need to explore ways to attract substantial sources of capital investment in addition to state and federal funding. Action is needed to enable the responsible development of resources; facilitate, secure, and benefit from new global transportation routes; and safeguard Arctic residents and ecosystems.

This investment will improve the safety, security, and reliability of transportation in the region—a goal established by the U.S. Arctic Policy signed by President Bush in 2009. As interest and activity in the Arctic continues to rise, America's preparedness in the region becomes ever more important to national security.

Increased human activity related to shipping, oil and gas development, commercial fishing, and tourism will require, at a minimum, new ports and safe harbors, equipment and facilities for oil spill response, additional Polar Class icebreakers for the U.S. fleet, and improved charting and mapping.

The U. S. Coast Guard's needs in these areas well illustrate the magnitude of infrastructure investment necessary in the Arctic. The Search & Rescue (SAR) agreement recently negotiated by the eight Arctic Nations through the Arctic Council commits the United States to search and rescue response in regions of the Arctic. Domestically, the National Contingency Plan requires the U.S. Coast Guard to oversee oil spill planning and preparedness in coastal waters and to supervise any oil spill response. Additionally, the U.S. Coast Guard's mission is to protect the public, the environment, and U.S. economic interests in the nation's ports and waterways, along the coast, on international waters, or in any maritime region as required for national security.[1]

At present, the Coast Guard has very limited Arctic emergency response capabilities and no permanent bases on Alaska's North Slope to support its operations. Basic needs there include communications, housing, and support facilities. It is especially notable that the Coast Guard has only one operational Polar Class icebreaker, the USCG Cutter Healy. Clearly, the Coast Guard does not have the assets required to carry out its expanding mission in the Arctic.

With transformation in the Arctic calling for a broad spectrum of new facilities on such a large scale, the state of Alaska must take an active role in regional planning efforts with communities and their stakeholders. This will help communities develop local strategies and ensure that the state is getting the most return on investment for local projects. Some communities may not have the resources to adequately prepare for the future, and the state should take this opportunity to help increase local capacity for the benefit of all Alaskans.

1. The ANWTF Recommends that the Alaska State Legislature Urge the United States to Forward Base the U.S. Coast Guard in the Arctic.

As human activity increases in Alaska's northernmost waters, the need to establish a Coast Guard base in the Arctic grows. The most northern Coast Guard base in the United States is in Kodiak, Alaska, more than 1,000 miles from pos-

1. The Coast Guard has 11 Statutory (non-discretionary) missions: Search and Rescue, Maritime Safety, Ports & Waterways Security, Drug Interdiction, Migrant Interdiction, National Defense, Living Marine Resources, Marine Environmental Protection, Aids to Navigation, Ice Operations, and Law Enforcement.

sible Chukchi Sea drilling sites and nearly as far from existing Arctic shipping lanes in the Bering Strait.[1] This distance causes untenable logistical problems that negatively impact response times and capabilities. The Coast Guard must have a greater overall presence in the Arctic, with the ability to stage assets closer to future shipping, oil and gas drilling, and commercial fishing activities.

The federal government should begin planning immediately to establish an Arctic base, and it must also move forward on interim measures for search and rescue and oil spill response in the region. The latter include working with communities to site required equipment at strategic locations, upgrading regional airports and associated storage facilities to enable efficient airlifting of assets, and increasing communications infrastructure.

2. The ANWTF Recommends that the Alaska State Legislature Urge the United States to Fund Icebreakers and Other Ice-capable Vessels.

At present, the United States has only one Polar Class icebreaker in service, the Coast Guard's Healy. A second Polar Class icebreaker, the Polar Star, is undergoing extensive repairs in Seattle and is not expected to return to service until 2013. Its sister ship, the Polar Sea, was decommissioned in 2011.

Meanwhile, Russia has a fleet of eight service-ready nuclear powered icebreakers, including an ice-breaking container ship. A ninth is under construction and will join their fleet in 2015. China owns the world's largest non-nuclear icebreaker and plans to launch a second by 2013. Canada has committed $38 billion to a 30-year plan to build additional icebreakers and other ice-strengthened ships suitable for Arctic service. Sweden, Finland, South Korea, and Japan are adding icebreakers to their fleets.[2]

The United States Coast Guard Cutter Healy is a medium strength vessel used most recently as a platform for scientific research. Its design is less suited to military missions. Congress has appropriated $60 million for repairs to the Polar Star. At this level of funding, its overhaul is estimated to provide for seven to ten years of additional service—the same length of time the Coast Guard estimates is required to design and construct a new Polar Class icebreaker, at a cost of about $860 million.

This limited number of icebreakers presents a major challenge to the Coast Guard mission in Alaska. Having ice-capable vessels is vital to maintain sovereignty, continue scientific research, and provide emergency and oil spill response. Overreliance on the Healy, which was not designed to meet all these challenges, poses risks for the United States and Alaska.

The ANWTF urges the state of Alaska to prevail upon the U.S. government to fund the construction of new heavy icebreakers and additional cutters for the U.S. Coast Guard. The Coast Guard is developing a long term vessel asset plan, but so far it has been unable to secure funding. It is expected that additional vessels will be required in support of oil spill response; these vessels must be capable of year-round Arctic operations. Immediate steps should be taken to begin construction of these assets.

Further, the ANWTF supports planning for other necessary facilities for search and rescue responsibilities, spill clean-up equipment and response vessels, and research. The Coast Guard needs this infrastructure to fulfill its mission.

3. The ANWTF Recommends that the Alaska State Legislature Support Search and Rescue Coordination Centers along the Coast to Assist Federal and State Responders.

The ANWTF supports search and rescue efforts at all levels—federal, state, and local. Because the USCG doesn't have an Arctic presence, local communities are often the first responders to an emergency.

The state of Alaska should coordinate planning with the USCG and local communities to develop strategies for increased search and rescue capabilities in the Arctic. Strategies may include purchase of equipment, training, and increased communications capability at the community level.

Other countries are already moving ahead with similar initiatives. Russia is currently in the process of building ten search and rescue centers along its Arctic coast line. Given the size of the Alaskan Arctic, effective local response will be critical. State planning should begin immediately.

4. The ANWTF Recommends Supporting the University of Alaska Fairbanks Scenarios Network for Alaska and Arctic Planning.

Scientists reviewing weather data for Alaska believe the state has been experiencing a warming trend with drier conditions in parts of the state. The ANWTF heard presentations on impacts this could have on Arctic communities and businesses. They include, among others, drier conditions in Interior Alaska resulting in more frequent and severe forest fires; species moving outside their historical ranges and perhaps displacing other species; changes in the active layer and permafrost in areas of the state resulting in loss of structural support and other adverse effects on roads and infrastructure; increase in the rate of coastal erosion in areas of

1. To put this distance into perspective, the distance between Kodiak and Barrow is about the distance between Los Angeles and Seattle.

2. For a list of ice breaker assets around the world go to: http://www.globalsecurity.org/military/world/icebreakers-list.htm

the state; and changes in hydrology including loss of surface ponds used for drinking water. It is important for state and local governments and industry to have a better understanding of possible future climatic conditions in the state when planning long-term infrastructure and critical services.

