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ARCTIC LAW & POLICY YEAR IN REVIEW: 2015

Arctic Law & Policy Institute, University of Washington*

I.	INTRODUCTION: ARCTIC NEWS HIGHLIGHTS	73
II.	TREATIES AND OTHER INTERNATIONAL AGREEMENTS	79
	A. U.N. Convention on the Law of the Sea	79
	B. U.N. Framework Convention on Climate Change ...	80
	C. International Convention for Prevention of Pollution from Ships	81
	D. Arctic Council Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic.....	82
	E. Arctic Council Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic.....	82
	F. Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean	83
III.	STATE PRACTICE.....	84
	A. United States: Federal Government.....	84
	1. U.S. Congress	84
	2. President	87
	3. Department of State.....	89
	4. Department of Homeland Security / U.S. Coast Guard.....	90
	5. Department of Commerce / National Oceanic and Atmospheric Administration	95
	6. Department of Interior / Bureau of Ocean Energy Management / Bureau of Safety and Environmental Enforcement / U.S. Geological Survey	99
	7. Department of Defense	103
	8. National Aeronautics and Space Administration.....	107

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9.	Environmental Protection Agency.....	107
10.	Significant U.S. Court Decisions	108
11.	U.S. Arctic Research Commission.....	112
12.	National Ocean Council	113
13.	Committee on the Marine Transportation System.....	114
14.	National Academies Transportation Research Board.....	115
B.	United States: Alaska	115
1.	State of Alaska	116
2.	The Alaska Arctic Policy Commission	117
3.	Alaska Marine Mammal Co-Management Agreements	118
C.	Canada	119
D.	China	120
E.	Denmark/Greenland	121
F.	Finland	122
G.	Iceland.....	122
H.	Japan.....	123
I.	Norway	125
J.	South Korea.....	126
K.	Russia 127	
L.	Sweden	129
M.	The European Union.....	129
N.	United Kingdom.....	130
IV.	INTERNATIONAL ORGANIZATIONS	130
A.	United Nations	130
B.	Arctic Council.....	131
C.	International Maritime Organization	141
D.	Food & Agriculture Organization Committee on Fisheries.....	143
E.	International Whaling Commission	144
F.	North Atlantic Marine Mammal Commission.....	146
G.	Commission on Limits of the Continental Shelf ...	146
H.	UNESCO / IOC / ICES / PICES	152
I.	World Trade Organization	153
J.	International Tribunals	155
K.	United Nations Environment Program	157
V.	SELECTED ARCTIC THEMES.....	157
A.	Arctic Marine Shipping.....	157
1.	Prognosis for Arctic Shipping	158
B.	Arctic Marine Shipping Assessment.....	158
1.	Arctic Shipping Routes.....	161
2.	International Agreements on Shipping Safety	168
3.	Arctic Shipping Safety Measures.....	169
C.	Polar Icebreakers	170

D. Arctic Living Marine Resources.....	176
E. Arctic Non-Living Marine Resources.....	181
F. Marine Pollution Prevention, Response, & Liability	188
G. Arctic Marine Scientific Research	190
H. Indigenous Arctic Residents	193
I. Military Activities in the Arctic.....	194
VI. UNIVERSITY OF WASHINGTON ALPI NEW DEVELOPMENTS	202
VII. SELECTED CONFERENCES.....	202

I. INTRODUCTION: ARCTIC NEWS HIGHLIGHTS

In April 2015, Canada passed the Arctic Council Chair to the United States. In assuming the chair, the United States adopted as its theme: *One Arctic: Shared Opportunities, Challenges, and Responsibilities*. The U.S. chairmanship goals are detailed in Section IV.B.

Early Predictions for 2015

A January 21, 2015, article in *The Economist* proclaimed that the Arctic “hype” is receding, and that while the Arctic still matters; mainly for environmental reasons, the surge of interest in its economy and politics has ebbed.¹

Global Climate Change Agreement

As 2015 drew to a close, delegates attending the 21st Conference of Parties to the UN Framework Convention on Climate Change (COP21) in Paris reached unanimous agreement on measures to reduce greenhouse gas emissions. Although non-binding, the Agreement was hailed as a major win for the environment.²

The Arctic Report Card

Arctic Ice Conditions: In 2015, the winter maximum Arctic sea ice extent reached a record low, extending

1. *Not So Cool: The Hype Over the Arctic Recedes, Along with the Summer Ice*, *ECONOMIST* (Jan. 31, 2015), <http://www.economist.com/news/international/21641240-hype-over-arctic-recedes-along-summer-ice-not-so-cool>.

2. *About COP21*, *CLIMATE ACTION* (2015), <http://www.cop21paris.org/about/cop21/>. For a more detailed discussion, see *infra* Section II.B.

only 14.54 million square kilometers—approximately 1.1 million square kilometers below average. In September, the summer minimum Arctic sea ice extent was 4.63 million square kilometers, the fourth lowest September sea ice extent in the modern satellite record, which started in 1979.³

Arctic Climate Conditions: The average annual surface air temperature anomaly (+1.3°C relative to the 1981–2010 baseline) over land north of 60°N between October 2014 and September 2015 was the highest in the observational record beginning in 1900. This represents a 2.9°C increase since the beginning of the 20th century. On Dec. 30, 2015, the high temperature at the North Pole reached 42° Fahrenheit.⁴

U.S. Oil and Gas Activities

On December 23, 2015, the price of Brent crude oil, the global benchmark for oil prices, fell to \$36.11 per barrel—its lowest level in eleven years—as global supply continues to outpace demand.⁵

The Department of Interior released a draft of its 2017–2022 lease plan for the U.S. outer continental shelf (OCS).⁶ The plan withdrew 9.8 million acres of the Arctic Ocean from oil and gas leasing.⁷

In late September 2015 Shell announced that it was

3. Maria-Jose Viñas, *2016 Arctic Sea Ice Wintertime Extent Hits Another Record Low*, NASA, Mar. 28, 2016, <http://www.nasa.gov/feature/goddard/2016/2016-arctic-sea-ice-wintertime-extent-hits-another-record-low>.

4. J. Overland, et al., *Surface Air Temperature*, ARCTIC REPORT CARD: UPDATE FOR 2015, http://www.arctic.noaa.gov/reportcard/air_temperature.html (last visited Apr. 2, 2016).

5. Ben Meyer, *Crude Crash Continues, Brent Reaches 11-year Low*, AMERICAN SHIPPER (Dec. 23, 2015), http://www.americanshipper.com/Main/News/Crude_crash_continues_Brent_reaches_11year_low_62512.aspx.

6. DEP'T OF THE INTERIOR, OIL AND GAS LEASE UTILIZATION, ONSHORE AND OFFSHORE (2012), <https://www.doi.gov/sites/doi.gov/files/migrated/news/pressreleases/upload/Final-Report.pdf>.

7. *Id.*; see also BOEM, *2017-2022 OCS Oil and Gas Leasing Program*, OIL & GAS ENERGY PROGRAMS, <http://www.boem.gov/Five-Year-Program-2017-2022/#ProposedProgram> (last visited Apr. 2, 2016); Krestia DeGeorge & Nathaniel Herz, *Obama Moves to Block Development in 9.8 million Acres of Arctic Ocean*, ALASKA DISPATCH NEWS (Jan. 27, 2015), <http://www.adn.com/article/20150127/obama-moves-block-development-98-million-acres-arctic-ocean>.

suspending its Arctic offshore oil exploration program, citing disappointing results from exploratory wells after having spent over seven billion dollars for exploration and leases in the Chukchi Sea.⁸ Norway's Statoil also suspended its U.S. Arctic OCS activities.⁹ Both companies requested lease extensions, but the U.S. Department of Interior denied them.¹⁰

Arctic Shipping

The Arctic Council Protection of the Arctic Marine Environment (PAME) working group produced a 2015 progress report on the implementation of the 2009 Arctic Marine Shipping Assessment (AMSE).¹¹

Northern Sea Route: In 2015, Russia's Northern Sea Route (NSR) Administration granted 708 transit permits, up from 631 permits in 2014. Only sixty-three of those were granted to foreign flag vessels. Total cargo volume through the NSR was 5.15 million tons, compared to 3.7 million tons in 2014. While domestic internal traffic along the NSR increased, international transit traffic using the NSR for transport between Europe and Asia declined significantly from its peak in 2012.¹²

8. Clifford Rauss & Stanley Reed, *Shell Exits Arctic as Slump in Oil Prices Forces Industry to Retrench*, N.Y. TIMES (Sept. 28, 2015), <http://www.nytimes.com/2015/09/29/business/international/royal-dutch-shell-alaska-oil-exploration-halt.html>; Sarah Kent, *Shell to Cease Oil Exploration in Alaska Arctic After Disappointing Drilling Season*, WALL STREET J. (Sept. 28, 2015), <http://www.wsj.com/articles/shell-to-cease-oil-exploration-offshore-alaska-1443419673>.

9. Tim Bradner, *Statoil Quits the Alaska Arctic OCS, Following Shell's Exit*, ALASKA JOURNAL OF COMMERCE (Nov. 18, 2015, 3:18pm), <http://www.alaskajournal.com/2015-11-18/statoil-quits-alaska-arctic-ocs-following-shell%E2%80%99s-exit#.VwB9LPkrLIU>.

10. Letter from Kevin J. Pendergast, Regional Supervisor, BSEE, to Susan Childs, Venture Support Integrator, Shell (Oct. 16, 2015), <https://www.doi.gov/sites/doi.gov/files/uploads/ShellSOOLtr.pdf>; see also Press Release, Dep't of the Interior, Interior Department Cancels Arctic Offshore Lease Sales (Oct. 16, 2015), <https://www.doi.gov/pressreleases/interior-department-cancels-arctic-offshore-lease-sales>.

11. ARCTIC COUNCIL'S WORKING GROUP ON THE PROTECTION OF THE ARCTIC MARINE ENVIRONMENT, 2015 PROGRESS REPORT ON IMPLEMENTATION OF THE 2009 ARCTIC MARINE SHIPPING ASSESSMENT REPORT RECOMMENDATIONS (2015), http://www.pame.is/images/03_Projects/AMSA/AMSA_Documents/Progress_Reports/AMSArecommendations2015_Web.pdf.

12. *Object of Activity and Functions of NSRA*, THE NORTHERN SEA ROUTE ADMINISTRATION, http://www.nsra.ru/en/ceili_funktsii/ (last visited Apr. 2, 2016); see also NORTHERN SEA ROUTE INFORMATION OFFICE, <http://www.arctic-lio.com/> (last visited Apr. 2, 2016).

Northwest Passage: In 2012, a record number (thirty) of vessels transited through the Northwest Passage (NWP).¹³ Only seventeen vessels managed the full Northwest Passages in 2014, due to a short and cold summer.¹⁴ Transport Canada, NORDREG, the Canadian Coast Guard, or their Russian counterparts have provided data on 2015 traffic through the NWP.¹⁵ Unofficial reports suggest there were few complete transits of the Passage, but increased “destinational” traffic as a result of the commencement of Baffinland iron ore exports. A scientific study of sea ice thickness in the Passage published in September 2015 concluded, “even in today’s climate, ice conditions must still be considered severe.”¹⁶ In evaluating shipping conditions, the researchers highlighted the importance of considering both sea ice extent and thickness.¹⁷

During its Arctic West 2015 research cruise, the U.S. Coast Guard Cutter *Healy*—under command of University of Washington Law alumnus Captain Jason Hamilton—reached the North Pole, the first U.S. surface ship to do so unaccompanied.¹⁸

The Research Vessel (R/V) *Sikuliaq* was commissioned on March 8, 2015.¹⁹

The 261-foot vessel is owned by the National Science Foundation, operated by the University of Alaska Fairbanks (UAF) School of Fisheries and Ocean Sciences, and home-ported at UAF’s Seward Marine

13. *Trends in Shipping in the Northwest Passage and the Beaufort Sea*, in NORTHWEST TERRITORIES STATE OF THE ENVIRONMENT REPORT (May 29, 2015), <http://www.enr.gov.nt.ca/state-environment/73-trends-shipping-northwest-passage-and-beaufort-sea>.

14. *Id.*

15. *Id.*

16. Christian Haas & Stephen E. L. Howell, *Ice Thickness in the Northwest Passage*, 42 GEOPHYSICAL RESEARCH LETTERS 7673 (2015), <http://onlinelibrary.wiley.com/doi/10.1002/2015GL065704/full>.

17. *Id.*

18. Press Release, U.S. Coast Guard, U.S. Coast Guard Cutter Reaches North Pole During Historic Expedition (Sept. 8, 2015), <http://www.uscgnews.com/go/doc/4007/2593986/U-S-Coast-Guard-cutter-reaches-North-Pole-during-historic-expedition>.

19. Heidi Zemach, *R/V Sikuliaq Commissioned in Seward*, SEWARD CITY NEWS (Mar. 8, 2015), <http://sewardcitynews.com/2015/03/rv-sikuliaq-commissioned-in-seward/>.

Center in Seward, Alaska. One of the most advanced research vessels ever built, *Sikuliq* has a crew of twenty and carries up to twenty-six researchers. She is capable of breaking first-year sea ice up to 2.5 feet thick at a constant speed of two knots.²⁰

Crystal Cruise Lines continued preparations for the summer 2016 Arctic cruise by the *Crystal Serenity*. The vessel will sail from Seward, Alaska to New York City, via the Northwest Passage.²¹

The 338-foot Russian freezer trawler *Dalny Vostok* sank in the Sea of Okhotsk on April 1, 2015.²² At least fifty-six crewmembers perished. Early reports indicated a collision with ice. The tragedy was reminiscent of the November 30, 2014 loss of the *Oryong 501*, a 326-foot South Korean trawler that sank in the Bering Sea.²³ Russia came under criticism in the latter case for its failure to timely respond to the incident in the Russian SAR sector and to timely request U.S. assistance.²⁴ More than fifty fishermen were feared dead after the trawler sank.²⁵

In August of 2015, the Bremerton, Washington-based fast attack submarine USS *Seawolf* (SSN 21) surfaced

20. Press Release 12-192, National Science Foundation, National Science Foundation Launches Arctic Research Vessel (Oct. 13, 2012), https://www.nsf.gov/mobile/news/news_summ.jsp?cntn_id=125707&org=PLR&from=news.

21. *Crystal Cruises Northwest Passage 2016 FAQ*, CRYSTAL CRUISES, <http://www.crystalcruises.com/alaska-cruises/northwest-passage--6319> (last visited Apr. 2, 2016).

22. Alec Luhn, *Dozens Die as Russian Trawler Sinks in the Sea of Okhotsk*, GUARDIAN (Apr. 2, 2015), <http://www.theguardian.com/world/2015/apr/02/dozens-die-as-russian-trawler-sinks-in-the-sea-of-okhotsk>.

23. Choe Sang-Hun, *Dozens Missing After South Korean Trawler Sinks in Bering Sea*, N.Y. TIMES (Dec. 1, 2014), <http://www.nytimes.com/2014/12/02/world/asia/south-korean-trawler-sinks-in-bering-sea.html>.

24. Chris Klint, *U.S. Coast Guard Joins Search for 54 Fisherman After Bering Sea Sinking*, KTUU (Dec. 1, 2014), <http://www.ktuu.com/news/news/coast-guard-monitors-bering-sea-sinking-of-60person-fishing-vessel/30000826>; Diana Honings, *International Search in the Bering*, COAST GUARD ALASKA: OFFICIAL BLOG OF THE 17TH COAST GUARD DISTRICT (Dec. 19, 2014), <http://alaska.coastguard.dodlive.mil/2014/12/international-search-in-the-bering/>.

25. Tom Parfitt, *More than 50 Fishermen Feared Dead in Bering Sea Trawler Tragedy*, TELEGRAPH (Dec. 2, 2014), <http://www.telegraph.co.uk/news/worldnews/europe/russia/11267813/More-than-50-fishermen-feared-dead-in-Bering-Sea-trawler-tragedy.html>.

at the North Pole during the sub's six-month deployment.²⁶

Legislation/ International Agreements

On July 16, 2015, the five Arctic littoral States agreed to ban commercial fishing in the 1.1 million-square-mile Central Arctic Ocean.²⁷ The so-called Arctic Ocean high seas "donut hole" covered by the declaration lies beyond the five states' exclusive economic zones.²⁸

In May 2015, Alaska's Governor Bill Walker signed into law the **Declaration of State Arctic Policy**, which was based on the recommendations of the Alaska Arctic Policy Commission.²⁹

In May 2015, the International Maritime Organization's Marine Environment Protection Committee adopted the environmental protection provisions of the International Code for Ships Operating in Polar Waters (Polar Code) and related MARPOL amendments, roughly six months after the Maritime Safety Committee had adopted the safety provisions and SOLAS amendments.³⁰ The committees' actions pave the way for implementation of the Code beginning January 2017.³¹

President Obama signed into law the Omnibus Appropriations Act of 2016 bill on December 18, 2015.³² In the bill, Congress appropriated a total of \$10.6 billion for the Coast Guard in FY16, \$933 million more than in FY15. The FY16 appropriation includes \$1.26 billion for Coast Guard shipbuilding programs—more

26. Barbara Starr, *U.S. Submarine Returns from Arctic Mission*, CNN (Aug. 31, 2015), <http://www.cnn.com/2015/08/31/politics/uss-seawolf-submarine-navy-arctic/>.

27. Yereth Rosen, *5 Nations Sign Declaration to Protect Arctic 'Donut Hole' from Unregulated Fishing*, ARCTIC NEWSWIRE (July 16, 2015), <http://www.adn.com/article/20150716/5-nations-sign-declaration-protect-arctic-donut-hole-unregulated-fishing>.

28. *Id.*

29. Press Release, Alaska Governor's Office, Governor Signs Arctic Policy Bill into Law (May 11, 2015).

30. *Shipping in Polar Waters*, INTERNATIONAL MARITIME ORGANIZATION, <http://www.imo.org/en/MediaCentre/HotTopics/polar/Pages/default.aspx> (last visited Apr. 3, 2015).

31. *Id.*

32. Consolidated Appropriations Act of 2016, Pub. L. No. 114-113 (2015).

than double the amount requested by the President.³³

Japan released an Arctic policy white paper detailing its strategy for the Arctic.

In late December 2015, White House sources announced that a “wave” of new regulations would be coming in 2016.

II. TREATIES AND OTHER INTERNATIONAL AGREEMENTS

A. *U.N. Convention on the Law of the Sea*

In the 2008 Ilulissat Declaration, the five coastal nations bordering the Arctic Ocean (Canada, Denmark/Greenland, Norway, Russia, and the U.S.), jointly affirmed their commitment to settle any Arctic maritime disputes within the framework provided by the Law of the Sea.³⁴ In doing so, they rejected calls for a new treaty regime, similar to the Antarctic Treaty System.³⁵ The declaration concludes that the Law of the Sea framework “provides a solid foundation for responsible management by the five coastal States and other users of this Ocean through national implementation and application of relevant provisions. We therefore see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean.”³⁶

2015 brought no significant progress on possible U.S. accession to the 1982 U.N. Convention on the Law of the Sea (UNCLOS).³⁷ Opponents argue accession relinquishes too much sovereignty to a dispute resolution regime proven

33. *Id.*; see also Craig H. Allen, Sr., *The Coast Guard Advances its Arctic Readiness in 2015, but Challenges Remain*, PACIFIC MARITIME MAGAZINE (Feb. 1, 2016), <http://www.pacmar.com/story/2016/02/01/features/the-coast-guard-advances-its-arctic-readiness-in-2015-but-challenges-remain/409.html>; Bill Chappell, *Obama Signs \$1.8 Trillion Tax and Spending Bill into Law*, NPR (Dec. 18, 2015), <http://www.npr.org/sections/thetwo-way/2015/12/18/460281572/congress-sends-1-8-trillion-tax-and-spending-bill-to-president-obama>.

34. See Arctic Ocean Conference, May 27–29, 2008, The Ilulissat Declaration (May 28, 2008), http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf [hereinafter The Ilulissat Declaration].

35. Antarctic Treaty, Dec. 1, 1959, 12 U.S.T. 794, 402 U.N.T.S. 71.

36. See The Ilulissat Declaration, *supra* note 34.

37. U.N. Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

ineffective at checking territorial aggression, for example by China in the South China Sea. Proponents—which includes every president since Bill Clinton’s presentment to Congress over twenty years ago, the Navy, the U.S. Coast Guard, and the Alaska Arctic Policy Commission—point out that accession would, among other things, help the United States maximize international recognition and legal certainty regarding the outer limits of the U.S. continental shelf.

B. U.N. Framework Convention on Climate Change

The U.N. Framework Convention on Climate Change (UNFCC),³⁸ which entered into force on March 21, 1994, sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource that can be degraded by industrial and other emissions of carbon dioxide and other greenhouse gases. Under the Convention, governments: (1) gather and share information on greenhouse gas emissions, national policies, and best practices, (2) launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries, and (3) cooperate in preparing for adaptation to the impacts of climate change.³⁹

The convention provides a framework that is then implemented by a series of protocols designed to limit average global temperature increases and the resulting climate change, and to cope with climate change impacts.⁴⁰

From November 30 to December 11, 2015, France chaired and hosted the 21st Conference of the Parties to the UNFCC (COP21) in Paris.⁴¹ On December 13, 2015, the conferees succeeded in producing a new international agreement on

38. U.N. Framework Convention on Climate Change, May 9, 1992, S. Treaty Doc. No. 102-38, 1771 U.N.T.S. 107.

39. *Id.*

40. *See, e.g.*, Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 2303 U.N.T.S. 148.

41. *About COP21*, *supra* note 2; *Paris Climate Change Conference—November 2015*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/meetings/paris_nov_2015/meeting/8926.php (last visited Apr. 3, 2016).

climate change, applicable to all countries.⁴² The agreement's annex identifies a goal of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.⁴³ To the disappointment of many, however, at the last minute the word “shall” was replaced with “should” throughout the text of the agreement, rendering it a non-binding agreement that focuses on efforts rather than results.⁴⁴

C. International Convention for Prevention of Pollution from Ships

The International Convention for Prevention of Pollution from Ships (MARPOL) establishes a framework for the prevention and control of vessel-source pollution that is then implemented by six annexes.⁴⁵ The U.S. is a party, and MARPOL is implemented in the U.S. by regulations promulgated under the Act to Prevent Pollution from Ships.⁴⁶ The six annexes include: Annex I Prevention of pollution by oil, Annex II Control of pollution by noxious liquid substances, Annex III Prevention of pollution by harmful substances in packaged form, Annex IV Prevention of pollution by sewage from ships, Annex V Prevention of pollution by garbage from ships, and Annex VI Prevention of air pollution from ships.⁴⁷

MARPOL Annex VI prescribes global limits on vessel exhaust emissions of sulfur and nitrogen oxides (SO_x and NO_x) and particulate matter, and prohibits deliberate emissions of ozone depleting substances (ODS). It also allows states to seek IMO approval of sulfur special emissions control

42. Conference of the Parties, *Adoption of the Paris Agreement*, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015).

43. *Id.*

44. *Id.*; see also Coral Davenport, *Nations Approve Landmark Climate Accord in Paris*, N.Y. TIMES (Dec. 12, 2015), http://www.nytimes.com/2015/12/13/world/europe/climate-change-accord-paris.html?_r=0.

45. See International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 1340 U.N.T.S. 1884.

46. Pub. L. No. 96-478, 94 Stat. 2297 (1980) (codified at 33 U.S.C. §§ 1905–1915 (2012)).

47. *Id.*

areas (SECA), within which stricter emission limits may be set.

The IMO approved an application by the U.S., Canada, and France to establish a SECA for North America in 2010.⁴⁸ It entered into force in 2011 and its 0.1% sulfur emissions limit went into effect January 1, 2015.⁴⁹ The North American SECA does not presently extend into the Arctic. As a result, the less stringent global Annex VI emissions standards apply in those waters.

D. Arctic Council Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic

The Marine Oil Pollution Cooperation Agreement was signed by all Arctic Council member-states at the 2013 ministerial meeting in Kiruna, Sweden.⁵⁰ The Agreement builds on frameworks established by UNCLOS, the Oil Pollution Preparedness, Response and Co-Operation Convention (OPRC),⁵¹ and the 1969 International Convention Related to Intervention on the High Seas in Cases of Oil Pollution Casualties.⁵²

E. Arctic Council Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic

The Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (SAR) was the first binding agreement negotiated under the auspices of the Arctic Council.⁵³ The agreement coordinates international search and

48. Press Release, International Maritime Organization, Ships Face Lower Sulphur Fuel Requirements in Emissions Control Areas from 1 January 2015 (Dec. 23, 2014), <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/44-ECA-sulphur.aspx#.VwPqTfkrLIU>; see also EPA, OFFICE OF TRANSPORTATION AND AIR QUALITY, EPA-420-F-10-015, REGULATORY ANNOUNCEMENT: DESIGNATION OF NORTH AMERICAN EMISSIONS CONTROL AREA TO REDUCE EMISSIONS FROM SHIPS (2010), <https://www3.epa.gov/nonroad/marine/ci/420f10015.pdf>.

49. Press Release, International Maritime Organization, *supra* note 48.

50. See Arctic Council, *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic* (May 15, 2013).

51. International Convention on Oil Pollution Preparedness, Response and Cooperation, Nov. 30, 1990, 1891 U.N.T.S. 77.

52. International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, Nov. 29, 1969, 26 U.S.T. 765, 970 U.N.T.S. 211.

53. Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in

rescue coverage and response in the Arctic, and establishes the area of SAR responsibility of each state party.

The agreement coordinates international search and rescue (SAR) coverage and response in the Arctic, and establishes the area of SAR responsibility of each state party.

F. Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean

On July 16, 2015, the five states surrounding the Central Arctic Ocean—Canada, Denmark/Greenland, Norway, Russia, and the United States—met in Oslo to sign a declaration to prevent unregulated commercial fishing in the high seas waters of the Central Arctic Ocean.⁵⁴

The declaration, which is non-binding, recognizes that, although commercial fishing in Arctic waters is not imminent, the reduction of Arctic sea ice and environmental challenges in the region necessitate a “precautionary approach to prevent unregulated fishing in the area.”⁵⁵ Therefore, the signatories authorized vessels to conduct future commercial fishing only when international mechanisms are in place to manage fishing in accordance with international standards. The declaration also manifests the intent of the countries to establish a joint scientific research program on the ecosystem of the area.

Erik Molenaar analyzes the agreement in his 2015 Arctic Yearbook article *The Oslo Declaration on High Seas Fishing in the Central Arctic Ocean*.⁵⁶

Delegations from the five declaration states convened in Washington, D.C., in early December 2015 to discuss the next

the Arctic, May 12, 2011, 13 T.I.A.S. No. 13-119.

54. Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean, July 16, 2015, <https://www.regjeringen.no/globalassets/departementene/ud/vedlegg/folkerett/declarati-on-on-arctic-fisheries-16-july-2015.pdf>; see also Rosen, *supra* note 27; Seamus Ryder, *The Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean*, UNIVERSITY OF CALGARY LAW ABLAWG.CA (July 31, 2015), <http://ablawg.ca/2015/07/31/the-declaration-concerning-the-prevention-of-unregulated-high-seas-fishing-in-the-central-arctic-ocean/>.

55. Press Release, U.S. Dep’t of State, Arctic Nations Sign Declaration to Prevent Unregulated Fishing in the Central Arctic Ocean (July 16, 2016), <http://www.state.gov/r/pa/prs/ps/2015/07/244969.htm>.

56. Erik J. Molenaar, *The Oslo Declaration on High Seas Fishing in the Central Arctic Ocean*, in ARCTIC YEARBOOK 426 (Lassi Heininen, et al. eds. 2015), <http://www.arcticyearbook.com>.

steps. Attendees reviewed the outcomes of the Third Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean, which considered whether and when fish stocks may reach levels that would be sufficient to support sustainable commercial fishing in the Arctic.⁵⁷ The attendees noted the existence of relevant legal framework for fisheries management through the 1982 UN Convention on the Law of the Sea, and the 1995 UN Fish Stocks Agreement. However, currently no international mechanism exists to regulate commercial fishing in the Central Arctic Ocean except in the Convention Area of the North-East Atlantic Fisheries Commission. Norway plans to host the next scientific meeting, slated for September or October 2016.

III. STATE PRACTICE

A. *United States: Federal Government*

1. *U.S. Congress*

Arctic Caucus. Alaska Senator Lisa Murkowski and Maine Senator Angus King announced in March 2015 the creation of an Arctic caucus that will focus on building U.S. leadership in the region and provide a forum for discussion on defense, energy, environment and trade. Senator Murkowski called on her colleagues to take on the U.S.'s leadership role as an Arctic nation and "[e]mbrace your inner-Arctic self."⁵⁸

Within the House, Representatives Don Young of Alaska and Rick Larsen of Washington State formed the Congressional Arctic Working Group on January 23, 2015.⁵⁹

Senator King joined Alaska's and Washington's senators to advocate for increased funding for the Coast Guard budget for

57. Erik J. Molenaar, *The December 2015 Washington Meeting on High Seas Fishing in the Central Arctic Ocean*, THE JCLOS BLOG (Feb. 5, 2016), <https://site.uit.no/jclos/2016/02/05/the-december-2015-washington-meeting-on-high-seas-fishing-in-the-central-arctic-ocean/>.

58. Jordain Carney, *Alaska Senator Launches Arctic Caucus*, THE HILL (Mar. 4, 2015), <http://thehill.com/blogs/floor-action/senate/234659-alaska-senator-launches-arctic-caucus>; Press Release, U.S. Senate, King, Murkowski Announce U.S. Senate Arctic Caucus (Mar. 4, 2015), <http://www.king.senate.gov/newsroom/press-releases/king-murkowski-announce-us-senate-arctic-caucus>.

59. CONGRESSIONAL ARCTIC WORKING GROUP, <http://congressionalarcticworkinggroup-larsen.house.gov/> (last visited Apr. 3, 2016).

construction of additional U.S. icebreakers. These vessels, explained Senator King, are essential to maintaining shipping routes in the Northwest Passage, which is the “highway of the Arctic.”⁶⁰

FY16 Appropriations. Congress enacted an omnibus appropriations bill on December 18, 2015.⁶¹ The bill appropriated a total of \$10.6 billion for the Coast Guard in FY16, \$933 million more than in FY15. The FY16 appropriation includes \$1.26 billion for Coast Guard shipbuilding programs—more than double the amount requested by the President (the bill encourages the Department and the Administration to provide more realistic AC&I budget requests in the future).⁶² The shipbuilding figure includes funds for the construction of a ninth National Security Cutter and to outfit the NSCs to support the deployment of unmanned aircraft systems (UAS). Additionally, it appropriates \$6 million for “survey and design work associated with reactivation of the *Polar Sea*”⁶³ and adds an additional \$3.5 million to begin acquisition of a new polar icebreaker.⁶⁴ The bill also requires the Commandant to submit to Congress a report on the plans by the Coast Guard to ensure at least one mission-capable cutter maintains a presence in the Bering Sea and Arctic Region at all times.⁶⁵ Finally, the bill lifts the forty-year-old ban on crude oil exports.⁶⁶

The Appropriations Bill also included several provisions to enhance Arctic marine safety, including:

Funding for NOAA to conduct hydrographic surveys (or sonar mapping) of the nation’s coastline. Attached to that funding is a provision emphasizing the need for Arctic mapping and setting hard deadlines with the federal agencies responsible in the region.

60. Tom Bell, *Sen. Angus King Pursues Funding to Add Icebreakers in Arctic*, PORTLAND PRESS HERALD (Dec. 8, 2015), <http://www.pressherald.com/2015/12/08/sen-angus-king-pursues-funding-to-add-icebreakers-in-arctic/>.

61. Consolidated Appropriations Act of 2016.

62. Allen, *supra* note 33.

63. S. REP. 114-068, at 81 (2015).

64. *Id.*

65. *Id.* at 76.

66. Consolidated Appropriations Act of 2016, at 746.

A provision to examine the benefit that electronic navigational buoys would provide to vessels transiting the Arctic Ocean and Bering Sea.

A provision requiring NOAA to identify the gaps in Arctic weather and sea ice observations as well as a strategy to minimize buoy outages in the future.⁶⁷

Coast Guard Reauthorization Act of 2015. The Coast Guard Reauthorization Act of 2015 is under consideration in both Houses.⁶⁸ If enacted, it will authorize the Coast Guard to enter into incremental contracts for new icebreakers, thus sparing the service from being forced to wait until the total cost of the ship has been appropriated. Similarly, the Omnibus Appropriations Act, which President Obama has signed into law, encourages the President to permit the Coast Guard to enter into incremental contracts.⁶⁹

Point Spencer Conveyance Act. In May 2015, Senator Murkowski and Congressman Don Young introduced the Point Spencer Land Conveyance Act that calls for conveying about 2,500 acres of federal lands to state and Native Alaskan stakeholders.⁷⁰ Their bills are now part of the pending Coast Guard Authorization Act bill. If enacted, the Act would create a public-private partnership to develop Alaska's Seward Peninsula, establish a Port Coordination Advisory Council, and

67. Press Release, Senator Lisa Murkowski, Year-End Budget Bill Priorities Arctic Needs (Dec. 22, 2015),

<http://www.murkowski.senate.gov/public/index.cfm/2015/12/murkowski-investment-in-arctic-through-omnibus-bill>.

68. Coast Guard Authorization Act, H.R. 4188, 114th Cong. (2015); Coast Guard Authorization Act, S. 1611, 114th Cong. (2015).

69. President Barack Obama signed H.R. 4188 into law in February 2016, providing \$9.1 billion in annual funding for fiscal year 2016–17. See Press Release, White House Office of the Press Secretary, Statement by the Press Secretary on H.R. 515, H.R. 4188, S. 2152 (Feb. 8, 2016), <https://www.whitehouse.gov/the-press-office/2016/02/08/statement-press-secretary-hr-515-hr-4188-s-2152-0>; see also Heather Caygle & Lauren Gardner, *FAA Jockeying Kicks Off in Earnest*, POLITICO (Feb. 10, 2016), <http://www.politico.com/tipsheets/morning-transportation/2016/02/faa-jockeying-kicks-off-in-earnest-defazio-to-rain-on-whole-thing-dot-budget-breakdown-lithium-battery-debate-heats-up-212635>.

70. Point Spencer Land Conveyance Act, H.R. 2284, 114th Cong. (2015); Point Spencer Land Conveyance Act, S. 1316, 114th Cong. (2015); see also Press Release, Matthew Shuckerow, Young, Murkowski Propose Bicameral Legislation to Spur Future Development of Point Spencer (May 13, 2015), <http://donyoung.house.gov/news/documentsingle.aspx?DocumentID=398248>.

provide rights to use portions of the conveyance for the USCG and the State of Alaska.⁷¹

Other Congressional Activities. On June 1, 2015, the House passed H.R. 1335: the Strengthening Fishing Communities and Increasing Flexibility in Fisheries Management Act.⁷² The bill was referred to the Senate Committee on Commerce, Science, and Transportation on June 2, 2015, where it pends.⁷³ On May 19, 2015, the White House issued a policy letter opposing the bill and threatening a veto should both Houses pass it.⁷⁴

2. *President*

In January 2015, President Obama issued an Executive Order aimed at better managing U.S. Arctic policy.⁷⁵ The order created an Arctic Executive Steering Committee to guide U.S. policy and coordinate with local and Native governments, as well as research institutions, academic organizations and nonprofits.⁷⁶ Director John Holdren, of the White House Office of Science and Technology Policy, or his designee will chair the committee, with members chosen from various federal departments and agencies.⁷⁷

The President's January 2015 Order is notable for several reasons. First, the President's 2014 Arctic Strategy Implementation Plan spread dozens of tasks across twenty-five

71. The Point Spencer Land Conveyance Act was included in the Coast Guard Authorization Act (H.R. 4188), which was signed into law by President Obama in February 2016. See Press Release, U.S. Senate, Bill to Spur Point Spencer Development Signed into Law (Feb. 9, 2016),

<http://www.murkowski.senate.gov/public/index.cfm/2016/2/bill-to-spur-point-spencer-development-signed-into-law>.

72. Strengthening Fishing Communities and Increasing Flexibility in Fisheries Management Act, H.R. 1335, 114th Cong. (2015); see also *H.R. 1335*, CONGRESS.GOV, <https://www.congress.gov/bill/114th-congress/house-bill/1335/text> (last visited Apr. 3, 2016).

73. *Id.*

74. Office of Mgmt. & Budget, Exec. Office of the President, Statement of Administrative Policy (May 19, 2015),

https://www.whitehouse.gov/sites/default/files/omb/legislative/sap/114/saphr1335r_20150519.pdf.

75. Exec. Order. No. 13689, 80 Fed. Reg. 4189 (Jan. 21, 2015).

76. *Id.* at 4191.

77. *Id.* at 4191–92.

federal agencies, but it lacks a coordinating framework.⁷⁸ The absence of central control or reporting made progress difficult to measure. The President's requirement that an Arctic Executive Steering Committee meet and report quarterly should help.

Second, the Implementation Plan was so broad and inclusive that a number of the directives had the potential to overlap and create duplicative, possibly conflicting, results. The new Order required the Steering Committee to provide a report that identifies areas of overlap, recommends efficiency measures, and addresses any gaps in implementation.⁷⁹

Finally, the Order increases the President's overtures to Alaska Natives, the State of Alaska, and Alaskan local, private-sector, and nonprofit-sector stakeholders. Section 5 highlights an interest in collaboration with these entities, and calls for new processes to improve coordination, ensure tribal consultation and collaboration, identify a federal point of contact with Alaska, and to invite State, local, Alaska Native, and academic and research institutions to consult and participate in discussions.⁸⁰

The White House released an Arctic Strategy Implementation Report in March 2015.⁸¹ The report described many of the Implementation Plan projects as, essentially, "making progress." Most of this progress is measured in new data that helps define an Arctic baseline across a number of indicators, from biodiversity to telecommunication infrastructure. More concrete results include aviation safety installations, Department of Energy alternative power projects, and a new ten-year projection of expected Arctic marine vessel traffic. A number of significant accomplishments fall under the United States' Arctic Council agenda, which will be discussed below.⁸²

78. Yareth Rosen, *Obama Issues Executive Order to Better Coordinate Arctic Policy*, ARCTIC NEWSWIRE (Jan. 21, 2015), <http://www.adn.com/article/20150121/obama-issues-executive-order-better-coordinate-arctic-policy>.

