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Governing the Bering Strait Region: Current Status, Emerging Issues and Future Options

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ABSTRACT

This article examines the existing governance arrangements applicable to the Bering Strait Region (BSR), assesses the emerging needs for governance in the region, and considers options for addressing these needs. Widely regarded as a critical chokepoint between the North Pacific and the Arctic Ocean (and its marginal seas), the BSR is subject to a variety of regimes, ranging from global constitutive arrangements (e.g., 1982 United Nations Convention on the Law of the Sea) to bilateral operational arrangements. The growth of human activities in the BSR, associated with transformative changes occurring in the Arctic in recent years, is generating new needs for governance. This article reveals options that can be used or ignored by decision makers, in contrast to recommendations that may involve advocacy, with the single objective of contributing to informed decision making in this realm.

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Introduction

The Bering Strait Region (BSR), including the coastal and marine areas to the north and south of the Bering Strait (the Strait), is a region of great sensitivity in biophysical and socio-economic terms and of prime importance in geopolitical terms. Only 47 nautical miles wide at its narrowest point, the Strait itself lies within the territorial seas of the Russian Federation and the United States. The remaining waters of the BSR are located within the exclusive economic zones (EEZs) of the two countries. As opposite states, in the terminology of the 1982 United Nations Convention on the Law of the Sea (UNCLOS),¹ the jurisdiction of each country extends to the delimitation line in the BSR identified in the bilateral agreement of 1990,² leaving no intermediate area subject to the regime of the high seas. Accordingly, bilateral cooperation between the two countries is critical to the governance of this region,

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though all such arrangements are and must be nested within the overarching framework provided by the law of the sea and other applicable international agreements.

Any vessel desiring to pass between the Arctic Ocean (or its marginal seas) and the Pacific Ocean (or its marginal seas) must transit the Bering Strait. Such activities are subject to the regime of transit passage as spelled out in Art. 38 of UNCLOS, which is accepted as the prevailing international law by both coastal states, although the United States has not yet ratified UNCLOS. As long as the number of ships transiting the Strait remained relatively low, this regime constituted an adequate management system for the BSR. But with increased activity in the area and the prospect of further increases, involving destination and transit ship traffic into or out of the Arctic Ocean, the development of energy resources north of the Bering Strait, the growth of mining activities, the prospect of fishing in the Arctic Ocean, the rise of scientific activity, and the potential for ship-based adventure tourism, numerous questions are coming into focus that involve emerging governance needs in the region.

This article identifies these needs, considers the relevance of existing legal frameworks in responding to them, and explores governance options that can contribute to sustainable development in the BSR during the foreseeable future. To achieve sustainability, governance systems must seek to balance environmental protection, economic activity, and societal well-being, taking into account the urgencies of today and needs of future generations. In the context of the Arctic Ocean and other international transboundary regions, sustainability further involves balancing national interests and common interests.

The substantive sections of this article proceed as follows. The second section provides a more formal introduction to the BSR area. The third section offers a survey of the existing laws and practices—both multilateral and bilateral—applicable to the BSR. This is followed in the fourth section by a discussion of emerging human activities in the region that are likely to pose new needs for governance during the foreseeable future. These observations set the stage finally for the analysis in the fifth section about the adequacy of existing arrangements to handle these new governance needs, introducing options to strengthen existing arrangements or create new ones if the existing arrangements appear to be insufficient.

The objective throughout the article is to explore governance options (as opposed to recommendations involving advocacy and special interests) that will contribute to informed decision-making about sustainable development in the BSR. On a more basic level, the goal is to help maintain the BSR and the Arctic more generally as a zone of peace, stability, and sustainability.

An overview of the Bering Strait Region (BSR)

The Arctic region as a whole is experiencing transformative change. Arctic sea ice is receding, the active layer of the permafrost in the circumpolar Arctic is becoming deeper, and habitat changes are threatening the well-being of polar bears and other marine mammals as well as adjacent communities of indigenous peoples. There are interests in expanding oil and gas exploration, development, and production, fisheries, and mining. The Northern Sea Route is becoming increasingly accessible to international commercial shipping.³ Legal and political stability involving wise stewardship are at the heart of the emerging international efforts to address the environmental state-change in the Arctic Ocean.⁴

The only gateway between the Arctic and Pacific Ocean is the Bering Strait, an essential migration corridor for marine mammals, sea birds, and fish stocks and a place where

different mixed ocean currents from the Pacific normally stream to the north, if not changed under the influence of winds. The Bering Strait, the southern Chukchi Sea (to the north of it), the northern Bering Sea (to the south of it), and contiguous coastal areas of the United States and the Russian Federation constitute the area considered as the Bering Strait Region (see Figure 1).

The term “Bering Strait Region” is not used in the most ancient or in contemporary navigational sources.⁵ Vitus Bering, the officer of the Russian Navy (born in Denmark) who discovered the Bering Strait in the course of his Kamchatka marine expeditions in 1725–1741, never used the term.⁶ The term Bering Strait Region is used, however, in a number of contemporary international legal sources, including those that have been agreed at the highest level between the United States and the Russian Federation, for example, the 2011 “Joint Statement of the President of the United States of America and the President of the Russian Federation on Cooperation in the Bering Strait Region.”⁷ A challenge is to utilize an easy-to-describe and functional delimitation of the BSR that can be used to assess socioeconomic and biophysical changes in this region with consistency over time, which is the purpose of Figure 1.

Some authors define the term Bering Strait Region as only a sea area including “the northern Bering Sea, the Bering Strait, and the southern Chukchi Sea,” that is “the marine area between North America and Asia from roughly 63° and 69° north latitude, extending from

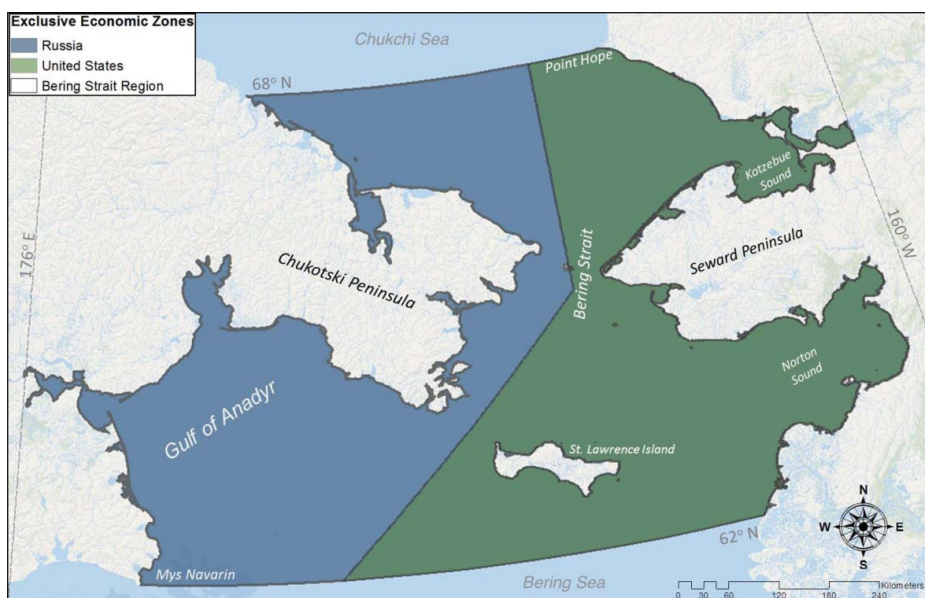


Figure 1. Polygon of the Bering Strait Region (BSR) defined in this article, showing the maritime boundary between the United States and the Russian Federation based on their Exclusive Economic Zones, which intersect Little Diomed Island and Big Diomed Island at the center of the Bering Strait. The northern boundary is adjacent to Point Hope (68°N) and southern boundary is adjacent to Mys Navarin (62°N), extending from the 160°W to 176°E and encompassing the coastal-marine systems in between, south of the Chukchi Sea and north of the Bering Sea. The BSR is a well-constrained area for functional analyses of impacts over time across this maritime chokepoint, which are essential for sustainable infrastructure development associated with this critical gateway in the Arctic Ocean. This map corresponds closely to the transboundary region across the Bering Strait proposed by the United States and the Russian Federation.