The University of Alaska Fairbanks formed the Scenarios Network for Alaska and Arctic Planning (SNAAP) to help decision makers understand possible future climate scenarios and their impacts in the state. SNAAP has developed data-driven models and scenarios for specific areas of the state that describe possible effects from longer-term changes in air temperature and precipitation. SNAAP has been working with other researchers to integrate down-scaled climatic models with terrestrial models to make predictions of landscape changes and the implications of such changes (melting permafrost, shifting and intensity of fire regimes, etc.) on the state's roads, airports, ports, pipelines, and rural communities. Both marine and terrestrial models should include predictions of impacts on resource development and related infrastructure. Such models would inform future infrastructure development and management.

The ANWTF recommends the state of Alaska support the work being done by SNAAP and encourages making this information, along with any important caveats on the limitations on such climatic predictions, available to state agencies, local governments, and the public to assist them in their long-term planning. The ANWTF believes this information could also be useful to agencies and organizations involved in setting standards for construction around the state.

5. The ANWTF Recommends Continuing the Analysis and Development of Ports and Safe Harbors in the Arctic Region.

Studies by the U.S. Coast Guard, the U.S. Navy, the Arctic Council, the U.S. Army Corps of Engineers, and the Alaska Department of Transportation and Public Facilities all identify the need to develop ports and harbors in Arctic Alaska. Given the long lead times for such construction, ports should be among the highest priorities for Arctic infrastructure.

Building on the findings of the 2008 and 2011 state/federal Alaska Regional Ports Workshops and the 2011 Arctic Ports Charette, the state of Alaska and the U.S. Army Corps of Engineers should continue analyzing options for deep- and medium-draft port and safe harbor construction in the Alaskan Arctic. The state should convene an industry-focused Alaska Arctic Ports Workshop to assess the pros and cons of alternative locations and types of ports, address environmental conditions and engineering approaches, and explore funding alternatives.

Locations to consider include:

- St. Paul Island in the Pribilof Islands. Here there is an existing harbor for the Central Bering Sea fishing fleet and fish processing facilities.
- St. Lawrence Island. There is no existing sea port on St. Lawrence.
- Nome/Teller. A medium-draft port exists at Nome. Considerations include expanding the Nome causeway, improving the Nome-Teller road, and developing a seasonal deep-draft port at Port Clarence Bay off Teller.
- Kotzebue/Cape Blossom. A shallow-draft port complex exists at Kotzebue. During the ice-free season, deep-draft freighters anchor 15 miles out to sea and cargo is lightered to port. Shallow-draft barges deliver cargo to area communities. Cape Blossom, across Kotzebue Sound, offers a potential deep-draft port site.
- Mekoryuk. Located on Nunivak Island, Mekoryuk has no boat harbor but does have moorage for small boats protected by a breakwater.
- Cape Thompson. Located on the Chukchi Sea about 26 miles southeast of Point Hope, Cape Thompson has previously been considered for a port site. It is located on a promontory with bulk rip-rap and aggregate potential and is broadly sheltered from the north by the spit of Point Hope. It has an old airstrip but is otherwise largely undeveloped.
- Wainwright. Wainwright is the nearest village to the Chukchi Sea OCS leases and is located on Wainwright Inlet, which is capable of sheltering shallow- to medium-draft vessels. It is located 90 miles west of Barrow. The city presently does not have a seaport.
- Point Franklin. Located between Wainwright and Barrow, Point Franklin and its adjacent barrier islands may serve as a shelter and possible port site for shallow- to medium-draft vessels.
- Barrow. With a population of more than 4000, Barrow boasts considerable infrastructure despite its remote location and is the geographic midpoint between the active exploration areas in the Beaufort and Chukchi Seas. Just east of Point Barrow is Eluitkaak Pass, which is the "notch" between the Barrow spit and the barrier islands of Elson Lagoon. Eluitkaak Pass is about 50 feet deep at its deepest, although it shallows at both ends toward the north and the south. Elson Lagoon, although shallow, is protected from the open ocean by barrier islands. At present there is no protected harbor at Barrow.
- Prudhoe Bay. Prudhoe Bay has been extensively developed for oil industry support. There is a causeway and dock system on the east and west sides of Prudhoe Bay that currently services the line-haul barges that transport drilling and production infrastructure to the North Slope. The community, made up almost entirely of oil industry

employees, is connected year-round to the North American road system by the Dalton Highway.

- Mary Sachs Entrance. This is a channel between barrier islands located about 60 miles north and east of Prudhoe Bay.

Plans for the development of deep-draft ports and improved safe harbors in northern waters should be intended also to improve access to inland resources in the region. Consideration should be given to the proximity of exploitable natural resources and access to them by navigable inland waterways or through the construction of railways or roads.

A key economic factor in the viability of developing natural resources in Alaska is the distance to an ocean port. Natural resources within 100 miles of a coast line typically have a higher probability of development due to shipping proximity. Development of resource transportation corridors to Arctic ports is critical for both shipping of product to market and for resupply of materials and equipment necessary for resource exploration, development, and extraction. Options for public-private partnerships (P3's) should be explored as a mechanism to capitalize development of the resource deposits and provide a return on investment to the state and private sector industries. Port planning for the Arctic should include a prioritized strategy for approaches to specific resource deposits and options for developing infrastructure to support exploration, development, and transportation of the resource.

6. The ANWTF Recommends the State of Alaska Consider Proposals to Expand Fiber Optic Cable Routes Across Northern Waters.

The retreat of sea ice and stability of the sea floor in the Arctic is creating interest in a potential fiber optic cable route from London to Tokyo via the Canadian Northwest Passage and Alaskan Arctic. Just as shipping routes are significantly shorter across the northern waters, so would be cable routes.

Linking Alaska's Arctic communities to trans-Arctic cable routes would bring many benefits. Increased communications will be needed in support of the Coast Guard's mission, including search and rescue and oil-spill response operations. Better communications are also required for the safe operations of ships transiting the region and offshore oil field development activities. At the same time, broadband links would enhance economic development and distance learning opportunities for Arctic communities.

The state should consider an assortment of strategies. In 2010, Kodiak Kenai Cable Company developed an international consortium for a Tokyo-London link with a landing at Prudhoe Bay. The company also proposed branches linking Kodiak with the more remote communities of Dutch Harbor, Nome, Kotzebue, and Barrow before rejoining the primary cable at the Prudhoe Bay landing. While this proposal was unsuccessful in obtaining funding, the effort produced valuable research, and the related Arctic Cable Company has now been formed.

On land, GCI's Terra SW has connected 65 coastal villages and communities in the Bristol Bay and Yukon-Kuskokwim Delta regions to a fiber optic/microwave network. GCI is exploring expanding the network to include the communities of northwest Alaska. On the North Slope of Alaska, the Arctic National Broadband Network initiative explored developing broadband capability between Barrow and Nuiqsut.