79. Exec. Order. No. 13689, *supra* note 75, at 4192.

80. *Id.* at 4193.

81. WHITE HOUSE, NATIONAL STRATEGY FOR THE ARCTIC REGION IMPLEMENTATION REPORT (2015), https://www.whitehouse.gov/sites/default/files/docs/report_on_implementation_of_the_national_strategy_for_the_arctic_region_....pdf.

82. *See id.* at 3–24.

The Interior Department announced President Obama's decision to ask Congress to set aside as wilderness twelve million acres of the Arctic National Wildlife Refuge, and withdraw 9.8 million acres of the Arctic Ocean from oil and gas leasing.⁸³ A "wilderness" designation is the highest level of protection for a region, prohibiting permanent roads and commercial enterprise development within the area.⁸⁴

President Obama traveled to Alaska in early September 2015, highlighting the effects of climate change in the Arctic.⁸⁵ The White House announced the renaming of Mount McKinley to Denali before the President's visit in recognition of the traditions of Alaska Native peoples.⁸⁶ The President also spoke at the GLACIER Conference.⁸⁷

The President announced in November 2015 that he was formally rejecting a Canadian company's request to build the Keystone XL oil pipeline, ending seven years of review.⁸⁸ In February 2015, Congress sent a bill to Obama to approve the project,⁸⁹ which the President vetoed.⁹⁰

3. *Department of State*

The U.S. Department of State had a busy Arctic year as Secretary of State John Kerry took over the Arctic Council

83. Press Release, Dep't of the Interior, Obama Administration Moves to Protect Arctic National Wildlife Refuge (Jan. 25, 2015), <https://www.doi.gov/news/pressreleases/obama-administration-moves-to-protect-arctic-national-wildlife-refuge>.

84. See The Wilderness Act of 1964, 16 U.S.C. §§ 1131–1136 (2006 & Supp. II 2008); see also *FAQ*, NATIONAL PARK SERVICE, <http://wilderness.nps.gov/faqnew.cfm> (last visited Apr. 4, 2016).

85. *President Obama's Trip to Alaska*, THE WHITE HOUSE, <https://www.whitehouse.gov/2015-alaska-trip> (last visited Apr. 4, 2016).

86. Michael A. Memoli, *Mt. McKinley, America's Tallest Peak, is Getting Back its Original Name: Denali*, L.A. TIMES (Aug. 30, 2015), <http://www.latimes.com/nation/la-na-alaska-mckinley-denali-20150830-story.html>.

87. See *infra* Section III.A.3.

88. Coral Davenport, *Citing Climate Change, Obama Rejects Construction of Keystone XL Oil Pipeline*, N.Y. TIMES (Nov. 6, 2015), http://www.nytimes.com/2015/11/07/us/obama-expected-to-reject-construction-of-keystone-xl-oil-pipeline.html?_r=0.

89. The Keystone XL Pipeline Approval Act, S.1, 114th Cong. (2015).

90. Press Release, White House, Message to the Senate Returning Without Approval the Keystone XL Pipeline Approval Act (Feb. 24, 2015), <https://www.whitehouse.gov/the-press-office/2015/02/24/veto-message-senate-s-1-keystone-xl-pipeline-approval-act>.

Chair at the Iqaluit Ministerial in April 2015.⁹¹ The United States agenda for its chairmanship term will be covered under the Arctic Council section below.

On April 8–9, 2015, the United States hosted the sixth annual U.S.-China Dialogue on the Law of the Sea and Polar Issues. The State Department reported that both nations “supported deepening U.S.-China dialogue on these issues.”⁹²

GLACIER. In August 2014, the U.S. Department of State hosted a Conference on Global Leadership in the Arctic: Cooperation, Innovation, Engagement, and Resilience (GLACIER) in Anchorage, Alaska.⁹³ The conference, which was not a formal component of the Arctic Council, was attended by President Obama, foreign ministers of several Arctic nations and key non-Arctic states, as well as scientists, policymakers, indigenous peoples, and stakeholders from Alaska and the Arctic.⁹⁴

4. *Department of Homeland Security / U.S. Coast Guard*

The U.S. Coast Guard plays a central role in federal Arctic initiatives under President Obama’s Arctic Strategy Implementation Plan. The Coast Guard Commandant, Admiral Paul F. Zukunft, addressed Arctic issues in his February 2015 State of the Coast Guard address.⁹⁵ He acknowledged the challenge of extending Coast Guard operations to address a “significant spike in human activity attributed to climate change.”⁹⁶ He added that “there is a new

91. *About Us*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/arctic-council/u-s-chairmanship> (last visited Apr. 4, 2016).

92. Press Release, Dep’t of State, The United States and China Complete the 6th Annual Dialogue on Law of the Sea and Polar Issues, Apr. 10, 2015, <http://www.state.gov/r/pa/prs/ps/2015/04/240581.htm>.

93. *Conference on Global Leadership in the Arctic*, U.S. DEP’T OF STATE, <http://www.state.gov/e/oes/glacier/index.htm> (last visited Apr. 4, 2016).

94. *Id.*; see also Adm. Robert J. Papp, Jr., *GLACIER Conference: U.S. Arctic Leadership on the World’s Stage*, ALASKA DISPATCH NEWS (Aug. 27, 2015), <http://www.adn.com/article/20150827/glacier-conference-us-arctic-leadership-world-s-stage>.

95. Adm. Paul F. Zukunft, Commandant, U.S. Coast Guard, State of the Coast Guard 2015 (Feb. 25, 2015), <http://www.uscg.mil/seniorleadership/DOCS/State%20of%20Coast%20Guard%20Address%202015%20SLP%20Script.pdf>.

96. *Id.* at 8.

ocean opening and Coast Guard authorities mandate our presence wherever U.S. national interests require people and ships to operate.”⁹⁷

On December 23, 2015, the Coast Guard released its U.S. Coast Guard Arctic Strategy Implementation Plan.⁹⁸ The Coast Guard’s Arctic Strategy outlines the ends, ways, and means for achieving strategic objectives in the Arctic over the next ten years. The Implementation Plan, which similarly adopts a ten-year planning horizon, describes thirteen initiatives the Coast Guard will undertake to meet the challenges of operating in the Arctic.⁹⁹ The plan is explicit on its underlying assumptions:

1. Current demand for Coast Guard services in the Arctic will remain at current levels, or slightly increase.¹⁰⁰

2. Climate change in the Arctic will continue, with loss of sea ice at a rate equal to or greater than Intergovernmental Panel on Climate Change predictions.¹⁰¹

3. With reduction in sea ice cover, technological advancements, and greater global demand for strategic resources, maritime and terrestrial resource extraction and associated activities will likely increase in intensity. However, the rate of development is based on global markets, and there is significant uncertainty.¹⁰²

4. Interest in the Arctic will bring more adventurers and tourists to the Arctic Region.¹⁰³

5. The plan will be scalable to demand for services and available resourcing.¹⁰⁴

6. Operation *Arctic Shield* will continue using a “mobile and seasonal”¹⁰⁵ approach to activities and regional force deployment and lay down.

Arctic Coast Guard Forum. The Department of Homeland Security released a joint statement on October 30,

97. *Id.*

98. U.S. COAST GUARD, ARCTIC STRATEGY IMPLEMENTATION PLAN (2015), www.uscga.edu/WorkArea/DownloadAsset.aspx?id=65532.

99. *Id.* at 3.

100. *Id.* at 7.

101. *Id.*

102. *Id.*

103. *Id.*

104. *Id.*

105. *Id.*

2015, officially establishing the Arctic Coast Guard Forum (ACGF).¹⁰⁶

The ACGF is an operationally-focused, consensus-based organization with the purpose of leveraging collective resources to foster safe, secure, and environmentally responsible maritime activity in the Arctic. Membership includes all eight Arctic nations: Canada, Denmark, Finland, Iceland, Norway, Sweden, the Russian Federation, and the United States.¹⁰⁷ At the first principals' meeting, representatives approved the ACGF Terms of Reference and a Joint Statement of the participating states.

Arctic Shield. Arctic Shield 2015, the Coast Guard's designation that encompasses its annual ramped-up activities in the Arctic,¹⁰⁸ concluded in October when regional maritime activity ceased.¹⁰⁹ Participating units included two forward-deployed Jayhawk helicopters and crews from Air Station Kodiak and Coast Guard Cutters *Healy*, *Waesche*, *Boutwell*, *Alex Haley*, *Sycamore*, and *Maple*.¹¹⁰ The vessels and personnel manning them conducted exercises simulating scenarios from oil spills to search and rescue.¹¹¹

Coast Guard officials will select next year's Arctic Shield agenda and location based on facility availability and geographic distribution of expected maritime activity.¹¹² Rear Admiral Daniel Abel, commander of the Coast Guard in Alaska's Arctic, commented that although the land-based Jayhawk helicopter crews performed an important role, they are supplemental.¹¹³ "The primary base in the Arctic is a cutter

106. Press Release, Dep't Homeland Security, Coast Guard Leaders from Arctic Nations Sign Historic Joint Statement (Oct. 30, 2015), <https://www.dhs.gov/news/2015/10/30/coast-guard-leaders-arctic-nations-sign-historic-joint-statement>.

107. *Id.*

108. *Arctic Shield 2015*, U.S. COAST GUARD (Jan. 1, 2016), <http://www.uscg.mil/d17/Arctic%20Shield%202015.asp>.

109. Kelly Parker, *It's a Wrap: Arctic Shield 2015*, COAST GUARD ALASKA: OFFICIAL BLOG OF THE 17TH COAST GUARD DISTRICT (Oct. 21, 2015), <http://alaska.coastguard.dodlive.mil/2015/10/its-a-wrap-arctic-shield-2015/>.

110. *Id.*

111. *Id.*

112. Asaf Shalev, *Coast Guard Wraps up Busy Season in the Arctic*, ARCTIC NEWSWIRE (Nov. 1, 2015), <http://www.adn.com/article/20151101/coast-guard-wraps-busy-season-arctic>.

113. *Id.*

with a helipad,” Abel said.¹¹⁴ The mobility and logistical self-sufficiency of a cutter out at sea make it a “flexible asset,” he added.¹¹⁵

Coast Guard Center for Arctic Study and Policy. The Coast Guard established the Center for Arctic Study and Policy (CASP) in September 2014.¹¹⁶ SES Gary Rasicot, Director of the Coast Guard’s Marine Transportation Systems Management Directorate (CG-5PW), provides overall direction for CASP; with Michael Emerson serving as the Coast Guard’s Arctic Policy Advisor.

The CASP mission is to promote academic research on Arctic policy and strategy by facilitating collaboration, partnerships, and dialogue among specialists from academia, government, tribal organizations, NGOs, industry, and the Coast Guard.¹¹⁷ Rachel Perron was appointed executive director of CASP on October 18, 2015,¹¹⁸ and Dr. Rebecca Pincus was selected to be the first holder of the Class of ‘65 Endowed Chair in Arctic Studies.¹¹⁹ The latter position was made possible by a generous gift by members of the Academy’s Class of 1965. The core CASP team is assisted by three research fellows: Dr. Lawson W. Brigham, James B. Ellis, and Craig H. Allen Sr.¹²⁰

In the spring of 2015, Coast Guard Academy cadets published the results of their year-long advanced research project titled “U.S. Coast Guard Readiness for Increased Cruise Traffic in the Arctic: Policy and Implementation Challenges.”¹²¹

114. *Id.*

115. *Id.*

116. *History*, CENTER FOR ARCTIC STUDY & POLICY, UNITED STATES COAST GUARD ACADEMY, <http://www.uscga.edu/CASP/display2.aspx?id=6336> (last visited Apr. 28, 2016).

117. CENTER FOR ARCTIC STUDY AND POLICY, <http://uscga.edu/casp/default.aspx> (last visited Apr. 28, 2016).

118. *Permanent Staff*, CENTER FOR ARCTIC STUDY & POLICY, UNITED STATES COAST GUARD ACADEMY, <http://uscga.edu/CASP/display2.aspx?id=3056> (select “Permanent Staff” from drop down menu under “Staff”).

119. *Id.*

120. *Fellows*, CENTER FOR ARCTIC STUDY & POLICY, UNITED STATES COAST GUARD ACADEMY, <http://uscga.edu/CASP/display2.aspx?id=6592> (select “Fellows” from drop down menu under “Staff”).

121. *Cadet Research*, CENTER FOR ARCTIC STUDY & POLICY, UNITED STATES COAST GUARD ACADEMY, <http://www.uscga.edu/CASP/display2.aspx?id=6346> (last visited Apr. 28, 2016).

Department of Homeland Security's Arctic Domain Awareness Center. The Department of Homeland Security's Arctic Domain Awareness Center (ADAC) is a research and development center currently located at the University of Alaska Anchorage.¹²² Although a formal ribbon-cutting ceremony was held in Anchorage in 2015, the Center has been operating since August 2014, bringing together academics, industry groups, stakeholders, and government agencies working on technology in the Arctic.¹²³ Reportedly, the Center will offer scholarships and other opportunities for studies to research navigation simulation and Arctic modeling.¹²⁴

U.S. Coast Guard Icebreakers.

See Section V.B.7 below.

Other Coast Guard Developments. Rear Admiral Michael F. McAllister, currently serving as Deputy Director of Operations for Headquarters U.S. Northern Command, received orders to succeed Rear Admiral Dan Abel as Commander of Coast Guard District 17, with responsibility for the Alaska region.¹²⁵

February 10: Just as she completed her 2014–15 Operation Deep Freeze Antarctic Resupply mission, USCGC *Polar Star* (WAGB 10) was diverted to respond to a distress involving the FV *Antarctic Chieftain*.¹²⁶ The 207-foot, Australian-flagged fishing vessel was beset in ice 900 miles northeast of McMurdo Sound. *Polar Star*, the United States' only operational heavy icebreaker, had to cut through 150 miles of ice up to 20 feet thick in some areas—at times in whiteout conditions—to reach the *Antarctic Chieftain* and rescue its crew of twenty-six.¹²⁷

February 25: Admiral Zukunft's 2015 State of the Coast Guard address emphasized, among other things, assured

122. *Arctic Domain Awareness Center (ADAC)*, HOMELAND SECURITY UNIVERSITY PROGRAMS, <https://adac.hsuniversityprograms.org/centers-of-excellence/adac/> (last visited Apr. 28, 2016).

123. Asaf Shalev, *Coast Guard Anticipates High-tech Future with New Arctic R&D Center*, ARCTIC NEWSWIRE (Nov. 1, 2015), <http://www.adn.com/article/20151101/coast-guard-anticipates-high-tech-future-new-arctic-rd-center>.

124. *Id.*

125. Allen, *supra* note 33.

126. *Coast Guard Cutter Polar Star Returning Home Following Antarctic Rescue*, COAST GUARD NEWS, Mar. 9, 2015, <http://coastguardnews.com/coast-guard-cutter-polar-star-returning-home-following-antarctic-rescue/2015/03/09/>.

127. *Id.*

access in Arctic and Antarctic and a whole of government approach to recapitalizing the nation's icebreaker fleet.¹²⁸

June 2015: Coast Guard released its Cyber Strategy.¹²⁹ The strategy identifies three strategic priorities: Defending Cyberspace, Enabling Operations and Protecting Infrastructure.¹³⁰

August 2015: Coast Guard Cutter *Healy* (WAGB 20) completed an historic voyage to the North Pole, the first U.S. surface ship to do so unaccompanied.¹³¹

October 2015: the U.S. Coast Guard, in cooperation with the Department of Defense and Department of State, held an international Arctic Search and Rescue table-top exercise called Arctic Zephyr at the University of Alaska Anchorage.¹³² The exercise examined the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic in 2011 and included stakeholders and experts from the U.S., Canada, Denmark, Finland, Iceland, Norway, and Sweden.¹³³

5. *Department of Commerce / National Oceanic and Atmospheric Administration*

The National Oceanic and Atmospheric Administration (NOAA) released its annual Arctic Report Card on December 15, 2015.¹³⁴ It reports that maximum sea ice extent, measured on February 25, was fifteen days earlier than average and the lowest value on record (1979–present).¹³⁵ Minimum ice extent

128. Zukunft, *supra* note 95.

129. UNITED STATES COAST GUARD CYBER STRATEGY (2015), <https://www.uscg.mil/seniorleadership/DOCS/cyber.pdf>.

130. *Id.* at 23–31.

131. Meghann Myers, *Icebreaker Healy Sails to North Pole on Historic Voyage*, NAVY TIMES (Sept. 8, 2015), <http://www.navytimes.com/story/military/2015/09/08/icebreaker-healy-sails-north-pole-historic-voyage/71892802/>.

132. News Release, U.S. Coast Guard, U.S. Coast Guard and Federal Partners Lead Arctic Search-and-Rescue Exercise (Oct. 28, 2015), <http://www.uscgnews.com/go/doc/4007/2618330/U-S-Coast-Guard-and-federal-partners-lead-Arctic-search-and-rescue-exercise>.

133. *Id.*

134. M. O. Jeffries, et al., *Executive Summary*, ARCTIC REPORT CARD: UPDATE FOR 2015, http://www.arctic.noaa.gov/reportcard/exec_summary.html (last visited Apr. 28, 2016).

135. *Id.*

in September was the fourth lowest on record.¹³⁶ Sea ice also continues to be younger and thinner: In February and March 2015 there was twice as much first-year ice as there was thirty years ago.¹³⁷ It also found that:

Widespread positive sea surface temperature and primary production anomalies occurred throughout the Arctic Ocean and adjacent seas as sea ice retreated in summer 2015.

Melting occurred over more than fifty percent of the Greenland Ice Sheet for the first time since the exceptional melting of 2012.

Walrus are negatively affected by loss of sea ice habitat but positively affected by reduced hunting pressure.

Sea ice loss and rising temperatures in the Barents Sea are causing a poleward shift in fish communities.¹³⁸

NOAA continued to implement its 2014 Arctic Action Plan.¹³⁹ The plan is directly responsive to the President's Arctic Strategy Implementation Plan. The plan includes eighty-eight milestone actions for 2014 and 2015 that "will evolve with Administration budgets, Congressional appropriations, and national priorities."¹⁴⁰ Many actions support the development of better baseline understanding of the Arctic. They include preparing a baseline monitoring report for all managed fish stocks, and conducting synoptic bioeffects sampling studies for baseline sediment chemistry, benthic community assessment, and sediment toxicity in the Bering, Chukchi, and Beaufort Seas.¹⁴¹ NOAA also has an Arctic Theme Page that serves as the focal point for Arctic observations, from which interested parties can access data and reports from NOAA and non-NOAA sources.¹⁴²

136. *Id.*

137. *Id.*

138. *Id.*

139. KATHRYN D. SULLIVAN, NOAA'S ARCTIC ACTION PLAN: SUPPORTING THE NATIONAL STRATEGY FOR THE ARCTIC REGION (2014), <http://www.arctic.noaa.gov/NOAAarcticactionplan2014.pdf>.

140. *Id.* at 26.

141. *Id.* at 28–29.

142. NOAA, ARCTIC THEME PAGE, <http://www.arctic.noaa.gov/> (last visited Apr. 28, 2016).

Charting the Arctic. In June, NOAA officially launched its 2015 Arctic hydrographic survey season with the deployment of NOAA survey vessels *Rainier* and *Fairweather*.¹⁴³ NOAA Deputy Under Secretary for Operations Vice Admiral Michael Devany noted that the ships' work is crucial to the United States' mission to make the Arctic seas safe for shipping and marine life. Both vessels surveyed projects in the Arctic including charting data for Port Clarence, Kotzebue Sound and Point Hope.¹⁴⁴

Ocean Acidification. Several NOAA-led studies focused on ocean acidification (OA) and the effects of climate change on Alaska's fishery sector.

The chemical composition of high-latitude oceans, like those around Alaska, is "considered to be more vulnerable to the impacts of OA on shorter timescales."¹⁴⁵ The impacts result from human development that increases carbon dioxide (CO₂) concentrations in the atmosphere, terrestrial runoff, and ultimately the ocean. Mollusks and other shellfish face the most immediate threat, but their scarcity in the food web threatens species of particular importance in Alaska, including crab and salmon.

A 2015 study by NOAA, the University of Alaska, and Woods Hole Oceanographic Institute shows that the waters of the Chukchi and Beaufort seas could reach acidity levels that threaten animal populations by 2030 and 2044.¹⁴⁶

Another 2015 report suggested that "highly productive commercial and subsistence fisheries are located in regions projected to experience rapid transitions in temperature, pH, and other chemical parameters. . . beginning this decade."¹⁴⁷

143. *NOAA Deploys Survey Ships for Arctic Charting Projects*, NOAA NEWS, June 8, 2015, <http://www.noaa.gov/stories/2015/20150608-noaa-deploys-survey-ships-for-arctic-charting-projects.html>.

144. *Id.*

145. Jeremy T. Mathis, *Ocean Acidification Along the Rapidly Changing Alaskan Coast*, ARCUS, <https://www.arcus.org/witness-the-arctic/2014/1/article/20438> (last visited Apr. 28, 2016).

146. *New Study Shows Arctic Ocean Rapidly Becoming More Corrosive to Marine Species*, NOAA, <http://research.noaa.gov/News/NewsArchive/LatestNews/TabId/684/ArtMID/1768/ArticleID/11240/New-study-shows-Arctic-Ocean-rapidly-becoming-more-corrosive-to-marine-species.aspx> (last visited Apr. 28, 2016).

147. J.T. Mathis, et al., *Ocean Acidification Risk Assessment for Alaska's Fishery Sector*, 136 PROGRESS IN OCEANOGRAPHY 71 (2015).

The unfortunate conclusion found southeast and southwest Alaska—highly reliant on fishery harvests, characterized by relatively low incomes, and already under acute socio-economic strains—highly vulnerable to negative impacts of ocean acidification.¹⁴⁸

Ringed Seal Critical Habitat. In December 2014, NOAA proposed to designate roughly 350,000 square miles of Alaska’s north and west coasts as critical habitat for ringed seals.¹⁴⁹ The public comment period closed on March 31, 2015. No further action has been reported.¹⁵⁰

Ringed seals are a primary food source for Polar Bears, and share the Polar Bears’ reliance on ice and snow in the Bering, Chukchi, and Beaufort Seas.¹⁵¹ The seals are designated as threatened or endangered under the Endangered Species Act, which requires designation of critical habitat areas. The proposed designation includes “no regulatory restrictions, only a consultation requirement for federal agencies.”¹⁵²

Humpback Whales. On April 20, 2015, NOAA announced a rulemaking proposal to divide Humpback Whales into fourteen distinct population segments; none of the district population segments in Alaska waters would be listed as endangered or threatened.¹⁵³

NOAA Vessel Pollution Investigation. In August 2015, the Office of the Inspector General released its report investigating the environmental stewardship on NOAA

148. *Id.* at 87–88.

149. Yereth Rosen, *NOAA Proposes Vast Marine Area as Critical Habitat for Ringed Seals*, ALASKA DISPATCH NEWS (Dec. 2, 2014), <http://www.adn.com/article/20141202/noaa-proposes-vast-marine-area-critical-habitat-ringed-seals>.

150. News Release, Julie Speegle, NOAA Fisheries Extends Comment Period on Proposed Arctic Ringed Seal Critical Habitat (Jan. 30, 2015), <https://alaskafisheries.noaa.gov/node/15295>.

151. See Cheryl Lyn Dybas, *No Ice in Sight: Polar Bears Scramble Onshore to Find Food*, NATIONAL GEOGRAPHIC (Apr. 22, 2015), <http://voices.nationalgeographic.com/2015/04/22/no-ice-in-sight-polar-bears-scrabble-onshore-to-find-food/>.

152. News Release, NOAA, NOAA Fisheries Proposes Arctic Ringed Seal Critical Habitat, Seeks Public Comment (Dec. 2, 2014), <https://alaskafisheries.noaa.gov/node/3204>.

153. *Successful Conservation Efforts Recognized in Revised ESA Humpback Whale Listing*, NOAA NEWS (Apr. 20, 2015), <http://www.noaanews.noaa.gov/stories2015/20150420-successful-conservation-efforts-recognized-in-revised-esa-humpback-whale-listing.html>.

research vessels.¹⁵⁴ The investigation determined that engineering staff intentionally and repeatedly discharged untreated bilge water into the ocean and failed to record and report those improper discharges. Such discharges are prohibited by the EPA and NOAA Policy.¹⁵⁵

6. *Department of Interior / Bureau of Ocean Energy Management / Bureau of Safety and Environmental Enforcement / U.S. Geological Survey*

A widely cited 2008 report on the oil and gas potential north of the Arctic Circle by the DOI's U.S. Geological Survey (USGS) concluded that the area north of the Arctic Circle has an estimated ninety billion barrels of undiscovered, technically recoverable oil, 1,670 trillion cubic feet of technically recoverable natural gas, and forty-four billion barrels of technically recoverable natural gas liquids in twenty-five geologically defined areas.¹⁵⁶ That represents thirteen percent of the undiscovered oil, thirty percent of the undiscovered natural gas, and twenty percent of the undiscovered natural gas liquids in the world.¹⁵⁷ About eighty-four percent of the estimated resources are expected to occur offshore.¹⁵⁸

In July 2015, USGS issued its Arctic Science Strategy 2015–2020.¹⁵⁹ The Strategy supports five of the goals established by the President's National Strategy for the Arctic Region.

2012–2017 OCS Lease Cancellations. In mid-October, the Department of Interior announced that the lease sales in the Beaufort and Chukchi Seas planned under the 2012–2017

154. OFFICE OF INSPECTOR GENERAL, DEP'T OF COMMERCE, INVESTIGATIVE REPORT: INVESTIGATION INTO ENVIRONMENTAL STEWARDSHIP ON NOAA RESEARCH VESSEL (2015), <https://www.oig.doc.gov/OIGPublications/OIG-14-0505-I.pdf>.

155. *Id.* at 1.

156. Press Release, U.S. Geological Survey, 90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic, USGS (July 23, 2008), http://www.usgs.gov/newsroom/article.asp?ID=1980&from=rss_home#.VxK17fkrLIU.

157. *Id.*

158. U.S. Geological Survey, USGS Fact Sheet 2008-3049, Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle (2008), <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>

159. MARK SHASBY & DURELLE SMITH, USGS ARCTIC SCIENCE STRATEGY FACT SHEET 2015-3049 (2015), <https://pubs.er.usgs.gov/publication/fs20153049>.

leasing program were being cancelled, reportedly due to lack of interest.¹⁶⁰

Draft 2017–2022 OCS Lease Program. Oil and Gas leasing under the Outer Continental Shelf Lands Act begins with five-year plans developed by the Department of Interior.¹⁶¹ The Department released a Draft Proposed Program (DPP) for 2017–2022 activities on January 27, 2015.¹⁶² The proposed plan makes available for leasing eighty percent of the estimated undiscovered, technically recoverable oil and gas in the OCS.¹⁶³

At present, the plan includes three possible sales in offshore Alaska, one each in the Beaufort Sea (2021), the Chukchi Sea (2022), and Cook Inlet (2021).¹⁶⁴ However, it withdraws 9.8 million acres of the Arctic Ocean from oil and gas leasing, including a twenty-five-mile coastal buffer in the Chukchi Sea, and whaling deferral areas in Barrow and Kaktovik.¹⁶⁵

According to the Department, the Arctic sales are scheduled late in the five-year program “to provide additional opportunity to evaluate and obtain information regarding environmental issues, subsistence use needs, infrastructure capabilities, and results from any exploration activity associate with existing leases.”¹⁶⁶

The Draft Arctic Oil & Gas Rule. Oil and gas development in the Alaska outer continental shelf is one of DOI’s most closely scrutinized activities. In March 2013, former Interior Secretary Ken Salazar proclaimed during a news conference “Shell screwed up in 2012 and we’re not going to let them screw up when they try to drill in the Arctic again.”¹⁶⁷ The Department spent more than a year drafting

160. Press Release, Dep’t of the Interior, *supra* note 10.

161. *2017–2022 OCS Oil and Gas Leasing Program*, BOEM, <http://www.boem.gov/Five-Year-Program-2017-2022/> (last visited Apr. 28, 2016).

162. BUREAU OF OCEAN ENERGY MANAGEMENT, *2017-2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING DRAFT PROPOSED PROGRAM* (2015).

163. *Id.* at S-2.

164. *Id.* at S-3, 9-4.

165. *Id.* at S-6.

166. *Id.*

167. Rebecca Jacobson, *Controversy Over Shell’s Oil Exploration in Arctic Continues*, PBS THE RUNDOWN BLOG (Sept. 17, 2013, 2:50 PM), <http://www.pbs.org/newshour/rundown/controversy-over-shells-oil-exploration-in-arctic-continues/>.

new Arctic drilling regulations. The Bureau of Safety and Environmental Enforcement (BSEE) and the Bureau of Ocean Energy Management (BOEM) released the proposed regulations on February 20, 2015.¹⁶⁸

The new rules would apply only to offshore exploration by Mobile Offshore Drilling Units (MODUs) in the Beaufort and Chukchi Sea Planning Areas.¹⁶⁹ The Department intends to finalize and apply these rules, and then assess whether and how they should expand to regulate development drilling.

With reference to lessons learned during and after Shell's 2012 Arctic operations, DOI designed the rules to ensure that Arctic offshore drilling proceeds only when operators and their contractors specifically prepare for harsh Arctic conditions. Operators must develop integrated plans that detail all phases of exploration.¹⁷⁰ These plans must incorporate region-specific oil spill response plans, with prompt access to source control and containment equipment and same-season relief well capabilities. Operators must also demonstrate a capability to predict, track, report, and respond to ice and weather conditions.¹⁷¹ Equipment must perform effectively in the full range of conditions experienced in the Arctic, including the relatively limited support infrastructure.

Timing plays a central role in the kind of exploration plans envisioned in the new rule. The Arctic drilling season is short: typically late June to late October. The bureaus designed the rule to maximize the possibility that operators could contain any blowout before ice renders containment virtually impossible.¹⁷² A capping stack must be positioned to arrive at the well within twenty-four hours after loss of control, with a containment dome at the scene within seven days.¹⁷³

168. Press Release, Bureau of Safety and Environmental Enforcement, BSEE, BOEM Issue Proposed Regulations to Ensure Safe and Responsible Exploratory Drilling Offshore Alaska (Feb. 20, 2015), <http://www.bsee.gov/BSEE-Newsroom/Press-Releases/2015/BSEE-BOEM-Issue-Proposed-Regulations-to-Ensure-Safe-and-Responsible-Exploratory-Drilling-Offshore-Alaska/>.

169. Oil and Gas and Sulphur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf; Proposed Rule, 80 Fed. Reg. 9916, 9942 (proposed Feb. 24, 2015).

170. *Id.* at 9916.

171. *Id.* at 9917.

172. *Id.* at 9958.

173. *Id.* at 9923, 9958.

The Draft *Deepwater Horizon* Well Control Rule. On April 13, 2015, BSEE announced a proposed Post-*Deepwater Horizon* Well Control Regulation.¹⁷⁴ In related news, BSEE Director Brian Salerno released a first-ever annual report the next month,¹⁷⁵ pointing out that: “the annual report observes an increase in loss of well control events. That’s troubling, given the potential for such incidents to have grave consequences.”¹⁷⁶

Chukchi Sea Lease Sale 193 Developments. The Chukchi Sea Outer Continental Shelf Oil and Gas Lease Sale 193 was held on February 6, 2008.¹⁷⁷ Shell was the high bidder for 275 of the 5,354 blocks in the lease sale.¹⁷⁸ Before engaging in exploration activities, Shell was required to present an exploration plan for each block to BOEM for approval.¹⁷⁹ Those plans—together with the government’s environmental impact statements (EIS)—have been the subject of extensive litigation.¹⁸⁰

A 2014 Ninth Circuit Court of Appeals, in *Native Village of Point Hope v. Jewell*,¹⁸¹ effectively suspended operations there after ruling that BOEM based its original environmental

174. Press Release, Bureau of Safety and Environmental Enforcement, Interior Department Releases Proposed Well Control Regulations to Ensure Safe and Responsible Offshore Oil and Gas Development (Apr. 13, 2015), <http://www.bsee.gov/BSEE-Newsroom/Press-Releases/2015/Interior-Department-Releases-Proposed-Well-Control---Regulations-to-Ensure-Safe-and-Responsible-Offshore-Oil-and-Gas-Development/>.

175. BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT, ANNUAL REPORT 2014 (2014), http://www.bsee.gov/uploadedFiles/BSEE/BSEE_Newsroom/Publications_Library/Annual_Report/BSEE%202014%20Annual%20Report.pdf.

176. Press Release, Bureau of Safety and Environmental Enforcement, BSEE Director Brian Salerno Announces Key Efforts to Reduce Risk Offshore (May 5, 2015), <http://www.bsee.gov/BSEE-Newsroom/Press-Releases/2015/BSEE-Director-Brian-Salerno-Announces-Key-Efforts-to-Reduce-Risk-Offshore/>.

177. BUREAU OF OCEAN ENERGY MANAGEMENT, CHUKCHI SEA OIL AND GAS LEASE SALE 193 CHRONOLOGY, <http://www.boem.gov/ak193/> (last visited Apr. 28, 2016).

178. U.S. DEP’T OF THE INTERIOR, REVIEW OF SHELL’S 2012 ALASKA OFFSHORE OIL AND GAS EXPLORATION PROGRAM 9 (2013), <https://www.doi.gov/sites/doi.gov/files/migrated/news/pressreleases/upload/Shell-report-3-8-13-Final.pdf>.

179. *Id.* at 9–10.

180. Yereth Rosen, *Shell’s Chukchi Exploration Plan Wins Federal Approval*, ALASKA DISPATCH NEWS (May 11, 2015), <http://www.adn.com/article/20150511/shells-chukchi-exploration-plan-wins-federal-approval>.

181. *Native Village of Point Hope v. Jewell*, 740 F.3d 489 (9th Cir. 2014).

impact statement (EIS) on an arbitrary and capricious estimate of 1 billion barrels of recoverable oil in the blocks.¹⁸² BOEM released a new analysis in October 2014 that considered a 4.3 billion barrel scenario,¹⁸³ followed by a Supplemental EIS responsive to the court's remand in February 2015.¹⁸⁴ The Department of Interior then affirmed the Lease Sale in late March 2015, paving the way for its May 12 approval of Shell's 2015 exploration plan.¹⁸⁵ This did not end the controversy over Lease Sale 193, however, as discussed below in the "Significant U.S. Courts Decisions" below.

On December 7, 2015, the Department of Interior Inspector General (IG) issued a report, which concluded that BOEM staff members rushed their environmental review of the Shell exploration plan.¹⁸⁶ Although the IG did not find fault with BOEM's conclusions, the report concluded that some BOEM staff felt pressured by Congress or by a potential industry backlash.¹⁸⁷

7. *Department of Defense*

The Department of Defense's Arctic Strategy sets out the Department's desired end-state for the Arctic: A secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and nations work cooperatively

182. *Id.* at 492, 498–99.

183. BUREAU OF OCEAN ENERGY MANAGEMENT, OIL AND GAS LEASE SALE 193 DRAFT SECOND SEIS VOL. 2 A-18 (2014); *see also* Yareth Rosen, *Federal Regulators Issue Chukchi Environmental Review, Possibly a Step Toward Resuming Drilling*, ALASKA DISPATCH NEWS, Dec. 31, 2014, <http://www.adn.com/article/20141031/federal-regulators-issue-chukchi-environmental-review-possibly-step-toward-resuming>.

184. BUREAU OF OCEAN ENERGY MANAGEMENT, BOEM 2014-669, FINAL SECOND SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT VOL. 1 (2015), http://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Leasing_and_Plans/Leasing/Lease_Sales/Sale_193/2015_0127_LS193_Final_2nd_S_EIS_Vol1.pdf.

185. U.S. DEP'T OF THE INTERIOR, CHUKCHI SEA OUTER CONTINENTAL SHELF OIL AND GAS LEASE SALE 193 RECORD OF DECISION 21 (2015), http://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Leasing_and_Plans/Leasing/Lease_Sales/Sale_193/03-31-2015-LS193-ROD-Second-SEIS.pdf.

186. *See* U.S. DEP'T OF THE INTERIOR, INVESTIGATIVE REPORT OF MANAGEMENT INTERFERENCE WITH LEASE 193 EIS 1, 12 (2015), https://www.doi.gov/sites/doi.gov/files/WebRedacted_MgmtInterference_Lease193EIS.pdf.

187. *Id.* at 1.

to address challenges.¹⁸⁸ It articulates two main supporting objectives: (1) ensure security, support safety, and promote defense cooperation, and (2) prepare to respond to a wide range of challenges and contingencies—operating in conjunction with other nations when possible, and independently if necessary—in order to maintain stability in the region.

The strategy identifies the ways and means the Department of Defense (DOD) intends to achieve these objectives as it implements the National Strategy for the Arctic Region. To achieve these objectives, the DOD will: (1) exercise sovereignty and protect the homeland; (2) engage public and private sector partners to improve domain awareness in the Arctic; (3) preserve freedom of the seas in the Arctic; (4) evolve Arctic infrastructure and capabilities consistent with changing conditions; (5) support existing agreements with allies and partners while pursuing new ones to build confidence with key regional partners; (6) provide support to civil authorities, as directed; (7) partner with other departments and agencies and nations to support human and environmental safety; and (8) support the development of the Arctic Council and other international institutions that promote regional cooperation and the rule of law.¹⁸⁹

The United States Navy, in its Arctic Roadmap, predicts that the region will remain a low threat security environment characterized by peaceful resolution of differences.¹⁹⁰ The Navy considers its present Arctic posture sufficient for near-term defense requirements, but recognizes that increased activity in shipping, oil and gas development, and fishing will alter the strategic importance of the Arctic.¹⁹¹ With particular attention on increasingly open Arctic Sea shipping routes, the Navy's objectives seek to ensure Arctic sovereignty and homeland defense, provide naval forces that are ready to respond to crisis and contingencies, preserve freedom of the seas, and promote international partnerships.¹⁹²

188. U.S. DEP'T OF DEFENSE, ARCTIC STRATEGY 2, 5–6 (2013), http://www.defense.gov/Portals/1/Documents/pubs/2013_Arctic_Strategy.pdf.

189. *Id.* at 7–11.

190. U.S. NAVY, THE UNITED STATES NAVY ARCTIC ROADMAP FOR 2014 TO 2030 6 (2014), http://www.navy.mil/docs/USN_arctic_roadmap.pdf.

191. *Id.* at 6–7.