St. Lawrence Island and the northern Bering Sea north through the Bering Strait to the southern Chukchi Sea and Cape Lisburne.”⁸ There are, however, doubts as to whether this suggested definition of the BSR is legally correct. According to the 2011 Joint Statement, not only sea areas are included in the BSR, but also land areas, “comprising the Beringia National Park, which is located in the Russian Federation, and the Bering Land Bridge National Preserve and Cape Krusenstern National Monument, which are located in the United States of America.”⁹

The pivot of the BSR—the Bering Strait—is a vital sea area between the two continents of Eurasia and North America and between the United States and the Russian Federation. The Bering Strait is the only sea waterway connecting Europe—through the Arctic Ocean—with China, Japan, the Republic of Korea, and other economically strong Pacific Ocean countries. Being the only way from the Pacific to the Arctic Ocean, the Bering Strait is economically important, taking into account that already by the 1980s trans-Pacific trade equaled trans-Atlantic trade and that today trans-Pacific trade is surging.

According to the “Russian Sailing Directions,” the Bering Strait is 47 nautical miles wide at its the narrowest point.¹⁰ It is in this part of the Strait that Ratmanova Island or Big Diomedes Island (Russian Federation) and Krusenstern Island or Little Diomedes Island and Fairway Rock (United States) lie.¹¹ It is notable that some authors do not mention Fairway Rock in describing the Bering Strait.¹² This does not seem accurate, at least as far as legal description is concerned. According to applicable international law (Art. 121 of UNCLOS), though rocks have no EEZ or continental shelf, they do have the territorial sea adjacent to each side of a rock. The breadth of the territorial sea is established by the relevant coastal state up to a limit not exceeding 12 nautical miles (Art. 3 of UNCLOS). Such a geographical situation legally means that in the Bering Strait the Russian Federation has a territorial sea adjacent to its mainland (Chukotka Peninsula) and Big Diomedes Island, and the United States has belts of territorial seas adjacent to Little Diomedes Island, Fairway Rock, and the North American continent (Seward Peninsula).

The distance between Russian Big Diomedes Island and American Little Diomedes Island is only about 2 nautical miles. It is here that the maritime boundary between the United States and the Russian Federation is delimited according to their bilateral treaties: the Convention Ceding Alaska of 1867¹³ and the 1990 Maritime Boundary Agreement.¹⁴ The distance between Little Diomedes Island and Fairway Rock is 7.8 nautical miles.¹⁵

Because of these two islands and one rock lying in the Bering Strait there are, in effect, four geographic straits (or channels), all covered by the term Bering Strait: (1) between the Russian mainland and Big Diomedes Island; (2) between Big Diomedes Island and Little Diomedes Island; (3) between Little Diomedes Island and Fairway Rock; and (4) between Fairway Rock and the U.S. mainland.¹⁶ None of these four channels has a high seas area. Therefore, freedom of the high seas is not applicable to any of the four channels. All of the Bering Strait at its narrowest point is the territorial sea of either:

- the United States (the territorial sea adjacent to Alaska’s Seward Peninsula, then to Fairway Rock; then to Little Diomedes Island); or
- the Russian Federation (the territorial sea adjacent to Big Diomedes Island and then to Chukotka Peninsula).

However, the United States and the Russian Federation as states bordering the Bering Strait are obliged under international law to respect the right of transit passage of all ships

and aircraft through this strait. In summary, the Bering Strait Region (BSR) consists of two parts:

- (1) sea area, including the Bering Strait and northern parts of the Bering Sea and southern parts of the Chukchi Sea joining at the Bering Strait; and
- (2) land areas (not only the islands and the rock already described, but also the Seward Peninsula and the Chukotka Peninsula) that are coastal to the southern part of the Chukchi Sea, through the Bering Strait, and to the northern part of the Bering Sea.

The land areas are part of the territory either of the United States (in case of the Seward Peninsula, Little Diomed Island and Fairway Rock) or the Russian Federation (in case of the Chukotka Peninsula and Big Diomed Island). The sea areas of the northern Bering Sea and the southern Chukchi Sea are internal waters, territorial seas, EEZs, or continental shelves of either the United States or the Russian Federation. What is common to the BSR as a whole is that it is under the sovereign jurisdiction of either the United States or the Russian Federation. There is no area of the BSR that is beyond national jurisdiction of these two neighboring Arctic coastal states.

International law pertaining to the BSR

Important legal questions for the BSR are:

- What is the status of the Bering Strait, the northern part of the Bering Sea and the southern part of the Chukchi Sea under general international law?
- What are the relevant *lex specialis* or specific rules of the legal framework applicable to the BSR, especially those that exist in bilateral legal documents of the two states bordering the Bering Strait?

To address these questions, the suite of global regimes, regional arrangements, and bilateral agreements that pertain to the BSR is analyzed (see [Table 1](#)). A broader collection of agreements and policies relevant to the BSR—encompassing nearly 160 policy documents in English and Russian at the local and international levels—has been compiled¹⁷ to objectively discover content-in-context relationships within and between the documents.¹⁸

The law of the sea

The Bering Strait has never been treated as historical waters by either the United States or the Russian Federation, though historically this strait has not experienced high levels of international maritime traffic. In other words, the legal positions of both states bordering the Bering Strait have always been that it is an international strait. This is in line with the opinion of the International Court of Justice as to the legal qualification of a strait as belonging to the class of international highways through which passage of all ships and aircraft cannot be prohibited by a coastal state in time of peace. In the *Corfu Channel Case*, the Court addressed the fact that Albania denied that the Corfu Channel belonged to the class of international straits on the ground that the channel was “only of secondary importance and not even a necessary route between two parts of the high seas,” and that the channel was “used almost exclusively for local traffic.”¹⁹ But in the opinion of the Court, “the decisive criterion is rather its geographical situation as connecting two parts of the high seas and the fact of its being used for international navigation.”²⁰

Table 1. Environmental and Maritime Agreements with Application (+ or –) to the Russian Federation (RF) and/or the United States (US) in the Bering Strait Region (BSR)[*treated as law, but not necessarily ratified]