The state should continue to encourage fiber optic cable ventures that will include links to coastal hub communities and industry bases adjoining the northern waters.

7. The ANWTF Recommends that the State of Alaska Explore Models to Access Funding for Arctic Infrastructure.

As the state of Alaska determines its priorities for Arctic infrastructure projects, the Alaska Industrial Development and Export Authority (AIDEA) should begin examining which categories of projects are likely to meet its criteria for funding and which will need additional or wholly alternative sources.

The state should consult with financing and investment specialists to explore strategies to attract additional sources of capital to infrastructure priorities. Such considerations could include private sector investment as well as the creation of state, national, and international development corporations.

Fisheries

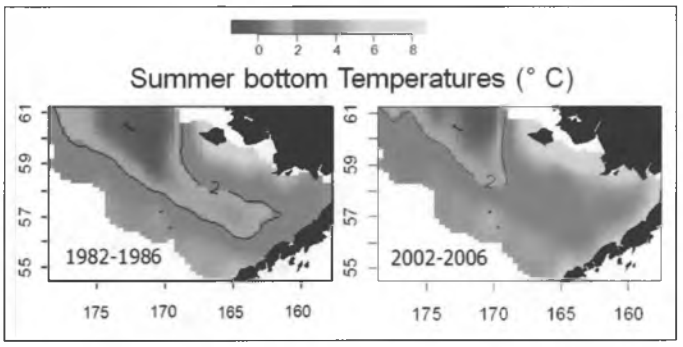
Introduction

As sea ice diminishes and some commercial fish species move into northern waters, interest in fisheries north of the Bering Strait has increased. However, in 2009 the North Pacific Fishery Management Council approved a National Marine Fisheries Service management plan establishing a moratorium on commercial fishing in these waters, including the Chukchi and Beaufort Seas.[1] While there are some 100 known species of fish in northern Arctic waters, their population dynamics and ecology are poorly understood. And while scientists have discovered that a number of species such as cod, herring, and pollock are expanding northward in the Bering Sea, there is currently not nearly enough information available to make sustainable management of commercial fisheries possible north of the Bering Strait.

Changes occurring and in store for the Arctic are expected to have significant impacts on Arctic fish stocks. Understanding the effects of salinity and temperature changes, the loss of sea ice, ocean acidification, and increased human activity will require considerable study and monitoring of fish stocks over a significant period of time.

On one hand, changes in the Arctic may lead some fish populations to reach levels that allow for gainful, responsibly managed commercial fisheries. On the other, developing conditions might also harm existing fish populations, including subsistence resources. Thus, while the changing Arctic may create significant new economic opportunities for Alaskans in the form of commercial fisheries, the future may also yield troubling impacts on the subsistence way of life that has sustained the region's peoples for thousands of years.

For these reasons, the ANWTF believes the state of Alaska and the U.S. government should continue with precautionary policies regarding Arctic fisheries. At the same time, state and federal agencies should greatly increase fisheries-related research in the region, should remain active in the negotiation of fisheries-related transboundary accords with other nations, and should prepare strategies for commercial fisheries structures and management in the region in anticipation of future developments.



1. The ANWTF Recommends the State of Alaska Support a Comprehensive Arctic Fisheries Research and Monitoring Plan.

The current moratorium on Arctic commercial fisheries in the U.S. Exclusive Economic Zone should not postpone Arctic fisheries research. Since the ban was established in 2009, research in the region has not significantly increased. There is a critical need to establish baseline data on fish stocks and to conduct other relevant studies to enable future decision making.

The state of Alaska should support increased research by state agencies, the University of Alaska and other institutions, and the National Marine Fisheries Service in the following areas:

- Baseline studies of the fishery resources of Arctic Alaska.
- Surveys to estimate biomass of potentially harvestable species.
- Ecosystem-based studies to evaluate potential effects of fisheries on other fish species, marine mammals, and seabirds.
- Research on specific productivity parameters—rates of growth, recruitment, and natural mortality—to estimate potential sustainable fishery yields.
- Socioeconomic studies to evaluate benefits and costs to communities along the Arctic coast.

The Alaska Department of Fish & Game should continue to closely monitor all fisheries-related research in the Arctic in order to anticipate and prepare for a possible lifting of the moratorium on commercial fisheries in the region.

2. The ANWTF Recommends the State of Alaska Develop Strategies in Anticipation of the Establishment of State Waters Arctic Fisheries.

Alaska's state government should consider measures to maximize the degree to which local communities might benefit from the development of commercial fisheries in Arctic wa-

1. For the full text of the NPFMC's Management Plan go to: http://www.fakr.noaa.gov/npfmc/PDFdocuments/fmp/Arctic/ArcticFMP.pdf

ters within the state's management jurisdiction, which extends three miles from shore. It is the duty of the state of Alaska and the Alaska State Legislature to promote the development of predominantly resident fisheries.

If future research indicates that state-waters commercial fisheries can be safely established and sustainably managed in the Arctic, the state should create policies and programs to develop and manage those fisheries to the maximum benefit of the people of the region and the state. These efforts should include programs and workshops through the Commercial Fisheries Entry Commission along with the Division of Economic Development and the University of Alaska's Marine Advisory Program to prepare residents of Arctic communities to participate in commercial fisheries at all levels.

The Alaska Department of Transportation and Public Facilities should examine the need for increased infrastructure—including boat harbors, shipping facilities, and airstrips—to enable fish harvesting and onshore processing operations to be based in Arctic coastal communities.

If it appears that fisheries are likely to be established that target species whose stocks cross state and federal management boundaries, the Alaska Department of Fish & Game and the Board of Fisheries should work with the National Marine Fisheries Service and the North Pacific Fishery Management Council to ensure that regulations and management agreements are in place for the conduct of fisheries in a sustainable manner.

3. The ANWTF Recommends that the State of Alaska and the Federal Government Develop Management Programs that Benefit Coastal Communities in Anticipation of the Establishment of Federal Waters Arctic Fisheries.

The state of Alaska and the federal government should be prepared to institute programs in Arctic communities that ensure local residents have access to Arctic fisheries developed in federal waters.

Any Individual Transferable Quota systems considered for Arctic fisheries should include provisions—such as Community Development Quota and Community Quota Entity programs—to secure a substantial degree of local ownership, participation, and stewardship in such fisheries.

The ANWTF encourages all relevant agencies, boards, and councils to consider innovations to management systems—established or otherwise—that would guarantee Arctic fisheries resources would be sustainably regulated in a manner that most equitably benefits Alaskans.

When considering future appointments to the North Pacific Fishery Management Council, the governor of Alaska should select a candidate with considerable knowledge and experience related to the state's northernmost waters.

Research

Introduction

Worldwide climate change is having an outsized impact on the Arctic, where temperatures are rising twice as quickly as elsewhere on Earth. Profound transformations are underway in its complex ecosystems. These changes are expected to trigger unprecedented degrees of human activity in the region. As a consequence, transformation in the far north will accelerate all the more, not just environmentally, but also on socioeconomic levels.