192. *Id.* at 15.

In late 2014, the Secretary of Defense transferred Alaska Command from U.S. Pacific Command to U.S. Northern Command.¹⁹³ From October 19–22, 2015, the U.S. Northern Command (NORTHCOM) and Alaska Command, the Coast Guard, and Department of State led Arctic Zephyr, a multinational table-top search and rescue (SAR) exercise.¹⁹⁴ The exercise drew officials from Canada, Denmark, Finland, Iceland, Norway, and Sweden, along with representatives from the Arctic cruise industry and the North Slope and Alaska Northwest Boroughs.¹⁹⁵ The exercise served as a test of the *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic*,¹⁹⁶ signed by the Arctic Council member-states in 2011.¹⁹⁷ At the conclusion of the exercise, the United States announced plans to host a live international SAR exercise in 2016.¹⁹⁸

The Department of Defense announced in late October 2015 that it was moving forward with a plan that could reverse planned cuts to U.S. Army force levels in Alaska.¹⁹⁹ Defense Secretary Ashton Carter also committed to creating an operation plan for the Arctic, laying out a military strategy for the Arctic region that would call for troop levels to remain static or to increase.²⁰⁰

Deep-Water Arctic Ports Feasibility Study Put on Hold. The Army Corps of Engineers and the Alaska Department of Transportation and Public Facilities released a draft report on the continuing Deep-Draft Arctic Port System

193. Press Release, Alaskan Command Public Affairs, Alaskan Command Joins U.S. Northern Command (Nov. 3, 2014), <http://www.af.mil/News/ArticleDisplay/tabid/223/Article/547709/alaskan-command-joins-us-northern-command.aspx>.

194. See U.S. Coast Guard, *supra* note 132.

195. *Id.*

196. Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, May 12, 2011, 50 I.L.M. 1119.

197. U.S. Coast Guard, *supra* note 132.

198. *Id.*

199. See Erica Martinson, *Alaska to Lose Thousands of Troops in Army Cuts to be Announced Thursday*, ARCTIC DISPATCH NEWS (July 8, 2015), <http://www.adn.com/article/20150708/alaska-lose-thousands-troops-army-cuts-be-announced-thursday>.

200. Bonney Bowman, *Department of Defense Will Create Strategic Arctic Plan*, KTVA ALASKA (Oct. 27, 2015), <http://www.ktva.com/department-of-defense-will-create-strategic-arctic-plan-542/>.

Study in February 2015.²⁰¹ After spending several years considering possible locations, the study recommended expanding the capacity of Nome Harbor,²⁰² and found no significant adverse impact on species or historic sites protected under various federal laws.²⁰³ The plan objectives included addressing the need for enhanced marine infrastructure to support multiple maritime missions, facilitating holistic economic growth, being compatible with cultural, subsistence and natural resources, taking into account existing land uses, encouraging shared responsibility for development in the Arctic, and allowing for multi-purpose use of Arctic resources.²⁰⁴

The estimated project cost, which includes lands, easements, facilities, and construction of general navigation features, is \$210.8 million with an estimated additional \$8.3 million for deepening the navigation features, and roughly \$244,000 in annual operation and maintenance costs.²⁰⁵ These costs would be apportioned between Federal and non-Federal sources in accordance with the Water Resources Development Act of 1986 (see below).²⁰⁶

Portion of Project ²⁰⁷	Fed %	Non-Fed %
General Navigation Features	65	35
Dredging to minus 20 feet	80	20
Dredging from minus 20 to 45 feet	65	35
Local Service Facilities	0	100
Aids to Navigation	100	0

201. U.S. ARMY CORPS OF ENGINEERS, ALASKA DISTRICT, ALASKA DEEP-DRAFT ARCTIC PORT SYSTEM DRAFT INTERIM INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT (2015), <http://www.poa.usace.army.mil/Portals/34/docs/civilworks/arcticdeepdraft/ADDMainReportwithoutappendixes.pdf>.

202. *Id.* at 72.

203. *Id.* at 32.

204. *Id.* at Executive Summary.

205. *Id.*

206. *Id.*

207. *Id.* at 117, Table 38.

In October 2015, the Army Corps of Engineers suspended work on the Nome deep-water feasibility study,²⁰⁸ following Shell's September 28th announcement that it was suspending its Arctic exploration activities for the "foreseeable future."²⁰⁹ The twelve-month delay will give the Corps time to reconsider the project's justification and the underlying economic assumptions.

8. *National Aeronautics and Space Administration*

The National Aeronautics and Space Administration's (NASA) Cryospheric Science Program is a major contributor to the nation's Arctic science effort. Among other missions, NASA provides ice observations by satellite and aircraft observations.

NASA reported that in 2015 the winter maximum Arctic sea ice extent reached a record low, extending only 14.54 million square kilometers—approximately 1.1 million square kilometers below average.²¹⁰ In September, the summer minimum Arctic sea ice extent was 4.63 million square kilometers, the fourth lowest September sea ice extent in the modern satellite record, which NASA started in 1979.²¹¹

In late 2015, NASA reported that the Earth is experiencing the strongest El Niño event since 1997-1998.²¹²

9. *Environmental Protection Agency*

The Environmental Protection Agency (EPA) and President Obama announced the Clean Power Plan on August 3, 2015.²¹³

208. Alex DeMarban, *Work Toward Deep-Water Port in Alaska Arctic on Hold, Army Corps Says*, ARCTIC NEWSWIRE (Oct. 26, 2015), <http://www.adn.com/article/20151026/work-toward-deep-water-port-alaska-arctic-hold-army-corps-says>.

209. Juliet Eilperin & Steven Mufson, *Royal Dutch Shell Suspends Arctic Drilling Indefinitely*, WASHINGTON POST (Sept. 28, 2015), <https://www.washingtonpost.com/news/energy-environment/wp/2015/09/28/royal-dutch-shell-suspends-arctic-drilling-indefinitely/>.

210. Viñas, *supra* note 3.

211. Press Release, National Snow & Ice Data Center, Arctic Sea Ice Extent Settles at Fourth Lowest in the Satellite Record (Oct. 6, 2015), https://nsidc.org/news/newsroom/PR_2015meltseason.

212. Kate Ramsayer, *NASA Sees a Different Kind of El Niño*, NASA (Feb. 25, 2016), <http://www.nasa.gov/feature/goddard/2016/nasa-sees-a-different-kind-of-el-nino>.

213. Carbon Pollution Emission Guidelines For Existing Stationary Sources: Electric

The final rule, promulgated under Section 111 of the Clean Air Act,²¹⁴ would regulate carbon pollution from existing power plants. By 2030, all states would be required to meet specific emission reduction targets, by closing down coal plants, building renewable generation, increasing energy efficiency or creating market systems like cap-and-trade.²¹⁵

The response by the affected states was immediate. In October 2015, twenty-four states filed lawsuits against the EPA seeking to enjoin the implementation of the Clean Power Plan.²¹⁶

In an unrelated development, the judicial challenge to the rule promulgated jointly by the EPA and Corps of Engineers expanding the definition of “waters of the United States” is described in the following section.

10. Significant U.S. Court Decisions

***Alaska Eskimo Whaling Com’n v. EPA*, 791 F.3d 1088 (9th Cir. 2015).**²¹⁷ A three-judge panel of the Ninth Circuit largely upheld a federal permit allowing Royal Dutch Shell and other companies to discharge waste from oil exploration into Alaska’s Beaufort Sea.²¹⁸ The Alaska Eskimo Whaling Commission appealed the EPA’s Beaufort Sea Permit that authorized oil and gas waste discharge into the Sea. The EPA admitted an error in the record regarding water temperature data; however, the panel denied the challenger’s petition because the permit issued by the EPA was supported by evidence on record, did not reflect a failure to consider

Utility Generating Units, 80 Fed. Reg. 64,662 (proposed Oct. 23, 2015) (to be codified at 40 C.F.R. pt. 60). For more information on the timeline of the Clean Power Plan regulation, see *Clean Power Plan for Existing Power Plants*, EPA, <https://www.epa.gov/cleanpowerplan/clean-power-plan-existing-power-plants#additional-resources> (last updated Feb. 11, 2016).

214. 42 U.S.C. § 7411(d) (2012).

215. See Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830, 34832 (proposed June 18, 2014) (to be codified at 40 C.F.R. pt. 60).

216. Timothy Cama, *Two Dozen states Sue Obama Over Coal Plan Emissions Rule*, THE HILL (Oct. 23, 2015), <http://thehill.com/policy/energy-environment/257856-24-states-coal-company-sue-obama-over-climate-rule>.

217. *Alaska Eskimo Whaling Com’n v. U.S. E.P.A.*, 791 F.3d 1088 (9th Cir. 2015).

218. *Id.* at 1090.

important aspects of the problem, and was not otherwise arbitrary or capricious.²¹⁹

Shell Offshore, Inc., v. Greenpeace, Inc., 2015 A.M.C. 1724 (D. Alaska 2015).²²⁰ Shell Offshore, Inc. was successful in seeking a temporary restraining order against Greenpeace Inc. in Alaska federal court. Shell sought a preliminary injunction against Greenpeace to prohibit illegal boarding of Shell's oil rigs, and asked for a court order requiring the group to keep clear of Shell's drilling operations.²²¹ The restraining order did not reach Shell's broader request for a temporary restraining order to bar Greenpeace from approaching other support vessels.²²² The court later extended the preliminary injunction to cover twenty-seven additional vessels and Shell's facilities.²²³

Last year, the Ninth Circuit U.S. Court of Appeals prevented oil and gas exploration on Royal Dutch Shell's Lease Sale 193 after finding flaws in the required Environmental Impact Statement.²²⁴ The Bureau of Ocean Energy Management cured the flaws, and approved Shell's 2015 exploration plan.²²⁵ Returning to the Arctic for the first time since its troubled 2012 season, Shell found itself in federal court on a number of issues.

Alaska Wilderness League v. Jewell, 788 F.3d 1212 (9th Cir. 2015). The Ninth Circuit affirmed the lower court decision holding that the Bureau of Safety and Environmental Enforcement (BSEE) properly approved Shell's Oil Spill Response Plan (OSRP).²²⁶ Under United States law, an offshore exploration plan must include an OSRP that meets six specific requirements. Among these, the lessee must ensure

219. *Id.* at 1095.

220. See Tim Bradner, *Judge Extends Temporary Restraining Order After Hearing on Greenpeace Injunction*, ALASKA JOURNAL OF COMMERCE (Apr. 29, 2015).

221. *Shell Offshore, Inc. v. Greenpeace, Inc.*, No. 3:15-cv-00054-SLG, 2015 WL 1632493, at *1337-38 (D. Alaska Apr. 11, 2015).

222. *Id.* at *1343-44.

223. *Shell Offshore, Inc. v. Greenpeace, Inc.*, No. 3:15-cv-00054-SLG, 2015 WL 2185111, at *6 (D. Alaska May 8, 2015).

224. *Native Village of Point Hope v. Jewell*, 740 F.3d 489 (9th Cir. 2014).

225. See *supra* Section III.A.6.

226. *Alaska Wilderness League v. Jewell*, 788 F.3d 1212 (9th Cir. 2015).

sufficient capability to remove the *maximum extent practicable* of a worst-case oil spill.²²⁷

The plaintiffs, a group of environmental organizations, challenged the approval on several grounds. They interpreted Shell's OSRP to assume an unrealistic ability to mechanically recover ninety to ninety-five percent of any oil spilled.²²⁸ The court found that Shell made no such assumption, and if it did BSEE did not rely on the assumption in approving the plan.²²⁹

They also argued that BSEE improperly approved the OSRP without first conducting an additional review required under the Endangered Species Act (ESA) and the National Environmental Policy Act (NEPA).²³⁰ The court found that only discretionary agency action triggers the relevant ESA and NEPA requirements.²³¹ It ruled that the six requirements for an OSRP are so specific that BSEE's approval was not discretionary once it determined that Shell addressed all six requirements.

A dissenting opinion by Judge Nelson would have reversed the lower court's decision.²³² To Judge Nelson, agency action that *may affect* a protected species or habitat triggers the ESA requirements, and agency authority to regulate the consequences of a major federal action requires NEPA analysis.²³³ She found the regulatory definition of *maximum extent practicable* unreasonably dismissive of the obligation to strive for the highest possible magnitude of result.²³⁴

Alaska Wilderness League v. Jewell, No. 15–71656 (9th Cir., filed June 2, 2015). Environmental groups continued their challenge of BSEE's approval of Shell's plan to conduct annual offshore exploration drilling activities in the Chukchi Sea.²³⁵ The Ninth Circuit was scheduled to hear oral

227. *Id.* at 1215.

228. *Id.* at 1218.

229. *Id.*

230. *Id.* at 1225–26.

231. *Id.* at 1226.

232. *Id.* at 1226–27.

233. *Id.* at 1227.

234. *Id.* at 1227–28.

235. Brief of Petitioner-Appellant, Alaska Wilderness League, et al., v. Sally Jewell, et al., No. 15–71656. (9th Cir. June 2, 2015).

arguments on February 5, 2016. It is not clear how Shell's suspension of operations will affect the litigation.

Shell Offshore, Inc. v. Greenpeace, Inc., No. 3:15—cv—00054-SLG, 2015 WL 2185111 (D. Alaska May 8, 2015). On July 21, 2015, the Alaska district court upheld Interior Secretary Sally Jewell's position that her authority, as Secretary of Interior, to approve limited exploration of the 1.2-million-acre coastal plain of the Arctic National Wildlife Refuge's expired in 1987.²³⁶ The 18.9-million Arctic National Wildlife Refuge was created in 1980 by Congress, as an expansion of an 8.9-million-acre wildlife range created in 1960 Arctic National Wildlife Refuge. However, the coastal plain area was withheld from wilderness status by Congress and set aside for potential oil and gas exploration. Under the 1980 law, Congress must approve oil and gas development in the coastal plain, but the Act gave the Interior Secretary limited authority to conduct exploration to assess the resource potential.²³⁷

Alaska Oil and Gas Ass'n v. Jewell., No. 13–35619 (pending in 9th Circuit). The Ninth Circuit Court of Appeals heard arguments regarding the designation of Polar Bear habitat by the U.S. Fish and Wildlife service in August 2015. Petitioners were the Alaska Oil and Gas Association and the American Petroleum Institute. In February 2016, the 9th Circuit handed down a decision.²³⁸

State of Ohio, et al. v. U.S. Army Corps of Eng'rs, et al. (6th Cir. Oct. 9, 2015). The Sixth Circuit Court of Appeals entered a nationwide stay of the Clean Water Rule, which was adopted in 2015 by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers defining the term "waters of the United States."²³⁹ In granting the temporary

236. *State v. Jewell, No. 3:14—cv—00048—SLG, 2015 WL 4464576, at *6 (D. Alaska July 21, 2015).*

237. See Tim Bradner, *Federal Judge Rejects State Effort to Explore ANWR Plain*, ALASKA JOURNAL OF COMMERCE (July 22, 2015), http://www.alaskajournal.com/business-and-finance/2015-07-22/federal-judge-rejects-state-effort-explore-anwr-plain#.Vwm50_krLIU.

238. *Alaska Oil and Gas Ass'n v. Jewell, Nos. 13–35619, 2016 WL 766855 (9th Cir. 2016).*

239. *In re E.P.A., 803 F.3d 804, 805–06 (6th Cir. 2015); see also Jonathan H. Adler, Sixth Circuit Puts Controversial 'Waters of the United States' (WOTUS) Rule on Hold*, WASHINGTON POST (Oct. 9, 2015), <https://www.washingtonpost.com/news/volokh-conspiracy/wp/2015/10/09/sixth-circuit-puts-controversial-waters-of-the-united-states-wotus-rule-on-hold/>.

stay, the Sixth Circuit found that the eighteen states involved in the action had demonstrated a substantial probability of success on the merits of their claims that the Clean Water Rule unconstitutionally expands federal jurisdiction over waters described in the rule.²⁴⁰

11. *U.S. Arctic Research Commission*

The U.S. Arctic Research Commission (USARC) was established by the Arctic Research and Policy Act of 1984.²⁴¹ Its principal duties are to (1) establish the national policy, priorities, and goals necessary to construct a federal program for basic and applied scientific research with respect to the Arctic, including natural resources and materials, physical, biological and health sciences, and social and behavioral sciences; (2) promote Arctic research, to recommend Arctic research policy, and to communicate our research and policy recommendations to the President and the Congress; (3) work with the National Science and Technology Council and the National Science Foundation as the lead agency responsible for implementing the Arctic research policy and to support cooperation and collaboration throughout the Federal Government; (4) give guidance to the Interagency Arctic Research Policy Committee to develop national Arctic research projects and a five-year plan to implement those projects (see White House National Science and Technology Council, Arctic Research Plan 2013–2017);²⁴² and (5) interact with Arctic residents, international Arctic research programs and organizations and local institutions including regional governments in order to obtain the broadest possible view of Arctic research needs.²⁴³

On May 21, 2015, USARC released its newly updated goals report, Report on the Goals and Objectives for Arctic Research

240. In re E.P.A., at 807.

241. 15 U.S.C. §§ 4101–4111 (2012).

242. NATIONAL SCIENCE AND TECHNOLOGY COUNCIL, EX. OFFICE OF THE PRESIDENT, ARCTIC RESEARCH PLAN: FY 2013–2017 (2013), https://www.whitehouse.gov/sites/default/files/microsites/ostp/2013_arctic_research_plan.pdf.

243. *About USARC*, UNITED STATES ARCTIC RESEARCH COMMISSION, https://www.arctic.gov/about_usarc.html (last visited May 2, 2016).

2015–2016 for the U.S. Arctic Research Program Plan. The Plan is founded on USARC’s six priority research goals:

1. Observe, Understand, and Predict Arctic Environmental Change;
2. Improve Arctic Human Health;
3. Advance Knowledge of Arctic Natural Resources: A Focus on Renewable Energy;
4. Advance the Arctic “Built Environment”;
5. Explore Arctic Cultures and Community Resilience; and
6. Enhance International Scientific Cooperation in the Arctic.²⁴⁴

President Obama reappointed Fran Ulmer to a second four-year term as Chair of the U.S. Arctic Research Commission in May 2015.²⁴⁵

The Commission held its 104th Meeting August 25–26, 2015, in Anchorage and Nome, Alaska.²⁴⁶ At the meeting, Council Chair Fran Ulmer presented the commission’s 2015–2017 Goals and Objectives for Arctic Research Report.

12. National Ocean Council

On July 19, 2010, President Obama issued Executive Order 13,547 (“Stewardship of the Ocean, Our Coasts, and the Great Lakes”) establishing the National Ocean Policy (NOP) for the United States.²⁴⁷ The order adopted most of the recommendations of the Interagency Ocean Policy Task Force he had appointed shortly after taking office.²⁴⁸ The order also established the federal interagency National Ocean Council.

244. Cheryl Rosa, *USARC Releases 2015-16 Report on the Goals and Objectives for Arctic Research*, ARCUS, <https://www.arcus.org/witness-the-arctic/2015/2/article/23152> (last visited Apr. 9, 2016).

245. *Fran Ulmer Appointed Chair of the U.S. Arctic Research Commission*, ARCUS, <https://www.arcus.org/witness-the-arctic/2011/2/article/1652> (last visited Apr. 9, 2016).

246. *May 13, 2015, Today’s Events*, ARCTIC UPDATE, https://www.arctic.gov/arctic_update/2015/2015may13.html (last visited Apr. 18, 2016).

247. Exec. Order No. 13547, 75 Fed. Reg. 43023 (July 19, 2010) (revoking Exec. Order No. 13366, 69 Fed. Reg. 76591 (Dec. 17, 2004)).

248. WHITE HOUSE COUNCIL ON ENVTL. QUALITY, FINAL RECOMMENDATIONS OF THE INTERAGENCY OCEAN POLICY TASK FORCE (2010), https://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf.

On April 16, 2013, the administration released the National Ocean Policy Implementation Plan (NOPIP).²⁴⁹

In March of 2015, the White House released a progress report on the National Ocean Policy Implementation Plan.²⁵⁰

13. Committee on the Marine Transportation System

The Committee on the Marine Transportation System (CMTS), established by President George W. Bush in 2004, is a federal cabinet-level, inter-departmental committee chaired by the Secretary of Transportation.²⁵¹ Its purpose is to create a partnership of federal departments and agencies with responsibility for the Marine Transportation System (MTS).

In January 2015 the CMTS released a ten-year Projection of Maritime Activity in the U.S. Arctic Region.²⁵² The Report predicted ship activity growth in the Bering Strait and North Slope regions from 1.3 to 3.3 percent over ten years, estimating 710 vessels will operate in the region by 2025.²⁵³ The projected increases derive from expected global economic growth, vessel diversion from other routes, and natural resource exploration and production.²⁵⁴

The CMTS developed its report with a number of assumptions about Arctic shipping. For example, it assumed there would be no Arctic deep-water port in the next ten years, and no increase in the number of military and Coast Guard assets stationed there.²⁵⁵ It also assumed that the number of

249. *Obama Administration Releases Plan to Promote Ocean Economy and Reliance*, WHITE HOUSE COUNCIL ON ENVTL. QUALITY (Apr. 16, 2013), https://www.whitehouse.gov/sites/default/files/final_marine_planning_handbook.pdf.

250. WHITE HOUSE, REPORT ON THE IMPLEMENTATION OF THE NATIONAL OCEAN POLICY (2015), https://www.whitehouse.gov/sites/default/files/docs/nop_highlights__annual_report_final_-_150310.pdf.

251. *What We Do*, COMM. ON MARINE TRANSP. SYS. <http://www.cmts.gov/About/Index.aspx> (last visited Apr. 9, 2016).

252. INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION, A 10-YEAR PROJECTION OF MARITIME ACTIVITY IN THE U.S. ARCTIC REGION (2015), http://www.cmts.gov/downloads/CMTS_10Year_Arctic_Vessel_Projection_Report_1.1.1.5.pdf.

253. *Id.* at 44.

254. *Id.* at 42.

255. *Id.*

research and tourism vessels would remain at 2013 levels.²⁵⁶ The CMTS projected that ninety percent of route diversions would use the Northern Sea Route rather than the Northwest Passage. Finally, the CMTS report assumed that oil and gas exploration will occur (an assumption that will need to be revisited).²⁵⁷

Taking all this into account, the CMTS projects a conservative estimate of 420 vessels in the Arctic in 2025, with 877 Bering Strait transits, and a high-growth estimate of 1,262 vessels and 2,637 transits.

14. *National Academies Transportation Research Board*

The National Research Council published *Arctic Matters: The Global Connection to Changes in the Arctic* (2015).²⁵⁸

On June 16, 2015, the Marine Board issued a special report on *Funding and Managing the U.S. Inland Waterways System: What Policymakers Need to Know*.²⁵⁹ The report explores the role and importance of the federally funded inland waterways system.

B. *United States: Alaska*

William M. (“Bill”) Walker was sworn in as Alaska’s 11th Governor on December 1, 2014.²⁶⁰ That same day, Byron I. Mallott was sworn in as lieutenant governor. Walker appointed Craig Fleener as his special adviser on Arctic issues.²⁶¹ The governor’s new leadership team immediately confronted a budget crisis.

256. *Id.*

257. *Id.*

258. ARCTIC MATTERS: THE GLOBAL CONNECTION TO CHANGES IN THE ARCTIC (Nat’l Academies Press 2015), <http://www.nap.edu/catalog/21717/arctic-matters-the-global-connection-to-changes-in-the-arctic>.

259. TRANSPORTATION RESEARCH BOARD, *FUNDING AND MANAGING THE U.S. INLAND WATERWAYS SYSTEM, WHAT POLICY MAKERS NEED TO KNOW* (2015), <http://onlinepubs.trb.org/onlinepubs/sr/sr315.pdf>.

260. Kirk Johnson, *Bill Walker, Next Governor for Alaska, Traversed Unlikely Path*, N.Y. TIMES (Nov. 24, 2014), http://www.nytimes.com/2014/11/25/us/politics/next-governor-for-alaska-traversed-unlikely-path.html?_r=0.

261. Alex DeMarban, *Gov. Walker names former running mate Fleener as Arctic adviser*, ALASKA DISPATCH NEWS (Dec. 4, 2015), <http://www.adn.com/article/20141204/gov-walker-names-former-running-mate-fleener-arctic-adviser>.

On June 11, 2015, the Alaska legislature approved a FY16 budget, but only by a super-majority vote that was required to tap into the Constitutional Budget Reserve.²⁶² After the governor vetoed \$200 million, the FY16 budget totaled \$12.1 billion.²⁶³

Alaska's legislature passed a resolution declaring 2015–2017 the “Years of the Arctic.”²⁶⁴

1. *State of Alaska*

At 586,400 square miles, Alaska is more than twice the size of Texas, the second largest state, and is larger than all but eighteen of the nations in the world. The state has more shoreline (34,000 miles) than the rest of the nation combined. Alaska has produced over seventeen billion barrels of oil. From 1980–2000 Alaska accounted for twenty percent of the U.S. domestic oil production.²⁶⁵ More than half of the fish harvested in the U.S. are taken from the federal and state waters off Alaska.²⁶⁶ Cruise ships carry some one million passengers to Alaska each year.²⁶⁷

Alaska's Coastal Zone Management (CZM) Program, in place since 1977, was allowed to sunset on July 1, 2011.²⁶⁸ In 2012, Alaska voters overwhelmingly (62% to 38%) rejected an

262. Kate McPherson, *Alaska Legislature Passes 2016 Operating Budget*, KTVA ALASKA (June 11, 2015), <http://www.ktva.com/alaska-house-passes-2016-operating-budget-336/>.

263. Alexander Hoke, *Alaska's Not Out of Oil, and the Permanent Fund is for the People, Not Government*, ALASKA DISPATCH NEWS (Jan. 27, 2016), <http://www.adn.com/article/20160127/alaskas-not-out-oil-and-permanent-fund-people-not-government>.

264. Press Release, Alaska House of Representatives, Legislature Declares 2015-17 as “Years of the Arctic” (Apr. 9, 2015), <http://www.housemajority.org/2015/04/09/legislature-declares-2015-17-as-years-of-the-arctic/>.

265. *Alaska's Oil & Gas Industry*, RESOURCE DEV. COUNCIL FOR ALASKA, <http://www.akrdc.org/issues/oilgas/overview.html> (last visited Apr. 9, 2016).

266. *Alaska's Fishing Industry*, RESOURCE DEV. COUNCIL FOR ALASKA, <http://www.akrdc.org/issues/fisheries/overview.html> (last visited Apr. 9, 2016).

267. *Tourism*, RESOURCE DEV. COUNCIL FOR ALASKA, <http://www.akrdc.org/issues/tourism/> (last visited Apr. 9, 2016).

268. Richard Mauer, *Loss of Coast Zone Program Hurts State's Beluga Whale Case*, ALASKA DISPATCH NEWS (Oct. 30, 2011), <http://www.adn.com/article/20111030/losscoast-zone-program-hurts-states-beluga-whale-case>.

initiative (Ballot Measure 2) that would have restored the CZM Program.²⁶⁹ As a result, Alaska is the only coastal state in the U.S. that does not have a CZM plan developed and approved under the federal Coastal Zone Management Act of 1972.²⁷⁰ Reportedly, the state has also declined to participate in the voluntary regional marine spatial planning called for by the President's National Ocean Policy. Whether Governor Walker will reverse that stand is unclear.

2. *The Alaska Arctic Policy Commission*

Alaska's Arctic Policy Commission (AAPC) submitted its Final Report²⁷¹ and Implementation Plan to the Alaska legislature on January 30, 2015.²⁷² The two documents outline an Arctic development agenda driven by resource extraction, intended to inform related state legislative action.

The Report concentrated on four "Strategic Lines of Effort:" (1) promote economic and resource development; (2) address the response capacity gap; (3) support healthy communities; and (4) strengthen science and research.²⁷³ The Commission developed a set of recommendations to further each line of effort, and identified state and federal actions necessary for each recommendation.²⁷⁴ The AAPC put heavy emphasis on resource development as a necessary first step to support all other Arctic policies.²⁷⁵

The State of Alaska enacted the follow-on Declaration of State Arctic Policy in April 2015.²⁷⁶ The legislation declares

269. Alyssa Carducci, *Alaska Voters Reject Coastal Management Program*, HEARTLAND INSTITUTE (Oct. 10, 2012), <http://news.heartland.org/newspaper-article/2012/10/10/alaska-voters-reject-coastal-management-program>.

270. See *Coastal Zone Management Programs*, OFFICE OF COASTAL MGMT., <http://coast.noaa.gov/czm/mystate/> (last visited Apr. 9, 2016).

271. ALASKA ARCTIC POLICY COMMISSION, FINAL REPORT (2015), http://www.akarctic.com/wp-content/uploads/2015/01/AAPC_final_report_lowres.pdf.

272. ALASKA ARCTIC POLICY IMPLEMENTATION PLAN (2015), http://www.akarctic.com/wp-content/uploads/2015/01/AAPC_ImplementationPlan_lowres.pdf.

273. See *id.* 6–7.

274. *Id.* at 45.

275. *Id.* at 6.

276. Yareth Rosen, *Alaska Senate Passes Bill Establishing an Official State Arctic Policy*, ARCTIC NEWSWIRE (Apr. 7, 2015), <http://www.adn.com/article/20150407/alaska-senate-passes-bill-establishing-official-state-arctic-policy>.

several policies: (1) uphold the state's commitment to economically vibrant communities sustained by development activities consistent with the state's responsibility for a healthy environment; (2) collaborate with all levels of government, tribes, industry, and nongovernmental organizations to achieve transparent and inclusive Arctic decision-making; (3) enhance the security of the Arctic region of the state and, thereby, the security of the entire state; and (4) value and strengthen the resilience of communities and respect and integrate the culture, language, and knowledge of Arctic peoples.²⁷⁷

3. *Alaska Marine Mammal Co-Management Agreements*

Section 101(b) of the U.S. Marine Mammal Protection Act provides the following exemption from the moratorium on taking marine mammals:

(b) Exemptions for Alaskan natives. Except as provided in section 1379 of this title, the provisions of this chapter shall not apply with respect to the taking of any marine mammal by any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean if such taking—(1) is for subsistence purposes; or (2) is done for purposes of creating and selling authentic native articles of handicrafts and clothing.²⁷⁸

Section 119 of the Act authorizes the National Marine Fisheries Service and U.S. Fish and Wildlife Service to enter into marine mammal co-management agreements with Alaska Native Organizations (ANOs), including, but not limited to, Alaska Native Tribes and tribally authorized co-management bodies.²⁷⁹ Agreements may involve: (1) developing marine mammal co-management structures and processes with federal and state agencies; (2) monitoring the harvest of marine mammals for subsistence use; (3) participating in marine mammal research; and (4) collecting and analyzing data on marine mammal populations.²⁸⁰

277. H.B. 1, 2015 Leg., 29th Sess. (Alaska 2015).

278. 16 U.S.C. § 1371(b) (2012).

279. *Id.* at § 1388.

280. *Id.*

Co-management agreements were authorized with the Alaska Beluga Whale Committee, Alaska Eskimo Whaling Commission, Aleut Marine Mammal Commission, Alaska Native Harbor Seal Commission, Cook Inlet Marine Mammal Council, Ice Seal Committee, Indigenous People's Council for Marine Mammals, Traditional Council of St. George Island, and Tribal Government of St. Paul. Under Section 119 agreements, marine mammal stocks should not be permitted to diminish beyond the point at which they cease to fulfill their role in their ecosystem or to levels that won't allow for sustainable subsistence harvest.²⁸¹

C. Canada

Canada is a party to UNCLOS and a member, and immediate-past Chair, of the Arctic Council. A summary of Canada's chairmanship term is included in Section IV.B below. Canada's extended continental shelf submission to the Commission on Limits of the Continental Shelf is detailed in Section IV.G.

Canadian voters elected Justin Trudeau as their Prime Minister on October 19, 2015.²⁸² Trudeau then appointed Nunavut MP Hunter Tootoo Minister of Fisheries, Oceans, and the Canadian Coast Guard.²⁸³ He also designated his new Minister of Foreign Affairs, Stephane Dion, to represent Canada on the Arctic Council.²⁸⁴ Under the previous government, Arctic duties were handled by Leona Aglukkaq—an Inuk from Nunavut—and the environment minister, with the foreign ministry handling any foreign issues relating to the region.²⁸⁵

281. *Id.*

282. Ian Austen, *Justin Trudeau and Liberal Party Prevail with Stunning Rout in Canada*, N.Y. TIMES (Oct. 19, 2015), <http://www.nytimes.com/2015/10/20/world/americas/canada-election-stephen-harper-justin-trudeau.html>.

283. *Meet Justin Trudeau's New Liberal Cabinet*, CBC, <http://www.cbc.ca/news/politics/trudea-cabinet-ministers-profile-1.3304176> (last updated Nov. 4, 2015, 10:56 PM).

284. Brian Pehora, *Out of the Arctic, Into Experienced Hands*, ARCTIC JOURNAL (Nov. 13, 2015, 7:51 PM), <http://arcticjournal.com/politics/1963/out-arctic-experienced-hands>.

285. *Id.*

Soon after taking office, Trudeau directed his Minister of Transport, Marc Garneau, to ban oil tankers along British Columbia's northern coast (Dixon Entrance, Hecate Strait, and Queen Charlotte Sound).²⁸⁶ The ban casts serious doubt on the future of the Northern Gateway proposal to export from British Columbia crude oil transported by pipeline or rail from Alberta's oilsands fields.²⁸⁷

The Gahcho Kué diamond mine in Canada's Northwest Territories is more than eighty percent complete and on track to begin production in 2016.²⁸⁸ Canada is now the world's third-largest diamond producer, behind Botswana and Russia, producing fifteen percent of the world's diamonds by value.²⁸⁹

For a report on maritime traffic through the Northwest Passage see Section V.A.

D. China

China became a permanent observer at the Arctic Council in 2013.²⁹⁰ A May 20, 2013 article in the government-controlled Beijing Review titled "How China became an Arctic State" asserted "China has ultimately managed to re-shuffle the Arctic balance of power in record time."²⁹¹ China now refers to itself as a "near Arctic state" (jin beiji guojia) and an "Arctic

286. *Crude Oil Tanker Ban for B.C.'s North Coast Ordered by Trudeau*, CBC, <http://www.cbc.ca/news/canada/british-columbia/crude-oil-tanker-traffic-moratorium-bc-north-coast-1.3318086> (last updated Nov. 13, 2015, 3:03 PM).

287. See Joel Stonington, *Indigenous Canadians Take Leading Role in Battle Against Tar Sands Pipeline*, GUARDIAN (OCT. 18, 2015, 8:00 AM), <http://www.theguardian.com/world/2015/oct/18/canada-indigenous-first-nations-tar-sands-pipeline-oil>.

288. Levon Sevunts, *Diamond Mine to Open in Arctic Canada in 2016*, ARCTIC NEWSWIRE (Dec. 14, 2015), <http://www.adn.com/article/20151214/diamond-mine-open-arctic-canada-2016>.

289. *Id.*

290. Steven Lee Myers, *Arctic Council Adds Six Nations as Observer States, Including China*, N.Y. TIMES (May 15, 2013), http://www.nytimes.com/2013/05/16/world/europe/arctic-council-adds-six-members-including-china.html?_r=0.

291. Mikå Mered, *How China Became an 'Arctic State'*, BEIJING REVIEW (May 20, 2013), http://www.bjreview.com.cn/expert/txt/2013-05/20/content_544897.htm.

stakeholder” (beiji lihaiguanxguo).²⁹² President Xi Jinping has referred to China as a “polar great power” (jidi daguo).²⁹³

Several future scenarios have highlighted China’s increasing overtures to Greenland’s inhabitants and the possibility that the economic opportunities provided by China—particularly, Chinese mining entities—may encourage Greenlanders to declare their full independence from Denmark.²⁹⁴

During President Obama’s September 2015 visit to Alaska, China sent five of its navy ships (three surface combatant ships, one amphibious ship and one supply ship) to the Bering Sea, passing through the Aleutian Islands on their southern leg.²⁹⁵ China’s naval activities were consistent with navigation rights established by UNCLOS and drew no protests from the United States.

In October 2015, COSCO, China’s largest shipping company (even before its merger with China Shipping Container Lines), announced plans to launch regular services through the Arctic to Europe.²⁹⁶ The state-owned carrier has sent vessels through the Northern Sea Route twice, once in 2013 and again in 2015.

E. Denmark/Greenland

Denmark included the Arctic as an area of concern in its annual national threat assessment.²⁹⁷ The assessment mentions Russia as a leading voice in Arctic policy, and notes

292. Andreas Kuersten, *Russian Sanctions, China, and the Arctic*, THE DIPLOMAT (Jan. 3, 2015), <http://thediplomat.com/2015/01/russian-sanctions-china-and-the-arctic/>.

293. Jane Perlez, *China, Pursuing Strategic Interests, Builds Presence in Antarctic*, N.Y. TIMES (May 3, 2015), <http://www.nytimes.com/2015/05/04/world/asia/china-pursuing-strategic-interests-builds-presence-in-antarctica.html>.

294. See Will Hickey, *China Targets Greenland for Mining*, YALE GLOBAL ONLINE (Apr. 18, 2013), <http://yaleglobal.yale.edu/content/china-targets-greenland-mining>.

295. Jeremy Page & Gordon Lubold, *Chinese Navy Ships came Within 12 Nautical Miles of U.S. Coast*, WALL STREET J. (Sept. 4, 2015, 5:46 PM), <http://www.wsj.com/articles/chinese-navy-ships-off-alaska-passed-through-u-s-territorial-waters-1441350488>.

296. Costas Paris & Joanne Chiu, *Chinese Shipping Group Cosco Planning Regular Trans-Arctic Sailings*, WALL STREET J., (Oct. 29, 2015, 1:26 PM), <http://www.wsj.com/articles/chinese-shipper-cosco-to-schedule-regular-trans-arctic-sailings-1446133485>.

297. DANISH DEFENSE INTELLIGENCE SERVICE, INTELLIGENCE RISK ASSESSMENT 2015 (2015), http://arcticjournal.com/sites/default/files/risikovurdering2015_englishversion.pdf.

the Russian military build-up is likely concerned with the Northern Sea Route.

Denmark's extended continental shelf claim is covered below in Section IV.G.