Year	Title of agreement	US	RF
Global Agreements with Application to the BSR			
1946	International Convention for the Regulation of Whaling	+	+
1972	Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter	+	+
1973	Convention on International Trade In Endangered Species of Wild Fauna and Flora (CITES)	+	+
1973/1978	International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol Relating Thereto (MARPOL 73/78)	+	+
1974	International Convention for Safety of Life at Sea (SOLAS)	+	+
1979	Convention on the Conservation of Migratory Species of Wild Animals	+	-
1982	United Nations Convention on the Law of the Sea (UNCLOS)	+	+
1989	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	-	+
1992	Framework Convention on Climate Change	+	+
1992	Convention on Biological Diversity	-	+
Regional Agreements with Application to the BSR			
1973	Agreement on the Conservation of Polar Bears	+	+
1996	Declaration on the Establishment of the Arctic Council	+	+
2002	International Maritime Organization. Guidelines for Ships Operating in Arctic Ice-Covered Waters	+	+
2005	Memorandum of Understanding for Cooperation in the Areas of Meteorology, Hydrology and Oceanography between the National Oceanic and Atmospheric Administration of the Department of Commerce of the United States of America and the Federal Service for Hydrometeorology and Environmental Monitoring of the Russian Federation	+	+
2009	International Maritime Organization. Guidelines for Ships Operating in Polar Waters. Resolution A.1024(26)	+	+
2008	Ilulissat Declaration, Arctic Ocean Conference	+	+
2011	Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic	+	+
2013	Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic	+	+
Bilateral Agreements with Application to the BSR			
1867	Treaty concerning the Cession of the Russian Possessions in North America by his Majesty the Emperor of all the Russias to the United States of America	+	+
1972	Agreement on Cooperation in the Field of Environmental Protection Between the United States of America and the Union of Soviet Socialist Republics	+	+
1989	Uniform Interpretation of Rules of International Law Governing Innocent Passage	+	+
1989	Agreement Between the USSR and the USA Concerning Cooperation in Combating Pollution in the Bering and Chukchi Seas in Emergency Situations	+	+
1989	Agreement Concerning the Bering Straits Regional Commission	+	+
1989	Agreement Concerning Mutual Visits by Inhabitants of the Bering Straits Region	+	+
1990	The Agreement Between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, with Annex	+	+
1991	Shared Beringian Heritage Program	+	+

(Continued on next page)

Table 1. (Continued)

Year	Title of agreement	US	RF
1994	Agreement Between the Government of the United States of America and the Government of the Russian Federation on Cooperation in the Field of Protection of the Environment and Natural Resources	+	+
2000	Agreement on the Conservation and Management of the Alaska-Chukotka Polar Bears Population	+	+
2011	Joint Statement of the President of the United States of America and the President of the Russian Federation on Cooperation in the Bering Strait Region	+	+
2012	Joint Statement of Secretary of State Hillary Clinton and Foreign Minister Sergey Lavrov on Cooperation in the Bering Strait Region	+	+
2013	Memorandum of Understanding between the Government of the United States of America and the Government of the Russian Federation Symbolically Linking National Parks in the Bering Strait Region	+	+

The Bering Strait connects the Bering Sea and Chukchi Sea, which both have EEZs as well as high seas zones where the freedom of navigation applies. The Bering Strait has been used for international navigation for centuries, though the total number of ships passing through the Bering Strait has been much less than the number passing through the Corfu Channel.²¹ There is no doubt that the Bering Strait belongs to the class of straits used for international navigation. That means that the specific legal regime of such straits provided by Part III of UNCLOS is applicable to the Bering Strait.

One of the Bering Strait coastal states (the United States) is not a party to UNCLOS. After the Third United Nations Conference on the Law of the Sea, the United States strongly opposed the idea of considering Part XI of UNCLOS (“The Area” as the Common Heritage of Mankind) as a *jus cogens* rule, that is, a peremptory norm of general international law “from which no derogation is permitted.”²² According to the United States: “The concept of the common heritage of mankind contained in the Convention adopted by the Conference is not *jus cogens*. The Convention text and the negotiating record of the Conference demonstrate that a proposal by some delegations to include a provision on *jus cogens* was rejected.”²³

With the exception of this new concept included in UNCLOS, practically all the other rules articulated in the Convention have been accepted by the United States as reflecting customary international law—“the United States has long considered that, with respect to traditional uses of the ocean, the Convention generally reflects customary international law and these provisions are thus binding on the United States.”²⁴ Navigation in general, and navigation through international straits, in particular, are certainly traditional uses of the sea, such that the UNCLOS provisions provided in Part III (“Straits used for international navigation”) are binding not only on the Russian Federation but also on the United States.

According to Art. 38 of UNCLOS, in straits used for international navigation, “all ships and aircraft enjoy the right of transit passage, which shall not be impeded.” Transit passage means the exercise “of the freedom of navigation and overflight solely for the purpose of continuous and expeditious transit of the strait.” Specific duties on ships and aircraft during transit passage are spelled out in Art. 39, according to which such ships or aircraft are to:

(a) proceed without delay through or over the strait; (b) refrain from any threat or use of force against the sovereignty, territorial integrity or political independence of States bordering the strait, or in any other manner in violation of the principles of international law embodied in the Charter of the United Nations; and (c) refrain from any activities other than those incident to their normal modes of continuous and expeditious transit unless rendered necessary by force majeure or by distress.

The United States and the Russian Federation as states bordering the Bering Strait may designate sea lanes and prescribe traffic separation schemes for navigation in this strait in order to promote safe passage of ships. According to Art. 41 of UNCLOS, such sea lanes and schemes “shall conform to generally accepted international regulations.” Moreover, according to Art. 42, the United States and the Russian Federation may also adopt laws and regulations applicable to the Bering Strait in respect of all or any of the following:

(a) the safety of navigation and the regulation of maritime traffic; (b) the prevention, reduction and control of pollution, by giving effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the strait; (c) with respect to fishing vessels, the prevention of fishing, including the stowage of fishing gear; (d) the loading or unloading of any commodity, currency or person in contravention of the customs, fiscal, immigration or sanitary laws and regulations.

Such laws and regulations, however, may not discriminate “in form or in fact among foreign ships or in their application have the practical effect of denying, hampering or impairing the right of transit passage as defined in this section.”²⁵

According to Art. 43 of UNCLOS, the United States and the Russian Federation, on the one side, and those states that use the Bering Strait for the purpose of transit passage on the other “should by agreement cooperate: (a) in the establishment and maintenance in a strait of necessary navigational and safety aids or other improvements in aid of international navigation; and (b) for the prevention, reduction and control of pollution from ships.”

There also are options for the United States and the Russian Federation to cooperate on the bilateral basis with a fundamental purpose to create regulations to improve safety of navigation through the BSR, to prevent pollution, or to involve the International Maritime Organization (IMO) to contribute to creating such regulations.

In this regard, an important legal question is whether Art. 234 of UNCLOS on ice-covered areas is applicable to the BSR. The United States and Russian Federation may treat Art. 234 of UNCLOS as being customary international law, widely accepted within the international community. The article provides that:

Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance.

The two coastal states might argue that in the BSR—in ice-covered areas beyond the territorial seas but within the EEZs of the United States and the Russian Federation—“particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance.”