Under these circumstances, the need for wide-ranging scientific research and monitoring in the Arctic has never been more pressing. We must continue to gather essential baseline information about the environment and its dynamics in order to become better able to discern shifting conditions. In turn, our understanding of the implications of changes there will increase, and we will improve our ability to prepare for and mitigate impacts.

The enormous amount of research that will be required in the years ahead presents an extraordinary opportunity for Alaska's university system. The Arctic is certain to become an ever more prominent international focal point in the coming decades. Already recognized for exceptional programs for study of the far north, the University of Alaska is in the position to become among the world's foremost institutions for marine and terrestrial Arctic research. The state of Alaska should actively support the university in this endeavor.

Research in the Arctic is already substantial. The state of Alaska has supported the valuable work of the U.S. Arctic Research Commission for more than twenty years and will continue to do so in the future. During its nearly two years of hearings, the ANWTF examined the research of more than 20 state and federal agencies, quasi-governmental institutions, universities, and NGOs. On more than one occasion, scientists who came before the task force remarked that they had only become aware of the work of a colleague in the same agency after seeing that colleague's presentation to the task force. There is obviously opportunity for more collaboration among scientists and researchers focused on the Arctic.

Inevitably, as more government agencies and other institutions converge on the region there are going to be inefficiencies and redundancies. Therefore, the task force encourages greater coordination of research activities. This would not only increase efficiency and reduce duplicative work; it would also improve data management, sharing, and synthesis efforts.

Many specific research needs for the Arctic are addressed in other sections of this report. The recommendations below primarily speak to broader concerns related to scientific investigation in the region.

1. The ANWTF Recommends the State of Alaska and the Federal Government Identify Priorities for Arctic Research.

There have been several recent analyses of Arctic research to identify gaps in the scientific knowledge needed to develop resources responsibly there. The latest, by the U.S. Geological Survey (USGS), included more than 50 findings and recommendations.[1] However, the USGS report, like previous efforts, did not clearly prioritize the many research needs it documented.[2] Prioritizing additional necessary research is particularly important in light of the limited funding for such projects.

The state, the federal government, and other stakeholders should come together in conjunction with the University of Alaska to determine Arctic research priorities as soon as possible. By ranking priorities we can target funding more effectively and better coordinate efforts. Major knowledge gaps will be closed far more quickly.

2. The ANWTF Recommends Improving the Exchange of Research Information and Integration of Data Management.

The pace at which results from Arctic studies and monitoring projects are shared and integrated is too slow. A stronger effort to consolidate and coordinate data is needed. This is particularly crucial to enabling timely synthesis of multiple studies in order to refine and amplify their findings. Improved distribution of real-time monitoring data can be of substantial immediate value, to aid in emergency responses and to support weather and ice conditions forecasts.

Faster and more extensive integration of data collected by state and federal agencies, academics, and industry would yield enormous benefits for all stakeholders. Several entities

1. U.S. Department of the Interior and the U.S. Geological Survey. 2011. An Evaluation of the Science Needs to Inform Decisions on the Outer Continental Shelf Energy Development in the Chukchi and Beaufort Seas, Alaska. Circular 1370. http://pubs.usgs.gov/circ/1370/pdf/circ1370.pdf. The Pew Environment Group and Ocean Conservancy commissioned an independent review of the U.S. Geological Survey's report. The Pew report can be found at: http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/USGS-Report-Review-Sept2011.pdf

2. For example, among the top priorities should be identifying and protecting areas of special biological importance. Some areas in the Beaufort Sea have already been identified as ecologically sensitive, including Ledyard Bay, Hanna Shoal, Barrow Canyon, and the Boulder Patch. Some studies have been done to synthesize data on these ecological hotspots, but further research is still needed. Such designated areas should be given priority in research and monitoring programs to reach a better understanding of the underlying features and processes that make them important.

are already working toward this goal, including the Alaska Ocean Observing[1] System and the North Slope Science Initiative[2]. These and other such efforts need to be encouraged and supported.

3. The ANWTF Supports Increased Long-Term Monitoring of the Arctic, Including Routine Surveys of Key Chemical, Physical, and Biological Parameters of the Beaufort and Chukchi Seas:

In order to better understand, quantify, and predict the effects of on-going changes in both marine and terrestrial Arctic ecosystems, we must increase our long-term monitoring of a wide range of environmental characteristics.

Current research indicates that the Arctic is changing at a faster pace than recent modeling predicted. The state has many ongoing monitoring programs (including wildlife monitoring through the Department of Fish and Game and water and air quality monitoring through the Department of Environmental Conservation) that could be interwoven into a broader effort to provide a seamless network across jurisdictions. Establishment of such a monitoring system should be a top priority.

Increased monitoring will strengthen our baseline knowledge of the Arctic and enhance our capacity to accurately measure its transformation. As Alaska becomes more able to anticipate changes and predict their effects, we will have greater likelihood for success in efforts to moderate impacts. This will contribute significantly to responsible and sustainable approaches to all categories of development in the region.

1. Find more information about Alaska Ocean Observing Systems at http://www.aoos.org/.
2. Find more information about the North Slope Science Initiative at: http://www.northslope.org/

4. The ANWTF Recommends Support for Comprehensive Surveys of Alaska Native Marine and Subsistence Use.

Several reports have noted a scarcity of detailed information on marine uses by Arctic indigenous peoples, and much of the existing data on land-based subsistence practices is lacking in specificity and breadth. Projects initiated by the North Slope Borough, the Northwest Arctic Borough, and the city of Wainwright are researching Native marine and subsistence uses in Alaska's Arctic with groundbreaking comprehensiveness.

These studies will provide invaluable baseline documentation of Native Alaskans' traditional uses of resources—information that is particularly critical in light of increasing environmental changes and accelerating development activities in the region. More knowledge in these areas will help all stakeholders identify and minimize potential conflicts and socioeconomic impacts that may result from increased human activities. These projects will also provide valuable baseline data for recommended research on the social, cultural, and economic impacts that changes in the Arctic are having on its inhabitants.

5. The ANWTF Recommends the Use of Traditional Knowledge in Alaska Based Arctic Research.

The testimony of many Alaska Natives during hearings in several locations across the state supported the task force's conviction that the local and traditional knowledge gathered by Alaska's indigenous peoples over thousands of years is critically important to a fuller understanding of our northern ecosystems and the multitude of marine and land-based resources within them.

When the Arctic Council was established in 1996, its declaration recognized "the traditional knowledge of the indigenous people of the Arctic" and acknowledged "its importance and that of Arctic science and research to the collective understanding of the circumpolar Arctic."

The policy on traditional knowledge adopted by the government of Canada's Northwest Territories in 1997 states that "aboriginal traditional knowledge is a valid and essential source of information about the natural environment and its resources."

The Circumpolar Universities Association, whose more than 50 members include the University of Alaska, Dartmouth College, the Russian State Hydrometeorological Institute, and the University of Aberdeen, states in its Ethical Principles for the Conduct of Research in the North, "The research should take into account the knowledge and experience of the people and respect that knowledge and experience in the research process. The incorporation of relevant traditional knowledge into all stages of research is encouraged."