Royal Arctic Line—Greenland's nationally controlled seaborne freight company—is reportedly considering whether to establish cargo facilities in Nuuk, Greenland, that would enable the company to accommodate direct cargo shipments in Nuuk, thus obviating re-shipment through Aalborg, Denmark.²⁹⁸ The current Nuuk port expansion and improvements will be completed in 2016.²⁹⁹

F. Finland

Finland's Strategy for the Arctic Region was issued in 2013.³⁰⁰ The objectives of the policy are to strengthen multilateral Arctic cooperation, take part in the shaping of the EU's Arctic policy, and raise Finland's profile as an expert in Arctic issues.³⁰¹

Finland served as chair of the Barents Euro-Arctic Council (BEAC) for the 2013–2015 term.³⁰² Finland is also preparing to assume the chairmanship of the Arctic Council in 2017.³⁰³

G. Iceland

Arctic Circle Conference. The 2015 Arctic Circle Conference was held in Reykjavik on October 16–18.³⁰⁴ This

298. Kevin McGwin, *A Farewell to Aalborg?*, ARCTIC JOURNAL (Dec. 9, 2015, 9:41 PM), <http://arcticjournal.com/business/2025/farewell-aalborg>.

299. *Id.*

300. PRIME MINISTER'S OFFICE, FINLAND'S STRATEGY FOR THE ARCTIC REGION 2013 (2013), <http://vnk.fi/documents/10616/334509/Arktinen+strategia+2013+en.pdf/6b6fb723-40ec-4c17-b286-5b5910fbecf4>.

301. *Id.* at 17, 19.

302. Unit for Russia, *Finnish Chairmanship of the Barents Euro-Arctic Council*, MINISTRY FOR FOREIGN AFFAIRS OF FINLAND, <http://formin.finland.fi/public/default.aspx?contentid=288689&contentlan=2&culture=en-US> (last updated Nov. 11, 2015).

303. *The Arctic Council: A Backgrounder*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us> (last updated Sept. 28, 2015).

304. *Maine Delegation Heads to Arctic Circle Assembly in Reykjavik*, AMERICAN JOURNAL OF TRANSPORTATION (Oct. 14, 2015, 10:20 AM), <https://www.ajot.com/news/maine-delegation-heads-to-arctic-circle-assembly-in->

annual conference brought together international observers and participants to address healthcare, global warming, and other issues facing the Arctic region. The organizers encouraged organizations, forums, think tanks, corporations, and public associations to conduct meetings within the conference in order to increase participation and dialogue among stakeholders.³⁰⁵

The German company Bremenports came to an agreement with Iceland in October 2015 to begin a feasibility study of a large, deep-water harbor in order to facilitate international Arctic shipping.³⁰⁶ The purposes for the port are: a base port for Arctic oil and gas operations, as well as a hub port for trans-Arctic shipping; and as a service port for both offshore petroleum activity and Arctic shipping.³⁰⁷ The plans for the port include Liquefied Natural Gas (LNG) bunkering facilities and a search and rescue base.

H. Japan

The Arctic Council approved Japan's application for Permanent Observer status in May 2013.³⁰⁸ In 2014, Japanese shipping company Mitsui OSK Lines Ltd. announced plans to begin regular transport of LNG through the Arctic Ocean in 2018.³⁰⁹ The plan envisions construction of three ice-breaking tankers for year-round operations between the Yamal Peninsula and Europe, and summer operations to Northeast Asia. Once operational, Mitsui expects to transport roughly three million tons of LNG along the route annually.³¹⁰

Led by Prime Minister Shinzo Abe, Japan formally announced the release of its first white paper for Arctic development in October 2015 at the Japanese Headquarters

reykjavik.

305. *About*, ARCTIC CIRCLE, <http://www.arcticcircle.org/about> (last visited Apr. 10, 2016).

306. Barents Observer, *Germany, Iceland Cooperate on New Transpolar Port*, ARCTIC NEWSWIRE (Oct. 20, 2015), <http://www.adn.com/article/20151020/germany-iceland-cooperate-new-transpolar-port>.

307. *Id.*

308. Steven Lee Myers, *supra* note 290.

309. *Mitsui O.S.K. to Pioneer Arctic Route for LNG*, JAPAN TIMES (July 9, 2014), <http://www.japantimes.co.jp/news/2014/07/09/business/corporate-business/mitsui-o-s-k-pioneer-arctic-route-lng/#.VTwZJiFViko>.

310. *Id.*

for Ocean Policy.³¹¹ The policy seeks the country's active participation in the process of creating international rules in the Arctic region, as well as for investment in projects to develop oil, gas and other natural resources, consideration of an international resources management framework, and establishment of a sea route connecting Asia and Europe.³¹²

The provisional English translation of the white paper discusses the rapidly changing environment and increasing interest in the Arctic, as well as Japan's need to address seven Arctic issues: global environment, indigenous peoples, science and technology, ensuring the rule of law and promoting international cooperation, Arctic Sea route, natural resources development, and national security.³¹³

The white paper goes on to explain Japan's history in the Arctic. Beginning in the 1950s, Japan carried out research in the Arctic, maintaining a high level of scientific interests in the changing environment. In 1991, Japan was the first non-Arctic state to station an observation base in the Arctic, as well as join the International Arctic Science Committee.³¹⁴

Japan further discusses the importance of cooperating with Arctic Ocean coastal states to ensure the balance between the freedom and safety of navigation, while protecting and preserving the marine environment under the rule of international law in the Arctic. Japan plans to contribute its scientific and technological knowledge to further increase the activities of the Arctic Council, and actively engage in other international forums.³¹⁵

Additionally, the white paper discusses the importance of national security and the risk of opening new shipping routes that may cause "friction among states."³¹⁶ Japan asserts the importance of preventing "moves to strengthen military presence in the [Arctic] region from leading to tension and confrontations."³¹⁷ Despite this possible friction, Japan

311. HEADQUARTERS FOR OCEAN POLICY, JAPAN'S ARCTIC POLICY (PROVISIONAL ENGLISH TRANSLATION) (Oct. 16, 2015), <http://library.arcticportal.org/1883/>.

312. *See id.*

313. *Id.* at 3–6.

314. *Id.* at 1–2.

315. *Id.* at 2.

316. *Id.* at 6.

317. *Id.*

emphasizes the importance of promoting cooperation with the Arctic and other states.

In October 2015, Japan gave notice to the International Court of Justice (ICJ) that it was withdrawing its consent to jurisdiction over disputes involving marine resources, such as whales and tuna.³¹⁸ Foreign Minister Fumio Kishida transmitted the notice, explaining that the decision does not affect Japan's consent to jurisdiction over disputes involving territories, territorial waters, and other marine resources disputes.³¹⁹

In late 2015, Japan resumed its "scientific whaling" operations in the Southern Ocean.³²⁰

I. Norway

Speaking at the "Arctic Balance" conference hosted by the Center for Strategic and International Studies, Norway's Minister of Foreign Affairs, Børge Brende emphasized the importance of values, democracy, human rights, trade and cooperation in the nation's approach to the Arctic.³²¹ In Norway's view, the Arctic must remain a zone of peace, stability, and international cooperation. He also noted that eighty percent of "Arctic maritime traffic" passes through Norway's waters.³²² Brende welcomed the U.S. priorities for its

318. *Declarations Recognizing the Jurisdiction of the Court as Compulsory*, INTERNATIONAL COURT OF JUSTICE,

<http://www.icj-cij.org/jurisdiction/?p1=5&p2=1&p3=3&code=JP> (last visited Apr. 10, 2016); see also Andrew Darby, *Japan Rejects International Court Jurisdiction Over Whaling*, SYDNEY MORNING HERALD (Oct. 19, 2015), <http://www.smh.com.au/federal-politics/political-news/japan-rejects-international-court-jurisdiction-over-whaling-20151018-gkc7rm.html>.

319. *Japan to Stop Attending ICJ Trials on Living Marine Resources*, JAPAN NEWS (Oct. 28, 2015, 19:25), <http://www.asianews.network/content/japan-stop-attending-icj-trials-living-marine-resources-2757>.

320. See e.g., *Japan Plans Unilateral Restart to Antarctic Whaling in 2015, Says Official*, GUARDIAN (June 20, 2015, 1:12 AM), <http://www.theguardian.com/environment/2015/jun/20/japan-plans-unilateral-restart-to-antarctic-whaling-in-2015-says-official>.

321. *Arctic Balance: Creating Economic Growth While Enhancing Environmental Stewardship*, CENTER FOR STRATEGIC & INTERNATIONAL STUDIES (Feb. 25, 2015), <http://csis.org/event/arctic-balance>.

322. Børge Brende, *The Arctic: Important for Norway, Important for the World*, GOVERNMENT.NO (Apr. 16, 2015), https://www.regjeringen.no/en/aktuelt/arctic_harvard/id2406903/.

chairmanship of the Arctic Council, noting that the two nations share the same interests and values.

Expressing Norway's grave concern for Russia's violations of international law, which has created a "new security environment in Europe," Brende observed that Norway was compelled to impose sanctions and suspend military cooperation, but would continue to cooperate with Russia on fisheries, maritime safety, nuclear safety and environmental protection.³²³

Norway is experiencing six to seven percent growth.³²⁴ Its exploitation of natural gas will serve as a bridge to Green Energy.

J. South Korea

The Arctic Council admitted The Republic of Korea, along with Japan and Singapore, as a Permanent Observer in May 2013.³²⁵ Two months later, Korea announced the Pan Government Arctic Development Plan, setting up comprehensive plans regarding sea routes, energy, and resource development in the Arctic.³²⁶ Korea hopes to become Northeast Asia's oil hub as Arctic shipping increases.

South Korea has a long record of scientific undertakings in the Arctic. The Korean icebreaker *Araon* generally conducts Arctic scientific research missions each year from July to October.³²⁷

Recent foreign policy initiatives of South Korea's presidents reveal a recognition of the importance of the Arctic to achieving foreign policy goals. Past President Lee Myung-bak introduced the idea of a "Global Korea" and a policy entitled "Low Carbon, Green Growth" as Korea's strategy for development and addressing climate change.³²⁸

323. *Id.*

324. *Norway's Banks Well-Positioned to Weather Slowdown in Economic Growth*, MOODY'S (Apr. 10, 2016), https://www.moody's.com/research/Moodys-Norways-banks-well-positioned-to-weather-slowdown-in-economic--PR_330041.

325. Steven Lee Myers, *supra* note 290.

326. Yoon Sojung, *Korea Announces Comprehensive Arctic Policies*, KOREA.NET (July 30, 2013), <http://www.korea.net/NewsFocus/Policies/view?articleId=110561>.

327. *Id.*

328. Martin Kossa, *South Korea's Positioning in the Arctic*, WORLD POLICY BLOG (Sept. 30, 2015, 9:00 AM), <http://www.worldpolicy.org/blog/2015/09/30/south->

South Korea has proposed utilizing the Arctic's Northern Sea Route to strengthen its connections in the Polar region, and the country's Minister of Foreign Affairs, Yun Byung-se, stated in July of 2015 that South Korea is committed "to contributing to the science of climate change, as well as to broader research on the polar regions."³²⁹

South Korea's Daewoo Shipbuilding and Marine Engineering is at work building a planned fleet of 15 Arctic-capable LNG carriers to service the Yamal LNG project in the Russian Arctic.³³⁰ The 300-meter vessels will reportedly be capable of operating in second year ice up to 2.5 meters thick.³³¹

In an early November 2015 summit in Seoul, South Korea and Iceland agreed to cooperate on developing the Northern Sea Route to connect Asia and Europe. The NSR would allow ships to reach Rotterdam in the Netherlands from South Korea in thirty days, cutting travel time by ten days and travel distance by close to ten thousand miles.³³²

K. Russia

Sixty percent of the Arctic falls within Russia's land and maritime borders. Russia continues its efforts to push out those limits. In April 2014 Russia filed an application with the Commission on the Limits of the Continental Shelf (CLCS) to establish its rights to an area in the Sea of Okhotsk, which was unanimously approved.³³³ In October 2014, the Russian navy completed a cartographic survey of a newly discovered island

korea%E2%80%99s-positioning-arctic.

329. *Id.*

330. Eugene Gerden, *Russian Shipping Companies Seek Larger International Share*, PACIFIC MARITIME MAGAZINE (Dec. 1, 2015),

<http://www.pacmar.com/story/2015/12/01/features/russian-shipping-companies-seek-larger-international-share/394.html>.

331. Karen Thomas, *Bureau Veritas Will Class DSME-Built Yamal LNG Carriers*, LNG WORLD SHIPPING (Oct. 24, 2015),

http://www.lngworldshipping.com/news/view,bureau-veritas-will-class-dsmebuilt-yamal-lng-carriers_40695.htm.

332. Hege Eilertsen, *Iceland and South Korea Join Forces to Develop Northern Sea Route*, HIGH NORTH NEWS (Nov. 11, 2015), <http://www.highnorthnews.com/iceland-and-south-korea-join-forces-to-develop-northern-sea-route/>.

333. *Russia Files New Bid with UN for Expansion of Arctic Continental Shelf*, TASS (Aug. 4, 2015, 9:17 AM), <http://tass.ru/en/russia/812402>.

that could add 1,165 square kilometers of territorial waters to Russian territory.³³⁴

Russia also continues its efforts to extend its continental shelf boundary to the North Pole. Noted Canadian Arctic scholar Michael Byer's assessment that "[e]ssentially, Russia's claim will stop at the North Pole, despite the fact that it might have been able to make a scientific case to seabed closer to Canada or to Greenland,"³³⁵ was proven correct in August 2015, when Russia submitted its claims for additional territories in the Arctic including the Mendeleev and Lomonosov Ridges.³³⁶ The CLCS will eventually determine if Russia's submission is consistent with the Law of the Sea Convention. This submission, if approved, would expand Russia's Arctic territory by 1.2 million square kilometers.³³⁷

For a report on the Northern Sea Route see Section V.A.

In August 2015, the Netherlands' Permanent Court of Arbitration unanimously ordered Russia to pay sanctions for seizing the Greenpeace vessel *Arctic Sunrise* during an environmentalist protest in 2013.³³⁸ The ruling awards the Netherlands compensation with interest for costs and damages, with the final amount to be set at a later hearing. The Russian Foreign Ministry stated that it did not recognize the court's authority in this case.³³⁹

Despite Norway's long-standing relationship with Russia in the Arctic oil and gas industry, events in 2015 have impacted the two countries' willingness to cooperate on some issues. Russia's activities in the Ukraine and diplomatic tensions involving oil-drilling blocks in the Arctic Svalbard islands have put strain on the partnership. The unannounced visit of

334. Mia Bennett, *Arctic Satellite Image of the Week: Russia Discovers a New Island in its Arctic*, CRYOPOLITICS (Nov. 16, 2014), <https://cryopolitics.com/2014/11/16/arctic-satellite-image-of-the-week-russia-discovers-a-new-island-in-its-arctic/>.

335. Marc Jacobsen, *High North Dialogue 2015: Interview with Michael Byers*, ARCTIC INSTITUTE (Oct. 9, 2014), <http://www.thearcticinstitute.org/2014/11/111014-Michael-Byers.html>.

336. Atle Staalesen, *Russia Submits Claim for North Pole*, BARENTS OBSERVER (Aug. 4, 2015), <http://barentsobserver.com/en/arctic/2015/08/russia-submits-claim-north-pole-04-08>.

337. *Id.*

338. Anthony Deutsch, *Court Orders Russia to Pay Compensation for Greenpeace Ship Seizure*, REUTERS, Aug. 25, 2015, <http://www.reuters.com/article/us-netherlands-russia-greenpeace-idUSKCN0QU0M620150825>.

339. *Id.*

Russian Deputy Prime Minister Dmitry Rogozin (banned from travel as part of the Ukraine sanctions against Russia) to Svalbard in April, and Russian claims that Norway violated the Svalbard Treaty by opening blocks in the Barents Sea for drilling added to the already heightened tensions.³⁴⁰ The Russian military posture is examined in Section V.H.

L. Sweden

Sweden, a full member of the Arctic Council, was chair of the Council from 2011 to 2013.³⁴¹ The nation is home to 20,000 of the 70,000 Sami peoples.³⁴²

Sweden issued its Strategy for the Arctic Region in 2011.³⁴³ The strategy is based on the process of far-reaching change in the Arctic region.³⁴⁴ Climate change is creating new challenges, but also new opportunities. Sweden promotes economically, socially and environmentally sustainable development throughout the Arctic region. Sweden also works to ensure that the Arctic remains a region where security policy tensions are low, and for these objectives sees a need of a strengthened Arctic Council.

M. The European Union

The European Union's application for Arctic Council permanent observer status remains under consideration. 2014 reports suggested that the Council withheld approval pending resolution of a dispute with Canada over an EU seal products ban.³⁴⁵ The EU and Canada reached a seal agreement in October 2014, but Leona Aglukkaq (the former Canadian

340. Kjetil Malkenes Hovland, *Norway Summons Ambassador After Banned Russian Visits Svalbard*, WALL STREET J. (Apr. 20, 2015, 9:21 AM), <http://www.wsj.com/articles/norway-summons-ambassador-after-banned-russian-visits-svalbard-1429536060>.

341. *The Arctic Council: A Backgrounder*, *supra* note 303.

342. MINISTRY OF AGRICULTURE, FOOD AND CONSUMER AFFAIRS, THE SAMI – AN INDIGENOUS PEOPLE IN SWEDEN 5 (2014), <http://www.samer.se/2137>.

343. GOVERNMENT OFFICES OF SWEDEN, SWEDEN'S STRATEGY FOR THE ARCTIC REGION (2011), <http://www.openaid.se/wp-content/uploads/2014/04/Swedens-Strategy-for-the-Arctic-Region.pdf>; *see also* Sweden, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/member-states/sweden> (last updated Sept. 10, 2015).

344. SWEDEN'S STRATEGY, *supra* note 343, at 4.

345. *See, e.g.*, Chris Plecash, *Seal Deal Clears Way for EU Observer Status at Arctic Council*, EMBASSY (Oct. 22, 2014), [http://static.ow.ly/docs/102214_em%20\(2\)_2DrL.pdf](http://static.ow.ly/docs/102214_em%20(2)_2DrL.pdf).

Arctic Council Chair) maintained that the two issues are not related.³⁴⁶ In May 2015, the Arctic Council postponed the EU's application for observer status for another two years. The Council explained that it needed to review observer issues before issuing its decision.

In 2014, the Council of the European Union requested the European Commission and the EU's High Representative for Foreign Affairs present a new communication on Arctic Policy by the end of December 2015.³⁴⁷ Experts predict the new Arctic communication will be published in early 2016, providing a clearer delineation of Arctic policies between the European Arctic and the Circumpolar Arctic.

N. United Kingdom

The United Kingdom's House of Lords Arctic Committee published their report on *Responding to a Changing Arctic* on February 27, 2015.³⁴⁸

IV. INTERNATIONAL ORGANIZATIONS

A. United Nations

Recognizing the need for an ongoing periodic review of law of the sea issues, in 1999 the U.N. General Assembly established the Open-Ended Informal Consultative Process on Oceans and the Law of the Sea (ICP). The U.N. Division for Ocean Affairs and the Law of the Sea (DOALOS) plays a key facilitation role in the annual ICP process. DOALOS is also responsible for preparing the U.N. Secretary-General's annual report on ocean affairs and the law of the sea.³⁴⁹ The annual Secretary General's reports, the ICP reports, and the U.N. General Assembly resolutions on law of the sea matters document the

346. *Id.*

347. Council of the European Union Press Release, Council Conclusions on Developing a European Union Policy Towards the Arctic Region (May 12, 2014), http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/EN/foraff/142554.pdf.

348. SELECT COMMITTEE ON THE ARCTIC, RESPONDING TO A CHANGING ARCTIC, 2014–15, HL 118 (UK), <http://www.publications.parliament.uk/pa/ld201415/ldselect/ldarctic/118/118.pdf>.

349. *See, e.g.*, U.N. Secretary-General, *Annual Report on Oceans and the Law of the Sea*, U.N. Doc. A/69/71/Add.1 (Sept. 1, 2014), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N14/523/40/PDF/N1452340.pdf?OpenElement>.

practice of states and international organizations and collect relevant research and analysis.

On June 19, 2015, the U.N. General Assembly passed Resolution 69/292, calling for development of an international binding instrument under UNCLOS on the conservation and sustainable use of biological diversity in areas beyond national jurisdiction (ABND).³⁵⁰ As with past proposals, it would provide for sharing the benefits of marine genetic resources.³⁵¹

B. Arctic Council

In 1996, representatives of Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden, and the U.S. met in Ottawa to form the Arctic Council.³⁵² In addition to the eight circumpolar member-states and six indigenous community-permanent participants, there are twelve permanent observer states: China, France, Germany, India, Italy, Japan, South Korea, Netherlands, Poland, Singapore, Spain, and the United Kingdom.³⁵³ Although not a legally binding treaty, the Ottawa Declaration serves as the council's charter.³⁵⁴ Under the declaration, the council chair rotates among the eight member-states, with each of the eight taking two-year terms as follows:

2013–2015: Canada

2015–2017: United States

2017–2019: Finland

The Canadian Chair Term Concludes. The theme of Canada's 2013–2015 chairmanship was “development for the people of the North,” with a focus on responsible Arctic resource development, safe Arctic shipping, and sustainable circumpolar communities.³⁵⁵

350. G.A. Res. A/RES/69/292 (June 19, 2015).

351. G.A. Res. A/RES/69/292, ¶2.

352. See Declaration on the Establishment of the Arctic Council, Sept. 19, 1996, 35 I.L.M. 1387 [hereinafter Ottawa Declaration]

353. *Observers*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/arctic-council/observers> (last updated Feb. 12, 2016).

354. *Frequently Asked Questions*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/arctic-council/faq> (last updated Sept. 2, 2015).

355. *Canada's Arctic Council Chairmanship*, GLOBAL AFFAIRS CANADA, <http://www.international.gc.ca/arctic-arctique/chairmanship-presidence.aspx?lang=eng> (last updated Nov. 4, 2015).

The Canadian theme took a leap forward with the September 2014 creation of the Arctic Economic Council (AEC).³⁵⁶ Senior Arctic Officials approved a plan to facilitate its development at their March meeting in Yellowknife, Northwest Territories.³⁵⁷ The plan supported the establishment of an independent body of business representatives to facilitate Arctic business opportunities, trade, investment, and growth.³⁵⁸ AEC membership includes 21 business interests and six Arctic indigenous groups, who held a foundational meeting September 2–3, 2014 in Iqaluit, Nunavut.³⁵⁹

In April 2015, business leaders met in Ottawa, Canada for the second meeting of the AEC and unanimously selected Tara Sweeney of the U.S. as Chair for 2015–17. Sweeney represents the Inuit Circumpolar Council and will be assisted as the AEC's Chair by an executive committee of vice chairs from Finland, Russia, and outgoing Canadian chair Tom Paddon.³⁶⁰

Tense relations between Russia and Canada (which reportedly has over 1.2 million residents of Ukrainian origin) spilled over into Arctic Council matters. Russian Minister of Foreign Affairs Sergey Lavrov declined to attend the 2015 Iqaluit Ministerial.³⁶¹

United States Chair Term Begins. On April 24, 2015, the eight Arctic States and six Permanent Participants gathered in Iqaluit, Nunavut, Canada for the Ministerial meeting to conclude Canada's 2013–2015 Chairmanship term.³⁶² Outgoing

356. *Id.*

357. *Senior Arctic Officials met in Yellowknife*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/our-work/2/8-news-and-events/225-senior-arctic-officials-met-in-yellowknife> (last updated Sept. 1, 2015).

358. *Id.*

359. *Canada's Arctic Council Chairmanship*, *supra* note 355.

360. News Release, Arctic Economic Council, Arctic Economic Council Selects New Chair and Establishes Secretariat (Apr. 23, 2015), http://arcticeconomiccouncil.com/wp-content/uploads/2014/12/NEWS-RELEASE_AEC_Apr.2320151.pdf.

361. Steven Lee Myers, *Arctic Council Meeting Starts Amid Russia Tensions*, N.Y. TIMES (Apr. 24, 2015), http://www.nytimes.com/2015/04/25/us/politics/arctic-council-meeting-russia.html?_r=0.

362. *See U.S. Chairmanship of the Arctic Council*, U.S. DEPARTMENT OF STATE, <http://www.state.gov/e/oes/ocns/opa/arc/uschair/index.htm> (last visited Apr. 10, 2016).

Canadian chair, Leona Aglukkaq, passed the ceremonial “gavel” to the incoming U.S. chair, John Kerry.

The assembled ministers issued the Iqaluit Declaration of 2015. The Declaration reaffirmed: the Council’s commitment to maintaining peace, stability and constructive cooperation in the Arctic; and, commitment to sustainable development in the region. The Declaration also reaffirmed the importance of indigenous peoples of the Arctic, and emphasized the unique role indigenous voices play in increasing global knowledge and respect for the region.³⁶³

The U.S. delegation to the Arctic Council selected three goals to guide its 2015–17 chairmanship: (1) improving Arctic Ocean safety, security, and stewardship; (2) improving economic and living conditions for people in the Arctic; and (3) addressing climate change impact in the Arctic.³⁶⁴

Various programs and projects have been instituted to carry out these three goals. One such program, the promotion of mental health and suicide prevention in the region, the U.S. carried over from the past Canadian chairmanship. To this end, the U.S. has formed the Reducing the Incidence of Suicide in Indigenous Groups—or RISING-SUN—which held its first workshop in Anchorage, Alaska, in September 2015.³⁶⁵

Projects to carry out these goals are undertaken through the Arctic Council’s six working groups, three temporary task forces and one expert group. The State Department maintains a list of these projects and has grouped them into issue areas:

Search and Rescue: The United States will lead a search and rescue exercise (SAREX) comprised of Arctic States, regional, tribal and industry stakeholders, and Arctic Council Observers. The U.S. Government will generate an after-action report, including recommendations for further steps, for delivery by the end of the U.S. Chairmanship. We will encourage the tradition of Arctic Council chair countries

363. Arctic Council, Iqaluit Declaration of 2015, 24 Apr. 2015, https://oaarchive.arctic-council.org/bitstream/handle/11374/662/EDOCS-3431-v1-ACMMCA09_Iqaluit_2015_Iqaluit_Declaration_original_scanned_signed_version.PDF?sequence=7&isAllowed=y.

364. *U.S. Chairmanship of the Arctic Council*, *supra* note 362.

365. *See Chairmanship Projects*, U.S. DEPARTMENT OF STATE, <http://www.state.gov/e/oes/ocns/opa/arc/uschair/248957.htm> (last updated Oct. 29, 2015).

holding SAREXs in accordance with the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic and sharing the results with Emergency Prevention, Preparedness and Response and other relevant Arctic groups.³⁶⁶

Marine Environmental Protection: The Arctic Council plans to build upon existing preparedness and response programs by placing greater emphasis on research and information sharing regarding the effects of spills and effectiveness of countermeasures; the identification and mobilization of the resources necessary to mitigate the effects of a pollution incident; and the development of international guidelines for preparedness and response in this logistically challenging region. The Council will strive for increased sharing of scientific information related to oil and hazardous substance spill response, identify spill response resources for the creation of a specialized equipment inventory, and implement the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic and related operational guidelines.³⁶⁷

Marine Protected Areas: The Arctic Council will enhance PAME's work on a Pan-Arctic Network of Marine Protected Areas (MPAs). During the U.S. Chairmanship, PAME will create an inventory and map of existing Arctic MPAs; perform a "desktop study" of area-based conservation measures and their linkages with categories of Arctic biodiversity to create a toolbox in support of MPAs and MPA networks; and identify examples and best practices for stakeholder engagement and communication as a part of the project on Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities.³⁶⁸

Ocean Acidification: The Arctic Council's initiative on ocean acidification seeks to achieve more comprehensive monitoring of ocean acidification throughout the Arctic Ocean. There are three main efforts to this initiative: expand the reach of the Global Ocean Acidification Observing Network (GOA-ON); increase the number of stakeholders trained to use and understand monitoring techniques, including from indigenous

366. *Id.*

367. *Id.*

368. *Id.*

communities; and raise public awareness of the issue. This effort also is intended to contribute to and enhance the efforts to develop a second AMAP Arctic Ocean Acidification Assessment.³⁶⁹

Clean Energy Access: Energy security and improved economic development for residents in remote Arctic communities can be strengthened through increasing the use of renewable energy and energy efficiency. The Sustainable Development Working Group will work on exploring and developing projects, which enhance energy security through these measures over the course of the U.S. chairmanship and beyond. This work will include a project aimed at developing a modular system pairing renewable energy technology with diesel generators and energy-storage devices to power micro-grid systems in small Arctic communities. This project cluster may be expanded into a mechanism for clean energy practitioners to share knowledge and promote capacity building in rural communities. Other projects that address energy security in Arctic communities may also be added to this project cluster.³⁷⁰

Water and Sanitation: Capitalizing on the results of the Alaska Water and Sewer Challenge, this project will focus on decentralized water and wastewater treatment, recycling and usage efficiency. A workshop will be convened to facilitate collaboration between researchers, engineers, manufacturers, vendors and health experts on measures to increase access to, and reduce the operating costs of, in-home running water and sewer in remote communities, attract investment, improve public health, and spur public-private partnerships. The workshop will also serve as a platform to report on a circumpolar health assessment of existing community systems, water quality and quantity, utilization of traditional water sources and related health indicators.³⁷¹

Mental Wellness: The RISING-SUN project (Reducing the Incidence of Suicide in Indigenous Groups – Strengths United through Networks) aims to create common metrics for evaluating suicide prevention efforts in the Arctic as a key component of scaling up and evaluating interventions across

369. *Id.*

370. *Id.*

371. *Id.*

the circumpolar region. Complementing the mental health work completed under the Canadian chairmanship, the common metrics, developed through engagement with Permanent Participants and community leaders, will aid health workers and policy-makers in measuring progress and identifying challenges by facilitating data sharing and pooling, evaluation, and interpretation across service systems.³⁷²

Climate Resilience and Adaptation: The Arctic Council will advance understanding of changes and vulnerabilities in the Arctic and support best practices for community and ecosystem resilience by completing the Arctic Resilience Report and Adaptation Actions for a Changing Arctic (Part C) assessment. In addition to supporting action on the ground, these two assessments will produce recommendations for the Arctic Council and national and sub-national governments. The Arctic Council will improve community-based environmental monitoring efforts through the circumpolar expansion of the Local Environmental Observers Network. It will also promote climate data sharing and will develop and promote decision-making tools and services, in part through the expansion of the Arctic Adaptation Exchange Portal. The Arctic Council will assess likely pathways for the introduction of invasive species as a result of climate change, and will develop a pan-Arctic action plan for preventing and managing these potential invasions. The Arctic Council will also draw upon efforts to institutionalize the “One Health” approach to enhance the underlying resilience of Arctic communities and ecosystems.³⁷³

One Health: One Health is an interdisciplinary approach to assess health issues at the interface between humans, animals and ecosystems. By the end of the U.S. chairmanship, the SDWG will have taken steps to institutionalize the practice of One Health across the Arctic region, and will have contributed key findings to Arctic Council reports, as well as relevant meetings. Hubs will be designated to serve as Points of Contact for the Arctic States and Permanent Participants. A circumpolar-agreed checklist will be developed to measure progress towards on-the-ground implementation of One

372. *Id.*

373. *Id.*

Health, inform priority-setting and facilitate non-expert engagement with the initiative.³⁷⁴

Circumpolar Local Environmental Observers (CLEO) Network: The Arctic Council will expand the coverage of an existing Alaska-based monitoring tool, the Local Environmental Observer (LEO) network that links traditional knowledge and scientific analysis, across the Arctic. Trained traditional knowledge experts are able to record their observations in the LEO database. These observations are reviewed by the Alaska Native Tribal Health Consortium (ANTHC), which serves as a secretariat. ANTHC is able to share observations of concern with regulators, academics and others who can in turn provide technical assistance to local communities when needed.³⁷⁵

During Phase I of the project, ACAP will create a North American CLEO “Hub”, including indigenous communities in the Alaskan and Canadian Arctic for delivery to the 2017 Ministerial. Phase II of the project will establish a CLEO Hub in the Nordic region, as appropriate and explore options for linking with Russian indigenous communities. Phase III of the project will look at interoperability of the CLEO Hubs and/or related observational networks. The CLEO project is also captured in the Resilience project description.³⁷⁶

Climate Change Indicator System: The Arctic Council will build on the set of climate change indicators currently under development by the United States Global Climate Change Research Program (USGCRP) to indicate the status and trends of change in key physical, biological, social and economic parameters related to climate impacts and effects. This activity will involve all Arctic States and Permanent Participants to link a subset of indicators focused on climate change into a single pan-Arctic network, the Climate Change Indicator System for the Arctic (CCISA). Planned work includes contributing to the development of the framework for the CCISA and illustrating the potential for an Arctic Indicators Network by identifying a subset of Arctic-relevant indicators from the larger USGCRP effort.³⁷⁷

374. *Id.*

375. *Id.*

376. *Id.*

377. *Id.*

Digital Elevation Model: The Arctic Council will promote the extension of the high-resolution pan-Arctic digital elevation model being developed for Alaska to the broader Arctic, to improve the quality of topographic information and capitalize on the Arctic Spatial Data Infrastructure (ASDI), an initiative led by the mapping agencies of the Arctic States.³⁷⁸

Freshwater Synthesis: The Adaptation Actions for a Changing Arctic (AACA) will contain an Arctic Freshwater Synthesis (AFS). The AFS will examine issues such as: the role of freshwater in Arctic systems, historical changes to the Arctic freshwater system and key drivers of such changes and projected changes to the Arctic freshwater system and drivers of such changes. The AFS will be the first-ever examination of the freshwater picture in the Arctic and could serve as the basis for a broader, in-depth Arctic Freshwater Assessment in the future.³⁷⁹

Arctic Water Resources Vulnerability Index: This project will internationalize the University of Alaska-Fairbanks Arctic Water Resource Vulnerability Index (AWRVI) to provide Arctic communities with a valuable tool to assess the status of their freshwater resources. The expanded assessment will then feed into the Arctic Adaptation Exchange Portal, allowing local government officials, researchers and residents to evaluate their communities' freshwater resiliency and address vulnerabilities.³⁸⁰

Telecommunications: The Task Force on Telecommunications Infrastructure in the Arctic, consisting of representatives of the Arctic States, Permanent Participations, the telecommunications industry and end user groups, will provide the Council in 2017 with a circumpolar assessment of existing telecommunications infrastructure and networks potentially to include identification of unmet requirements and community needs (such as health services, broadband connectivity, scientific observations transmissions and support for emergency search and rescue and oil spill response). The Task Force will aim to include, among other things, recommendations for public-private partnerships to enhance telecommunications access and service in the Arctic. The

378. *Id.*

379. *Id.*

380. *Id.*

results of this assessment would be presented at the appropriate international fora with a strong message from the Arctic States to make the Arctic a top priority for future telecommunications investment.³⁸¹

Arctic Marine Cooperation: Arctic Council Ministers established the Task Force on Arctic Marine Cooperation to “assess future needs for a regional seas program or other mechanism, as appropriate, for increased cooperation in Arctic marine areas.” Looking ahead to the future of the Arctic Ocean, the Task Force is assessing the needs for international cooperation to meet these future challenges and opportunities. Based on this needs assessment, the Task Force will make recommendations for new mechanisms for international cooperation, as appropriate, to meet these future needs.³⁸²

Scientific Cooperation Task Force (SCTF): The Scientific Cooperation Task Force is working on arrangements to improve scientific research cooperation among the eight Arctic States in the Arctic region, through discussions of shared concerns including access to data, access to scientific infrastructure and research areas and simplification of movement of scientists and their equipment and samples. The Task Force is currently drafting the text of a legally binding Agreement on Enhanced International Arctic Scientific Cooperation, with a view to completing its work during the U.S. Chairmanship.³⁸³

Black Carbon and Methane Expert Group (BCMEG): In order to understand trends in emissions of black carbon and methane in or near the Arctic, and to promote enhanced action over time, the Arctic Council launched an Expert Group to periodically assess the progress made under the Framework for Action on Black Carbon and Methane. Arctic States and participating Observer States will submit national reports on their existing and planned actions to address black carbon and methane, including national inventories. The Expert Group will analyze the national reports to draw conclusions and make recommendations for further voluntary action, captured in a report to inform the Arctic Ministers in 2017. The work of the Expert Group will include identifying options for consideration

381. *Id.*

382. *Id.*

383. *Id.*

in order to establish a collective baseline for black carbon emissions, as well as undertaking analysis and identifying options for quantitative goal(s) as described in “the common vision” of the Framework. The United States, as the chair of the Expert Group, also intends to convene a high-level policy forum to explore opportunities for further collaboration based on the above-referenced recommendations.³⁸⁴

Arctic Council Working Group Activities

AMAP: The Arctic Monitoring and Assessment Program (AMAP) published the AMAP Assessment 2015: Methane as an Arctic climate forcer;³⁸⁵ Implementing Scientific Data Collection across the Arctic Oceanic Region Utilizing Unmanned Aircraft Systems (UAS);³⁸⁶ and the Arctic Science RPAS Operator’s Handbook.³⁸⁷

EPPR: The Arctic Council’s Working Group on Emergency Prevention, Preparedness and Response (EPPR) met on December 1–3, 2015, in Reykjavík, Iceland to discuss the group’s work on issues critical in the Arctic including the Framework Plan for Cooperation on Prevention of Oil Pollution from Petroleum and Maritime Activities in the Marine Areas of the Arctic (MOSPA)³⁸⁸ and the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (SAR).³⁸⁹ The group finalized plans for an MOSPA exercise in 2016. The group reviewed its 2015 Framework Plan

384. *Id.*

385. ARCTIC MONITORING AND ASSESSMENT PROGRAMME, SUMMARY FOR POLICY MAKERS: ARCTIC CLIMATE ISSUES 2015 (2015), <http://www.amap.no/documents/doc/summary-for-policy-makers-arctic-climate-issues-2015/1196>.

386. C. SWEATTE, ET AL., ARCTIC MONITORING AND ASSESSMENT PROGRAMME, IMPLEMENTING SCIENTIFIC DATA COLLECTION ACROSS THE ARCTIC OCEANIC REGION UTILIZING UNMANNED AIRCRAFT (2015), <http://www.amap.no/documents/doc/Implementing-Scientific-Data-Collection-across-the-Arctic-Oceanic-Region-Utilizing-Unmanned-Aircraft-Systems-UAS/1220>.