Ice currently forms in the Bering Strait in the beginning of November, and by the end of November all the western part of the Strait is ice-covered, while in December the eastern part of the Strait is usually ice-covered.²⁶ This first-year sea ice usually drifts to the North, though sometimes under the influence of currents and winds the direction of drifting varies. By the middle of June, the Strait is usually ice free.²⁷

Moreover, Art. 234 states that “laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.” In the context of the BSR, such scientific evidence would include research findings from the Russian-American Long-Term Census of the Arctic (RUSALCA or “mermaid” in Russian). It is noteworthy that this bilateral project originated in 2003²⁸ with the explicit goal “to understand better causes and consequences of the reduction of ice cover in the northern part of the Bering Sea and the Chukchi Sea in the Arctic Ocean.”²⁹

At present, therefore, there is no compelling reason to reject the legal positions of the United States and Russian Federation that sea ice covering the BSR makes Art. 234 applicable to the region. In the future, however, seasonal sea ice in the BSR might decline or disappear and arguments about the application of Art. 234 might change. There also are questions about whether the United States and Russian Federation can act unilaterally with regard to the application of Art. 234 in the BSR and how any precedents might create limitations for themselves or other Arctic coastal states beyond the BSR.

Regimes for shipping in ice-covered waters

Another important question for the United States and the Russian Federation to address in the BSR is, what will be the legal significance of the International Code for Ships Operating in Polar Waters (the Polar Code)³⁰ that is expected to enter into force on 1 January 2017? The Polar Code has been constructed in the form of amendments to the International Convention for the Safety of Life at Sea (SOLAS 1974)³¹ and the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol relating thereto (MARPOL 73/78).³² The BSR is within the geographic scope of the area to which the Polar Code is applicable (see [Figure 2](#)).

What the Polar Code acknowledges is that polar waters “may impose additional demands on ships, their systems and operation beyond the existing requirements,” primarily those set out in SOLAS and MARPOL.³³ Such additional demands are caused by the increased probability of occurrence of ice, low temperature, and extended periods of darkness or daylight. The Polar Code notes other risk factors, such as “high latitude, as it affects navigation systems, communication systems”; “remoteness and possible lack of accurate and complete hydrographic data and information”; and “potential lack of ship crew experience in polar operations, with potential human error.”³⁴ Additional measures provided by the Polar Code include:

- safety measures (including ship structure; watertight and weather-tight integrity; machinery installations; fire safety protection; life-saving appliances and arrangements; crew training; and safety of navigation); and
- pollution prevention measures (including prevention of pollution by oil; control of pollution by noxious liquid substances in bulk; and prevention of pollution by harmful substances carried by sea in packages).

The Polar Code contains both mandatory provisions and non-mandatory recommendations, which likely will be elaborated further as ship traffic expands in the Arctic Ocean.

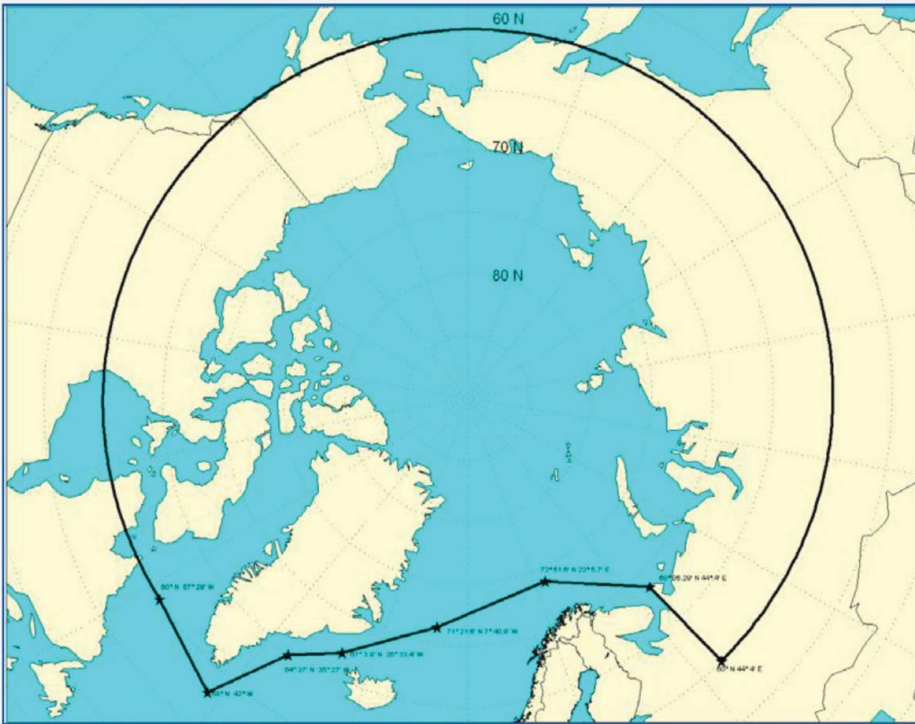


Figure 2. Arctic boundary for the binding *International Code for Ships Operating in Polar Waters* (Polar Code).

Environmental protection and species conservation regimes

Application of other international agreements to the BSR depends on whether the United States or the Russian Federation are parties to such multilateral regimes (see Table 1).

According to the 1979 Convention on the Conservation of Migratory Species of Wild Animals (to which the United States is a party, while the Russian Federation is not), conservation status of a migratory species “means the sum of the influences acting on the migratory species that may affect its long-term distribution and abundance.”³⁵ Article II of the Migratory Species Convention acknowledges the “importance of migratory species being conserved and of Range States agreeing to take action to this end whenever possible and appropriate, paying special attention to migratory species the conservation status of which is unfavourable, and taking individually or in co-operation appropriate and necessary steps to conserve such species and their habitat.” The Migratory Species Convention also acknowledges the need to take action “to avoid any migratory species becoming endangered.”³⁶

The 1946 International Convention for the Regulation of Whaling, to which both Bering Strait states are parties, “applies to factory ships, land stations, and whale catchers under the jurisdiction of the Contracting Governments and to all waters in which whaling is prosecuted by such factory ships, land stations, and whale catchers.”³⁷ The taking of whales “for purposes of scientific research” and aboriginal subsistence harvesting of whales is not prohibited in the 1946 Convention.³⁸ Aboriginal subsistence whaling occurs in the BSR, though neither state currently conducts commercial harvesting of whales. This is a subject matter

that could be regulated on the basis of a harmonized approach by the United States and the Russian Federation.

Bilateral agreements applicable to the BSR

Particularly relevant are the bilateral agreements concluded between the United States and the Russian Federation that are applicable to the BSR. Already noted is the 1990 bilateral Agreement on Maritime Delimitation (the 1990 Agreement).³⁹ Though the Russian Federation has not ratified this agreement, both states have respected the boundary line identified in the agreement for more than 25 years.

Article 1 of the 1990 Agreement indicates that the maritime boundary is the “western limit” described in Art. 1 of the 1867 Russia–United States Alaska Treaty, and Art. 2 provides that “the maritime boundary extends north along the 168° 58' 37" W meridian through the Bering Strait and Chukchi Sea into the Arctic Ocean as far as permitted under international law.” There may be different options for the United States and Russian Federation regarding interpretation of the wording “as permitted under international law”; nevertheless, this maritime boundary extends north at least as far as 200 miles from the baselines of the United States and the Russian Federation on the Arctic coast, which is farther north than the limits of the BSR in [Figure 1](#).