As additional research into the Arctic continues in Alaska, the ANWTF recommends that the local and traditional knowledge of the state's indigenous inhabitants be incorporated into all relevant areas of study.

6. The ANWTF Recommends Improved Sea Ice, Wind, and Current Forecasts and Trajectories.

The ANWTF endorses increased study and monitoring of a wide range of Arctic environmental features, but it would particularly like to emphasize the need to improve sea ice forecasting and predictive modeling.

The continuing loss of perennial sea ice is a major driver of consequential changes across the region. Diminishing sea ice affects transportation access, regional weather, marine mammal habitat, marine food webs, and countless aspects of the lives of Arctic residents. The understanding of ice as a habitat also has implications for oil spill response and damage assessment.

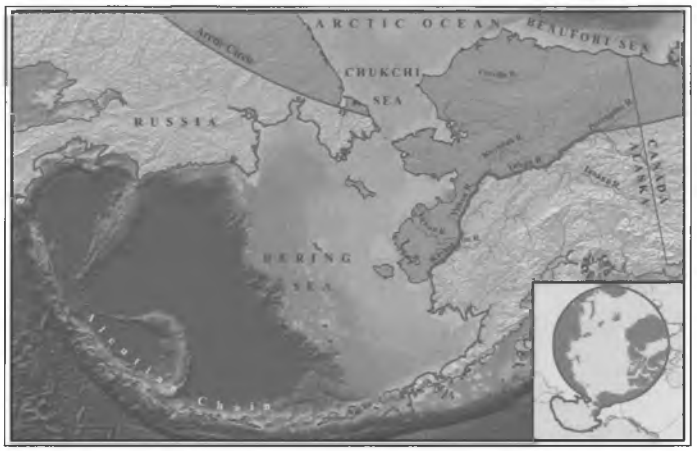
As tourism, oil and gas exploration, and shipping increase in the region, floating sea ice will present a major threat to maritime safety and increase the potential for oil spills. Improved daily and weekly modeling of ice conditions and better wind, current, and trajectories forecasts are among the most urgent immediate needs in the Arctic. There is currently no up-to-date sea ice atlas and little capacity to formulate reliable seasonal predictions—critical tools for shipping and off-shore development operational planning. New seasonal prediction services will also benefit communities and support the management of protected marine resources.

Appendix A

Definition of the Arctic

Arctic Boundary as Defined by the Arctic Research and Policy Act (ARPA)

All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering, and Chukchi seas; and the Aleutian chain.



Appendix B

House Concurrent Resolution 22

HCR022c -1- CSHCR 22(FIN)
26-LS1622\W

Establishing and relating to the Alaska Northern Waters Task Force.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS Alaska is the only Arctic state in the nation; and

WHEREAS recent warming trends have resulted in the depletion of Arctic perennial sea ice by nine percent a decade; and

WHEREAS, according to the National Aeronautics and Space Administration, the rate of depletion is accelerating because of the interaction among the ice, oceans, and atmosphere; and

WHEREAS rapidly retreating sea ice is altering fish and wildlife habitats and affecting the accessibility and viability of certain species, on which many local communities rely for nutritional and cultural purposes; and

WHEREAS reduced sea ice is affecting polar route navigation by opening oceans previously frozen year-round; and

WHEREAS the new accessibility of the Northern waters is resulting in increased marine transportation, access to resources, tourism, fisheries, and the presence of United States government agencies in the North; and

WHEREAS the waters of Northern Alaska are of national security and strategic importance to the United States and the State of Alaska; and

WHEREAS, because of national security concerns, the United States Coast Guard is increasing its presence in the North and has plans to build new infrastructure to support its heightened activity, including housing and office facilities and possibly a deep water port; and

WHEREAS Northern Alaska contains important mineral and other resources both in state waters and on the outer continental shelf; and

WHEREAS commercial activities, including resource development, and the revenue they generate for the state may be significantly affected by the changing Arctic waters; and

WHEREAS those changes will affect local communities, businesses, the state, and the natural resources on which they rely; and

WHEREAS there is no comprehensive state plan for Alaska's Northern waters; and

WHEREAS various federal agencies and international bodies are working together to form a commission to address the changing ocean patterns and the opportunities and problems that may arise as a result of those changing patterns; and

WHEREAS the State of Alaska should be involved in the process of forming the commission; and

WHEREAS a comprehensive plan to address the warming ocean, including the economic, ecological, and security effects, will benefit the state and its residents;

BE IT RESOLVED by the Alaska State Legislature that the

Alaska Northern Waters Task Force is created in the legislative branch and shall consist of 11 members as follows:

(1) two senators appointed by the President of the Senate;

(2) two representatives appointed by the Speaker of the House of Representatives; and

(3) seven members appointed jointly by the President of the Senate and the Speaker of the House of Representatives, as follows:

(A) five public members, three of whom reside in coastal areas of the state;

(B) one member representing the executive branch of state government;

(C) one member representing the federal government; and be it

FURTHER RESOLVED that a vacancy on the task force shall be filled in the manner of the original appointment; and be it

FURTHER RESOLVED that the legislators on the task force shall select a chair from among themselves and the chair may assign staff to provide support to the task force; and be it

FURTHER RESOLVED that the public members, and, if the member does not receive reimbursement for expenses from the federal government, the federal government member of the task force may receive per diem and travel expenses authorized for boards and commissions under AS 39.20.180; and be it

FURTHER RESOLVED that the task force may meet during and between legislative sessions and the duties of the task force include the following:

(1) assess and facilitate creation of a state and federal commission responsible for overseeing the development of state and federal northern ocean waters;

(2) facilitate regional coordination, cooperation, and outreach regarding the creation of the commission to keep local stakeholders informed and to incorporate their input into the process;

(3) identify and coordinate efforts of mutual concern for federal, state, and local agencies, as well as international interests in the creation of the commission; and

(4) conduct hearings in the Northern region of the state to fulfill its purpose; and be it

FURTHER RESOLVED that the task force shall provide recommendations regarding the formation of the commission and shall deliver a preliminary report of its findings to the legislature by January 20, 2012, and deliver a final report to the legislature on January 30, 2012, together with legislative proposals for consideration; and be it

FURTHER RESOLVED that the task force shall be available for legislative hearings regarding its final report and recommendations; and be it

FURTHER RESOLVED that the continuation or termination of the task force shall be reevaluated during the Second Regular Session of the Twenty-Seventh Alaska State Legislature.

Appendix C

Biographies

Representative Reggie Joule, Chair, Northern Waters Task Force

Representative Reggie Joule was born in Nome on July 14, 1952, to Alfred and Vera Huff. He was adopted at birth by grandparents Tony and May Joule. As a young boy Rep. Joule lived in St. Michaels and Deering and traveled extensively with his parents, as he went with them wherever they taught. His father was a well-known Inupiaq teacher from the village of Point Hope. Kotzebue has been Rep. Joule's home since 1958. He graduated from Cooper Valley High School in 1970.