387. R. STORVOLD, ET AL., ARCTIC MONITORING AND ASSESSMENT PROGRAMME, ARCTIC SCIENCE RPAS OPERATOR’S HANDBOOK (2015), <http://www.amap.no/documents/doc/Arctic-Science-RPAS-Operators-Handbook/1221>.

388. Iqaluit Ministerial Meeting, 2015 Senior Arctic Officials Report to Ministers, *Framework Plan for Cooperation on Prevention of Oil Pollution from Petroleum and Maritime Activities in the Marine Areas of the Arctic*, annex 3 (Apr. 24–25, 2015), <https://oaarchive.arctic-council.org/handle/11374/609>.

389. Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, May 12, 2011, 13 T.I.A.S. No. 13-119.

on oil pollution prevention. They also agreed to update the EPPR Field Guide for Oil Spill Response in Arctic Waters,³⁹⁰ and to establish an expert group on SAR.³⁹¹

PAME: The Arctic Council's Working Group on Protection of the Arctic Marine Environment (PAME) published its 2015 progress report on implementing the recommendations in the 2009 Arctic Marine Shipping Assessment (AMSA) Report.³⁹²

C. International Maritime Organization

The International Maritime Organization (IMO) Assembly unanimously endorsed the appointment of Mr. Kitack Lim from the Republic of Korea as Secretary-General of the IMO effective January 1, 2016, for a term of four years.³⁹³

IMO and Climate Change. On September 28, 2015, outgoing IMO Secretary-General Koji Sekimizu reiterated his view that IMO is the only place where the debate over shipping and climate change should be taken forward, given the huge impact the industry has on the global economy and its unique international structure.³⁹⁴ Sekimizu pointed to IMO's excellent track record to date in developing measures to reduce greenhouse gas emissions from shipping and mitigate its contribution to climate change. Thanks to IMO, he said, shipping is so far the only international industry or business sector already operating under mandatory regulations to reduce emissions over time.³⁹⁵

390. EMERGENCY PREVENTION, PREPAREDNESS AND RESPONSE, ARCTIC COUNCIL, FIELD GUIDE FOR OIL SPILL RESPONSE IN ARCTIC WATERS (1998), <https://oaarchive.arctic-council.org/bitstream/handle/11374/109/Field%20Guide%20for%20Oil%20Spill%20Response%20in%20Arctic%20Waters.pdf?sequence=1&isAllowed=y>.

391. *EPPR (Emergency Prevention, Preparedness and Response) Meets in Reykjavik*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/our-work/2/8-news-and-events/371-eppr-ii-2015> (last updated Dec. 17, 2015).

392. *Following Up on the Arctic Marine Shipping Assessment*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/our-work/2/8-news-and-events/351-following-up-on-the-arctic-marine-shipping-assessment> (last updated Oct. 5, 2015).

393. Press Release, International Maritime Organization, IMO Assembly Confirms Mr. Kitack Lim as Secretary-General (Nov. 26, 2015), <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/50-kitack-lim-SG-.aspx>.

394. Press Release, International Maritime Organization, IMO Only Place for Global Debate on Shipping and Climate change, says IMO Secretary General (Sept. 28, 2015), <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/42-Sekimizustatement.aspx>.

395. *Id.*

On December 14, 2015, shortly after the Paris COP21 conference reached its historic agreement, Sekimizu pledged that “The absence of any specific mention of shipping in the final text will in no way diminish the strong commitment of IMO as the regulator of the shipping industry to continue work to address GHG emissions from ships engaged in international trade.”³⁹⁶

Polar Code Update. In 2014, the International Maritime Organization’s Maritime Safety Committee (MSC) adopted the SOLAS “Safety” measures forming Part I of the mandatory International Code for Ships Operating in Polar Waters (the “Polar Code”).³⁹⁷ In May 2015, the IMO’s Marine Environment Protection Committee (MEPC) adopted the pollution prevention measures forming Part II of the Polar Code.³⁹⁸ At its June 2015 meeting, the MSC approved, for later adoption, amendments to the STCW Convention and Code that will implement training requirements for vessel officers and crewmembers to obtain a certificate of proficiency for service in waters covered by the Polar Code.

According to the IMO, this collection of safety and environmental rules covers “the full range of shipping-related matters relevant to navigation in waters surrounding the two poles—ship design, construction and equipment; operational and training concerns; search and rescue; and, equally important, the protection of the unique environment and ecosystems of the polar regions.”³⁹⁹

The Polar Code will be phased in beginning January 1, 2017.⁴⁰⁰ It will apply in Antarctica south of 60°S, and in the Arctic north of 60°N, with a cutout across the generally ice-free North Atlantic Ocean south of Greenland’s southeast coast and specifically excluding Iceland, Norway, and Russia’s Kola

396. *IMO Pledges to Continue to Work on GHG Emissions*, MARINELOG.COM, http://www.marinelog.com/index.php?option=com_k2&view=item&id=10240:imo-pledges-to-continue-work-on-ghg-emissions&Itemid=230 (last visited Apr. 10, 2016).

397. Int’l Maritime Org. [IMO], *International Code for Ships Operating in Polar Waters (Polar Code)*, Resolution MSC.385(94) (Nov. 21, 2014).

398. Press Release, International Maritime Organization, *Draft Polar Code Approved by IMO’s Marine Environment Protection Committee* (Oct. 20, 2014).

399. *Shipping in Polar Waters*, *supra* note 30.

400. *Id.*

Peninsula. For a detailed analysis of the Code, see the ALPI Year in Review for 2014.⁴⁰¹

At the Arctic Encounters Symposium in January 2015, Dr. Adrianna Muir, Deputy Senior Arctic Official in the U.S. the Arctic Council team, suggested the United States would promote a “Polar Code II” applicable to vessels not covered under the rules adopted this year. However, the recent Arctic Council Declaration and Senior Arctic Officials Report did not mention this initiative.

IMO Approves Aleutian Islands Areas to be Avoided. The IMO approved a United States proposal to designate buffer zones, or “Areas to be Avoided,” around Alaska’s Aleutian Islands, where roughly 2,000 vessels made more than 4,600 transits through Unimak Pass in 2012.⁴⁰²

The five areas extend fifty nautical miles from Aleutian shorelines, except where necessary to pass through a channel, and apply to all ships of 400 or more gross tons solely in transit. A final plan calls for stationing an on-call rescue tug in the area to help damaged or stranded vessels.⁴⁰³

D. Food & Agriculture Organization Committee on Fisheries

The Food and Agriculture Organization and its Committee on Fisheries (COFI) “is the only global inter-governmental forum where major international fisheries and aquaculture problems and issues are examined,” and where recommendations are developed for governments, regional fishery bodies, NGOs, and fishworkers.⁴⁰⁴ COFI’s thirty-first Session (a biennial event) in June 2014 did not directly address the Arctic, and its next session will be in 2016.⁴⁰⁵

401. Arctic Law & Policy Inst., *Arctic Year in Review: 2014* 32–33 (2015), <https://www.law.washington.edu/arcticlaw/reports/ArcticLawYearReview2014.pdf>.

402. Carey Restino, *Aleutian Marine Protections Needed in Arctic Before the Rush*, ALASKA DISPATCH NEWS (Mar. 29, 2015), <http://www.adn.com/article/20150329/aleutian-marine-protections-needed-arctic-rush>.

403. *Id.*

404. INTERNATIONAL COLLECTIVE IN SUPPORT OF FISHWORKERS, SAMUDRA REPORT, NO. 53 (2009), http://www.icsf.net/images/samudra/pdf/english/issue_53/3346_art_roundup.pdf.

405. See Report of the 31st Session of the Committee on Fisheries, June 9–13, 2014, U.N. Doc. 2015/23 (Sept. 2014).

The International Tribunal for the Law of the Sea (ITLOS) issued a comprehensive advisory opinion on state responsibilities with respect to illegal, unregulated and unreported (IUU) fishing.⁴⁰⁶ The opinion is examined in Section J below.

Although it was not negotiated under the auspices of the FAO, the five states bordering the Arctic Ocean (Canada, Denmark/Greenland, Norway, Russia and the United States) signed a declaration in Oslo on July 16, 2015, agreeing to ban commercial fishing by their vessels in the high seas waters of the Central Arctic Ocean until more scientific research can be done on how warming seas and melting ice are affecting fish stocks.⁴⁰⁷ The declaration is examined in Part II above.

E. International Whaling Commission

The International Whaling Commission (IWC) was established by the 1946 International Convention for the Regulation of Whaling (ICRW).⁴⁰⁸ The convention's purpose is to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry. The IWC headquarters is in Impington, near Cambridge, England. The IWC meets biennially, with the next meeting scheduled for 2016.

In 1982 the IWC member-states adopted a moratorium on commercial whaling, which entered into force in 1986.⁴⁰⁹ Japan, Norway, Peru, and the Soviet Union lodged formal objections (and were therefore not bound by the moratorium under the ICRW). Japan and Peru later withdrew their objections. In 1994, the IWC established the Southern Ocean Whale Sanctuary in the Antarctic.⁴¹⁰

406. See Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission, Advisory Opinion of 2 Apr. 2015, ITLOS, https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.21/advisory_opinion/C21_AdvOp_02.04.pdf.

407. Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean, *supra* note 54.

408. International Convention for the Regulation of Whaling, Dec. 2, 1946, 62 Stat. 1716, 161 U.N.T.S. 72.

409. *Commercial Whaling*, INT'L WHALING COMM., <https://iwc.int/commercial> (last visited Apr. 11, 2016).

410. *Southern Ocean Whale Sanctuary*, ANTARCTIC AND SOUTHERN OCEAN COALITION,

Iceland, which did not lodge an objection to the 1982 moratorium, withdrew from the IWC in 1992; however, it then re-adhered to the 1946 ICRW in 2002.⁴¹¹ Its 2002 instrument of adherence included a reservation to the commercial whaling moratorium. The reservation was not acceptable to all IWC member governments. However, in 2002, a majority of the ICRW parties voted to accept Iceland back as an IWC member. In 2013, taking advantage of its reservation to the moratorium, Iceland resumed whaling.⁴¹²

The IWC allows non-zero whaling quotas for aboriginal subsistence. In 2012, the commission voted forty-eight to ten upholding new catch limits for Arctic subsistence whaling communities, which were set to expire in 2012.⁴¹³ The vote came on a joint request from the U.S. and Russia to set catch limits for aboriginal subsistence whaling on bowhead whales. The commission adopted catch limits for 2013 through 2018 that allow Alaskan and Chukotka native whalers to land up to 336 whales to meet their subsistence needs.⁴¹⁴ The U.S. and Russia allocate the available strikes between Alaska Eskimos and Chukotka natives under a bilateral agreement.⁴¹⁵

Under the ICRW, member states may issue “scientific permits” to their citizens. Japan has issued such “scientific whaling” permits since 1986.⁴¹⁶ In a challenge by Australia and New Zealand,⁴¹⁷ the International Court of Justice held on

<http://www.asoc.org/advocacy/antarctic-wildlife-conservation/southernocean-whale-sanctuary> (last visited Apr. 10, 2016).

411. *Iceland and Commercial Whaling*, INT’L WHALING COMM., <https://iwc.int/iceland> (last visited Apr. 10, 2016).

412. John Vidal, *Iceland Resumes Fin Whale Hunting After Two-year Break*, GUARDIAN (June 19, 2013),

<http://www.theguardian.com/environment/2013/jun/19/iceland-fin-whale-hunting-greenpeace>.

413. Yvonna Tahana, *Fight for Maoria Whaling Traditions*, NEW ZEALAND HERALD (July 5, 2012),

http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10817502.

414. *Id.*

415. Press Release, Alaska Eskimo Whaling Comm. & N. Slope Borough Office of the Mayor, IWC 64th Annual Meeting (July 3, 2012), <http://www.north-slope.org/assets/images/uploads/Press%20Release%20-%20AEWC%20%20NSB%20-%20IWC64.pdf>.

416. Gerry J. Nagtzaam, *The International Whaling Commission and the Elusive Great White Whale of Preservationism*, 33 WM. & MARY ENVTL. L. & POL’Y REV. 375, 429 (2009).

417. Whaling in the Antarctic (Austl. v. Japan; N. Z. intervening), Judgment, 2014

March 31, 2014, that Japan's whaling activities in the Southern Ocean did not fall within the ICRW's article on scientific whaling and were therefore not exempt from the global moratorium on commercial whaling.⁴¹⁸ However, after modifying its program, Japan resumed "scientific whaling" in the Southern Ocean in 2015.⁴¹⁹

F. North Atlantic Marine Mammal Commission

The North Atlantic Marine Mammal Commission (NAMMCO) is self-described as an international body for cooperation on the conservation, management, and study of marine mammals in the North Atlantic.⁴²⁰ The NAMMCO Agreement was signed on April 9, 1992 by Norway, Iceland, Greenland and the Faroe Islands, and entered into force on July 8, 1992.⁴²¹ Its headquarters is in Tromsø, Norway. Norway has been whaling commercially since 1994, consistent with its "objection" to the IWC moratorium.

The twenty-third meeting of the NAMMCO Council took place in Reykjavík, Iceland, February 3–5, 2015.⁴²² The 22nd meeting of the NAMMCO Scientific Committee was held November 9–13, 2015 in Tórshavn, Faroe Islands.⁴²³

G. Commission on Limits of the Continental Shelf

On October 1, 2015, the chairman of the Commission on the Limits of the Continental Shelf (CLCS) issued a comprehensive twenty-page statement outlining the commission's activities and its staffing and funding

I.C.J. 148, (Mar. 31), <http://www.icj-cij.org/docket/files/148/18136.pdf>.

418. *Id.*; see also Cymie R. Payne, *ICJ Halts Antarctic Whaling – Japan Starts Again*, 4 TRANSNATIONAL ENVTL. L. 181, 182 (2015), <https://www.asil.org/insights/volume/18/issue/9/australia-v-japan-icj-halts-antarctic-whaling>.

419. *Japan Plans Unilateral Restart*, *supra* note 320.

420. NAMMCO, <http://www.nammco.no/> (last visited Apr. 10, 2016).

421. David D. Caron, *The International Whaling Commission and the North Atlantic Marine Mammal Commission*, 89 AM. J. INT'L L. 154 (1995).

422. *NAMMCO 23th Council Meeting*, NAMMCO, <http://www.nammco.no/about-nammco/press-releases/nammco-23th-council-meeting/>.

423. NAMMCO 2015, <http://www.nammco.no/news/archive/2015> (last visited Apr. 16, 2016).

challenges.⁴²⁴ Item 8 of the report describes the commission's actions regarding Iceland's ECS claim (Aegir Basin area and Reykjanes Ridge). The CLCS did not reach a decision on Iceland's claim.

Background and Legal Basis. A widely-circulated *Foreign Policy* article titled "Frozen Assets" by James Bamford provides a very readable introduction to the extended continental shelf claims process.⁴²⁵

Under the 1982 U.N. Convention on the Law of the Sea (UNCLOS), all coastal states have sovereign rights in the natural resources of their continental shelf.⁴²⁶ A coastal state's continental shelf extends at least 200 nautical miles seaward from the baseline. A complex formula in Article 76 of UNCLOS provides a basis for some "geographically advantaged" states to assert claims to an "extended" continental shelf beyond 200 nautical miles, if, among other things, certain geologic features are proven continental extensions.⁴²⁷

Article 76 and Annex II of UNCLOS call for a Commission on the Limits of the Continental Shelf (CLCS). Its function is to make recommendations to coastal states on matters related to the establishment of the outer limits of their continental shelf. CLCS recommendations are not binding on states. However, outer limits on the shelf established by a coastal state on the basis of CLCS recommendations are final and binding. According to Michael Byers, author of *International Law and the Arctic*, "[t]he commission does not adjudicate overlapping claims. These must be resolved through negotiation or recourse to an international court."⁴²⁸

Canadian Claims. On December 6, 2013, after ten years of surveys and research at a cost of some \$200 million, Canada

424. U.N. Convention on the Law of the Sea, Progress of Work in the Commission on the Limits of the Continental Shelf, U.N. Doc CLCS/90 (Oct. 1, 2015), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/297/39/PDF/N1529739.pdf?OpenElement>.

425. James Bamford, *Frozen Assets*, FOREIGN POLICY (2015), <http://foreignpolicy.com/2015/05/11/frozen-assets-arctic-espionage-spying-new-cold-war-russia-canada/>.

426. UNCLOS, *supra* note 37.

427. *Id.* at art. 76.

428. Michael Byers, *The North Pole is a Distraction*, GLOBE AND MAIL (Aug. 20, 2014), <http://www.theglobeandmail.com/opinion/the-north-pole-is-a-distraction/article20126915/>.

submitted to the CLCS information on the limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured in the Atlantic Ocean. Canada notified the Commission that this was a partial submission, and that it intended to submit information on the limits of the continental shelf beyond 200 nautical miles in the Arctic Ocean at a later date.⁴²⁹

In August 2014, Canada launched the first of its additional surveys to complete its Arctic submission. A second was conducted in 2015. The Harper administration had earlier hinted at a North Pole claim, based on a connection between the Lomonosov Ridge and Ellesmere Island.⁴³⁰ It is not clear whether the new Trudeau government will pursue such a claim.

Denmark Claims. On November 26, 2013, Denmark submitted to the CLCS information on the limits of the continental shelf in respect to the North-Eastern Continental Shelf of Greenland.⁴³¹ On December 15, 2014, Denmark submitted to the CLCS information on the limits of the continental shelf beyond 200 nautical miles in respect of the Northern Continental Shelf of Greenland.

Denmark claims the Lomonosov Ridge is an extension of Greenland. Its submission encompasses the North Pole, extends to the outer boundary of Russia's EEZ (200 nautical miles from the baseline), overlaps the claimed continental shelf of Norway and Russia, and is expected to overlap with Canada's continental shelf.⁴³²

Russian Claims. In response to an August 2015 re-submitted extended continental shelf (ECS) claim by Russia and a similar claim in December 2014 by Denmark (and an expected submission by Canada), the Commission on the

429. *Second Formative Evaluation*, GLOBAL AFFAIRS CANADA, http://www.international.gc.ca/department-ministere/evaluation/2011/cecsp_ppceec11.aspx?lang=eng (last updated July 22, 2014).

430. News Release, Government of Canada, Harper Government Launches First of Two Scientific Surveys to Complete Canada's Arctic Continental Shelf Submission (Aug. 8, 2014), <http://news.gc.ca/web/article-en.do?nid=874469>.

431. United Nations Convention on the Law of the Sea, Receipt of the Submission Made by Canada to the Commission on the Limits of the Continental Shelf, U.N. Doc. CLCS.70.2013.LOS (Dec. 9, 2013).

432. *Denmark Challenges Russia and Canada Over North Pole*, BBC NEWS (Dec. 15, 2014), <http://www.bbc.com/news/world-europe-30481309>.

Limits of the Continental Shelf will play the key role in determining whether any state's continental shelf claims extend to the seabed under the North Pole.⁴³³ At issue is the geologic origin of an undersea mountain range, the Lomonosov Ridge.

The CLCS issued recommendations for Russia's original December 20, 2001 submission on June 27, 2002.⁴³⁴ Those recommendations included a suggestion that Russia make a partial Sea of Okhotsk claim that "shall not prejudice questions relating to the delimitation of boundaries between States in the south for which a submission may be made later..."⁴³⁵ Pursuant to that recommendation, Russia submitted a partial revised claim for the Sea of Okhotsk on February 28, 2013. After several amendments, the Commission adopted Russia's revision on March 11, 2014.⁴³⁶

On August 3, 2015, Russia delivered its Partial Revised Submission of the Russian Federation to the Commission on the Limits of the Continental Shelf in Respect of the Continental Shelf of the Russian Federation in the Arctic Ocean.⁴³⁷ Reportedly, the 2015 Russian resubmission is among the most detailed ECS claims submitted to the CLCS. It includes a tectonic history of the evolution of the Arctic Ocean

433. *Daily Press Briefing by the Office of the spokesperson for the Secretary General*, UNITED NATIONS, <http://www.un.org/press/en/2015/db150804.doc.htm> (last visited Apr. 12, 2016); see also Asaf Shalev, *Russia Just Claimed a Broad Swath of the Arctic Shelf; Why Isn't the U.S. Doing the Same?*, ARCTIC NEWSWIRE (Aug. 8, 2015), <http://www.adn.com/article/20150808/russia-just-claimed-broad-swath-arctic-shelf-why-isnt-us-doing-same>.

434. Barbara Kwiakowska, *Submissions to the UN Commission on the Limits of the Continental Shelf*, 28 INT'L J. MARINE & COASTAL LAW 219 (2013).

435. *Id.*

436. COMM. ON THE LIMITS OF THE CONTINENTAL SHELF, SUMMARY OF RECOMMENDATIONS OF THE COMMISSION ON THE LIMITS OF THE CONTINENTAL SHELF IN REGARD TO THE PARTIAL REVISED SUBMISSION MADE BY THE RUSSIAN FEDERATION IN RESPECT OF THE SEA OF OKHOTSK ON 28 FEBRUARY 2013, U.N. DOC. CLCS/83 (adopted with amendments Mar. 11, 2014),

http://www.un.org/Depts/los/clcs_new/submissions_files/rus01_rev13/2014_03_13_CO_M_REC_RUS_Summary.pdf.

437. MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT OF THE RUSSIAN FEDERATION ET AL., PARTIAL REVISED SUBMISSION OF THE RUSSIAN FEDERATION TO THE COMMISSION ON THE LIMITS OF THE CONTINUAL SHELF IN RESPECT OF THE CONTINENTAL SHELF OF THE RUSSIAN FEDERATION IN THE ARCTIC OCEAN (2015), http://www.un.org/depts/los/clcs_new/submissions_files/rus01_rev15/2015_08_03_Exec_Summary_English.pdf.

seabed and subsoil over the past 130 million years.⁴³⁸ Russia acknowledges that its claim overlaps with the ECS claim by Denmark and the expected ECS claim by Canada.⁴³⁹ In a prior diplomatic note, Canada, Denmark, and Russia agreed not to object to ECS submissions by the other two states, subject to the understanding that delimitation of any overlapping continental shelves of the three states will be determined subsequently. Russian news agencies report that the CLCS will hear its claim in February 2016.⁴⁴⁰

United States Claims. The President's *National Strategy for the Arctic Region Implementation Report* estimates that the continental shelf off Alaska probably extends more than 600 nautical miles.⁴⁴¹ However, the situation of the United States is complicated by the fact that it has not yet acceded to UNCLOS.

The U.S. Extended Continental Shelf Project is a multi-agency collaboration whose mission is to determine and define the extent of the U.S. continental shelf beyond 200 nautical miles consistent with international law.⁴⁴² In congressional testimony, Admiral Robert Papp, the U.S. Special Representative for the Arctic, explained the current U.S. position on continental shelf claims in the Arctic and the importance of the U.S. acceding to the 1982 UNCLOS. Admiral Papp explained:

The United States, like the other Arctic States, has made significant progress in determining its ECS. All of the necessary data collection to delineate the U.S. ECS in the Arctic Ocean has been completed through tremendous efforts by the U.S. Coast Guard, the National Oceanic and Atmospheric Administration (NOAA), the United States Geological Survey (USGS), and the Department of State. Nine successful cruises were completed in the Arctic Ocean over twelve years, and four of those missions were jointly conducted with Canada.

438. *Id.* at 13, 18, 22.

439. *Id.* at 9.

440. *Presentation of Russian Arctic Shelf Bid at UN Scheduled for Feb. 9*, TASS (Feb. 5, 2016), <http://tass.ru/en/politics/854698>.

441. WHITE HOUSE, *supra* note 81, at 23.

442. *About*, U.S. EXTENDED CONTINENTAL SHELF PROJECT, <http://www.continentalshelf.gov/about/index.htm> (last visited Apr. 12, 2016).

Last year the Office of Ocean and Polar Affairs at the Department of State established the ECS Project Office at a NOAA facility in Boulder, Colorado. This office is dedicated to completing the data analysis and documentation necessary to establish the limits of the U.S. ECS in the Arctic and for other U.S. ECS areas, such as the Bering Sea, Atlantic Ocean, and the Gulf of Mexico.

While the United States has a significant amount of ECS in the Arctic, as a non-party to the Law of the Sea Convention, the U.S. is at a disadvantage relative to the other Arctic Ocean coastal States. Those States are parties to the Convention, and are well along the path to obtaining legal certainty and international recognition of their Arctic ECS.

Becoming a Party to the Law of the Sea Convention would help the United States maximize international recognition and legal certainty regarding the outer limits of the U.S. continental shelf, including off the coast of Alaska, where our ECS is likely to extend out to more than 600 nautical miles. U.S. accession is a matter of geostrategic importance in the Arctic (where all other Arctic nations, including Russia, are Parties). The Administration remains committed to acceding to the LOS Convention.

Overlapping continental shelves are inevitable in the Arctic Ocean, as elsewhere. Where boundaries have not yet been concluded, we expect that neighboring States will continue to work together on a bilateral basis to reach agreement on what are often complex and time-consuming processes. It is important to keep in mind this is not a question of first-come, first-served.

We have two maritime boundaries in the Arctic, one with Russia and one with Canada. The United States and the Soviet Union signed a maritime boundary agreement in 1990. Although only provisionally in force, Russia has respected this maritime boundary, and has not defined an ECS on the U.S. side of the boundary. The United States is taking the same approach.

Canada and the United States have yet to agree to a maritime boundary that would divide our overlapping ECS. We have made this a key objective for implementation of our National Strategy for the Arctic Region, and this will be an

important future effort. Nonetheless, we have managed to work together to collect mutually beneficial data necessary to define our respective ECS areas.⁴⁴³

For more detailed and up-to-date information on the United States' ECS, see U.S. Extended Continental Shelf Project.⁴⁴⁴

H. UNESCO / IOC / ICES / PICES

The United Nations Educational, Scientific and Cultural Organization (UNESCO) describes its mission as building solidarity among nations by fostering information exchange across a number of disciplines.⁴⁴⁵ In 2011, after UNESCO's governing board voted to recognize Palestine as a state and admit it to the organization, President Obama announced that the United States was immediately cutting off funding for the organization.⁴⁴⁶ At the time, the United States payments constituted twenty-two percent of UNESCO's budget.⁴⁴⁷

The Intergovernmental Oceanographic Commission (IOC) is part of UNESCO.⁴⁴⁸ It is recognized through the United Nations Convention on the Law of the Sea as the competent organization in the fields of Marine Scientific Research (Part XIII) and Transfer of Marine Technology (Part XIV).⁴⁴⁹

The International Council for Exploration of the Sea (ICES) is an organization of twenty member states that develops science and advice to support the sustainable use of the oceans,

443. *Statement of Admiral Robert J. Papp, Jr. Before the Subcommittees on Europe, Eurasia, and Emerging Threats, and Western Hemisphere of the H. Comm. on Foreign Affairs*, 114th Cong. 2 (2015),

<http://docs.house.gov/meetings/FA/FA14/20151117/104201/HHRG-114-FA14-Wstate-PappR-20151117.pdf>.

444. See U.S. EXTENDED CONTINENTAL SHELF PROJECT, *supra* note 442.

445. UNESCO, Universal Declaration on Cultural Diversity, Adopted by the 31st Session of the General Conference of UNESCO (Nov. 2, 2001), http://portal.unesco.org/en/ev.php-URL_ID=13179&URL_DO=DO_TOPIC&URL_SECTION=201.html.

446. Steven Erlanger & Scott Sayare, *UNESCO Accepts Palestinians as Full Members*, N.Y. TIMES (Oct. 31, 2011),

http://www.nytimes.com/2011/11/01/world/middleeast/unesco-approves-full-membership-for-palestinians.html?_r=0.

447. *Id.*

448. See *Intergovernmental Oceanographic Commission*, UNESCO, <http://www.unesco.org/new/en/natural-sciences/ioc-oceans/> (last visited Apr. 11, 2016).

449. UNCLOS, *supra* note 37.

with particular emphasis on the North Atlantic.⁴⁵⁰ Its purpose is to promote an *integrated ecosystem understanding* of marine environments by coordinating research and advising international commissions and governments on marine policy and management.⁴⁵¹ ICES calls the Arctic a “research priority,” with projects on subarctic fisheries, Barents Sea Ecosystem Assessment, hydrography and warming of the Arctic Ocean, marine spatial planning, and risk evaluations for Arctic shipping, oil and gas development, and non-native species invasion.⁴⁵² ICES publishes an annual Report on Ocean Climate for the North Atlantic each December.⁴⁵³

The North Pacific Marine Science Organization (PICES) is an intergovernmental science organization that promotes and coordinates marine research in the northern North Pacific.⁴⁵⁴ Members are Canada, Japan, China, Korea, Russia, and the United States. Whereas ICES extends work into the Arctic, PICES 2014 report indicates, “PICES will not initiate projects related to the Arctic, as the Convention covers only the temperate subarctic and adjacent seas, but this does not preclude the exchange of scientific knowledge between North Pacific and Arctic waters.”⁴⁵⁵

I. *World Trade Organization*

The World Trade Organization (WTO) is, among other things, a forum for governments to negotiate trade agreements and settle trade disputes. For example, on November 25, 2013, a World Trade Organization panel upheld the European Union’s 2010 ban on trade in seal products.⁴⁵⁶ The WTO, while

450. *Who We Are*, INT’L COUNCIL FOR THE EXPLORATION OF THE SEA, <http://www.ices.dk/explore-us/who-we-are/Pages/Who-we-are.aspx> (last visited Apr. 12, 2016).

451. *Id.*

452. *Action Areas*, ICES/CIEM, <http://www.ices.dk/explore-us/Action%20Areas/Pages/Arctic.aspx> (last visited Apr. 12, 2016).

453. *ICES Report on Ocean Climate (IROC)*, ICES/CIEM, <http://ocean.ices.dk/iroc/> (last visited Apr. 12, 2016).

454. *About PICES*, NORTH PACIFIC MARINE SCI. ORG., <https://www.pices.int/about/default.aspx> (last visited Apr. 13, 2016).

455. NORTH PACIFIC MARINE SCI. ORG. ANNUAL REPORT (2014), https://www.pices.int/publications/annual_reports/Ann_Rpt_14/ann_rep_2014.aspx.

456. Panel Report, *EC-Seal Products*, WT/DS400/R, WT/DS401/R (Nov. 25, 2013)

finding that the EU's so-called Seal Regime had violated international trade agreements, determined that the ban was valid under the public morals clause.⁴⁵⁷ The EU ban, which principally targets Canadian sealing practices, is reportedly a principal reason the EU's request to be granted Permanent Observer status at the Arctic Council was "deferred" in 2013.⁴⁵⁸

Article XX of the General Agreement on Tariffs and Trade (GATT)⁴⁵⁹ exempts specific kinds of regulations from certain GATT rules, including measures "necessary to protect public morals," "necessary to protect human, animal or plant life and health," and those "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption." Such exceptions must comply with the Article XX chapeau (introduction): they must not arbitrarily or unjustifiably discriminate.

The WTO Appellate Body upheld the EU ban in a May 2014 decision, but also found the EU embargo "constitutes a means of arbitrary or unjustifiable discrimination."⁴⁶⁰ The Seal Regime bans products from commercial hunts, but exempts products from certified traditional Inuit hunts. Canada argued that it is arbitrary to exempt products based only on the identity of the hunter, when Inuit hunts may share every other characteristic with Canadian commercial hunts.

The Appellate Body found the ban allowable under Article XX, but unfairly favorable to Greenlandic seal products in violation of the chapeau.

[hereinafter *Panel Report*]. The EU's seal regulatory regime was composed of two primary regulations: a Basic Regulation and an Implementing regulation. *Panel Report* ¶¶ 2.2, 2.4.

457. *Seal Product Ban Upheld on 'Ethical' Grounds*, CBC NEWS (Nov. 25, 2013), <http://www.cbc.ca/news/canada/newfoundland-labrador/seal-product-ban-upheld-on-ethical-grounds-1.2438904>; Andreas Østhagen, *In or Out? Symbolism of the EU's Arctic Council Bid*, THE ARCTIC INSTITUTE, <http://www.thearcticinstitute.org/2013/06/in-or-out-symbolism-of-eus-arctic.html> (last visited Apr. 13, 2016).

458. Sebastian Knecht, *New Observers Queuing Up: Why the Arctic Council Should Expand – and Expel*, ARCTIC INSTITUTE (Apr. 20, 2015), <http://www.thearcticinstitute.org/2015/04/042015-New-Observers-Queuing-up.html>.

459. General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 State. A-11, 55 U.N.T.S. 194.

460. Appellate Body Report, *EC-Seal Products*, WT/DS400/AB/R, WT/DS401/AB/R (May 22, 2014).

Canada and the EU agreed in September 2014 that the EU would bring its regulation into conformity with GATT obligations by October 2015. The measures ultimately adopted by the European Parliament and Council, and implemented by Commission regulation deleted an exception to the ban for hunts to protect fish stocks; however, it preserved an amended exception for hunts by Inuits and other indigenous communities.⁴⁶¹ The exception requires that the hunting methods used must have due regard for animal welfare, be part of their hunters' tradition, and contribute to their subsistence.

J. International Tribunals

The International Tribunal for the Law of the Sea (ITLOS) issued an advisory opinion regarding illegal, unreported, and unregulated (IUU) fishing on April 2, 2015.⁴⁶² While the opinion has no direct application in the Arctic, it articulated principles based on treaties or customary international law that will apply to vessels fishing in any state's exclusive economic zone (EEZ).

The Sub-Regional Fisheries Commission (SRFC), comprised of seven West African nations facing serious IUU fishing problems, ask the ITLOS to address four questions. First, what obligations apply to flag States of vessels engaged in IUU fishing? Second, what is the extent flag State liability for these activities? Third, what party is liable for violations when IUU fishing is conducted by a vessel licensed under an international agreement between the flag State or an international agency? Fourth, what are the rights and obligations of coastal States to ensure sustainable management of shared or common-interest fish stocks?⁴⁶³

461. *Panel Report*, *supra* note 456.

462. Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission, Case No. 21, Advisory Opinion Apr. 2, 2015, https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.21/advisory_opinion/C21_AdvOp_02.04.pdf.

463. Tim Stephens, *ITLOS Advisory Opinion: Coastal and Flag State Duties to Ensure Sustainable Fisheries Management*, AM. SOCIETY OF INT'L LAW (Apr. 16, 2015), <https://www.asil.org/insights/volume/19/issue/8/itlos-advisory-opinion-coastal-and-flag-state-duties-ensure>.

After unanimously finding jurisdiction to issue such an opinion (contested by the United States, among others), the tribunal carefully circumscribed its opinions on the substantive issues. With regard to flag State obligations, it found “the primary responsibility for taking the necessary measures to prevent, deter and eliminate IUU fishing rests with the coastal State.”⁴⁶⁴ However, flag States must exercise due diligence to ensure their vessels do not engage in IUU fishing.⁴⁶⁵ This includes an obligation to investigate and take action following reported violations. In answering the second question, the tribunal explained that flag State liability follows only from a breach of this due diligence duty, and does not attach to actual vessel conduct. The flag State is not liable if “it has taken all necessary and appropriate measures to meet its “due diligence” obligations.⁴⁶⁶ If vessels flagged by member States of an international organization, such as the EU, engage in IUU fishing where the organization has negotiated access, liability generally attaches to the organization unless by contrary agreement.⁴⁶⁷

With regard to the fourth question, the ITLOS observed that a number of UNCLOS provisions establish coastal State rights and obligations related to the sustainable management of fish stocks shared between multiple exclusive economic zones. Noting UNCLOS’s unfortunate lack of related precise definitions, the tribunal highlighted article 61, paragraphs 2, 3, and 4 as creating a coastal State obligation to “conserve and develop [shared and common fish stocks] as a viable and sustainable resource.” The tribunal is of the view that this may include “more effective fisheries management schemes to ensure the long-term sustainability of exploited stocks” and stock restoration, as well as an obligation to cooperate toward these ends.⁴⁶⁸

In a non-Arctic development on October 29, 2015, but one that might well be relevant to excessive maritime claims and

464. *Id.*

465. *Id.*

466. Press Release, The Hague, Tribunal Delivers its Advisory Opinion Regarding Illegal, Unreported and Unregulated Fishing Activities (Apr. 2, 2015), <http://www.haguejusticeportal.net/index.php?id=13247>.

467. Stephens, *supra* note 463.

468. *Id.*

regulations by some Arctic states, arbitrators hearing a dispute brought by the Republic of the Philippines against the People's Republic of China over competing claims and activities in the South China Sea determined that the arbitration tribunal has jurisdiction over at least some of the claims.⁴⁶⁹ In late November 2015, the arbitrators heard arguments on the merits of the Philippines' claims. China has refused to officially appear in the arbitration, claiming that the arbitration panel has no jurisdiction in the matter.⁴⁷⁰

K. United Nations Environment Program

United Nations Environment Program (UNEP) facilitates and sometimes acts as secretariat for thirteen Regional Seas Programs among 143 nations.⁴⁷¹ Five other programs—including the program for the Arctic, which is administered by the Arctic Council states—are independently administered. Some within the U.S. State Department have suggested a more formal UNEP-administered Regional Seas Program for the Arctic Ocean (arguably, a semi-enclosed sea under Article 122 of UNCLOS). Such a program would build upon the Council member-states' existing 1991 Arctic Environmental Protection Strategy (AEPS) and could be coupled with provisions for a Regional Fishery Management Organization (RFMO), similar to the Commission for the Conservation of Antarctic Marine Living Resources.

V. SELECTED ARCTIC THEMES

A. Arctic Marine Shipping

Nearly all the perceived dangers and opportunities of a rapidly warming Arctic relate to shipping.

469. Press Release, Permanent Court of Arbitration, The Hague, Arbitration Between the Republic of the Philippines and the People's Republic of China (July 13, 2015), http://archive.pca-cpa.org/shownews454.html?nws_id=518&pag_id=1261&ac=view.

470. See Lowell Bautista, *The Arbitration Case Between Philippines and China Over Their Dispute in the South China Sea*, 19 J. OF SOUTHEAST ASIAN STUDIES 3, 4 (2014).

471. U.N. Environment Programme, *Governance of Oceans through Regional Seas*, U.N. Doc. UNEP/WEBRS.17/INF9 (Oct. 16, 2015), http://www.unep.org/ecosystemmanagement/water/regionalseas40/Portals/50221/WBR_S17_INF9_Governance%20of%20Oceans%20Through%20Regional%20Seas.pdf.