There also are a number of bilateral legal instruments applicable to environmental protection in the BSR. Historically, regarding the 1972 United Nations Conference on the Human Environment, preparatory work in the United States and Union of Soviet Socialist Republics promoted cooperation between the two Arctic coastal countries concerning environment protection. Representatives held various seminars and undertook research programs, which were linked to problems of nature protection and proposals for their solution. Although the Soviet Union did not take part in the 1972 conference, the experience resulting from the bilateral meetings laid down a basis for cooperation.⁴⁰ On May 23, 1972, the two countries signed the Agreement on Cooperation in the Field of Environmental Protection (the 1972 Agreement).⁴¹

According to this agreement, the United States and Soviet Union recognized the necessity of cooperation in the sphere of environmental protection. At the time, the 1972 Agreement represented the most comprehensive bilateral international treaty concerning environmental protection and was seen as “a sample of successful international cooperation on the bilateral level,” which subsequently was used as a basis for similar bilateral agreements between other states.⁴² The work realized within the framework of the 1972 Agreement led to the 1976 bilateral Convention on Conserving Migratory Birds and Their Environment.⁴³ Additionally, the parties initiated discussion of a bilateral agreement on combating pollution in the Bering and Chukchi seas.

Following the disintegration of the Soviet Union, the United States and the Russian Federation, “taking into account mutual interests and experience obtained from implementation of the Agreement of 1972,” prepared an updated version—the 1994 Agreement on Cooperation in the Field of Protection of the Environment and Natural Resources.⁴⁴ This agreement remains in force and is applicable to the BSR, expanding the sphere of interaction between the United States and Russian Federation, but also reflecting their shared development of international environmental law during the previous twenty years. The *Joint Russian-American Commission on Cooperation in the Field of Protection of the Environment and Natural*

Resources was established to approve cooperative programs, to coordinate activities of involved persons, and to address other issues of implementation of the 1994 Agreement. Each party appoints its representative as a Co-Chair of the Commission.

The 1989 *Agreement Between the USSR and the USA Concerning Cooperation in Combating Pollution in the Bering and Chukchi Seas in Emergency Situations* was signed in Moscow.⁴⁵ According to this agreement, the parties are to render assistance to each other in combating pollution incidents that may affect their areas of responsibility. The area of responsibility of a party means the area within the Bering and Chukchi Seas that are internal waters or territorial seas of the parties and “the sea area beyond the territorial sea, in which that Party exercises its sovereign rights and jurisdiction in accordance with international law.”⁴⁶ Further, the parties developed a Joint Contingency Plan Against Pollution in the Bering and Chukchi Seas,⁴⁷ which includes the BSR.

The necessity and practical importance of the 1989 Combatting Pollution Agreement was confirmed during the removal of oil spilled off the Alaska coast following the 1989 grounding of the tanker *Exxon Valdez* in Prince William Sound. At the request of the United States, the Soviet Union directed to the scene an oil removal vessel (*Vaydagubsky*) along with experts to help clean up the oil spill.⁴⁸

In that same year, with “Perestroika” under Soviet President Mikhail Gorbachev, the United States and Soviet Union concluded two other intergovernmental agreements relevant to the BSR—the 1989 Agreement Concerning Mutual Visits by Inhabitants of the Bering Straits Region⁴⁹ and the 1989 Agreement Concerning the Bering Straits Regional Commission.⁵⁰ It is noteworthy that in both of these 1989 agreements, the English authentic texts provides for the word Bering “Straits” (in plural), while the Russian authentic texts provide for the word Bering “proliv”—Strait (in singular).

The 1989 Mutual Visits Agreement provides, inter alia, that upon invitation from relatives across the BSR, “inhabitants may travel to the designated areas in accordance with the procedures established by this Agreement,” rather than in accordance with national legislation of either state.⁵¹ In a complementary fashion, the Bering Straits Regional Commission is to “investigate and, where appropriate, resolve all local minor incidents” and assist “in arranging emergency services for citizens of one Party visiting the other Party’s national territory.”⁵² Composed of three commissioners from each state, the commission “shall maintain direct working contacts with a view of resolving expeditiously matters which arise within their jurisdiction,” scheduling “periodic” and “additional” meetings to fulfil its objectives.⁵³

A key element of U.S.-Russian cooperation regarding nature protection is the preservation of Arctic wilderness and nature. Traditionally, polar bears are of great importance to the livelihood of the indigenous peoples of the region. Since 1956, it has been prohibited by the national law of the Soviet Union to take these animals, and subsequently, in all Russian Arctic sea regions.⁵⁴

However, the reduction of sea ice has led to an increase in the illegal taking of polar bears that threatens the well-being of these animals. The outcome of an 8-year negotiation between the United States and the Russian Federation was the 2000 Agreement on the Conservation and Management of the Alaska–Chukotka Polar Bears Population.⁵⁵ The 2000 Agreement provides that both nations are to take steps to conserve polar bear habitats, recognizing that polar bears represent a valuable resource for the native people of Alaska and Chukotka. This agreement was developed not only by experts at the national level, but included the active participation of the indigenous populations of Chukotka and Alaska.

The 2000 Agreement prohibits the commercial taking of polar bears, but it allows indigenous peoples to take polar bears from the Alaska–Chukotka population for subsistence purposes pursuant to limitations set by the United States–Russia Polar Bear Commission, established under the Agreement.⁵⁶ Each party is to have the right to harvest one-half of the annual allowable take of polar bears. If a party does not intend to harvest its half of the annual allowable take, subject to the agreement of the commission, it may transfer to the other contracting party part of its remaining share of the annual limit. The 2000 Agreement is a logical development by the United States and Russian Federation of the rules developed under the five-nation 1973 Agreement on Conservation of Polar Bears,⁵⁷ which was the first international legally binding instrument between the coastal states surrounding the central Arctic Ocean.

On October 28, 2013, the United States and the Russian Federation published a Draft Memorandum of Understanding Symbolically Linking National Parks in the Bering Strait Region, which calls for, among other things, “protection of the shared natural and longstanding cultural heritage of Chukotka and Alaska” and notes that “the Bering Strait region is important to the economies of our two countries.”⁵⁸ The United States and Russian Federation have designated agencies for the implementation of the cooperation to be undertaken as a result of the Memorandum: the National Park Service of the U.S. Department of the Interior and the Ministry of Natural Resources and Environment of the Russian Federation. The geographic scope of cooperation in the Draft Memorandum is defined as “the Bering Strait region, including the transboundary area comprising the Beringia National Park, which is located in the Russian Federation, and the Bering Land Bridge National Preserve and Cape Krusenstern National Monument, which are located in the United States of America.”⁵⁹

In the Joint Statement of Secretary of State Hillary Clinton and Foreign Minister Sergey Lavrov on Cooperation in the Bering Strait Region of 2012, the two reaffirmed “the longstanding interest of the United States of America and the Russian Federation in protecting the shared natural and cultural heritage of Chukotka and Alaska.”⁶⁰ They observed that over the past 20 years, the “Shared Beringian Heritage Program” had promoted a better understanding of the common history and helped to sustain the cultural vitality of the indigenous peoples in the Bering Strait region. The joint statement provided for pursuing “a Transboundary Area of Beringian specially protected natural territory, in consultation with local and tribal governments, linking the proposed Beringia National Park in Chukotka with the Bering Land Bridge National Preserve and Cape Krusenstern National Monument in Alaska.” The intent of the proposed link between these specially protected natural territories involves “the preservation of kinship ties, cultural traditions, subsistence lifestyle and language of the indigenous peoples of the region,” and collaboration “on conservation, management, scientific research, and effective monitoring of the environment.”