Rep. Joule has been elected to the Alaska State House of Representatives continuously since 1996. Currently he is a bush legislator in coalition with the House Majority. He serves as a member of the House Finance Committee, chair of the House Finance Subcommittee on the Health & Social Services Operating budget, and chair of the Bush Caucus. Previously he has served on the Kotzebue City Council, the NANA Regional School Board, the local Dog Mushers Association, the NANA Regional and Village Corporation Board, the statewide Alcohol and Drug Abuse Advisory Board, the Governor's Council on Disabilities, the Governor's Interim Commission on Children and Youth, the Alaska Human Resource Investment Council, and the Native Scholars Advisory Board. He is a highly recognized Bundle Carrier for the Sobriety Movement. Rep. Joule is currently serving his eighth term in the Alaska House of Representatives.

Senator Bert Stedman, Vice-Chair, Northern Waters Task Force

Senator Bert Stedman represents Southeast Alaska in the Alaska State Senate and serves as vice-chairman of the Alaska Northern Waters Task Force.

A fourth-generation Alaskan, Senator Stedman was raised in Petersburg and Sitka, spending several years working in commercial fishing and construction. After receiving a business degree from the University of Oregon in 1985, Senator Stedman founded Pioneer Capital Management, the Sitka investment firm he manages today.

In 2003 Senator Stedman was appointed to represent Senate District A in the Alaska State Legislature by Governor Frank Murkowski. Senator Stedman was elected to the seat in 2004 and 2008. Previously the Senator served four years on the Sitka City & Borough Assembly and eight years on the Sitka Planning Commission.

Senator Stedman has served as co-chairman of the Senate Finance Committee since 2007. He is vice-chair of the Legislative Budget & Audit Committee, and he is a member of Legislative Council, the Senate Rules Committee, and the Senate Resources Committee. In 2011 he was elected vice-chairman of the Energy Council.

The senator resides in Sitka with his wife Lureen and daughter Susie.

Senator Lyman Hoffman

Senator Lyman Hoffman was born and raised in Bethel and has lived on the Kuskokwim River for most of his life. He graduated from Bethel High School in 1968 and earned a degree in Business Administration from the University of Alaska Fairbanks in 1974. He and his wife Lillian raised two children—Trina and Douglas—in Bethel, and they are now the proud grandparents of three granddaughters.

Senator Hoffman has a long history of public service, both in volunteer and elected positions. Organizations he has served in Bethel include the Planning Commission, Bethel Family Clinic, Bethel Native Corporation, Bethel Pre-maternal Home, Yukon-Kuskokwim Health Corporation, and the Lower Kuskokwim Development Corporation.

Senator Hoffman was first elected to the Alaska Legislature as a representative in 1987, and he reached the Senate in 1995. He is now part of the Bi-Partisan Senate Working Group. He serves as co-chair of the Senate Finance Committee and co-chair of the Legislative Budget and Audit Committee. In recent years, he has focused on implementing and funding programs for energy rebates, weatherization, and alternative energy. He is a member of the Renewable Energy Funding Advisory Committee and is actively working on projects to produce affordable energy.

Representative Bob Herron

Representative Bob Herron has represented the 38th District in the Alaska State House since 2008. He was previously the government and public relations director for the Yukon Kuskokwim Health Corporation. His Southwest Alaska district ranges from Nunivak Island to Upper Kalskag to Bethel and Platinum. He previously served as the Bethel City manager (1998-2005), legislative aide in the office of Sen. Lyman Hoffman (1987-1994), and general manager/partner with Swanson's Theater/Bethel Cablevision. Rep. Herron also has owned and operated a number of businesses, including Bethel Drilling & Welding, Blue Sky Estates, Golden Eagle, Kisaralik Unlimited, and North Star Gas.

He currently serves as chairman of the Economic Development Trade & Tourism Committee and vice-chair of Legislative Council. He serves on four Finance Sub-Committees, and on the House Fisheries, Health & Social Services, and Resources Committees.

Rep. Herron is active in PNWER's Arctic Caucus. In 2011 he sponsored legislation highlighting the Alaska Legislature's formal recognition of the Arctic Caucus and legislation urging the U.S. Senate to ratify the Law of the Sea Treaty.

Larry Hartig, Commissioner, Alaska Department of Environmental Conservation

Commissioner Larry Hartig is an attorney with more than 20 years' experience in environmental law, regulations, permits, and land use issues. Prior to his appointment in 2007 as commissioner of the Department of Environmental Conservation, he was in private practice as an attorney with the Anchorage law firm of Hartig Rhodes Hoge & Lekisch, PC. Joining the firm in 1983, Mr. Hartig worked primarily on environmental, natural resources, and commercial matters. His practice included assisting clients in obtaining environmental and other permits for natural resource development projects as well as projects involving environmental compliance and cleanup of contaminated properties. Clients included government, private developers, industry, and Native Corporations, among others. He also worked as a landman in the Land/Legal Department of Alyeska Pipeline Service Company between 1972 and 1976.

Mr. Hartig has a B.A. from the University of Utah and received his J.D. from Lewis and Clark College. He is a member of the Exxon Valdez Oil Spill Trustee Council and serves on the board of the Alaska Permanent Fund Corporation. He is also a member of the Alaska Bar Association and a former member of the State Board of Forestry.

Chuck Greene, NANA Regional Corporation

Chuck Greene is currently Vice-President of Government and Community Affairs for NANA Regional Corporation. Prior to this role, Mr. Greene worked in government relations with the NANA Development Corporation. Before joining the NANA team, Mr. Greene served as mayor of the Northwest Arctic Borough for 13 years and was a special assistant to the governor of Alaska. Mr. Greene is a board member of the Resource Development Council and has served on many other boards, including the Kotzebue City Council, Kikitagruk Inupiat Corporation, Inuit Circumpolar Council-Alaska, the state Alcohol Beverage Control Board, and the Rural Governance and Empowerment Commission. Mr. Greene also served his country in the United States Navy for four years, two of which were in Vietnam.

Chris Hladick, City Manager, Unalaska

Chris Hladick is a long-standing city manager in Alaska with over twenty years of varied experience in capital projects such as docks and harbors, power projects, water and wastewater plants, landfills, shore protection, bridges, and multiple additional facilities. He has an in-depth background in strategic planning, having also volunteered his time to help community organizations reach their goals. Mr. Hladick has been city manager for Unalaska/Dutch Harbor for the past 11 years. Having lived in the Arctic during his tenure in Alaska, he has a special interest in the region and has testified before the State Legislature regarding the need to ratify the Law of the Sea Treaty. Mr. Hladick is versed in Bering Sea commercial fishing issues and has worked closely with the Coast Guard regarding search and rescue missions, clean-up of shipwrecks, and port of refuge incidents. He has served on a variety of governing boards over the years.