1. *Prognosis for Arctic Shipping*

For details on the ten-year shipping forecast conducted for the U.S. Committee on the Marine Transportation System (CMTS), see section III.A.13 above.

A scientific study of sea ice thickness in the Northwest Passage and its implication for shipping published in September 2015 concluded, “even in today’s climate, ice conditions must still be considered severe.”⁴⁷² In evaluating shipping conditions, the researchers highlighted the importance of considering both sea ice extent and thickness.⁴⁷³

Resources for the Future held a conference on Shipping in the Arctic: Promise, Preparations, and Impact on October 7, 2015.⁴⁷⁴ After noting that only 236 vessels have transited the Northwest Passage to date, Lawson Brigham admonished the audience that “that route is unlikely to be viable any time soon.”

The 7th Arctic Shipping Summit was held in London November 11–12, 2015. The summit focused on Northern Sea Route shipping. Speakers include Mikå Mered CEO at POLARISK Analytics.⁴⁷⁵

A Winter 2015 article in the *Fletcher Forum of World Affairs* by University of Alaska Fairbanks professor Lawson Brigham titled “Future Perspective: The Maritime Arctic in 2050,” constructs a picture of the Arctic 35 years out that is free of major conflict among the Arctic states.⁴⁷⁶

B. *Arctic Marine Shipping Assessment*

In 2009, an Arctic Council Protection of the Marine Environment (PAME) working group led by experts from Canada, Finland and the United States completed a

472. Christian Haas & Stephen E. L. Howell, *supra* note 16.

473. *Id.* at 7673.

474. *Shipping in the Arctic: Promise, Preparations, and Impacts*, RESOURCES FOR THE FUTURE, <http://www.rff.org/events/event/2015-10/shipping-arctic-promise-preparations-and-impacts> (last visited Apr. 13, 2016).

475. *7th Arctic Shipping Summit 2015*, UARCTIC, <http://www.uarctic.org/news/2015/9/7th-arctic-shipping-summit-2015-11-12-november-2015/> (last visited Apr. 13, 2016).

476. Lawson Brigham, *Future Perspective: The Maritime Arctic in 2050*, 39 FLETCHER FORUM OF WORLD AFFAIRS 109 (2015).

comprehensive report on Arctic marine shipping.⁴⁷⁷ It has been described as the most comprehensive analysis ever undertaken of trends relating to shipping into, out of, and through the region. PAME has produced annual progress reports on its implementation.

The original report included recommendations for enhancing marine safety, protecting people and the environment, and building infrastructure.⁴⁷⁸ AMSA's marine safety and environmental protection goal has been a driving force behind the IMO's mandatory Polar Code.

Arctic Marine Shipping Assessment Progress Report for 2015. In April, the Arctic Council's PAME Working Group published its 2015 progress report on implementing the recommendations in the 2009 Arctic Marine Shipping Assessment (AMSA) Report.⁴⁷⁹ This third in a series of biennial progress reports provides a comprehensive analysis on Arctic shipping, focusing on ships, their use in the Arctic Ocean, the potential impact on humans and Arctic marine environment, as well as their marine infrastructure requirements.

The Arctic Council's Emergency Prevention, Preparedness and Response (EPPR) working group discussed the intelligence gained from two search and rescue exercises hosted by Denmark and the Russian Federation.⁴⁸⁰ Additionally, EPPR finalized a pilot project "Automated Mutual Assistance Vessel Rescue Network," which has a regional ship reporting system and uses automatic and long range identification and tracking data for search and rescue efforts. This data will be available in emergencies and is an additional tool for managing search and rescue in the Arctic.⁴⁸¹

The marine insurance industry and the International Association of Classification Societies (IACS) offer a risk assessment tool to supplement the Polar Code. As IACS

477. ARCTIC COUNCIL, ARCTIC MARINE SHIPPING ASSESSMENT 2009 REPORT (2009), http://www.arctic.noaa.gov/detect/documents/AMSA_2009_Report_2nd_print.pdf.

478. *Id.* at 6–7.

479. ARCTIC COUNCIL, STATUS ON IMPLEMENTATION OF THE AMSA 2009 REPORT RECOMMENDATIONS (2015).

480. EPPR, *supra* note 391.

481. EPPR, EPPR WORKING GROUP MEETING FINAL REPORT 8 (2013), http://arctic-council.org/eppr/wp-content/uploads/2013/09/EPPR-Oulu_Final_report.pdf.

explained to the IMO's Maritime Safety Committee, the Polar Operational Limit Assessment Risk Indexing System (POLARIS): "provides a standard approach for the evaluation of risks to the ship and the ice conditions encountered/expected (ice regime).⁴⁸² POLARIS can be used for voyage planning purposes or in real time to aid in the decision making in support of shipboard operations. POLARIS may be used by Administrations as a means to set operational limitations with respect to ships operating in ice."

The International Chamber of Shipping (ICS) released its 2015 Annual Review, covering Arctic shipping and the Polar Code specifically. The ICS reports that the international industry recognizes the sensitivity of Arctic ecosystems and extreme importance of care for ships navigating Arctic waters, which has been recognized in the new International Code of Safety for Ships Operating in the Polar Waters.⁴⁸³

The ICS has embraced the Polar Code; the ICS Annual Review noted that the Code will create a "greater level of confidence in the safety and environmental performance of shipping using a risk based approach which addresses the hazards relevant to the type of ship operation, the ship's location and the season of operation."⁴⁸⁴

ICS also reported discussions with the Arctic Council regarding the importance of a mandatory and uniform regulatory framework for maritime safety and environmental protection.⁴⁸⁵ In light of the success of the Polar Code, the ICS Secretary-General advocated for continued cooperation with the IMO during a February 2015 address to the Arctic Council's Working Group PAME.⁴⁸⁶

The Annual Report also explained that ICS will continue to advocate for avoiding imposing discriminatory treatment that

482. Int'l Maritime Org. [IMO], MSC 94/3/7, *Consideration and Adoption of Amendments to Mandatory Instruments: POLARIS* (Sept. 12, 2014), http://www.iacs.org.uk/document/public/Publications/Submissions_to_IMO/PDF/CONSIDERATION_AND_ADOPTION_OF_AMENDMENTS_TO_MANDATORY_INSTRUMENTS_pdf2416.pdf.

483. *Arctic Shipping and the Polar Code*, INTERNATIONAL CHAMBER OF SHIPPING 32, [http://www.ics-shipping.org/key-issues/all-key-issues-\(full-list\)/arctic-shipping-and-the-polar-code](http://www.ics-shipping.org/key-issues/all-key-issues-(full-list)/arctic-shipping-and-the-polar-code) (last visited Apr. 14, 2016).

484. *Id.*

485. *Id.*

486. *Id.* at 33.

may prejudice the rights of ships registered with non-Arctic nations.⁴⁸⁷ The Report further highlighted the need for clarity on the legal status of Arctic waters under UNCLOS.⁴⁸⁸

1. Arctic Shipping Routes

Secure access to, and the capacity limits of, the Panama and Suez Canals will affect the demand for Arctic shipping routes in the coming decades. The Panama Canal Authority is presently at work on an expansion project that will add a larger third lock to the system and enable it to accommodate container ships of up to 13,000 TEUs (presently, its limited to 5,000 TEU ships).⁴⁸⁹ The third lock was reportedly ninety-five percent complete as of October 31, 2015.⁴⁹⁰

The present Panamax, New Panamax, and Suezmax limits⁴⁹¹ are depicted in the following table:

	LENGTH	BEAM	DRAFT
Panamax (existing locks)	294 meters	32 meters	12 meters
New Panamax (third lock)	366 meters	49 meters	15 meters
Suezmax	Unlimited	50 meters	20 meters

For comparison, the commonly cited limiting figures for vessels transiting the Northern Sea Route are thirty-meter beam (vessels cannot be wider than the escorting ice-breaker it must sometimes follow), and 12.5-meter draft (due to the shallow and often unavoidable straits between the New

487. *Id.*

488. *Id.*

489. MARITIME ADMINISTRATION, U.S. DEP'T OF TRANSPORTATION, PANAMA CANAL EXPANSION STUDY 9 (2013), http://www.marad.dot.gov/wp-content/uploads/pdf/Panama_Canal_Phase_I_Report_-_20Nov2013.pdf.

490. Brian Davis, Rob Holmes, & Brett Milligan, *Isthmus*, PLACES JOURNAL, <https://placesjournal.org/article/isthmus-panama-canal-expansion/> (last visited Apr. 14, 2016).

491. See *Panamax and New Panamax*, Maritime Connector, <http://maritime-connector.com/wiki/panamax/> (last visited Apr. 16, 2016).

Siberian Islands). Limiting drafts in some Northwest Passage deep draft routes are as little as ten meters.

Northeast Passage (and the Northern Sea Route). The Northeast Passage, which includes what Russia has designated the Northern Sea Route (NSR), traverses the Arctic Ocean north of Russia from the Barents Sea to the Bering Strait, thus serving as a possible northern route between the Atlantic and Pacific Oceans.⁴⁹² UNCLOS provides for freedom of navigation (subject to certain limitations) on the high seas, but Russia regulates vessel traffic in the NSR through a system of mandatory navigation permits and transit fees.⁴⁹³ UNCLOS Article 234, which Russia has at times invoked, allows coastal States to adopt and enforce non-discriminatory regulations related to pollution in ice-covered areas within their Exclusive Economic Zones (up to 200 nautical miles from the baseline).⁴⁹⁴ Russia also controversially interpreted UNCLOS to allow it to enclose groups of islands in a system of baselines, encompassing their straits as internal waters subject to unrestricted Russian sovereignty. Whether the NSR eventually provides a viable shipping alternative depends largely on the future of Arctic ice: the Intergovernmental Panel on Climate Change expects 125 days of NSR navigability by 2050.⁴⁹⁵

Russia set up the Northern Sea Route Administration (NSRA)⁴⁹⁶ and published new Rules of Navigation on the Water Area of the Northern Sea Route (unofficial English translation).⁴⁹⁷ The Russian International Affairs Council (RIAC) provided a reader on the Northern Sea Route with

492. See William V. Dunlap, *Transit Passage in the Russian Arctic Straits*, 1 MARITIME BRIEFING 2-3 (1996).

493. Albert Buixadé Farré, et al., *Commercial Arctic Shipping Through the Northeast Passage*, 37 Polar Geography 298, 310 (2014).

494. *Id.*

495. Thomas Nilsen, *125 Days of Navigable Conditions by 2050*, BARENTS OBSERVER (Apr. 1, 2014), <http://barentsobserver.com/en/business/2014/04/125-days-navigable-conditions-2050-01-04>.

496. *Northern Sea Route Administration*, NORTHERN SEA ROUTE INFORMATION OFFICE, http://www.arctic-lio.com/nsr_nsra (last visited Apr. 14, 2016).

497. *Rules of Navigation on the Water Area of the Northern Sea Route*, Norther Sea Route Information Office, http://www.arctic-lio.com/docs/nsr/legislation/20130425185806en-Rules_unof.pdf (last visited May 2, 2016).

Arctic experts' in-depth coverage on maritime law, transit in the Bering Strait, ecology, icebreakers, and security.⁴⁹⁸

As the 2015 season came to a close, NSRA officials released preliminary transit and cargo figures for the NSR in mid-December.⁴⁹⁹ The NSR Administration granted 708 permits (as of December 14) for vessels to operate along the NSR, an increase from 631 permits in 2014. The majority of the permits went to Russian-registered vessels; only sixty-three were granted to foreign flag vessels. Readers should bear in mind that the number of permits granted does not directly correlate to the number of vessels that actually operated along the route in a given season. Total cargo volume through the NSR was 5.15 million tons, compared to 2.8 million tons in 2013 and 3.7 million tons in 2014.⁵⁰⁰

Activity by major energy projects in the region contributed to the increase in cargo volume, in particular oil production by Gazprom Neft's Prirazlomnaya platform and the development of Yamal LNG.⁵⁰¹ While domestic internal traffic along the NSR increased, international transit traffic using the NSR for transport from Europe to Asia or vice versa declined significantly from its peak in 2012. Transit shipping along the NSR decreased from a high of 1.26 million tons in 2012 to 1.176 million tons in 2013, then declined sharply to 274,000 tons and 39,000 tons in 2014 and 2015 respectively.⁵⁰²

In December 2015, the Norwegian flag *Tor Viking*, an icebreaker and anchor handling tug, entered record books for successfully transiting the Northern Sea Route without assistance from Russian nuclear-powered icebreakers in December.⁵⁰³

498. *Northern Sea Route*, RUSSIAN INTERNATIONAL AFFAIRS COUNCIL, <http://russiancouncil.ru/en/northernsearoute> (last visited Apr. 14, 2016).

499. Av Malte Humpert, *Frozen Waters: Northern Sea Route Traffic Boosted by Internal Traffic, While Transits Fall Sharply*, HIGH NORTH NEWS (Dec. 15, 2015), <http://www.highnorthnews.com/frozen-waters-northern-sea-route-traffic-boosted-by-internal-traffic-while-transits-fall-sharply/>.

500. *Id.*

501. *Id.*

502. *Id.*

503. Atle Staalesen, *First December Voyage Without Icebreaker*, BARENTS OBSERVER (Dec. 14, 2015), <http://thebarentsobserver.com/arctic/2015/12/first-december-voyage-without-icebreaker>.

At the 2015 Arctic Circle assembly, Russia's Deputy Minister of Transport Viktor Olersky explained that the "low bunker oil prices" made the Northern Sea Route "less attractive for ship-owners."⁵⁰⁴ Russia's Ministry of Transport continues to be optimistic about the NSR, projecting that cargo traffic will increase to approximately eighty-three million tons by 2030.⁵⁰⁵

In June 2015, Russian Prime Minister Dmitry Medvedev signed an order aimed at developing the NSR to increase its capacity from four million to eighty million tons within fifteen years. The Deputy Prime Minister Arkady Dvorkovich further explained that the necessary regulatory framework for increasing shipping already exists, and that the plan will include six components such as navigational and hydrographic support, creation of new maps, maritime traffic regulation system, sea protection against pollution, and establishment of search and rescue infrastructure.⁵⁰⁶

Hoping for increased traffic, the Ministry of Emergency Situations opened the third of ten planned search and rescue centers in October. The center includes fire-fighting, diving and oil spill clean-up capabilities. Russia expects all ten centers to be operational by 2015.⁵⁰⁷ Russia also has at least two icebreakers in development, including the world's largest nuclear icebreaker.⁵⁰⁸

Northwest Passage. Northwest Passage (NWP) transits through Canada's Arctic archipelago are much more limited than those through the NSR. Only 236 vessels have transited the NWP to date.⁵⁰⁹ In 2012, a record number (thirty) of

504. *Northern Sea Route – Focus on Domestic Projects*, BARENTS OBSERVER (Oct. 17, 2015), <http://barentsobserver.com/en/arctic/2015/10/northern-sea-route-focus-domestic-projects-17-10>.

505. *Id.*

506. Trude Pettersen, *Medvedev Orders Plan to Increase Northern Sea Route Capacity*, BARENTS OBSERVER (June 10, 2015), <http://barentsobserver.com/en/arctic/2015/06/medvedev-orders-plan-increase-northern-sea-route-capacity-10-06>.

507. Trude Pettersen, *Third Arctic Search and Rescue Center Opened*, BARENTS OBSERVER (Oct. 15, 2014), <http://barentsobserver.com/en/arctic/2014/10/third-arctic-search-and-rescue-center-opened-15-10>.

508. Atle Staalesen, *New Icebreakers Open Way for Russia in Arctic*, BARENTS OBSERVER (May 5, 2015), <http://barentsobserver.com/en/arctic/2015/05/new-icebreakers-open-way-russia-arctic-05-05>

509. See R. K. Headland, *Transits of the Northwest Passage to End of the 2015*

vessels transited through the Passage.⁵¹⁰ Only seventeen vessels managed the full northwest passages in 2014, due to a short and cold summer. Neither Transport Canada, NORDREG nor the Canadian Coast Guard has yet to provide data on 2015 traffic through the NWP, as did their Russian counterparts.⁵¹¹ Unofficial reports suggest there were few complete transits of the passage, but increased “destinational” traffic within the waters as a result of the commencement of Baffinland iron ore exports.⁵¹²

Canada has declared the NWP internal waters, and has enacted an assortment of laws to address maritime risks in the waters.⁵¹³

A recent *Ocean Yearbook* article explores the application of UNCLOS Article 234 in those waters (Peter Luttmann, *Ice-Covered Areas under the Law of the Sea Convention: How Extensive are Canada’s Coastal State Powers in the Arctic?*).⁵¹⁴ Another, by James Kraska, examines the Northern Canada Vessel Traffic Services Zone Regulations (NORDREG) and the Law of the Sea.⁵¹⁵

As the Canadian Department of Fisheries and Oceans’ Arctic Voyage Planning Guide warns, the NWP presents more shipping challenges than the NSR because of more hazardous ice conditions and a relative lack of infrastructure.⁵¹⁶ In July 2014, *Maritime Executive* interviewed several NWP experts regarding the Crystal Cruises plan. They unanimously expressed concerns, including “almost complete lack” of SAR

Navigation Season, NORTHWEST PASSAGE 2015, <http://cil.nus.edu.sg/wp/wp-content/uploads/2015/11/Arctic-Guide-November-2015-KDK-JAR-KDK-edits-12152015.pdf>, (last visited Apr. 14, 2016).

510. *Trends in Shipping in the Northwest Passage*, *supra* note 13.

511. *Id.*

512. *Id.*

513. ROBERT DUFRESNE, LIBRARY OF PARLIAMENT, *CONTROVERSIAL CANADIAN CLAIMS OVER ARCTIC WATERS & MARITIME ZONES* (2008) <http://www.lop.parl.gc.ca/content/lop/researchpublications/prb0747-e.htm>.

514. Peter Luttmann, *Ice-Covered Areas Under the Law of the Sea Convention: How Extensive are Canada’s Coast State Powers in the Arctic?*, 29 *OCEAN YEARBOOK* 85 (Aldo Chircop, ed., 2015).

515. James Kraska, *The Northern Canada Vessel Traffic Services Zone Regulations (NORDREG) and the Law of the Sea*, 30 *International Journal of Marine and Coastal Law* 225 (2015).

516. *Fisheries and Oceans Canada*, GOVERNMENT OF CANADA, <http://geoportal.gc.ca/eng/Gallery/MapProfile/5> (last visited Apr. 14, 2016).

capabilities, unpredictable ice hazards, a dearth of onshore emergency services, waste disposal, spill response, and insufficient ship construction.⁵¹⁷

The journal *Geophysical Research Letters* published a study in September 2015 showing sea ice in the Northwest Passage remains too thick to allow regular commercial shipping in the immediate future.⁵¹⁸ The study measured sea ice thickness for approximately 1,000 km between the Resolute and Cambridge Bays, finding the area completely covered by ice in the winter though decreasing in the summer.⁵¹⁹ The study projected that in thirty to fifty years, the ice may become weak enough for feasible shipping in the region.⁵²⁰

An October 2014 Report of the Commissioner of the Environment and Sustainable Development on Marine Navigation in the Canadian Arctic concluded that existing infrastructure adequately supports current traffic levels, but gaps must be addressed to handle the emerging risks of increased traffic.⁵²¹

One unofficial source reported that, between the first NWP transit in 1853 and the end of the 2012 navigation season, 185 complete transits of the Northwest Passage had been made by 135 different vessels.⁵²² The figure includes transits through all seven of the recognized NWP routes. In 2012, a record number (thirty) of vessels transited through the Northwest Passage, bringing the total to 215.

In 2013, for the first time, a large bulk carrier, the 75,000 deadweight-ton *Nordic Orion*, transited from Vancouver, BC to Pori, Finland via the Northwest Passage.⁵²³ In 2014, the

517. Wendy Laursen, *Experts Voice Concern Over New Arctic Cruise*, MARITIME EXECUTIVE (July 25, 2014), <http://www.maritime-executive.com/features/Experts-Voice-Concerns-Over-New-Arctic-Cruise-2014-07-26>.

518. See Haas & Howell, *supra* note 16.

519. *Id.* at 7675.

520. *Id.* at 7679.

521. Office of the Auditor General of Canada, *Marine Navigation in the Canadian Arctic*, in 2014 FALL REPORT OF THE COMMISSIONER OF THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT 3.77 (2014), http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201410_03_e_39850.html.

522. R. K. Headland, *supra* note 509.

523. John McGarrity & Henning Gloystein, *Big Freighter Traverses Northwest Passage for 1st Time*, REUTERS (Sept. 27, 2013), <http://www.reuters.com/article/us-shipping-coal-arctic-idUSBRE98Q0K720130927>.

Fednav cargo ship MV *Nunavik*, carrying nickel ore (and equipped with some ice protection) completed the transit without icebreaker accompaniment.⁵²⁴

In late 2015, the Finnish icebreakers of Arctia Shipping, MSV *Nordica* and MSV *Fennica* transited from Dutch Harbor to Helsinki, Finland via the Northwest Passage after serving as ice management vessels from Chukchi Sea operations.⁵²⁵ This late season transit passed through Prince of Wales Strait. Reportedly, the *Fennica* maintained an average transit speed of twelve knots and was never required to use more than fifty percent of her power to navigate through the NWP ice.⁵²⁶

Crystal Cruises has scheduled its cruise ship *Crystal Serenity* for a thirty-two-day expedition through the NWP for 2016.⁵²⁷ With a capacity of 1,070 passengers and a crew of 685, the 68,000 ton, Bahamian flag vessel carries will be the largest passenger vessel to sail that route.⁵²⁸ The Arctic 2016 cruise will begin August 16 in Seward, Alaska and end September 17, in New York City.⁵²⁹ *Crystal Serenity* will be the first non-ice-strengthened cruise ship to make such a voyage.⁵³⁰

The British Antarctic Survey research vessel Ernest Shackleton has been chartered to escort the *Crystal Serenity* through the Northwest Passage.⁵³¹ While the *Shackleton* does not have capacity to accommodate all 1,725 passengers and crew of the *Crystal Serenity*, with the assistance of extra boats

524. Becky Oskin, *Cargo Ship is First to Solo the Northwest Passage*, DISCOVERY NEWS (Oct. 2, 2014), <http://news.discovery.com/earth/oceans/cargo-ship-is-first-to-solo-the-northwest-passage-141002.htm>.

525. *Icebreakers MV NORDICA and MV FENNICA Attempt Late season Route 3 East Northwest Passage*, NORTHWEST PASSAGE 2015, <http://northwestpassage2015.blogspot.com/2015/10/icebreakers-mv-nordica-and-mv-fennica.html> (last visited Apr. 15, 2016).

526. *Id.*

527. *Crystal's Northwest Passage*, CRYSTAL CRUISES, <http://www.crystalcruises.com/OfferDetail.aspx?OG=220> (last visited Apr. 15, 2016).

528. *Crystal Serenity Deck Plans & Details*, CRYSTAL CRUISES, <http://www.crystalcruises.com/guidebook/crystal-serenity-deck-plans-and-details--31> (last visited Apr. 15, 2016).

529. *Crystal's Northwest Passage*, *supra* note 527.

530. *Crystal Serenity NW Passage Escort Ship Announced*, CHAMBER OF SHIPPING OF BRITISH COLUMBIA (Nov. 12, 2015), <http://www.cosbc.ca/index.php/international/item/2008-crystal-serenity-nw-passage-escort-ship-announced>.

531. *Id.*

she would be in a position to shuttle passengers to shore in an emergency.⁵³² She will also carry over 600 meters of oil spill booms, oil skimmers and at least one Puma helicopter. A response plan was submitted to both the U.S. and Canadian coast guards in 2014 which includes the carriage of ice-navigators on both vessels.⁵³³

2. *International Agreements on Shipping Safety*

Polar Code. The IMO's *Guidelines for Ships Operating in Polar Waters* provides voluntary standards for Arctic shipping. New standards are set to become mandatory under the Polar Code by 2017.⁵³⁴

Arctic Search and Rescue. In 2011, the Arctic Council states signed the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic.⁵³⁵ The agreement, which assigns the areas of SAR responsibility for each state-party, entered into force on January 19, 2013. In view of the conflicting territorial claims in the Arctic, the treaty provides that "the delimitation of search and rescue regions is not related to and shall not prejudice the delimitation of any boundary between States or their sovereignty, sovereign rights or jurisdiction."⁵³⁶ Russia embraced the agreement, opening three of ten planned SAR centers by the end of 2014. Future cooperation on search and rescue activities will be facilitated by the newly established Arctic Coast Guard Forum.⁵³⁷

From October 19–22, 2015, the U.S. Coast Guard, Department of Defense (U.S. NORTHCOM and Alaska Command) and Department of State led Arctic Zephyr, a multinational table top SAR exercise. The exercise drew officials from Canada, Denmark, Finland, Iceland, Norway and Sweden, along with representatives from the Arctic cruise industry and the North Slope and Alaska Northwest Boroughs. It also served as a test of the Agreement on Cooperation on

532. *Id.*

533. *Id.*

534. *See infra* Section IV.C.

535. *See* Agreement on Cooperation, *supra* note 53.

536. *Id.*

537. *See supra* note 106.

Aeronautical and Maritime Search and Rescue in the Arctic. At the end of the exercise, the United States announced plans to host a live international SAR exercise in 2016.⁵³⁸

3. *Arctic Shipping Safety Measures*

Central Bering Sea Place of Refuge. The Coast Guard and Marine Transportation Act of 2012 called for two Arctic marine studies.⁵³⁹ Section 717 required the Commandant of the Coast Guard to consult with appropriate federal agencies and with state and local interests to determine what improvements, if any, are necessary to designate existing ice-free facilities or infrastructure in the Central Bering Sea as a fully functional, year-round Potential Place of Refuge. The Coast Guard delivered the report in 2014.

Arctic Deep Water Port. Section 721 of the 2012 bill required the Commandant, in consultation with the Commanding General of the Army Corps of Engineers, the Maritime Administrator, and the Chief of Naval Operations, to conduct a study on the three seaport (with a depth of not less than thirty-four feet) in the Arctic to protect and advance strategic United States interests within the Arctic region.⁵⁴⁰ The Coast Guard delivered the Report on February 11, 2014.⁵⁴¹ See Section III.A.7 for a description of the Corps of Engineers' activity.

Committee on the Marine Transportation System. See Section II.A.13.

Bering Strait PARS. On November 8, 2010, the Coast Guard published a notice in the Federal Register of its intent to conduct a Port Access Routing Study (PARS) for the Bering Strait, the fifty-mile wide strait between Russia and Alaska, partly blocked by Little and Big Diomedes Islands.⁵⁴² The study was initiated to evaluate the continued applicability of and the need for modifications to current vessel routing

538. *See supra* note 132.

539. See Pub. L. No. 112-213, 126 Stat. 1540 (2012).

540. *Id.*

541. U.S. COAST GUARD, FEASIBILITY OF ESTABLISHING AN ARCTIC DEEP-DRAFT SEAPORT (Feb. 11, 2014),

<http://origin.library.constantcontact.com/download/get/file/1103854201241-742/2014-1.02.11.Feasibility+of+Establishing+an+Arctic+Deep-draft+Seaport.pdf>.

542. 75 Fed. Reg. 68,568 (Nov. 8, 2010).

measures, and the need for the creation of new vessel routing measures in the Bering Strait. The goal is to help reduce the risk of marine casualties and increase the efficiency of vessel traffic in the study area.⁵⁴³

The Coast Guard announced on February 19, 2015 a proposal to establish four-mile wide traffic lanes running from Unimak Pass in the Aleutian Islands through the U.S. side of the Bering Strait and into the Arctic Ocean.⁵⁴⁴

As presently proposed, the traffic lanes will be voluntary. The measures are expected to enter force in 2017.⁵⁴⁵

Arctic Waterways Safety Committee. In 2014 the U.S. Coast Guard 17th District facilitated an initial meeting of stakeholders to organize a new Arctic Waterways Safety Committee.⁵⁴⁶ The committee held its first formal meeting in Juneau in March 2015, and a public meeting in Anchorage on June 8. The new committee is meant to provide a forum to solve differences in the Arctic waterways without involving regulatory intervention. It focuses on creating best practices to ensure a safe, efficient, and predictable environment for all users of Arctic waterways. Members include representatives from Arctic municipalities, regional subsistence hunting groups, and the marine industries.⁵⁴⁷

C. Polar Icebreakers

The most widely cited compilation of icebreakers of the world is produced by the U.S. Coast Guard.⁵⁴⁸ What follows is a brief survey of recent icebreaker acquisition, construction, and operational developments.

Australia. Australia revealed details of its new icebreaker in October 2015. The new icebreaker will be used primarily to

543. *Id.*

544. *See* Allen, *supra* note 33.

545. *Id.*

546. ARCTIC WATERWAYS SAFETY COMMITTEE, <http://www.arcticwaterways.org/> (last visited Apr. 15, 2016).

547. *Our Work*, ARCTIC WATERWAYS SAFETY COMMITTEE, <http://www.arcticwaterways.org/attorneys-1.html> (last visited Apr. 15, 2016).

548. OFFICE OF WATERWAYS AND OCEAN POLICY, U.S. COAST GUARD, MAJOR ICEBREAKERS OF THE WORLD (2015), <http://www.uscg.mil/hq/cg5/cg552/docs/20150521%20Major%20Icebreaker%20Chart.pdf>.

supply Australia's three permanent Antarctic research stations with cargo, equipment and personnel as well as operating as a research ship with laboratory facilities. The icebreaker, set to replace the *Aurora Australis*, is projected for completion in 2019.⁵⁴⁹

Canada. The 492 foot, Polar Class 2, diesel electric powered Canadian Coast Guard icebreaker CCGS *John G. Diefenbaker* was expected to join the Canadian Coast Guard fleet in 2021–2022; however, that date has slipped, as there are reportedly several research vessels and two navy ships scheduled for construction ahead of her.⁵⁵⁰

China. China is building a new ice breaker, configured for research, to supplement the Xuelong (*Snow Dragon*). The new icebreaker will be designed mainly for field research, and it will have a better power system than Xuelong plus larger decks and laboratories. It will be shorter and have blades at the bow and a stern that will be able to break ice up to 1.5 meters thick, about 0.4 meters more than the Xuelong. The design contract, which cost more than \$613 million, was signed with Aker Arctic Technology of Finland in 2012. It will be built by a Chinese shipyard.⁵⁵¹

Finland. Finland continues to be a leading nation in the design and construction of icebreakers. The Finnish icebreaking fleet includes nine state-owned, Finnish Navy, and commercially owned vessels.

Finland's newest icebreaker, under construction at the Arctech Helsinki Shipyard for the Finnish Transport Agency, was christened *Polaris* and is now scheduled to be completed on January 16, 2015.⁵⁵² The 360 feet long icebreaker,

549. Sam Ikin, Rosemary Bolger, & Emilie Gamenz, *New \$500 million Icebreaker Australia's Biggest Investment the Antarctic Program*, ABC (Oct. 29, 2015), <http://www.abc.net.au/news/2015-10-29/pm-turnbull-releases-details-of-new-500-million-icebreaker/6893848>.

550. *Section 3 – Strategic and Management Priorities*, CANADIAN COAST GUARD, <http://www.ccg-gcc.gc.ca/Publication/2014-2017-IBHRP/Section3-Strategic-and-Management-Priorities> (last updated Dec. 20, 2014).

551. See INSTITUTE FOR FOREIGN POLICY ANALYSIS, INC., *NEW STRATEGIC DYNAMICS IN THE ARCTIC REGION* 155-61 (2012), <http://www.ifpa.org/pdf/StrategicDynamicsArcticRegion.pdf>; Gua Kai, *China Welcomes Foreign Talents in Polar Research*, CHINA DAILY (Mar. 29, 2016), http://usa.chinadaily.com.cn/china/2016-03/29/content_24158257.htm.

552. *Polaris's commissioning continues at the Helsinki Shipyard as of January 2016*. See *Commissioning of IB Polaris is Underway at Arctech Helsinki Shipyard*, PortNews

reportedly built at a cost of €125 million (\$138 million), will be the most powerful icebreaker ever to fly the Finnish flag and the first icebreaker to feature dual-fuel engines capable of using both low-sulfur marine diesel oil (LSMDO) and liquefied natural gas (LNG).⁵⁵³

In late 2015, the Finnish icebreakers of Arctia Shipping, MSV *Nordica* and MSV *Fennica* transited from Dutch Harbor to Helsinki, Finland via the Northwest Passage after serving as ice management vessels from Chukchi Sea operations.⁵⁵⁴

Germany. The German research icebreaker *Polarstern* returned to Germany on October 14, 2015, following a five-month expedition to the Arctic to study the effects of climate changes on this region. *Polarstern* carried over 200 scientists as part of a total of four expeditions. In the course of these five months, *Polarstern* covered over 16,000 nautical miles (more than 30,000 kilometers). On September 7, 2015, *Polarstern* reached the North Pole, where she met the USCG icebreaker *Healy*.⁵⁵⁵

Russia. Russia's nuclear-powered icebreaker "50 Years of Victory" completed the country's 100th visit to the North Pole in August 2015. Ninety-five of its one hundred voyages to the North Pole have been made by nuclear-powered icebreakers, with the *Yamal* recording the highest number of visits at thirty-three.⁵⁵⁶

Russia has commissioned a fleet of at least fourteen new icebreakers to strengthen Russian presence in the Arctic. The *Arktika*, an LK-60 icebreaker measuring 170 meters long and thirty-four meters wide, is the biggest of the Arctic fleet. The vessel received two nuclear state-of-the-art reactors in

(Jan. 29, 2016), <http://en.portnews.ru/news/213770/>.

553. *Finland's New Icebreaker Polaris Named at Helsinki Shipyard*, LIIKENNEVIRASTO FINNISH TRANSPORT AGENCY (Nov. 11, 2015), <http://www.liikennevirasto.fi/web/en/-/finland-s-new-icebreaker-polaris-named-at-helsinki-shipyard#.VxEuuPkrLIU>.

554. *Aker Arctic Participated in Northwest Passage Voyage Onboard MSV Nordica*, AKER ARCTIC, <http://akerarctic.fi/en/news/aker-arctic-participated-northwest-passage-voyage-onboard-msv-nordica> (last visited Apr. 15, 2016).

555. *Spotted: Polarstern Returns from 5-Month Stint in the Arctic*, WORLD MARITIME NEWS (Oct. 16, 2015), <http://worldmaritimeneeds.com/archives/174102/spotted-polarstern-returns-from-5-month-stint-in-the-arctic/> (last visited Apr. 21, 2016).

556. Trude Pettersen, *Russia's 100th Time to the North Pole*, BARENTS OBSERVER (Aug. 20, 2015), <http://barentsobserver.com/en/arctic/2015/08/russias-100th-time-north-pole-20-08> (last visited Apr. 21, 2016).

December 2015. Projected for completion in 2019, the LK-60 *Arktika* will be based in Murmansk, and the Russian Federation plans to add two additional LK-60 class vessels for 2019 and 2020.⁵⁵⁷

The Russian Ministry of Transport's icebreaker *Murmansk* was launched at the Arctech Helsinki Shipyard on March 25, 2015. The diesel-electric powered vessel will have a maximum icebreaking capability of 1.5 meters.⁵⁵⁸

The Russian Ministry of Defense is adding to the icebreaker fleet with four other icebreaking vessels under construction at the Admiralty Yard in St. Petersburg. The first vessel from this fleet is projected for completion in 2017.⁵⁵⁹

Russian inventors have reportedly created a laser ice cutter. Developed by a Moscow-based research institute, engineers hope their ice-cutting laser will help increase traffic along the NSR and Russia's Arctic coast shipping lane. However, polar explorers and industry stakeholders remain skeptic of the laser's effectiveness due to cold temperatures that would likely restore ice too quickly for the laser to cut through it.⁵⁶⁰

Sweden. Sweden recognizes that efficient ice-breaking operations are required to promote maritime safety and improve accessibility in ice-infested waters. Swedish icebreakers are able to support increasing commercial shipping in the Arctic as well as help with both the monitoring of the vulnerable marine environment and Arctic research. The Swedish Maritime Administration's five ice-breaking vessels are well suited to Arctic and sub-Arctic waters.⁵⁶¹ In addition,

557. Atle Staalesen, *These are Russia's New Icebreakers*, BARENTS OBSERVER (Dec. 1, 2015), <http://thebarentsobserver.com/2015/12/these-are-russias-new-icebreakers> (last visited Apr. 21, 2016).

558. *Russian Icebreaker Murmansk Launched at Arctech Helsinki Shipyard*, MARINE INSIGHT (Mar. 25, 2015), <http://www.marineinsight.com/shipping-news/russian-icebreaker-murmansk-launched-at-arctech-helsinki-shipyard/> (last visited Apr. 21, 2016).

559. Staalesen, *supra* note 557.

560. Aram Ter-Ghazaryan, *Laser-Equipped Icebreakers Could Appear in Russian Arctic*, RUSSIA BEYOND THE HEADLINES (May 14, 2015), http://rbth.com/science_and_tech/2015/05/14/laser-equipped-icebreakers-could-appear-in-russian-arctic_46005.html (last visited Apr. 22, 2016).

561. *Sweden*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/member-states/sweden> (last updated Sept. 10, 2015).

the private operator, Trans Viking Icebreaking and Offshore, operates three ice-capable vessels.

United States. Icebreaker acquisition attracts much attention among Arctic observers. The High Latitude Region Mission Analysis prepared for the Coast Guard by ABS Consulting in 2011 concluded that the Coast Guard needs three heavy and three medium icebreakers to fulfill its statutory missions (Vol. II of the study analyzes Arctic Mission Area Needs).⁵⁶² To fulfill its statutory missions *and* maintain the continuous presence requirements of the Naval Operations Concept (2010) would require six heavy and four medium icebreakers.⁵⁶³

The Coast Guard presently has two active polar icebreakers: USCGC *Healy* (WAGB 20), medium icebreaker with a projected service life of 2030, and USCGC *Polar Star* (WAGB 10), a heavy icebreaker whose original thirty-year service life ended in 2006, but then completed a service life extension program in 2013.⁵⁶⁴ A third polar icebreaker, the *Polar Sea* (WAGB 11), was towed to Vigor's Portland, Oregon, shipyard in November 2015 for "preservation drydocking."⁵⁶⁵

The Coast Guard has not yet decided whether it will be feasible to return the *Polar Sea* to active service. Meanwhile, her sister ship *Polar Star*, which is en route to Antarctica at this writing, is expected to reach the end of her extended service life not later than 2023, potentially leaving the nation without a heavy icebreaker to support its Antarctic activities.⁵⁶⁶

The Congressional Research Service published a detailed analysis of icebreaker capabilities and modernization needs on November 20, 2015.⁵⁶⁷ The U.S. has at least five options,

562. ABS CONSULTING, UNITED STATES COAST GUARD HIGH LATITUDE REGION MISSION ANALYSIS CAPSTONE SUMMARY 2 (2010), <http://assets.fiercemarkets.net/public/sites/govit/hlssummarycapstone.pdf> (last visited Apr. 29, 2016).