The 2012 Clinton–Lavrov Joint Statement is a clear follow-up to the 2011 Joint Statement of President Barack Obama and President Dmitry Medvedev when they declared their “intention to deepen cooperation between the United States of America and the Russian Federation in the cross-boundary Bering Strait region.” The Joint Presidential Statement recognized that the BSR “is important to the economies of both countries,” further noting the:

important need to protect the rights of native peoples residing in Alaska and Chukotka, and to ensure that residents and native peoples engaged in cultural and traditional activities aimed at providing for their personal needs have continued access to natural resources in accordance with each nation's laws.⁶¹

In September 2015, the Russian Federation and the United States signed a bilateral Agreement to Combat Illegal, Unreported, and Unregulated (IUU) Fishing with particular reference to the crab stocks of the Bering Sea.⁶² The agreement provides for cooperation between the U.S. Coast Guard and its Russian counterpart to share information in an effort to reduce the ability of illegal fishers to avoid detection and apprehension.⁶³

Emerging human activities generating needs for governance in the BSR

Human activities have long figured prominently in the BSR.⁶⁴ Although members of Vitus Bering's expedition in the eighteenth century were the first Europeans to pass through the Bering Strait, indigenous peoples on both sides of the Strait have harvested marine mammals, including whales, walrus, seals, and polar bears, as well as various species of seabirds and their eggs, in the BSR for several millennia. (As recently as 10,000–12,000 years ago, the Bering Land Bridge joined together Siberia and North America and is generally thought to have provided the avenue for the peopling of the new world.⁶⁵) In the nineteenth century, both Euro-American explorers and American whalers passed through the Strait in considerable numbers, seeking to locate the Northeast Passage and the Northwest Passage, as well as to discover new and commercially valuable stocks of whales.

In the post-World War II era, both Coast Guard vessels and naval vessels (including nuclear-powered submarines) have transited the Bering Strait on a regular basis. More recently, the Strait has been used by cargo ships delivering goods to the remote communities of the region, supply ships servicing developments like the oil fields at Prudhoe Bay and elsewhere along the North Slope of Alaska, and bulk carriers transporting ore from the Red Dog Mine in northwestern Alaska.⁶⁶ By 2012, the number of recorded transits of the Bering Strait was approaching 500 per year, doubling the number from 2008 (see Figure 3).

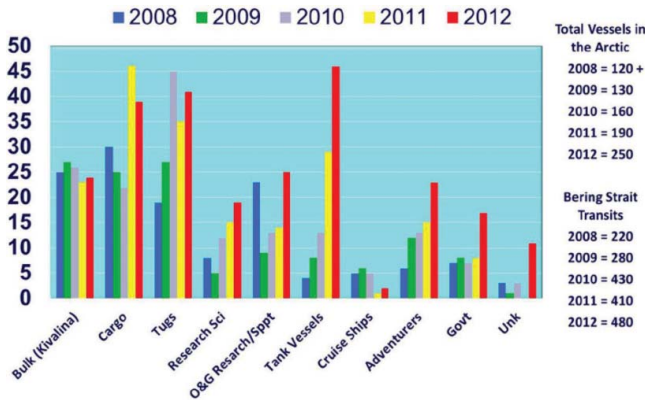


Figure 3. Automatic Identification System (AIS) data of ship traffic through the Bering Strait from the Alaska Marine Exchange (U.S. Coast Guard District 17).

With some notable exceptions, the needs for governance arising in connection with these activities have been modest. A prominent issue arising in the 1970s centered on a concern about declining stocks of bowhead and grey whales, triggering an effort on the part of the International Whaling Commission to terminate or severely restrict aboriginal subsistence harvesting of these animals on the part of Alaska Natives on the eastern side of the BSR and the native peoples of Chukotka on the western side of the region.⁶⁷ The resultant conflict became less severe, however, when Alaska Natives succeeded in documenting that bowhead whale stocks were substantially larger than outsiders believed, and gray whales stocks began to recover from earlier overharvesting. Today, both species are in relatively good shape, and aboriginal subsistence harvesting continues under a management system that is acceptable to both harvesters and policymakers responsible for administering the international regime for whales and whaling.

With the opening up of the Arctic in recent years, following the recession and thinning of sea ice in the region (see Figure 4), many observers anticipate a rapid growth of economic activity in the Arctic and an associated rise in use of the BSR.⁶⁸ Increased shipping will be influenced by duration of the open water periods and timing of the shoulder seasons when sea ice forms and melts. The shoulder seasons are projected to become progressively earlier in the spring and later in the fall in the Bering Strait as well as the Northern Sea Route (NSR), Northwest Passage and any Transpolar Routes, leading to longer open-water periods in all areas.

Numerous factors make it difficult to predict the trajectory of such activities. But it is worth considering developments pertaining to:

- (i) commercial shipping along the Northern Sea Route;
- (ii) activities associated with energy development in the Chukchi Sea (and Beaufort Sea);
- (iii) increased mining activity in northern Alaska and the Russian northern Far East;
- (iv) the possibility of commercial fishing north of the Bering Strait; and
- (v) the development of ship-based adventure tourism in the region.

As Figure 4 suggests, the total transits of the Bering Strait may reach 1,000 by 2020.

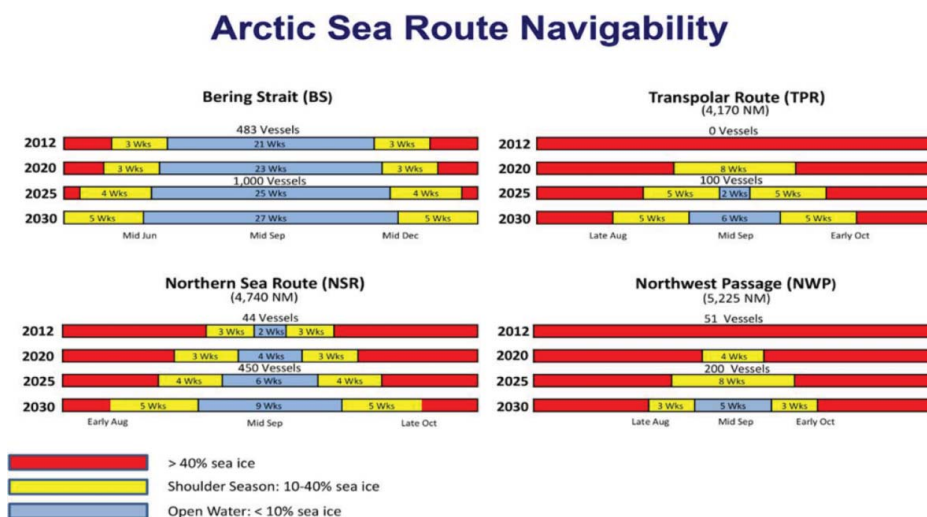


Figure 4. Arctic Ocean transit routes availability. Vessel projections courtesy of the Office of Naval Intelligence.