Edward Saggan Itta, Barrow

Edward Itta is an Inupiat whaler and hunter. He is committed to protecting the Inupiat subsistence heritage and ensuring the long-term social and economic viability of all the communities of Alaska's North Slope. Mr. Itta was elected mayor of the North Slope Borough in 2005 and re-elected in 2008. He is a member of the federal Outer Continental Shelf Policy Committee, a member of the Barrow Whaling Captains Association, and a past commissioner of the Alaska Eskimo Whaling Commission. Mr. Itta also served as president of the North Slope Borough School Board and was vice-chairman of the federal subsistence advisory council for northern Alaska. He and his wife, Elsie, have two children and four grandchildren.

Dave Kubiak, Alaska Marine Conservation Council

Dave Kubiak, an Alaska resident for the past 47 years, retired from teaching English at Kodiak High School in 1996. He has fished commercially out of Kodiak for crab and salmon and currently fishes halibut and Pacific cod. Mr. Kubiak also uses his boat for research chartering and limited tour chartering. He has served on various community boards and committees and is past chair of the Alaska Marine Conservation Council.

Denise Michels, Mayor, Nome

Denise Michels was elected Mayor of the City of Nome in October 2003. Born and raised in Nome, she is the first Alaskan Native and first woman to serve in this capacity. As mayor, she works closely with an appointed city manager, the Nome City Council, and other elected and appointed boards and commissions. The mayor is the chief spokesperson for the city, representing community legislative priorities to the Alaska Legislature and the U.S. Congressional delegation. She continues to focus on public safety, community, and economic and infrastructure development, and she promotes bringing diverse groups and residents together.

The position of mayor in Nome can be characterized as a "full time job with part-time pay." Mayor Michels is employed as Director of Transportation by Kawerak, Inc., a Native not-for-profit service organization. She and her husband, Terry Michels, have also owned and operated several businesses in Nome. Mayor Michels is past president for the Alaska Conference of Mayors and the Alaska Municipal League and past co-chair of the Public Works and Infrastructure Committee.

Mayor Michels is a shareholder of Bering Straits Native Corporation and Sitnasuak Native Corporation and is a Nome Eskimo tribal member. She is a member of the Alaska Airlines Northwest Community Advisory Board and the Resource Development Council. Her past memberships include serving BLM's Resource Advisory Council, the Governor's Transition Team for the Department of Military and Veterans Affairs, the Advisory Committee of the Alaska Military Force Advocacy and Structure Team, DOTPF's Long Range Transportation Plan 2010 Update, and the Governor's Subcabinet on Climate Change Adaptation Advisory Work Group on Public Infrastructure.

Federal Liaison

Rear Admiral Thomas P. Ostebo, United States Coast Guard

Rear Admiral Thomas P. Ostebo assumed the duties as Commander, Seventeenth Coast Guard District, in May 2011. He is responsible for all Coast Guard operations throughout Alaska.

In his previous assignment, Rear Admiral Ostebo was the Coast Guard's Assistant Commandant for Engineering and Logistics (CG-4). He was responsible for all naval, civil, aeronautical, and industrial engineering and logistics for the Coast Guard's $25 billion capital plant. Rear Admiral Ostebo graduated from the U.S. Coast Guard Academy in 1981 with a Bachelors of Science in Mathematics and Computer Science and earned a Master of Science in Industrial Administration from Purdue University's Krannert School of Business. He completed a Senior Fellowship in National Security at Harvard University in 2002 and a Senior Fellowship at the Naval War College in 2005. Additionally, he is a Program Manager Level III Certified Acquisition Professional and a Level I Certified Logistician.

His military decorations include three Legions of Merit, the Distinguished Flying Cross, three Meritorious Service Medals, two CG Commendation Medals, and the CG Achievement Medal.

Alternate Members

Senator Donald Olson, Golovin

Born in 1953, Senator Donald (Donny) Olson grew up in the native village of Golovin, Alaska. Senator Olson earned his M.D. in 1983. After completing a medical internship, he returned to rural Alaska to fulfill a life-long dream of practicing medicine in his home area. He later studied law at the University of Colorado, Boulder, and he finished his formal schooling at Emmanuel College, at Cambridge University in England, where he studied international and maritime law.

Senator Olson served on the Alaska State Medical Board from 1994 until 2000, when he was elected state senator. In addition to saving lives as a doctor, Senator Olson has participated in aerial searches for missing aircraft and lost individuals. He has flown his own airplane or helicopter in searches. Also a Reindeer Herder, Senator Olson personally financed and conducted an airlift rescue of reindeer off Hagemeister Island in 1992. Having the only ski-equipped commercial bush plane in Nome, he does all the off-airport flying out of Nome, including service to the ice runway at Little Diomede.

Travel for education, business, and adventure has taken Senator Olson to Russia, Greenland, Norway, Japan, China, South Korea, United Kingdom, France, Germany, Belgium, Switzerland, Austria, New Zealand, Australia, Canada, and Mexico. Lately, Senator Olson values spending time with his family. He and his wife Willow are raising two sons, Martin and Donald Jr.

Representative Bryce Edgmon, Dillingham

Representative Bryce Edgmon was born in Dillingham, Alaska, in 1961. Also raised in Dillingham, Rep. Edgmon fished commercially for Bristol Bay salmon and herring for more than twenty years. A graduate of the University of Alaska Anchorage with a degree in Business Administration, Rep. Edgmon has worked as the Community Development Quota manager for the Department of Commerce, Community & Economic Development and is a former chief operating officer for the Bristol Bay Economic Development Corporation.

Presently, the representative is chairman of the board of Choggiung Ltd., the Alaska Native village corporation for Dillingham, Ekuk, and Portage Creek.

A state legislator since January 2007, Rep. Edgmon currently holds a seat on the House Finance Committee, with chairmanships of the Department of Transportation and Department of Corrections Finance Subcommittees. In the 26th Legislature, he was chairman of the House Special Committee on Fisheries and co-chair of the House Energy Committee. Additionally, he has served on the Resources and Education Committees and the ADF&G, Revenue, CCED, and Transportation Finance Subcommittees. He lives with his wife Melody and their children Evan and Emma in Dillingham.

Cora Campbell, Commissioner, Department of Fish and Game

Commissioner Cora Campbell is a lifelong Alaskan, a sport-fishing and outdoor enthusiast, and an advocate for sustaining Alaska's world-class fishing, hunting, and wildlife viewing opportunities. Ms. Campbell worked in the commercial fishing industry beginning the early 1990s. In addition to being a commercial fisher, she served as executive director for a regional fishing association and was a member of numerous boards and committees.

After serving as Governor Sarah Palin's fisheries policy advisor, she became Governor Sean Parnell's policy advisor for fisheries, wildlife, environmental conservation, natural resources, Arctic issues, and climate change. In December 2010, Governor Parnell appointed Ms. Campbell commissioner of the Alaska Department of Fish and Game. Among her duties, she represents the state of Alaska on numerous bodies, including the North Pacific Fishery Management Council, which oversees commercial and sport fisheries in federal waters off Alaska, and the Exxon Valdez Oil Spill Trustee Council, which addresses effects and recovery from the 1989 oil spill.