563. *Id.*

564. *Id.*

565. Allen, *supra* note 33.

566. See Hector Martin, '*Polar Sea*' Revisited, ARCTIC JOURNAL (Oct. 16, 2014), <http://arcticjournal.com/politics/1082/polar-sea-revisited> (last visited Apr. 29, 2016).

567. RONALD O'ROURKE, CONGRESSIONAL RESEARCH SERVICE, COAST GUARD POLAR ICEBREAKER MODERNIZATION: BACKGROUND AND ISSUES FOR CONGRESS, <http://fas.org/sgp/crs/weapons/RL34391.pdf> (last visited Apr. 29, 2016).

individually or in combination, for acquiring a new heavy icebreaker: (1) acquire a new icebreaker from a U.S. shipbuilding company; (2) acquire a new icebreaker from a foreign shipbuilding company (perhaps at a lower cost); (3) enter into a short- or long-term lease; (4) enter into a hybrid public-private partnership for staffing an icebreaker owned privately or by the government; and (5) overhaul and reactivate the USCGC *Polar Sea*.⁵⁶⁸

During President Obama's visit to the Arctic in September 2015, he said he would move up icebreaker construction by two years (2020 instead of the original 2022 date).⁵⁶⁹ The President recognized in a speech in Seward, Alaska that "icebreakers are examples of something that we need to get online now. They can't wait. And I'm looking forward to trying to work with Congress to make that happen."⁵⁷⁰

In response to President Obama's September announcement that the U.S. should move up its icebreaker program, the Coast Guard's chief of acquisitions announced plans to develop an acquisition strategy for icebreakers by the spring of 2016 with the goal of beginning production in 2020.

The Omnibus Appropriations Act passed by Congress on December 16, 2015 appropriated \$1.26 billion for Coast Guard shipbuilding programs in FY16, including \$6 million for "survey and design work associated with reactivation of the *Polar Sea*" and \$3.5 million to begin acquisition of a new polar icebreaker.⁵⁷¹

Other than the icebreakers operated by the U.S. Coast Guard described above, four ice-capable ships fly the U.S. flag. One, *Sikuliaq* (261 feet long and launched in 2014), is owned by the National Science Foundation and operated by the

568. *Id.* at 1–2.

569. Julie Hirschfeld Davis, *Obama to Call for More Icebreakers in Arctic as U.S. Seeks Foothold*, N.Y. TIMES (Sept. 1, 2015), http://www.nytimes.com/2015/09/02/us/politics/obama-to-call-for-more-icebreakers-in-arctic-as-us-seeks-foothold.html?_r=0 (last visited Apr. 29, 2016).

570. *Remarks by the President at Seward Harbor*, WHITE HOUSE, <https://www.whitehouse.gov/the-press-office/2015/09/02/remarks-president-seward-harbor> (last visited Apr. 29, 2016).

571. See RONALD O'ROURKE, COAST GUARD POLAR ICEBREAKER MODERNIZATION: BACKGROUND AND ISSUES FOR CONGRESS at 32–33, <https://www.hsdl.org/?view&did=789665> (last visited Apr. 29, 2016).

University of Alaska Fairbanks.⁵⁷² Two are owned by Edison Chouest Offshore and chartered to the National Science Foundation: *Nathaniel B. Palmer* (308 feet long and launched in 1992) and *Laurence M. Gould* (230 feet long and launched in 1997).⁵⁷³ The fourth, the 360 foot *Aiviq* (launched in 2012), owned and operated by Edison Chouest Offshore, is an ice-capable anchor handling tug supply (AHTS) vessel built to support Royal Dutch Shell in the Arctic.⁵⁷⁴ On November 9, 2015, Edison Chouest Offshore canceled plans to build two more AHTS vessels.⁵⁷⁵ Foss Maritime launched the *Michele Foss*, the first of four planned Arctic tugs in March 2015. The ice-strengthened tugs are 132 feet long.⁵⁷⁶

D. Arctic Living Marine Resources

U.S. Arctic Fisheries. In 2009, the U.S. Secretary of Commerce approved the North Pacific Fisheries Management Council's Fishery Management Plan for the Fish Resources of the Arctic Management Area (Arctic FMP). The Arctic FMP imposes a moratorium on commercial fishing in the "Arctic Management Area," which includes the waters of the U.S. exclusive economic zone north of the Bering Strait, including the Chukchi and Beaufort Seas eastward to the limits of U.S. jurisdiction. The moratorium on fisheries is to remain in place until scientists can determine what fish stocks exist (e.g., Arctic cod, saffron cod, snow crab, and Pollock) and how crucial they are to maintaining a fragile Arctic ecosystem. The plan was implemented by the National Marine Fisheries Service in

572. R/V SIKULIAQ GLOBAL CLASS ICE-CAPABLE RESEARCH VESSEL, <https://www.sfos.uaf.edu/sikuliaq/launch/> (last visited Apr. 29, 2016).

573. U.S. Antarctic Program Images, NAT'L SCIENCE FOUNDATION, <https://www.nsf.gov/geo/plr/antarct/imageset/start.jsp> (last visited Apr. 29, 2016).

574. Jill Burke, *Builder of Tug that Failed Shell's Kulluk has Moneyed Alaska Ties*, ALASKA DISPATCH NEWS (Jan. 4, 2013), <http://www.adn.com/article/builder-tug-failed-shells-kulluk-has-moneyed-alaska-ties> (last visited Apr. 29, 2016).

575. *Chouest Said to Have Canceled Arctic AHTS Duo*, MARINE LOG (NOV. 9, 2015), http://www.marinelog.com/index.php?option=com_k2&view=item&id=10031:chouest-said-to-have-canceled-arctic-ahts-duo&Itemid=223 (last visited Apr. 29, 2016).

576. Peter Marsh, *Michele Foss: Foss Maritime's First Arctic Class Tug*, PACIFIC MARITIME MAGAZINE (June 1, 2015), <http://www.pacmar.com/story/2015/06/01/features/michele-foss-foss-maritimes-first-arctic-class-tug/347.html>.

2009.⁵⁷⁷ Canadians protested the eastern reach of the U.S. Arctic Management Area, claiming that it extended into waters claimed by Canada (the Beaufort Sea boundary between the U.S. and Canada is disputed).⁵⁷⁸

An initial study on the Arctic ecosystem was published by a researcher at NOAA's Alaska Fisheries Science Center in Seattle.⁵⁷⁹

Any decision on fishing activity in the harsh and distant waters of the 200,000 square mile Arctic Management Area must consider National Standard 10 of the Magnuson-Stevens Act, which dictates that conservation and management measures must, to the extent practicable, promote the safety of human life at sea.⁵⁸⁰

Norway and Russia agreed in October 2015 to increase the codfish quota in the Barents Sea.⁵⁸¹ The agreement is part of the annual fishing negotiations between both countries, which share stocks of cod, haddock, and capelin in the Barents Sea. In the late 1970s, the Russia and Norway institutionalized management cooperation through the Joint Norwegian-Russian Fisheries Commission under the Agreement of 11 April 1975.⁵⁸² The 2015 agreement contains technical regulations for fisheries operations and research collaboration.⁵⁸³

Walrus. The massive 2014 Pacific Walrus “haul out” was repeated in September 2015, when some 35,000 animals

577. 74 Fed. Reg. 211 (Dec. 3, 2009).

578. Elizabeth Bluemink, *US, Canada do Battle Over Beaufort Boundary*, ALASKA DISPATCH NEWS (Mar. 6, 2010), <http://www.adn.com/article/20100306/us-canada-do-battle-over-beaufort-boundary> (last visited Apr. 29, 2016).

579. G.A. Whitehouse, NOAA Technical Memorandum NMFS-AFSC-262, Preliminary Mass-Balance Food Web Model of the Eastern Chukchi Sea, U.S. Dep't of Commerce (2013), <https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-262.pdf>.

580. 16 U.S.C. §§ 1801–1883 (2012).

581. Trude Pettersen, *Norway and Russia Agree on Barents Sea Quotas for 2015*, BARENTS OBSERVER (Oct. 10, 2014), <http://barentsobserver.com/en/nature/2014/10/norway-and-russia-agree-barents-sea-quotas-2015-10-10> (last visited Apr. 29, 2016).

582. *Fisheries Collaboration with Russia*, RESOURCE MANAGEMENT, NORWAY, http://www.fisheries.no/resource_management/International_cooperation/Fisheries_collaboration_with_Russia/#.VxLHtvkrLIU (last visited Apr. 29, 2016).

583. *Bilateral Catch Agreement*, ARCTIC JOURNAL (Oct. 9, 2015), <http://arcticjournal.com/business/1880/bilateral-catch-agreement> (last visited Apr. 29, 2016).

congregated on a barrier island just north of Point Lay, Alaska.⁵⁸⁴

The haul outs were first observed in 2007, coinciding with a record sea ice melt in the Arctic. Female walrus and their young generally spend their summers on the sea ice, foraging in shallower areas for food. But as summer sea ice retreats, walrus are forced to spend summers on shore.⁵⁸⁵

Polar Bears. Scientists estimate the global polar bear population numbers 20,000 to 25,000, but they caution that data on populations in Russia and East Greenland are lacking.⁵⁸⁶ About sixty percent live within or are shared by Canada. Polar bears are also found in the U.S. (Alaska), Russia, Greenland, and Norway (Svalbard).⁵⁸⁷

The IUCN lists the polar bear as a vulnerable species, citing sea ice losses from climate change as the single biggest threat to polar bear survival.⁵⁸⁸ At their 2014 meeting, the IUCN Polar Bear Specialist Group reported that of the nineteen populations of polar bears, three populations are declining; six are stable; one is increasing; and there is insufficient data on the other nine.⁵⁸⁹

The Southern Beaufort Sea population along the northern coast of Alaska and western Canada plunged by about forty percent over the ten-year study period from 2001–2010, dropping from about 1,500 bears to 900 bears before stabilizing.⁵⁹⁰ However, Norway's Barents Sea polar bear population has increased by thirty percent over the past eleven years.

584. Suzanne Goldenberg, *Extreme Arctic Sea Ice Melt Forces Thousands of Walrus Ashore in Alaska*, *Guardian* (Aug. 27, 2015),

<http://www.theguardian.com/environment/2015/aug/27/walrus-alaska-arctic-sea-ice-melt> (last visited Apr. 29, 2016).

585. Emily Russell, *In Unnerving Trend, 35,000 Walrus Haul Out at Point Lay*, *Alaska Public Media* (Sept. 11, 2015), <http://www.alaskapublic.org/2015/09/11/innerving-trend-35000-walrus-haul-out-at-point-lay/> (last visited Apr. 29, 2016).

586. See *Polar Bear Status Report*, Polar Bears International, <http://www.polarbearsinternational.org/status-and-threats/polar-bear-status-report> (last visited Apr. 29, 2016).

587. *Id.*

588. *Id.*

589. *Id.*

590. *Id.*

Polar bears rely on the sea ice to hunt, travel, breed, and sometimes to den.⁵⁹¹ Scientists report that, confronted by dramatically diminished sea ice, polar bears are increasingly being forced to swim much longer distances between haul outs, increasingly their activity level at the same time food sources are less accessible.⁵⁹²

The five nations with polar bear populations signed a non-binding conservation agreement on September 2, 2015. Canada, Denmark, Norway, Russia, and the United States agreed on a circumpolar action plan to protect and manage polar bears and their habitats. Signatories to the agreement plan to draft an implementation plan and publish progress reports and action tables.⁵⁹³

The Inuit Circumpolar Council noted that the five-nation agreement recognizes the right of Inuit to harvest polar bears under Canadian land claims agreements and Greenland's legislation.⁵⁹⁴

Biodiversity and Invasive Species. Reports continue to come in on non-indigenous species in Arctic waters. In September 2014, a research vessel examining mackerel stocks caught three large Bluefin tuna in the Denmark Strait, much farther north than these fish usually range.⁵⁹⁵

In a December 8, 2015 article titled *Arctic Invasion* in *Hakai* magazine, Geoffrey Giller reported that scientists sampling arriving ships' ballast water in Svalbard identified twenty-three non-native species, including crabs, barnacles, and

591. *Id.*

592. Jonathan Amos, *Polar Bears Travel Further as Arctic Sea ice Drifts*, BBC NEWS (Dec. 16, 2015), <http://www.bbc.com/news/science-environment-35065411> (last visited Apr. 29, 2016). For more information on the environmental effects on polar bear populations, see Miriam Matejova, *Is Global Environmental Activism Saving the Polar Bear?* 47 ENVIRONMENT 14 (2015),

http://www.environmentmagazine.org/Archives/Back%20Issues/2015/September-October%202015/PolarBear_abstract.html (last visited Apr. 29, 2016).

593. *Five Circumpolar States Strike New Deal to Protect Polar Bears*, NUNATSIQA NEWS (Sept. 4, 2015),

http://www.nunatsiaqonline.ca/stories/article/65674circumpolar_nations_strike_new_plan_to_protect_polar_bears/ (last visited Apr. 29, 2016).

594. *Id.*

595. Alex Kirby, *Bluefin Tuna Follow Prey to Warming High Arctic*, CLIMATE NEWS NETWORK (Sept. 8, 2014), <http://climatenewsnetwork.net/bluefin-tuna-follow-prey-to-warming-high-arctic/> (last visited Apr. 29, 2016).

copepods, in the ballast water.⁵⁹⁶ So far, it appears that the surrounding waters are too cold for the species to survive.

Arctic High Seas Fisheries. Much of the Arctic Ocean lies beyond the U.S. or any other nation's 200-mile exclusive economic zone. Within that high seas Arctic "doughnut hole" (not to be confused with a similar high seas doughnut hole in the Bering Sea between the U.S. and Russian EEZs, which is governed by a 1994 international agreement) all nations enjoy the freedom to fish consistent with the U.N. Convention on the Law of the Sea and other applicable international law, such as the Straddling Fish Stocks Agreement.⁵⁹⁷

On June 3, 2008, President George W. Bush signed a congressional joint resolution relating to Arctic Fisheries.⁵⁹⁸ That resolution emphasizes the need for the United States to work with other nations to prepare for conserving and managing future Arctic fisheries.⁵⁹⁹ It further declares that the U.S. should support international efforts to halt the expansion of commercial fishing activities in the high seas of the Arctic Ocean until such international conservation measures are in place.⁶⁰⁰

For over five years, the U.S. encouraged the other states bordering the Arctic Ocean to negotiate an agreement to regulate Arctic fisheries. Russia balked for several years, but in 2012 it signaled its willingness to support an agreement. Talks among the Arctic states began in the spring of 2013. At a February 2014 meeting in Nuuk, Greenland, officials from Canada, Denmark, Norway, Russia, and the United States agreed on tentative terms.⁶⁰¹

In July 2015, the five nations with Arctic Ocean coastlines signed an agreement to keep their fleets out of the ocean's so-

596. Geoffrey Giller, *Arctic Invasion*, HAKAI MAGAZINE (Dec. 8, 2015), <http://www.hakaimagazine.com/article-short/arctic-invasion> (last visited Apr. 29, 2016).

597. See *Maritime Zones and Boundaries*, NOAA OFFICE OF GENERAL COUNSEL, http://www.gc.noaa.gov/gcil_maritime.html (last visited Apr. 29, 2016).

598. Pub. L. No. 110-243, 122 Stat. 1569 (2008).

599. *Id.*

600. *Id.*

601. Andrew E. Kramer, *Accord Would Regulate Fishing in Arctic Waters*, N.Y. TIMES (Apr. 16, 2013), http://www.nytimes.com/2013/04/17/world/agreement-would-regulate-fishing-in-arctic-waters.html?_r=0 (last visited Apr. 29, 2016).

called “donut hole.”⁶⁰² At the meeting, the U.S. presented its proposal for an internationally binding agreement that would, among other things, establish management organizations or arrangement to manage such fishing in accordance with modern international standards.⁶⁰³ The group will take up the subject again in the spring of 2016.

In December 2015, the U.S. State Department hosted a meeting on fisheries in the international waters of the Arctic Ocean that included Arctic nations Russia, Norway, Iceland, Denmark and Canada, as well as China, the European Union, Japan and South Korea.⁶⁰⁴

E. Arctic Non-Living Marine Resources

International policy leaders almost universally agree that the world should strive to keep global average temperature rise related to greenhouse gas emissions below 2°C above pre-industrial levels.⁶⁰⁵ Several studies indicate that meeting that goal throughout the twenty-first century requires a specific cap on global carbon emissions. Other studies estimate that emissions from using all the fossil fuels still left in the ground would exceed that cap by three times.

A study published in the science journal *Nature* in January 2015 compared the relative environmental costs of extractive activities in reserve locations around the world.⁶⁰⁶ The purpose was to arrive at a scientifically supportable conclusion about exactly which reserves should remain untapped. The results

602. Yereth Rosen, *5 Nations Sign Declaration to Protect Arctic ‘Donut Hole’ From Unregulated Fishing*, ARCTIC NEWSWIRE (July 16, 2015), <http://www.adn.com/article/20150716/5-nations-sign-declaration-protect-arctic-donut-hole-unregulated-fishing> (last visited Apr. 29, 2016).

603. *Id.*

604. Press Release, U.S. Dep’t of State, Meeting on High Seas Fisheries in the Central Arctic Ocean: Chairman’s Statement (Dec. 3, 2015), <http://www.state.gov/e/oes/rls/pr/250352.htm> (last visited Apr. 29, 2016).

605. See, e.g., Camil Domonoske, *2 Degrees, \$100 Billion: The World Climate Agreement, By the Numbers* NPR (Dec. 12, 2015), <http://www.npr.org/sections/thetwo-way/2015/12/12/459502597/2-degrees-100-billion-the-world-climate-agreement-by-the-numbers> (last visited Apr. 29, 2016).

606. Christophe McGlade & Paul Ekins, *The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2°C*, 517 NATURE 187 (2015), <http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html> (last visited Apr. 29, 2016).

indicate “that all Arctic resources should be classified as unburnable” if the temperature rise is to remain below 2°C.⁶⁰⁷

The Arctic Oil and Gas Potential. A widely-cited 2008 report by the U.S. Geological Survey estimates that the Arctic holds ninety billion barrels of oil, 1,669 trillion cubic feet of natural gas, and forty-four billion barrels of natural gas liquids, of which approximately eighty-four percent is expected to occur in offshore areas, where exploration and development risks and costs greatly exceed onshore counterparts.⁶⁰⁸

The International Energy Agency released its World Energy Outlook 2015 on November 10, 2015.⁶⁰⁹ The report found the precipitous fall in oil prices (as this is being written, crude oil is trading at its lowest level in eleven years), continued geopolitical instability and the ongoing climate negotiations are witness to the dynamic nature of energy markets.⁶¹⁰ In a time of so much uncertainty, understanding the implications of the shifting energy landscape for economic and environmental goals and for energy security is vital. The report provides a detailed analysis of the decline in oil prices and changed market conditions.

United States. The federal Outer Continental Shelf Lands Act (OCSLA) defines the OCS as all submerged lands lying seaward of state coastal waters which are under U.S. jurisdiction.⁶¹¹ Under the federal Submerged Lands Act, most states (including Alaska) have title to the adjacent submerged lands out to three miles offshore.⁶¹² Under the OCSLA, the Secretary of the Interior is responsible for the administration of mineral exploration and development of the OCS.⁶¹³ The Act empowers the Secretary to grant leases to the highest qualified responsible bidder on the basis of sealed competitive bids, and

607. *Id.* at 190.

608. U.S. GEOLOGICAL SOCIETY, CIRCUM-ARCTIC RESOURCE APPRAISAL: ESTIMATES OF UNDISCOVERED OIL AND GAS NORTH OF THE ARCTIC CIRCLE (2008), <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf> (last visited Apr. 29, 2016).

609. INTERNATIONAL ENERGY AGENCY, WORLD ENERGY OUTLOOK 2015 (2015), <http://www.worldenergyoutlook.org/weo2015/> (last visited Apr. 29, 2016).

610. *Id.* at 46-50.

611. 42 U.S.C. §§ 1301 *et seq.*; *see also* OCS Land Act History, BUREAU OF OCEAN ENERGY MANAGEMENT, <http://www.boem.gov/OCS-Lands-Act-History/> (last visited Apr. 29, 2016).

612. 42 U.S.C. § 1337(g).

613. *Id.* § 1334(a).

to formulate regulations as necessary to carry out the provisions of the Act.⁶¹⁴ The Act also provides guidelines for implementing an OCS oil and gas exploration and development program.⁶¹⁵

OCSLA leasing responsibility is delegated to the DOI's Bureau of Ocean Energy Management (BOEM).⁶¹⁶ The statutorily authorized OCSLA leasing program begins with preparation of five-year leasing plans.⁶¹⁷ The current plan covers the period 2012–2017.⁶¹⁸ That plan authorizes the leasing of up to 55.11 million acres in the Chukchi Sea and 64.72 million acres in the Beaufort Sea.⁶¹⁹

BOEM estimates that the Chukchi Sea contains between two and forty million barrels of unproved technically recoverable crude oil and up and ten to 210 trillion cubic feet of unproved technically recoverable natural gas.⁶²⁰

Royal Dutch Shell and Lease Sale 193. Royal Dutch Shell, the main purchaser of Arctic offshore Alaska drilling leases, had a disappointing 2012 Arctic season, and spent 2013 in negotiations with BOEM on conditions for a resumption of drilling. It returned to Arctic waters in the summer of 2015.

BOEM conditionally approved Shell's 2015 exploration plan on May 11, 2015, and followed up with final approval on July 22, after the supporting resources (two drill rigs and thirty support vessels) were all on scene (a Shell-chartered icebreaker MSV *Fennica* struck a submerged hazard near Dutch Harbor in July and had to undergo emergency repairs in Portland before joining the Shell fleet in the Chukchi Sea).⁶²¹

614. *Id.* § 1337(g).

615. *Id.* § 1351.

616. *Frequently Asked Questions*, BUREAU OF OCEAN ENERGY MANAGEMENT, <http://www.boem.gov/FAQ/> (last visited Apr. 29, 2016).

617. *Id.*

618. *Five-Year Outer Continental Shelf (OCS) Oil and Gas Leasing Program*, BUREAU OF OCEAN ENERGY MANAGEMENT, <http://www.boem.gov/Five-Year-Program/> (last visited Apr. 29, 2016).

619. *2012–2017 OCS Oil and Gas Leasing Program*, BUREAU OF OCEAN ENERGY MANAGEMENT, <http://www.boem.gov/Five-Year-Program-2012-2017/> (last visited Apr. 29, 2016).

620. *Oil Exploration in the U.S. Arctic Continues Despite Current Price Environment*, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/todayinenergy/detail.cfm?id=21632> (last visited Apr. 29, 2016).

621. *See generally* Paul Barrett & Benjamin Elgin, *Inside Shell's Extreme Plan to Drill for Oil in the Arctic*, BLOOMBERG (Aug. 5, 2015),

Shell successfully drilled the Burger J exploration well to a depth of 6,800 feet; however, the indications of oil and gas were reportedly not sufficient to warrant further exploration in the prospect.⁶²²

In late September 2015 Shell announced that it was suspending its Arctic offshore oil exploration program for the foreseeable future, citing disappointing results from exploratory well after having spent over seven billion dollars for exploration and leases in the Chukchi Sea.⁶²³ On December 30, 2015, the *Polar Pioneer* drill rig employed by Shell in its Chukchi Sea operation was placed aboard the heavy lift ship *Dockwise Vanguard* for transport to Norway.⁶²⁴

On October 16, 2015, BSEE denied “suspension of operations” requests by Shell and Statoil to extend their exploration leases in the Chukchi and Beaufort Sea outer continental shelf areas.⁶²⁵ As a result, the Beaufort Sea leases are scheduled to expire starting in 2017, and the Chukchi leases are scheduled to expire in 2020.⁶²⁶ On December 15, Shell filed its notice of appeal, seeking to reverse BOEM’s decision and preserve its rights under the lease.⁶²⁷

Statoil. On November 17, 2015, Norway’s Statoil announced that it plans to exit Alaska’s Chukchi Sea following recent exploration results in neighboring leases.⁶²⁸ The decision affects sixteen leases operated by Statoil, and its stake in fifty

<http://www.bloomberg.com/news/features/2015-08-05/inside-shell-s-extreme-plan-to-drill-for-oil-in-the-arctic> (last visited Apr. 29, 2016).

622. *Shell: Burger J Well to Be Sealed And Abandoned*, RTT NEWS (Sept. 28, 2015), <http://www.rttnews.com/2557348/shell-burger-j-well-to-be-sealed-and-abandoned.aspx> (last visited Apr. 29, 2016).

623. Eilperin & Mufson, *supra* note 209.

624. *Polar Pioneer Leaves Port Angeles Harbor*, PENINSULA DAILY NEWS (Dec. 25, 2015), <http://www.peninsuladailynews.com/article/20151225/NEWS/312259979> (last visited Apr. 29, 2016).

625. Yareth Rosen, *Environmental Groups Want a Say in Shell’s Arctic Lease-Extension Appeal*, ALASKA DISPATCH NEWS (Jan. 14, 2016), <http://www.adn.com/article/20160114/environmental-groups-want-say-shells-arctic-lease-extension-appeal> (last visited Apr. 29, 2016).

626. *Id.*

627. *Id.*

628. Alex DeMarban & Chris Klint, *Statoil Withdraws from Oil Exploration in Alaska’s Chukchi Sea After Shell Pullout*, ALASKA DISPATCH NEWS (Nov. 17, 2015), <http://www.adn.com/article/20151117/statoil-withdraws-oil-exploration-alaskas-chukchi-sea-after-shell-pullout> (last visited Apr. 29, 2016).

leases operated by ConocoPhillips, all in the Chukchi Sea.⁶²⁹ The leases were awarded in the 2008 lease sale in Alaska and will expire in 2020. In October 2015, BOEM denied Statoil's request to extend the leases.

With Shell's and Statoil's departures from the Alaska Arctic, seven companies now hold leases in the Chukchi Sea including: Eni Petroleum Co., Iona Energy Co., OOGC America LLC, and Repsol SA.⁶³⁰

Lease Sale Cancellations. BOEM announced the cancellation of Oil and Gas Lease Sale 237 in the Chukchi Sea Planning Area and Sale 242 in the Beaufort Sea Planning Area on the outer continental shelf (OCS) in late November 2015.⁶³¹ Lease Sale 237 was scheduled to occur in 2016 and Sale 242 was scheduled to occur in 2017 under the 2012–2017 OCS Program. The Sales were canceled due to lack of industry interest; current market conditions, specifically low oil prices; and the unavailability of tracts which are already under lease.⁶³²

Liberty Island Project. BOEM is deciding how to assess the environmental effect of a production plan for the Liberty Project by Hilcorp Alaska LLC.⁶³³ The project entails construction of a twenty-three-acre gravel island in Foggy Island Bay, fifteen miles east of Prudhoe Bay. The island would serve as a platform for five or more extraction wells that could tap oil six miles from shore in the Beaufort Sea. A successful well would be the first petroleum production in federal Arctic waters.⁶³⁴

National Petroleum Council Report. The National Petroleum Council is a federally chartered, but privately

629. *Id.*

630. Jennifer A. Dlouhy, *Shell Seeks to Preserve U.S. Drilling Rights in Arctic Ocean*, BLOOMBERG (Dec. 15, 2015), <http://www.bloomberg.com/politics/articles/2015-12-15/shell-bid-aims-to-preserve-u-s-drilling-rights-in-arctic-ocean> (last visited Apr. 29, 2016).

631. Cancellation of Oil and Gas Lease Sale 237 in the Chukchi Sea Planning Area on the Outer Continental Shelf (OCS), 80 Fed. Reg. 74,796 (Nov. 30, 2015).

632. *Id.*

633. *Hilcorp Alaska LLC*, Bureau of Energy Ocean Management, <http://www.boem.gov/Hilcorp-Liberty/> (last visited Apr. 29, 2016).

634. Alan Bailey, *New Liberty Plan*, PETROLEUM NEWS (Jan. 11, 2015), <http://www.petroleumnews.com/pntruncate/13322022.shtml> (last visited Apr. 29, 2016).

funded, advisory group established to represent the oil and gas industry's view to the federal government.⁶³⁵ At the request of Secretary of Energy Moniz, it produced a thorough report in March 2015: *Arctic Potential, Realizing the Promise of U.S. Arctic Oil and Gas Resources*.⁶³⁶ The report notably concludes that existing technology allows the safe development of Arctic oil and gas, but U.S. regulatory practices discourage exploration activity.⁶³⁷

Canada. In June of 2015, Exxon and BP suspended a joint venture in Canadian Arctic exploration due to lack of time for test drilling before its lease expires in 2020.⁶³⁸

Canada's National Energy Board confirmed on December 17, 2014 that Chevron withdrew from a hearing on Arctic drilling rules after deciding to indefinitely shelve plans to drill in the EL 481 block of Canada's Beaufort Sea. Chevron reportedly cited economic uncertainty, though not directly related to the forty-eight percent decline in oil prices since June 2014. Chevron was unlikely to drill until 2025, so its decision probably reflects a more long-term assessment of the costs and benefits of its Arctic operations.⁶³⁹

Norway. Norway's Statoil finished 2014 amid reports of escalating costs, declining prices, and disappointing failures. Statoil came up dry in all three Arctic wells drilled during its 2014 Barents Sea exploration season.⁶⁴⁰

635. *About NPC*, NATIONAL PETROLEUM COUNCIL, <http://www.npc.org/background.html> (last update Mar. 31, 2015).

636. National Petroleum Council, *Arctic Potential, Realizing the Promise of U.S. Arctic Oil and Gas Resources* (2015), http://npcarcticpotentialreport.org/pdf/ExSummary_vol-41715.pdf (last visited Apr. 29, 2016).

637. *Id.* at 51.

638. Chester Dawson, *Exxon Mobil, BP Suspend Canadian Arctic Exploratory Drilling Program in Beaufort Sea*, WALL STREET J. (June 26, 2015), <http://www.wsj.com/articles/exxon-mobil-bp-suspend-canadian-arctic-exploratory-drilling-program-in-beaufort-sea-1435348381> (last visited Apr. 29, 2016).

639. *Chevron Cancels Canadian Arctic Drilling as Oil Prices Slide*, REUTERS (Dec. 17, 2014), <http://www.reuters.com/article/us-chevron-canada-artic-idUSKBN0JV2UU20141217> (last visited Apr. 29, 2016).

640. Kjetil Malkenes Hovland, *Statoil Fails to Make Commercial Discoveries in Arctic Drilling Campaign*, WALL STREET J. (Aug. 7, 2014), <http://www.wsj.com/articles/statoil-fails-to-make-commercial-discoveries-in-arctic-drilling-campaign-1407400451> (last visited Apr. 29, 2016).

Italian oil company ENI reportedly plans to move ahead with its plans to drill in the Norwegian Arctic, provided that Norway assents.⁶⁴¹

Russia. Russia's leading resource extraction and development companies, Gazprom (natural gas) and Rosneft (the world's largest publicly-traded petroleum company), continue to explore new resources in the Arctic. To succeed, however, Russia will need access to Western technology and investment funds, and sanctions have impeded access to both.

Multilateral sanctions imposed on Russia, Russian companies, and selected Russian individuals following Russia's 2014 invasion of Ukraine continue to affect Russia's ability to develop its offshore oil and gas resources.⁶⁴²

In his November 17, 2015, testimony before a House committee, Admiral Papp reported that "The U.S. is in lockstep with the E.U. and Norway on sanctions that target, among other things, Russia's ability to develop resources in its Arctic waters."⁶⁴³

Sanctions were expanded in August 2015 to bar transporting certain equipment to Gazprom's Yuzhno-Kirinskoye field. And Rosneft postponed drilling a second well in the Kara Sea until 2018, because sanctions have reportedly prevented access to equipment and funding.⁶⁴⁴

In September 2015, Russia's Ministry of Natural Resources and Environment, Sergei Donskoi, announced that Russia will issue four field licenses to Rosneft, the country's largest oil producer, and Gazprom for development of the Arctic Shelf. Donskoi also commented that the ministry had considered

641. Harry Davies, *Italian Firm Eni Poised to Begin Arctic Oil Quest as Shell Quits Alaska*, GUARDIAN (Sept. 30, 2015), <http://www.theguardian.com/environment/2015/sep/30/italian-firm-eni-to-begin-arctic-oil-quest-shell-quits-alaska> (last visited Apr. 29, 2016).

642. See e.g., Joseph J. Schatz, *The Transatlantic Cost of Russia Sanctions*, POLITICO (Sept. 12, 2015), <http://www.politico.eu/article/transatlantic-unity-russia-sanctions-united-states-europe-ukraine/> (last visited Apr. 29, 2016).

643. *Statement of Admiral Robert J. Papp, Jr.*, supra note 443.

644. *Russia's Rosneft Unlikely to Resume Kara Sea Drilling Before 2018*, Reuters (June 11, 2015), <http://uk.reuters.com/article/russia-rosneft-kara-sea-idUKL5N0YW3DD20150611> (last visited Apr. 29, 2016).

suspending issuance of licenses but would continue issuing them under Russia's current legislation.⁶⁴⁵

On Dec. 29, 2015, Gazprom Chairman Alexey Miller underlined his company's commitment to the Russian Arctic region. The statement followed news that Gazprom's board of directors had approved an \$11.8 billion investment program for 2016. Noting Gazprom's leadership position in the Russian petroleum industry, Miller said: "We have been efficiently developing the Prirazlomnoye field in the Arctic Shelf. In November, the amount of oil output reached one million [tons] there and this vividly demonstrates that we operate this complex and extremely promising region in a productive and safe manner."⁶⁴⁶

Miller was referring to Gazprom Neft's news that it has brought its second well into production at the Prirazlomnoye field, with output field now up to 1,800 tons per day (up from 300,000 tons/day in 2014). The Prirazlomnoye field is located in the Pechora Sea, thirty nautical miles from shore.⁶⁴⁷

F. Marine Pollution Prevention, Response, & Liability

There were no significant marine pollution incidents in the Arctic in 2015.

U.S. Vessel Response Plan Requirements. On September 30, 2013, the Coast Guard promulgated its final rule on Nontank Vessel Response Plans (NTRVPs).⁶⁴⁸ The rule entered into effect on January 30, 2014. Foreign vessels in innocent passage through the U.S. territorial sea or transit passage through an international strait in U.S. waters (e.g., Unimak Pass, which some 3,000 vessels transit each year) are exempt.⁶⁴⁹ On December 20, 2013, the Coast Guard granted a temporary Alternative Planning Criteria (APC) request by the

645. *Sergei Donskoi: Rosneft and Gazprom to Receive Four Arctic Development Licenses*, THE ARCTIC (Sept. 2, 2015), <http://arctic.ru/resources/20150902/155646.html>.

646. Wendy Laursen, *Arctic Oil and Gas: Triumph and Disappointment in 2015*, MARITIME EXECUTIVE (Dec. 30, 2015), <http://www.maritime-executive.com/editorials/arctic-oil-and-gas-triumph-and-disappointment-in-2015>.

647. *Id.*

648. 78 Fed. Reg. 60,100 (Sept. 30, 2013) (to be codified at 33 C.F.R. 151, 155, & 160).

649. 78 Fed. Reg. 60,100, 60,102.

Alaska Maritime Prevention & Response Network for the waters of the Western Alaska Captain of the Port region.⁶⁵⁰

In May 2015, the Coast Guard approved a second APC service provider for a limited area of Western Alaska. Resolve Marine Group and National Response Corporation (NRC) partnered to form 1 Call-Alaska.⁶⁵¹ The new provider's coverage is limited to the northern Pacific great circle route and to nontank vessels transiting through the Aleutian Islands. This second APC approval raised concerns that competition between service providers would provoke a "race to the bottom," and discourage the investment necessary for the region to meet the more demanding National Planning Criteria for vessel spill response plans.

The APC approvals for both providers were due to expire on December 31, 2015, but were extended through 2017.⁶⁵² This, despite concerns over lack of response capability in the region raised by the co-chairs of Alaska's Arctic Policy Committee, Senator Lesil McGuire and Representative Bob Herron, in their testimony to the U.S. Senate Energy and Natural Resources Committee on March 5, 2015.⁶⁵³

The U.S. Coast Guard, with NOAA, again conducted oil spill response exercises during the annual Arctic Shield mission. The agencies conducted a simulated spill and tested detection and response technologies in real ice conditions. Testing included a mapping tool (Arctic ERMA) designed to provide a quick visualization of spill situations and response options, and airborne and underwater remote devices to delineate the extent of simulated contamination.⁶⁵⁴

650. ALASKA MARITIME PREVENTION & RESPONSE NETWORK, <http://www.akmprn.org/> (last visited Apr. 10, 2016).

651. *Resolve Marine Group and NRC Approved for Western Alaska Alternative Planning Criteria*, RESOLVE MARINE GROUPS (May 21, 2015), http://www.resolvemarine.com/news_item.php?id=177.

652. *Network's Alternative Planning Criteria (APC) Extended Until December 2017*, THE NETWORK, <http://www.ak-mprn.org/news/networks-alternative-planning-criteria-apc-reapproved-through-2017/> (last visited Apr. 10, 2016).

653. *United States Arctic Opportunities Hearing Before the S. Comm. on Energy and Natural Resources*, 114th Cong. 2 (2015) (statements of Sen. Lesil McGuire & Rep. Bob Herron), <http://www.energy.senate.gov/public/index.cfm/2015/3/united-states-arctic-opportunities-hearing>.

654. Zachary Winters-Staszak, *Adventures in Developing Tools for Oil Spill Response in the Arctic*, NOAA'S RESPONSE AND RESTORATION BLOG (Sept. 11, 2014), <https://usresponserestoration.wordpress.com/tag/oil-spills/page/12/>.