The Northern Sea Route (NSR)

The NSR is a shipping route running along the north coast of Russia from the Kara Sea in the west to the Bering Strait in the east. Although there are some controversies regarding the status of this route or certain sections of the route in international law, the NSR is administered by the Russian Federation and subject to Russian policies regarding the terms and conditions applicable to ships desiring to use the NSR. The NSR has been used for various purposes, including the resupply of remote communities located along the Ob-Irtysh, Yenisei, and Lena Rivers, since the mid-twentieth century. In fact, the volume of shipping plying the NSR was higher in Soviet times than it is today. Nevertheless, Russia is interested in increasing the volume of traffic making use of the route in the foreseeable future and there is a lively debate about the prospects for commercial shipping along the NSR within the international community of shipbuilders and commercial operators.⁶⁹

What can be said about the prospects for commercial shipping along the NSR during the near future and what are the implications for governance in the BSR? Under any circumstance, much of the shipping along this route will involve the resupply of communities in northern Russia. Such activities will not lead to a sizable increase in transits through the Bering Strait. A prominent focus of attention among those interested in the NSR is the fact that the route offers a shorter passage between Europe and the Far East than through the Suez or Panama Canals, possibly becoming an attractive option for commercial shippers engaged in international commerce. The prevailing view today, however, is that shipping companies (e.g., Maersk) that operate large container ships will not find the NSR attractive during the foreseeable future. There are several reasons for this, including the fact that:

- (i) the NSR cannot accommodate the very large container ships (those capable of carrying 10,000–20,000 TEUs) now becoming the mainstays of the industry;
- (ii) the sea and weather conditions in the NSR make it difficult to adhere to strict delivery schedules; and
- (iii) container ships normally call at ports to drop off and pick up containers located along their normal routes.⁷⁰

This leaves the prospect of bulk carriers transporting oil and gas or minerals from the Russian Arctic to international destinations, as the use of the NSR most likely to produce a growing number of transits of the Bering Strait. The prospects for this sort of traffic are difficult to foresee because they are subject to market forces (e.g., fluctuations in world market prices for oil), they are affected by the impact of geopolitical developments (e.g., relations between Russia and China regarding the production and shipment of oil), and there are alternative means of transportation (e.g., pipelines) that may affect the demand for marine transportation in some cases. Even so, there is reason to anticipate some increase in transits through the Bering Strait arising from the extraction of energy resources.

It is realistic to expect that liquid natural gas (LNG) tankers, carrying natural gas from the new port of Sabetta located on the Yamal Peninsula in northwestern Siberia to destinations in East Asia, will ply these waters during the summer and fall within a few years.⁷¹ It is possible that energy resources extracted from reserves located farther to the east in Siberia will be transported by tanker during within the next couple of decades. All in all, it can be expected that LNG and oil tankers will transit the Bering Strait in increasing numbers during the foreseeable future, though the totals will be well below what would be expected if the NSR were to become attractive to container ships.

Offshore energy development

Another source of increased ship transits through the Bering Strait involves the prospect of energy development in the Chukchi Sea and (perhaps less likely) in the Beaufort Sea.⁷² The well-known 2009 assessment carried out by the U.S. Geological Survey assigned a high probability to the discovery of large recoverable reserves of oil in the offshore area adjacent to the North Slope of Alaska.⁷³ Since then, plans for the exploration and potential development of these reserves have become a focal point of controversy between those who favor development and a wide range of environmental groups both within the United States and beyond.

The authority to make decisions regarding the opening of this area for exploration lies with the U.S. federal government. The United States has held lease sales in parts of the Chukchi Sea and Beaufort Seas and has authorized the initiation of exploratory efforts, subject to a range of regulatory provisions relating to the equipment to be used in this effort and the rules regarding offshore activities in this area. So far, Royal Dutch Shell has been the principal corporate player in this realm and the Chukchi Sea has been the principal focus of attention regarding exploratory work.

Of special interest for this analysis of governance in the BSR is the possibility of finding transboundary hydrocarbon deposits in the southern part of the Chukchi Sea. The United States and the Russian Federation do not have a bilateral agreement on the status of such deposits, in contrast, for example, to Annex II of the 2010 Russian–Norwegian Treaty dealing with transboundary hydrocarbon deposits in the Barents Sea.⁷⁴

Relevant United States and Russian government agencies worked in the 1990s toward establishing a system in Russia for leasing mineral rights to international industry. In 1994, the Russian Committee on Geology and Underground Resources (Roskomnedra) within the Ministry of Natural Resources approached the U.S. Department of the Interior (Minerals Management Service or MMS) with a suggestion for a simultaneous lease offering in the Chukchi Sea.⁷⁵ The MMS and Roskomnedra signed a Memorandum of Understanding (MOU) under the Energy Policy Committee of the Russian–American Commission on Economic and Technological Cooperation to promote joint activities and the exchange of information related to principles and methods of evaluation and development of offshore mineral resources.⁷⁶ This MOU provided a framework for the sharing of scientific and technical information with Russia during its transition toward a market economy in the development of offshore oil and gas resources. An annex to the MOU provided for a “Simultaneous Lease Sale (or Tender Offer) in the Chukchi Sea.” According to this document, the U.S. and Russian agencies

have decided to hold a lease sale in their respective jurisdictions of the continental shelf of the Chukchi Sea simultaneously. This Simultaneous Lease Sale (Tender Offer) is planned for 1997. This Annex is to formally acknowledge this decision by both parties.

The annex also provided for the establishment of a coordinating committee to implement the arrangements. This preparatory work has not eventuated in an international treaty for United States–Russian transboundary oil and gas deposits. However, a bilateral agreement covering hydrocarbon development in the Chukchi Sea, similar to the agreement between Norway and Russia for the Barents Sea, remains an option.

Within the area under U.S. jurisdiction, Shell resumed its effort to locate large-scale reserves of oil in the Chukchi Sea during 2015, following an abortive effort in 2012. It is

worth noting that even an exploratory effort has profound consequences for the BSR. In preparation for its 2015 program, for example, Shell assembled a flotilla composed of two large drill rigs, 28 support vessels, and seven aircraft.⁷⁷ Both drill rigs and all support vessels must transit the Bering Strait at least twice, once going north to reach the exploration site and again going south at the end of the season. Should problems arise with individual vessels or resupply become necessary, the number of transits of the Bering Strait would increase. This level of traffic pertains only to the exploration and development stages. Should the effort proceed to the production stage in the Chukchi Sea and/or the Beaufort Sea, vessel traffic in the BSR would increase substantially.

What is the likely trajectory of this development during the foreseeable future? Shell paid around \$2 billion for oil leases off the north coast of Alaska. It has spent around \$5 billion on efforts to locate oil in this area.⁷⁸ Even for a company the size of Shell, this represents a major stake, especially during a period characterized by sharp declines in the world market price of oil. The lead time between exploration and production of oil to be transported to southern markets can be as long as 10–20 years. In addition, it is likely that any oil produced in this area would be transferred by subsea pipeline to Prudhoe Bay and then shipped south via the Trans-Alaska Pipeline System. In late September 2015, Shell announced that it “will cease exploration in Arctic waters off Alaska’s coast following disappointing results from an exploratory well backed by billions in investment and years of work.”⁷⁹ There are no plans for resuming exploration in this area during the foreseeable future.