Richard Savik Glenn

A resident of Barrow, Alaska, Richard Glenn is executive vice-president of Lands and Natural Resources at Arctic Slope Regional Corporation (ASRC). He is a member of ASRC's board of directors. ASRC is the Alaska Native-owned regional corporation for the Inupiat Eskimos of Alaska's North Slope. ASRC owns approximately five million acres of surface and subsurface lands and has more than ten thousand Inupiat shareholders.

Mr. Glenn is a certified professional geologist in Alaska and has experience in onshore and offshore Arctic geologic processes. He was appointed twice to the U.S. Arctic Research Commission and has served on many boards and commissions, most dedicated to science or education. Mr. Glenn is a founding member and board president of the Barrow Arctic Science Consortium, a non-profit organization dedicated to bringing visiting researchers and local Arctic experts together.

Appendix D

Roster of Northern Waters Task Force Members

Representative Reggie Joule, District 40, Kotzebue, Chair
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Appendix E

List of Presenters

Ahlstrom, William.....Elder, St. Mary's

Amos, Howard.....Elder, Mekoryuk

Andreassen, Nils.....Executive Director, Institute of the North

Andrew, Tim.....Natural Resource Manager, Association of Village Council Presidents

Boardman, Stephen.....District Chief, Civil Project Management Branch, U.S. Corps of Engineers

Brubaker, Mike.....Director, Community Environmental Health, Alaska Native Tribal Health Consortium

Brune, Jason.....Executive Director, Resource Development Council

Coffey, Mike.....Maintenance and Operations Chief, Alaska Department of Transportation

Colvin, Christopher.....Commander of the 17th District, U.S. Coast Guard (Rear Admiral)

Connor, Billy.....University of Alaska Transportation Center

Crane, Kathleen (Dr.).....Arctic Research Programs, NOAA Co-Chair, Arctic Council's Circumpolar Biodiversity Marine Monitoring Program

Crockett, Marilyn.....Executive Director, Alaska Oil and Gas Association

DeMaster, Douglas (Dr.).....NOAA Science and Research Director, Alaska Fisheries Science Center

Dietrick, Larry.....Director, Division of Spill Prevention and Response, Alaska Department Environmental Conservation

Fitzgerald, Dan.....North Slope Borough, North Slope Science Initiative

Furgione, Laura.....Deputy Assistant Administrator, Weather Services, NOAA; Deputy Director, National Weather Service

Garay, Pater (Captain).....Alaska Marine Pilots

Hartig, Larry.....Commissioner, Alaska Department of Environmental Conservation

Heiman, Marilyn.....Director, Pew Environmental Group, U.S. Arctic Program

Holland-Bartels, Leslie.....United States Geological Survey

Holman, Amy.....Alaska Regional Coordinator, NOAA

Itta, Edward.....Mayor, North Slope Borough (former); Former President, Inuit Circumpolar Council

Kelty, Frank.....Natural Resource Analyst, City of Unalaska

Kenney, Frederick.....Judge Advocate General and Chief Counsel, U.S. Coast Guard (Rear Admiral)

Kruse, Gordon.....President's Professor of Fisheries, School of Fisheries Division and Ocean Sciences, University of Alaska, Fairbanks

LaBelle-Hammer, Nettie (Dr.) Associate Vice Chancellor for Research; Director, Office of Research Integrity, University of Alaska, Fairbanks

Laraux, Kenneth.....Elder, Bethel

Leighty, Wayne.....Commercial Regulatory Analyst, Shell Oil

Lisius, Jeffrey.....Assistant Area Port Director, U.S. Customs and Border Protection

Loten, Jennifer.....Canadian Consul, Canadian Consulate, Anchorage

Lukshin, Michael.....Engineer, Alaska Department of Transportation and Public Facilities

MacLean, Steve.....Protected Species Coordinator and Fisheries Analyst, North Pacific Fishery Management Council

Macrander, Michael.....Venture Support Integration Group Science Team Leader, Shell Alaska

Magone, Dan.....Owner, Magone Salvage

Marquardt, Shirley.....Mayor, Unalaska

McCammon, Molly.....Director, Alaska Ocean Observing Systems

McCarthy, Colleen.....Communications Manager, Shell Oil

Michels, Denise.....Mayor, Nome

Moran, Kate (Dr.).....Senior Policy Analyst, White House Office of Science and Technology Policy

Murkowski, Lisa (Senator).....United States Senator for the state of Alaska

Nick, Robert.....Elder, Nunapitchuk

Okleasik, Tom.....Planning Director, Northwest Arctic Borough, Subsistence Mapping

Ostebo, Thomas (Rear Adm.) ...Commander, 17th District, U.S. Coast Guard

Page, Edward.....Executive Director, Marine Exchange of Alaska

Pekich, Lisa.....Community Relations, ConocoPhillips

Pete, Mary.....Commissioner, U.S. Arctic Research Commission

Rosa, Cheryl (Dr.).....Deputy Director, United States Arctic Research Commission

Schnabel, Billy.....Water and Environmental Research Center, University of Alaska, Fairbanks

Sfraga, Mike.....Vice- Chancellor, University of Alaska, Fairbanks

Shake, Kristen.....School of Fisheries and Ocean Sciences, University of Alaska, Fairbanks

Shaw, Adam (Captain).....U.S. Coast Guard, 17th District

Sheehan, Glenn (Dr.).....Executive Director/Senior Scientist, Barrow Arctic Science Consortium

Smith, Melanie.....Audubon Alaska

Stotts, Jimmy.....President, Inuit Circumpolar Council-Alaska

Street, Steve.....Director of Cultural and Environmental Sciences, Association of Village Council Presidents

Suydam, Robert (Dr.).....North Slope Borough, North Slope Science Initiative

Tom, Stanley.....Elder, Newtok

Toohey, Cam.....Governmental Affairs Manager, Shell Exploration and Production Co., Alaska

Uchytil, Carl (Captain).....U.S. Coast Guard, 17th District

Ulmer, Fran.....Chair, U.S. Arctic Research Commission

Venes, Elias.....Elder, Bethel

Whalen, Carter (Captain).....Alaska Marine Pilots

Wheeler, Polly.....Coordinator, NW Interior Forest - Landscape Conservation, U.S. Fish and Wildlife

White, Dan.....Associate Dean, Research University of Alaska, Fairbanks

Appendix F

Hearing Schedule

The task force held meetings around the state as follows:

- Anchorage, October 1, 2010
- Barrow, December 2–3, 2010, in conjunction with PNWER's Arctic Caucus
- Juneau, March 14, 2011
- Kotzebue, July 6–7, 2011
- Nome and Wales, July 8–9, 2011
- Unalaska, August 24, 2011
- Bethel, October 10, 2011
- Anchorage, October 11, 2011
- Anchorage, October 19, 2011, in conjunction with Alaska Federation of Natives
- Anchorage, December 15–16, 2011

Many members of the task force also participated in the Arctic Imperative Summit in Girdwood, June 19–21; PNWER's Arctic Caucus Meeting, August 17–19 in Yellowknife, Northwest Territories, Canada; and the Norway Policy Tour, August 27–September 4, Norway.