Within the private sector, the Arctic Response Technology Joint Industry Program reported advances in their research program on remote sensing, dispersants and chemical herding, and in situ burning.⁶⁵⁵

G. *Arctic Marine Scientific Research*

The Third Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean was held in Seattle on April 14–16, 2015.⁶⁵⁶ Scientists note that conditions are not in place in the Central Arctic Ocean (CAO) for groundfish like cod or haddock; however, pelagic species like polar cod might be able to spread into the CAO.

On June 1, 2015, the Canadian High Arctic Research Station Act came into force, establishing *Polar Knowledge Canada*, a new federal research organization that combines the mandate and functions of the former Canadian Polar Commission and the Canadian High Arctic Research Station program.⁶⁵⁷

The Arctic Division of the American Association for the Advancement of Science held its 2015 Arctic Science Conference in Anchorage on October 1–3, 2015. The conference theme was “Healthy Estuaries: Sustainability and Resilience.”⁶⁵⁸

The 2015 Arctic Science Summit was held in Toyama, Japan, on April 23–30, 2015.⁶⁵⁹ The summit, convened under the auspices of the International Arctic Science Committee and co-organized by the Science Council of Japan, drew 708 participants from twenty-seven countries.⁶⁶⁰

The 10th annual meeting of the international Ecosystem Studies of Sub-Arctic Seas Program, was held at the

655. See *Research Projects*, ARCTIC RESPONSE TECHNOLOGY, <http://www.arcticresponsetechnology.org/research-projects> (last visited Apr. 10, 2016).

656. Meeting on High Seas Fisheries in the Central Arctic Ocean, *supra* note 604.

657. *Canadian High Arctic Research Station*, INDIGENOUS AND NORTHERN AFFAIRS CANADA, <https://www.aadnc-aandc.gc.ca/eng/1314731268547/1314731373200> (last visited Apr. 17, 2016).

658. *2015 Arctic Science Conference*, ARCTIC AAAS, <http://arcticaaas.org/meetings/2015/index.html> (last visited Apr. 17, 2016).

659. *ASSW2015 was Held in Toyama, Japan*, ASSW 2015, <http://assw2015.org/index.html> (last visited Apr. 17, 2016).

660. *Id.*

University of Washington School of Aquatic and Fishery Sciences on June 15–17, 2015.⁶⁶¹

The role of the International Arctic Science Committee (IASC) is examined in a 2015 Arctic Yearbook article by Malgorzata Smieszek: 25 Years of the International Arctic Science Committee (IASC).⁶⁶² ISAC is an International Scientific Associate of the International Council for Science (ICSU).⁶⁶³ IASC has been an accredited observer of the Arctic Council from its very beginning and is supporting the work of the Arctic Council, its Working Groups (WGs) and Permanent Participants (PPs) by providing scientific expertise from all its members, including the non-Arctic countries.⁶⁶⁴

Dr. Brendan P. Kelly was named executive director of the Study of Environmental Arctic Change (SEARCH), an NSF-funding organization charged with coordinating cross-disciplinary and cross-culture Arctic scientific research.⁶⁶⁵

An NSF-funded research project by Oregon State University concluded that sea levels have risen six meters or more on multiple occasions over the past three million years with just slight global warming.⁶⁶⁶

The ongoing Sea State and Boundary Layer Physics of the Emerging Arctic Ocean study, an Office of Naval Research Departmental Research Initiative (DRI) chaired by Dr. Jim Thomson of the UW Applied Physics Laboratory, seeks to identify factors affecting the spatial and temporal variability of

661. Hannah Hickey, *Conference Next Week Will Discuss Future of Arctic, sub-Arctic Seas*, UW TODAY BLOG (June 11, 2015),

<http://www.washington.edu/news/2015/06/11/conference-next-week-will-discuss-future-of-arctic-sub-arctic-seas-2/>.

662. Malgorzata Smieszek, *25 Years of International Arctic Science Committee (IASC)*, in ARCTIC YEARBOOK 436 (Lassi Heinen, et al. eds. 2015), http://www.arcticyearbook.com/images/Articles_2015/briefing-notes/5.BN_M_Smieszek.pdf.

663. *Id.*

664. *Id.* at 441.

665. Jessica Rohde, *Study of Environmental Arctic Change (SEARCH) Announces New Executive Director*, IARPC COLLABORATIONS (Aug. 21, 2015), <http://www.iarpccollaborations.org/news/2913>.

666. *Study: Global Sea Levels Have Risen Six Meters or More with Just Slight Global Warming*, OREGON STATE UNIVERSITY (July 9, 2015), <http://oregonstate.edu/ua/ncs/archives/2015/jul/study-global-sea-levels-have-risen-six-meters-or-more-just-slight-global-warming>.

sea state, and improve forecasting of waves on the open ocean and in the marginal ice zone.⁶⁶⁷

In launching the initiative, ONR noted that there remain fundamental gaps in our knowledge of the physical environment and processes, interactions and feedbacks that are critical to understanding the seasonal evolution of sea ice and the effect of increasing open water on the ice and on the atmosphere, at the Arctic to hemispheric scale.⁶⁶⁸

R/V *Sikuliaq* served as the research platform from September 30–November 6, 2015. Dr. Thomson’s cruise report can be found here.⁶⁶⁹

The DRI is part of ONR’s Arctic and Global Prediction Program, and is expected to run for five years, from FY13 to FY17.⁶⁷⁰

Ocean Acidification. Ocean acidification is particularly acute in polar waters. The Arctic Monitoring and Assessment Program, an Arctic Council Working Group, commissioned a three-year study of Arctic waters acidification. The report (Arctic Ocean Acidification Assessment) was released on May 6, 2013. AMAP released an overview report in March 2014.⁶⁷¹

A study released in the June 2015 issue of *Oceanography* revealed that the Chukchi and Beaufort seas could reach acidification levels that threaten the entire marine ecosystem as early as 2030. The authors concluded by warning that, “[t]his region provides unique insights into how the global ocean will respond to human activities, and it is our best hope for developing the understanding that will be needed to mitigate and adapt to what will be our new, modern ocean environment.”⁶⁷²

667. *Sea State and Boundary Layer of Physics of Emerging Arctic Ocean*, APPLIED PHYSICS LABORATORY, UNIVERSITY OF WASHINGTON, http://www.apl.washington.edu/project/project.php?id=arctic_sea_state (last visited Apr. 17, 2016).

668. *Id.*

669. *Id.*

670. *Id.*

671. ARCTIC MONITORING AND ASSESSMENT PROGRAMME, ARCTIC OCEAN ACIDIFICATION 2013: AN OVERVIEW (2014), <http://www.amap.no/documents/doc/arctic-ocean-acidification-2013-an-overview/1061>.

672. J.T. Mathis et al., *Ocean Acidification in the Surface Waters of the Pacific-Arctic Boundary Regions*, 28 OCEANOGRAPHY 122, 127 (2015), http://tos.org/oceanography/assets/docs/28-2_mathis2.pdf.

H. *Indigenous Arctic Residents*

The Arctic region is home to thirty different indigenous groups and four million residents.⁶⁷³ The Arctic Council has granted Permanent Participant status to six Arctic indigenous communities.⁶⁷⁴

Neither the United States nor Canada signed the 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).⁶⁷⁵ In 2010, Canada officially endorsed the declaration, and President Obama issued a statement of support. But Canada characterized it as “aspirational,” and President Obama emphasized that it is “not legally binding or a statement of current international law.”⁶⁷⁶

The International Whaling Commission (IWC) establishes aboriginal catch limits.⁶⁷⁷ For 2013 through 2018 the IWC has authorized Alaskan and Chukotka native whalers to land up to 336 whales to meet subsistence needs.⁶⁷⁸

On July 21, 2015, Inuvialuit signed a self-government agreement-in-principle with the governments of the Northwest Territories and Canada.⁶⁷⁹

On July 31, 2015, the European Union formally approved the Government of Nunavut as a Recognized Body under the Indigenous Communities Exemption of the EU Seal Regime, allowing the Government of Nunavut will be able to certify sealskins as having been harvested according to the rules of the exemption.⁶⁸⁰ The EU seal ban issue had previously been

673. *Protecting Life in the Arctic*, PEW CHARITABLE TRUSTS, <http://www.pewtrusts.org/en/projects/protecting-life-in-the-arctic> (last visited Apr. 17, 2016).

674. *Arctic Council*, ARCTIC PORTAL, <http://arcticportal.org/arctic-governance/arctic-council> (last visited Apr. 17, 2016).

675. See *UN Declaration on the Rights of Indigenous Peoples*, INDIGENOUS FOUNDATIONS, UNIVERSITY OF BRITISH COLUMBIA, <http://indigenousfoundations.arts.ubc.ca/home/global-indigenous-issues/un-declaration-on-the-rights-of-indigenous-peoples.html> (last visited Apr. 17, 2016).

676. *Id.*

677. *Catch Limits & Catches Taken*, INTERNATIONAL WHALING COMMISSION, <https://iwc.int/catches> (last visited Apr. 17, 2016).

678. *Id.*

679. *More Decision-Making Power for Inuvialuit Communities*, GOVERNMENT OF CANADA (July 21, 2015), <http://news.gc.ca/web/article-en.do?nid=1004559>.

680. News Release, Dep't of Executive and Intergovernmental Affairs, Nunavut, European Union Approves Exemption for Nunavut Seal Hunt (July 31, 2015),

cited by Canada as the reason for their objection to EU Observer status at the Arctic Council.⁶⁸¹

Inuit leaders attended the COP21 climate change conference in Paris.⁶⁸² Vice President of the Inuit Circumpolar Council-Canada Herb Nakimayak, Nunavut Premier Peter Taptuna, and Nunavut MP Hunter Tootoo of the federal fisheries ministry attended the summit as part of the Canadian delegation.⁶⁸³ Additionally, the Joint Arctic Peoples' delegation to Paris was headed by ICC's international chair Okalik Egeesiak and holds observer status at the Conference.⁶⁸⁴ The Inuit hoped to see support for Inuit adaption and mitigation efforts, use of native knowledge in decision making and creation of global financing to support indigenous peoples to monitor and battle climate change.⁶⁸⁵

I. Military Activities in the Arctic

When the Arctic Council was established in 1996, the founding states elected not to include military security issues in the council's mandate.⁶⁸⁶ Some have argued that the decision to exclude security issues should be reconsidered. Recommendations include a complete de-militarization of the Arctic (as is the case with Antarctica) and declaring the Arctic region to be a nuclear-weapons-free zone.

Canada. Canada is a charter member of NATO. Its armed forces number 68,000 active and 7,000 reserves. In addition,

<http://www.gov.nu.ca/eia/news/european-union-approves-exemption-nunavut-seal-hunt>.

681. Lassi Heininen, Heather Exner-Pirot & Joël Pflouffe, *This Year in the Arctic: Timeline of 2015 Events*, in ARCTIC YEARBOOK 29 (Lassi Heininen, et al. eds. 2015), <http://www.arcticyearbook.com>.

682. Shady Grove Oliver, *Arctic Delegation Heads to Paris Climate Talks*, ARCTIC NEWSWIRE (Dec. 4, 2015), <http://www.adn.com/article/20151204/arctic-delegation-heads-paris-climate-talks>.

683. *Inuit Leaders in Paris Attempt to Raise Arctic Issues at COP21*, NUNAATSIAQ NEWS (Dec. 1, 2015), http://www.nunatsiaqonline.ca/stories/article/65674inuit_leaders_in_paris_to_turn_cop21_attention_to_arctic_issues/.

684. *Id.*

685. *Id.*

686. The Council's Charter states that "The Arctic Council should not deal with matters related to military security." Ottawa Declaration, page 1, note 352.

the Canadian Coast Guard, a civilian, non-paramilitary organization, has over 4,500 members.⁶⁸⁷

It is too early to predict how the Trudeau's national security policy might differ from those of the Harper government, but the immediate withdrawal of Canadian military forces from Syria and Iraq may foreshadow a more isolationist posture.⁶⁸⁸

Vessel procurement requirements for the Royal Canadian Navy and Canadian Coast Guard are consolidated in the National Shipbuilding Procurement Strategy.⁶⁸⁹ In 2011, the government awarded a twenty-five billion dollar contract to build six to eight Arctic Offshore Patrol Ships as well as fifteen other warships for the RCN over the next two decades.⁶⁹⁰ The Canadian Press reported on September 3, 2014 that the Arctic ship order was on time and under budget.⁶⁹¹ By December, however, the Canadian Parliamentary Budget Office estimated that only four ships would be built, with a fifty percent chance of on-time delivery.⁶⁹²

Canada announced in August 2014 plans to develop a series of Northern Operations Hubs "to facilitate initial rapid deployment and up to thirty days sustained operations in the North."⁶⁹³ The hubs are expected to be operational by 2018 in Iqaluit, Yellowknife, Resolute Bay, and Inuvik. Canada also

687. *NATO Member Countries*, NATO,

http://www.nato.int/cps/en/natolive/nato_countries.htm (last updated Nov. 19, 2015).

688. Jessica Murphy, *Canada to End Airstrikes in Syria and Iraq*, *GUARDIAN* (Oct. 20, 2015), <http://www.theguardian.com/world/2015/oct/21/canada-end-airstrikes-syria-iraq-new-prime-minister-trudeau>.

689. *National Shipbuilding Procurement Strategy*, PUBLIC WORDS AND GOVERNMENT SERVICES CANADA, <http://www.tpsgc-pwgsc.gc.ca/app-acq/amd-dp/mer-sea/snacnsps/index-eng.html> (last updated Apr. 13, 2016).

690. Jeffrey Gilmour, *Canadian Defense Spending – A Case Study of Management*, 15 *J. OF MILITARY AND STRATEGIC STUDIES* 177 (2014), <https://www.ciaonet.org/attachments/24455/uploads>.

691. *Design of Arctic Patrol vessels on Time, Under Budget by \$200 to \$30 M*, *GLOBAL NEWS* (Sept. 3, 2014), <http://globalnews.ca/news/1541457/design-of-arctic-patrol-vessels-on-time-under-budget-by-20-to-30m/>.

692. OFFICE OF THE PARLIAMENTARY BUDGET OFFICER, *BUDGET ANALYSIS FOR THE ACQUISITION OF A CLASS OF ARCTIC/OFFSHORE PATROL SHIPS 2* (2014), http://www.pbo-dpb.gc.ca/web/default/files/files/files/AOPS_EN.pdf.

693. David Pugliese, *Canadian Forces to Stockpile Military Equipment in Arctic 'Hubs' for Faster Response in Case of Emergency*, *NATIONAL POST* (Aug. 21, 2014), <http://news.nationalpost.com/news/canada/canadian-forces-to-stockpile-military-equipment-in-arctic-hubs-for-faster-response-in-case-of-emergency>.

conducted a Canadian Armed Forces Joint Arctic Experiment that tested unmanned technology in Arctic conditions.⁶⁹⁴

Finland. Finland, which has adopted a non-alignment policy, is not a member of NATO;⁶⁹⁵ however, NATO and Finland actively cooperate on peace and security operations. Finnish and international concerns were raised in late 2014, when Russia reopened its Cold War era military base in Alakurtti, less than forty miles from the Finnish border.⁶⁹⁶ In early June of 2015, rumors circulated that Finland's new government was exploring the possibility of joining NATO.⁶⁹⁷ Finland's military numbers 35,000 standing armed forces and 900,000 reserves.⁶⁹⁸

NATO. The North Atlantic Treaty Organization (NATO), established by the Atlantic Treaty of 1949,⁶⁹⁹ now includes twenty-eight member-states.⁷⁰⁰ Article V of the treaty states that if an armed attack occurs against one of the member-states, it should be considered an attack against all members, and other members shall assist the attacked member, with armed forces if necessary.⁷⁰¹

694. Alycia Coulter, *Joint Arctic Experiment 2014 Demonstrates Capabilities of Unmanned Systems at CFS Alert*, NATIONAL DEFENCE AND THE CANADIAN ARMED FORCES (Oct. 22, 2014), <http://www.forces.gc.ca/en/news/article.page?doc=joint-arctic-experiment-2014-demonstrates-capabilities-of-unmanned-systems-at-cfs-alert/i1glw4ox>.

695. General Gustav Hägglund, *Finnish Defence Policy Aims to Protect Against External Pressures*, NATO, <http://www.nato.int/docu/review/1995/9504-4.htm> (last visited Apr. 16, 2016).

696. Elisabeth Braw, *Putin Makes His First Move in Race to Control the Arctic*, NEWSWEEK (Jan. 5, 2015), <http://www.newsweek.com/2015/01/16/putin-makes-his-first-move-race-control-arctic-296594.html>.

697. Mark Seip, *Fearful of Putin, Finland Explores NATO Membership*, NEWSWEEK (May 4, 2015), <http://www.newsweek.com/fearful-putin-finland-explores-nato-membership-339428>.

698. *Id.*

699. North Atlantic Treaty, Apr. 4, 1949, 63 Stat. 2241, 34 U.N.T.S. 243 [hereinafter North Atlantic Treaty].

700. NATO member states are the following: Albania, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Turkey, United Kingdom, and United States. *NATO Member Countries*, *supra* note 687.

701. North Atlantic Treaty, *supra* note 699, at art. V.

For an overview of NATO's role in Arctic security, see Maarten de Sitter, *NATO & the Arctic*, in the 2015 Arctic Yearbook.⁷⁰²

Some have argued that the NATO member states urgently need to address the evolving Arctic security environment. NATO's 2010 *Strategic Concept* fails to even mention the Arctic.⁷⁰³ Nor do any of the subsequent NATO summit declarations address the changing Arctic security picture. The might change in July 2016, when the NATO members assemble for a high level summit in Warsaw, Poland.

Retired Navy Admiral and former NATO Supreme Commander James Stavridis observed in a Foreign Policy article:

There are varying views of the role of NATO in the High North, which run from Canada's somewhat laissez faire philosophy of "High North, Low Tension" in terms of NATO involvement; to Norway's desire to integrate national and NATO surveillance systems to cover the Arctic aggressively and thoroughly from an alliance perspective.

The Norwegians often say the High North is the unguarded flank of the Alliance, because they fear Russian territorial aggression and a fight over hydrocarbons. The Canadians, on the other hand, jokingly say that the real job of the military in the Arctic in terms of any invader would be "search and rescue," because the conditions are too harsh to permit real military threat" as the Canadian minister of defense said somewhat ironically at the Halifax International Security Forum in 2012. The U.S. position tends to lie somewhere in between these two views, and we should lead NATO to engage more directly and realistically.⁷⁰⁴

Norway. Norway is a charter member of NATO.⁷⁰⁵ Its armed forces number 26,200 active and 56,200 reserves. The Russian announcement that it will soon add a marine brigade

702. Maarten de Sitter, *NATO & the Arctic*, in ARCTIC YEARBOOK 408 (Lassi Heininen, et al. eds. 2015), <http://www.arcticyearbook.com>.

703. Luke Coffey, *NATO in the Arctic: Challenges and Opportunities*, HERITAGE INSTITUTE (June 22, 2012), <http://www.heritage.org/research/reports/2012/06/nato-in-the-arctic-challenges-and-opportunities>.

704. James Stavridis, *Advice for the Ice King*, FOREIGN POLICY (Oct. 9, 2014), <http://foreignpolicy.com/2014/10/09/advice-for-the-ice-king/>.

705. *NATO Member Countries*, supra note 687.

to its Northern Fleet and station those marines near Pechenga (Murmansk Oblast)—just nine miles from the Norwegian border—raised concerns in Norway.⁷⁰⁶

At the CSIS forum,⁷⁰⁷ Norway's Foreign Minister Børge Brende expressed Norway's grave concern with Russia's violations of international law, which has created a "new security environment in Europe," Brende observed that Norway was compelled to impose sanctions and suspend military cooperation, but would continue to cooperate with Russia on fisheries, maritime safety, nuclear safety and environmental protection.⁷⁰⁸

Russia. On December 26, 2014, President Putin signed the revised Russian Military Doctrine. After characterizing NATO as a major threat to Russia's security, for the first time ever the doctrine named the protection of national interests in the Arctic among the main priorities for Russian armed forces in times of peace.⁷⁰⁹

Russia established its Arctic Command in 2014, to coordinate all military activities in the region.⁷¹⁰ On "Navy Day" in July 2015, Russia announced a new naval doctrine (in Russian), in which the Arctic plays a central role.⁷¹¹ Russia's Northern Fleet now comprises two-thirds of the nation's navy. That fleet will soon be reinforced with a marine brigade stationed near Pechenga (nine miles from the Norwegian border). In January 2015, Russia reopened its military

706. See Trude Pettersen, *More Naval Infantry to the Northern Fleet*, BARENTS OBSERVER (Nov. 28, 2014), <http://barentsobserver.com/en/security/2014/11/more-naval-infantry-northern-fleet-28-11>.

707. See *supra* Section III.I.

708. See Minister of Foreign Affairs Børge Brende, Special Advisory Board Meeting, CSIS (Apr. 14, 2014), <http://csis.org/multimedia/video-borge-brende-minister-foreign-affairs-norway>.

709. *Russia's New Military Doctrine Names NATO as Key Risk*, REUTERS (Dec. 26, 2014), <http://www.reuters.com/article/us-russia-crisis-military-doctrine-idUSKBN0K40Q120141226>.

710. Luke Coffey, *Russian Military Activity in the Arctic: A Cause for Concern*, HERITAGE (Dec. 16, 2014), <http://www.heritage.org/research/reports/2014/12/russian-military-activity-in-the-arctic-a-cause-for-concern>.

711. Wendy Laursen, *Moscow Launches New Strategy, New Ship*, MARITIME-EXECUTIVE (July 26, 2015), <http://www.maritime-executive.com/article/moscow-launches-new-strategy-new-ship>.

installation in Alakurtti, sixty kilometers from the border of Finland.⁷¹²

Russia increased its military budget by nearly eleven billion dollars from 2014 to 2015. It has announced its intent to modernize seventy percent of its military by 2020.⁷¹³

Russian General Valery Gerasimov stated that in 2015, the Defense Ministry will focus on increasing combat capabilities with a focus on the Arctic.⁷¹⁴ Moscow is in the process of constructing ten Arctic search and rescue stations, sixteen deep water ports, thirteen airfields, and ten air-defense radar stations.⁷¹⁵ On December 9, 2015, Russia deployed an S-300 equipped air defense missile regiment on the Novaya Zemlya islands.⁷¹⁶

Mark Ferguson, commander of the U.S. Navy in Europe and Africa and head of NATO's joint force command in Naples, stated that Russia's "Arc of Steel" from the Arctic to the Mediterranean is evidence of the country's remilitarization.⁷¹⁷ Russia maintains 20–30 icebreaking ships, and it opened a specialized Arctic rescue center for emergencies in its Murmansk port in mid-October 2015.⁷¹⁸

712. *Russia Moves First Troops to Arctic Base Near Finnish Border*, BARENTS OBSERVER (Jan. 15, 2015), <http://barentsobserver.com/en/security/2015/01/russia-moves-first-troops-arctic-base-near-finnish-border-15-01>.

713. Catrin Einhorn, Hannah Fairfield, & Tim Wallace, *Russia Rearms for a New Era*, N.Y. TIMES (Dec. 24, 2015), http://www.nytimes.com/interactive/2015/12/24/world/asia/russia-arming.html?_r=0.

714. Timothy Heritage, *Russia to Step Up Combat Capabilities in Crimea*, REUTERS, Jan. 13, 2015, <http://www.reuters.com/article/us-ukraine-crisis-russia-military-idUSKBN0KM10320150113>.

715. Jeremy Bender, *Russia Just Put the Finishing Touches on 6 Arctic Military Bases*, BUSINESS INSIDER (Dec. 7, 2015), http://www.businessinsider.com/russia-equipped-six-military-bases-in-the-arctic-2015-12?pundits_only=0&get_all_comments=1&no_reply_filter=1#comment-56679ed8ecad04e727ac49e3.

716. *Russian Defense Ministry Deploys S-300, S-400 Air Defense Missile Systems in Arctic*, TASS (Dec. 9, 2015), <http://tass.ru/en/defense/842758>.

717. Jim Garamone, *NATO Leader Says Russia Building 'Arc of Steel' in Europe*, U.S. DEP'T OF DEFENSE (Oct. 6, 2015), <http://www.defense.gov/News-Article-View/Article/622080/nato-leader-says-russia-building-arc-of-steel-in-europe>.

718. See Jen Judson, *The Icebreaker Gap*, POLITICO, (Sept. 1, 2015), <http://www.politico.com/agenda/story/2015/09/the-icebreaker-gap-000213>; *Arctic Rescue Center Put on Combat Duty in Russia's Murmansk*, TASS (Oct. 21, 2015), <http://tass.ru/en/society/830711>.

The Center for Strategic and International Studies (CSIS) published a report on August 27, 2015, titled “The New Ice Curtain,” the report concluded that “Russia views itself as *the* Arctic superpower, as the Kremlin is increasingly willing to use the Arctic to demonstrate Russia’s return to power on the global stage and in the region.”⁷¹⁹ Putin has made revitalizing the Arctic one of his top priorities. He has reopened some fifty Soviet-era Arctic military bases and conducted the largest military exercises there since the Soviet Union’s demise. Russian generals have announced plans to establish an Arctic Command by 2018. CSIS’s Heather Conley, co-author of the study, raised those same concerns in her testimony before the Senate Armed Services Committee Hearing on Russian Strategy and Military Operations on October 8, 2015; she described three large-scale Russian military exercises over the past twenty-four months, numbering up to 100,000 military forces.⁷²⁰

Commenting on Russia’s militarization of the Arctic, Admiral Robert Papp, the U.S. Special Representative for the Arctic, commented that “The problem is less due to the military buildup than the buildup of rhetoric . . . President Putin and his associates, their rhetoric about how important the Arctic is to them and their need to defend it is not useful to the type of cooperative efforts we would like to do within the Arctic.”⁷²¹

Admiral Paul Zukunft, Commandant of the U.S. Coast Guard, commented on Russia’s buildup of capability in the Arctic, noting that his concern stems from the “complete lack of transparency” in the process.⁷²²

719. Heather A. Conley & Caroline Rohloff, *The New Ice Curtain*, CENTER FOR STRATEGIC & INT’L STUDIES (Aug. 27, 2015), <http://csis.org/publication/new-ice-curtain>.

720. *Statement of Heather A. Conley Before the S. Comm. on Armed Services*, 114th Cong. (Oct. 8, 2015), http://www.armed-services.senate.gov/imo/media/doc/Conley_10-08-15.pdf.

721. Keith Johnson, *Searching for Leads in the Opening Arctic*, FOREIGN POLICY (Sept. 14, 2014), <http://foreignpolicy.com/2015/09/14/searching-for-leads-in-the-opening-arctic/>.

722. Jacqueline Klimas, *Interview: Adm. Paul Zukunft, Coast Guard Commandant*, WASHINGTON EXAMINER, Sept. 26, 2015, <http://www.washingtonexaminer.com/interview-adm.-paul-zukunft-coast-guard-commandant/article/2572774>.

Senator McCain visited the Arctic in 2015 and explained in a Wall Street Journal Op-ed that Russia's rush to nationalize and control waterways in the Arctic Ocean raises issues of commercial shipping, military, and intelligence.⁷²³ McCain expressed concern about Russia's activities, stating that the country is "threatening the security and prosperity of the Arctic and Northern Europe by assertively deploying its military power, patrolling its neighbors' coastlines both above and below water, and building or reopening numerous military outposts across the region."⁷²⁴ Alaska's freshman Senator Dan Sullivan has repeatedly voiced his concerns about Russia's military activities in the Arctic.⁷²⁵

Sweden. Sweden has declared itself a neutralized state and therefore not a member of NATO.⁷²⁶ However, reports circulated this year that Sweden was considering becoming a member of NATO if Finland also decided to join.⁷²⁷ The Swedish Armed Forces number 20,000 active, 12,000 reserve, and 22,000 Home Guard.

United States. The United States is a charter member of NATO.⁷²⁸ Its armed forces (not including the Coast Guard) number 1.3 million active and 850,000 reserve.

In late December 2015, Alaska's Governor Bill Walker announced his intent to establish a new line of defense across the state. He has included \$2.3 million in his proposed budget for the project. Walker wants to create a military model that would be the first of its kind in the nation. Each unit would be a rural branch of the state militia called a "scout battalion." Its purpose will be to have local people, with knowledge on the

723. John McCain, *The Real Arctic Threat*, WALL STREET J. (Sept. 1, 2015), <http://www.wsj.com/articles/the-real-arctic-threat-1441149448>.

724. *Id.*

725. Becky Bohrer, *Russian Military Moves Highlight U.S. Arctic Concerns*, Sullivan Says, ARCTIC NEWSWIRE, Aug. 17, 2015, <http://www.adn.com/article/20150817/russian-military-moves-highlight-us-arctic-concerns-sullivan-says>.

726. Drazo Kraishnik, *Sweden and the Never Ending Debate for NATO Membership*, NATO ASS'N, Jan. 14, 2015, <http://natoassociation.ca/sweden-and-the-never-ending-debate-for-nato-membership/>.

727. *Sweden and Finland Consider NATO Membership*, Geopolitical Diary, STRATFOR, Sept. 16, 2015, <https://www.stratfor.com/geopolitical-diary/sweden-and-finland-consider-nato-membership>.

728. *NATO Member Countries*, *supra* note 687.

ground, ready and trained to respond to natural and human-caused disasters.⁷²⁹

VI. UNIVERSITY OF WASHINGTON ALPI NEW DEVELOPMENTS

University of Washington Arctic Law and Policy Institute (ALPI) Director Professor Craig H. Allen was appointed a Research Fellow in the U.S. Coast Guard's Center for Arctic Study and Policy. Adam Murray, ALPI research fellow for 2014–2015, completed his fellowship in July and began a federal court clerkship in Anchorage. Bridgette Cooper (UW Law '16) was appointed a Hazelton Fellow to assist in compiling this Year in Review.

On January 30–31, 2015 UW Law hosted the Arctic Encounter Symposium 2015: "Charting a Path to U.S. Leadership in the High North." See section VII below.

UW Law hosted the Environmental Law Symposium "Ocean Acidification and Coastal Health: New Law for the New Normal?" on November 6, 2015.⁷³⁰

ALPI Director Craig H. Allen published "Lead in the Far North" by Acceding to the Law of the Sea Convention.⁷³¹

ALPI Research Fellow Adam Murray posted an on-line summary of the 2015 Arctic Council Ministerial: Circumpolar Cooperation at the Arctic Council's Iqaluit Ministerial 2015.⁷³²

VII. SELECTED CONFERENCES

The 9th Arctic Frontiers Conference was held in Tromsø, Norway, January 18–23, 2015. This year's conference was titled "Climate and Energy."⁷³³

729. Anna Rose MacArthur, *With Gov's Support, Bethel to be Seat of New Scout Battalion*, ALASKA PUBLIC MEDIA (Dec. 28, 2015), <http://www.alaskapublic.org/2015/12/28/with-govs-support-bethel-to-be-seat-of-new-scout-battalion/>.

730. Michelle Ma, *First Environmental Law Symposium Takes on Ocean Acidification*, UNIVERSITY OF WASHINGTON SCHOOL OF LAW NEWS 2015 (Oct. 29, 2015), <https://www.law.uw.edu/news/2015/environmental-law-symposium/>.

731. 5 WASH. J. ENVTL. L. & POL'Y 1 (2015).

732. ADAM MURRAY, CIRCUMPOLAR COOPERATION AT THE ARCTIC COUNCIL'S IQALUIT MINISTERIAL 2015 (2015), <https://www.law.washington.edu/arcticlaw/reports/CircumpolarCooperation.pdf>.

733. 2015 Arctic Frontiers – Climate and Energy, ARCTIC CLIMATE CHANGE

The Arctic Encounter Symposium took place on the University of Washington campus on January 30–31, 2015.⁷³⁴ The 2nd Annual Symposium drew approximately 250 attendees from academic, military, government, legal, and scientific sectors. Speakers reviewed the commercial, environmental, and technological interests in the Arctic, shared between the United States and around the globe. The Symposium focused on the role of the U.S. as an Arctic nation, and the unique challenges facing the U.S. in its 2015–17 chairmanship of the Arctic Council. The American Bar Association awarded the Arctic Encounter Symposium the 2015 the Law Student Environment, Energy, and Resources Program of the Year Award.⁷³⁵

The second annual Promise of the Arctic Conference was convened by Philips Publishing Group in Seattle from June 16–17, 2015.⁷³⁶ Speakers were drawn from federal, state, and local governments, public ports, Alaska Native corporations, academia and industry.⁷³⁷ The third annual conference is scheduled for October 12, 2016.⁷³⁸

The Ecosystem Studies of Sub-Arctic Seas (ESSAS) Annual Science Meeting Symposium on “The Role of Ice in the Sea” was held at the University of Washington on June 15–17, 2015.⁷³⁹

The 6th Symposium on the Impacts of an Ice-Diminishing Arctic on Naval and Maritime Operations was held in Washington, DC on July 14–16, 2015.⁷⁴⁰ The biennial

ECONOMY AND SOCIETY, http://www.access-eu.org/en/related_news/arctic_frontiers_2015.html (last visited May 2, 2016).

734. *Arctic Encounter Symposium*, ARCUS, <http://www.arcus.org/21360> (last visited Apr. 5, 2016).

735. *Past Award Recipients*, AMERICAN BAR ASSOCIATION http://www.americanbar.org/groups/environment_energy_resources/awards/law_student_award/past_recipients.html (last visited Apr. 5, 2016).

736. Chris Philips, *Promise of the Arctic*, PACIFIC MARITIME MAGAZINE, July 1, 2015, <http://arcticconference.com/>.

737. *Id.*

738. *The Promise of the Arctic*, ARCTIC CONFERENCE, <http://www.arcticconference.com/index.php> (last visited Apr. 28, 2016).

739. *2015 ESSAS Annual Science Meeting*, ECOSYSTEM STUDIES OF SUB-ARCTIC SEAS, http://www.imr.no/essas/2015_essas_annual_science_meeting/en (last visited Apr. 5, 2016).

740. *6th Symposium on the Impacts of an Ice-Diminishing Arctic on Naval and Maritime Operations*, ARCUS, <https://www.arcus.org/22869> (last visited Apr. 5, 2016).

symposium was co-hosted by U.S. National/Naval Ice Center (NIC) and the U.S. Arctic Research Commission (USARC). It focused on U. S. naval operations and national strategic issues in an “ice-free Arctic.”⁷⁴¹

The IMO and World Maritime University held a joint Arctic Council International Conference on “Safe and Sustainable Shipping in a Changing Arctic Environment” (ShipArc 2015) in Sweden in August 2015.⁷⁴² The conference centered on the implementation of and compliance with the Polar Code; Arctic governance; sustainable Arctic business development; protection of the region’s marine environment; and science, research, training, and capacity-building.⁷⁴³

The Alaska Arctic: A Summit on Shipping and Ports was held August 23–25, 2015, in Anchorage, Alaska.⁷⁴⁴ Alice Rogoff hosted the summit along with the state of Alaska and various partners, including President Ólafur Ragnar Grímsson of Iceland and Mead Treadwell, president of Pt Capital and former Alaska Lieutenant Governor.⁷⁴⁵

The Eighth Polar Law Symposium Alaska 2015 was held September 23–26, 2015, in Fairbanks and Anchorage, Alaska. The symposium was co-hosted by Alaska Pacific University (APU), the University of Alaska Fairbanks, the University of Alaska Anchorage, the University of Washington School of Law, and Vermont Law School; in cooperation with the Arctic Law Section of the Alaska Bar Association.⁷⁴⁶

The University of Washington Jackson School of International Studies and its Canadian Studies Center (with financial support from the Korea Maritime Institute) held a conference on November 20, 2015.⁷⁴⁷ The conference theme was

741. *6th Symposium: Impact of an Ice-Diminishing Arctic on Naval and Maritime Operations*, NOAA STAR, <http://www.orbit.nesdis.noaa.gov/star/Ice2015.php> (last visited Apr. 5, 2016).

742. *ShipArc 2015*, WORLD MARITIME UNIVERSITY, <http://www.wmu.se/events/shiparc-2015> (last visited Apr. 5, 2016).

743. *Id.*

744. *About*, THE ALASKAN ARCTIC, <http://www.alaskasummit.com/about/> (last visited Apr. 28, 2016).

745. *Id.*

746. *Eighth Polar Law Symposium – Alaska 2015*, JUSTICE CENTER, UNIVERSITY OF ALASKA ANCHORAGE, http://justice.uaa.alaska.edu/events/2015/2015-09.polar_law_symposium/index.html (last visited May 2, 2016).

747. Kristina Bowman, *Nov. 20: The Arctic Council at 20*, UNIVERSITY OF

“The Arctic Council at Twenty: Permanent Participants, Arctic Policy in Canada and the United States, and Stewardship.”⁷⁴⁸

The 2015 Arctic Circle Assembly convened October 16–18, 2015, in Reykjavík, Iceland.⁷⁴⁹ The Arctic Circle highlights issues and concerns, programs, policies, and projects; it also provides platforms for dynamic dialogue and constructive cooperation.⁷⁵⁰ While the plenary sessions are the responsibility of the Arctic Circle, the breakout sessions are organized by various participating partners in their own name, with full authority over the agenda, and the choice of speakers.⁷⁵¹

The University of Washington’s Arctic Law and Policy Institute (ALPI) is a collaborative, university-based, multidisciplinary think tank chartered to provide objective analysis of selected law and policy issues related to Arctic marine science, governance, pollution prevention, and response, safety of navigation, conservation and management of natural resources, and measures to ensure a healthy and sustainable future for Arctic peoples.⁷⁵²

Readers are encouraged to report new developments for inclusion in future end-of-year reviews by writing to the Institute at: ALPI@uw.edu.

WASHINGTON (Nov. 12, 2015), <http://jsis.washington.edu/news/nov-20-the-arctic-council-at-20-permanent-participants-arctic-policy-in-canada-and-the-united-states-and-stewardship/>.

748. *Id.*

749. ARCTIC CIRCLE ASSEMBLY, <http://arcticcircle.org> (last visited Apr. 5, 2016).

750. *About*, ARCTIC CIRCLE ASSEMBLY, <http://arcticcircle.org/about> (last visited Apr. 5, 2016).

751. *Id.*

752. *Arctic Law & Policy Institute*, UNIVERSITY OF WASHINGTON SCHOOL OF LAW, <http://www.law.washington.edu/arcticlaw/> (last visited Apr. 5, 2016).