Numerous factors affecting the future of oil development in this area are in play. The State of Alaska, heavily dependent on oil revenue, is a strong advocate of offshore development in the Chukchi and Beaufort Seas. Some local governments (e.g., the North Slope Borough in Alaska), relying heavily on revenue derived from oil development while at the same time being sensitive to impacts on subsistence resources and cultural integrity, are deeply divided regarding the issue. The U.S. federal government is conflicted regarding offshore oil development. The Obama Administration approved Shell’s plans in general terms, but specific agencies (e.g., the Bureau of Ocean Energy Management [BOEM]) have insisted on a rigorous application of relevant regulatory requirements to Shell’s efforts. In the meantime, the environmental community (ranging from local “kayakivists” in Seattle, Washington, to major international environmental nongovernmental organizations) expressed outrage at this development and targeted Shell as a focus of opposition. The world market for oil, which is highly volatile in the short run, is impossible to forecast with any confidence over the next 10–30 years.

Thus, the implications of offshore energy development for the BSR and for newly emerging needs for governance are difficult to foresee with any precision. The scale of Shell’s exploratory effort is not only significant in its own right; it also provides clear evidence that offshore energy development north of the Bering Strait could have profound effects on the extent and variety of human activities taking place in the BSR. At the same time, Shell’s decision to terminate its exploratory drilling may mean that there will be no offshore energy development close to the BSR for years to come. Still, there may be a case for thinking sooner rather than later about the needs for governance likely to arise in connection with future energy development in the area and about the adequacy of existing arrangements to address such needs. A particularly important concern is protecting the well-being of the region’s coastal communities.

Mining activity

Given the uncertain future of global markets for oil and gas, some observers have begun to pay more attention to mining activities in efforts to project the economic future of the Arctic in general and the BSR more specifically. The mineral deposits located in northwestern Alaska and the Russian Far East are substantial. Still, the actual effects of mining on the BSR and the resultant needs for governance are just as difficult to anticipate as they are in the case of oil and gas development.

The most significant mining operation currently underway in the region is the Red Dog zinc/lead mine, located on land belonging to the NANA Corporation within the Northwest Arctic Borough and operated as a joint venture by Teck Alaska (a subsidiary of Teck Resources Limited headquartered in Vancouver) and the NANA Corporation.⁸⁰ The mine, situated in the DeLong Mountains north of Kotzebue, is the world's largest source of zinc and a significant source of lead. Making use of a 53-mile haul road from the mine to the coast, ore from the mine is stockpiled throughout the year and shipped south via bulk carriers during the navigation season. Every ship engaged in this effort passes through the Bering Strait twice, once en route to the site and again loaded with ore. There has been considerable discussion of expanding the current operation, depending on trends in world demand for zinc and lead and on the prospect that diminishing sea ice in the area will increase the length of the navigation season in the BSR (see [Figure 4](#)). A more elaborate port facility located on the coast is a possibility. It is clear that the Russian Far East is another source of substantial deposits of valuable minerals.⁸¹

Efforts are underway to develop some of these deposits, but none of these minerals are being extracted currently in commercially significant quantities, due to the complicated regulatory regime covering such activities as well as to the uncertain state of world market prices for some of the relevant minerals. It also is unclear what role bulk carriers would play in transporting these commodities, even if large-scale development does go forward. Nevertheless, the movement of minerals from the Russian Far East could become another source of increased activity in the BSR, even though the actual mine sites are unlikely to be located in the region itself.

Commercial fishing

While the Bering Sea is the site of some of the world's most productive commercial fisheries, it is unclear what the prospects for fishing in the vicinity of the Bering Strait and north of the Strait are likely to be in the foreseeable future. The impacts of climate change are affecting the marine environment in this region and could result in the development of commercially significant stocks of fish located in some parts of the Arctic Ocean. Most fisheries biologists are skeptical regarding the likelihood of any such development, at least during the next several decades.⁸² They point to a variety of factors (e.g., the depth of the Arctic Ocean) likely to impede the northward movement of commercially important species. Nevertheless, the uncertainties surrounding such matters are profound. There are some indications that sizable stocks of specific species (e.g., polar or Arctic cod) may begin to show up in the Arctic Ocean sooner rather than later.

In August 2009, the United States imposed a moratorium on commercial fishing in the sectors of the Chukchi and Beaufort Seas located within its EEZ.⁸³ This moratorium does not preclude subsistence harvesting on the part of residents of the coastal communities

located within this area. However, it does ensure that no significant harvesting efforts will get underway in waters under U.S. jurisdiction north of the Bering Strait. The Russian Federation has not imposed a similar moratorium on commercial fishing in its area of the Chukchi Sea. As a result, there is a significant asymmetry in the regimes governing commercial fishing in the eastern and western segments of the BSR. Because this marine area constitutes a single system in biophysical terms, this asymmetry could have significant consequences from the perspective of sustainability. This is one area where bilateral cooperation might well be a suitable topic for policy initiatives going forward.

Ship-based adventure tourism

There is no counterpart in the western Arctic to the extensive ship-based tourism that has occurred for some time in the European Arctic and, to a lesser extent, the Davis Strait and Baffin Bay along the west coast of Greenland.⁸⁴ The northernmost point of interest for ship-based tourism in the western Arctic is St. Matthew Island, an uninhabited island lying somewhat to the south of the southern boundary of the BSR with abundant wildlife populations. Large cruise ships without ice-strengthened hulls do not generally operate in these waters. Vessels operating in the central and northern Bering Sea are equipped to carry around 100 passengers, rather than the much larger groups accommodated by conventional cruise ships.

Could this situation change during the foreseeable future? It is somewhat hard to envision the growth of tourist attractions in the BSR itself, even if changing ice conditions lengthen the navigation season and make the area safe for larger vessels (see [Figure 4](#)). Wealthy tourists seeking to travel to the North Pole are likely to depart from Russian ports far to the west (e.g., Murmansk), so they are unlikely to traverse the BSR. Perhaps the most significant prospect affecting the BSR is the attraction of transiting the Northwest Passage and (to a lesser extent) the Northeast Passage (i.e., the NSR). This prospect may well attract wealthy adventure tourists.

Crystal Cruises (headquartered in Los Angeles and owned by Genting Hong Kong) has announced plans to sail the *Crystal Serenity*, a large cruise ship carrying about 1000 passengers and 600 crew, from west to east through the Northwest Passage during August and September 2016.⁸⁵ Any transits of the passage will be subject to regulations imposed by Canada, the United States, and (perhaps) Denmark/Greenland. In the case of the NSR, Russian regulations would be applicable. In both cases, ships would need to transit the Bering Strait at either the beginning or end of their voyages and thus would be subject to the provisions of any bilateral regime governing ship traffic in the BSR that the United States and Russian Federation may develop in the future. Understandably, both local communities and public agencies responsible for safety (e.g., the U.S. Coast Guard) are concerned about the lack of adequate emergency services that could be called upon in the event of an accident affecting a large non-ice-strengthened vessel with many people on board.

Governance options and infrastructure for the BSR

Given this account of emerging human activities in the BSR, what specific needs for governance are likely to arise during the foreseeable future, and what are the options for addressing them effectively, efficiently, and equitably? Is there a case for extending or integrating existing arrangements or is it preferable to create new arrangements to fulfill these needs?

What enhancements of existing infrastructure would be required to implement and administer new or improved regulatory arrangements in this region? The goal in this section is to identify and assess options in such a way as to enrich the discourse about governing the BSR during the near future. In contrast to recommendations that involve advocacy and posturing, options can be used or ignored by policymakers with the objective of simply contributing to informed decision making.

For the purposes of analysis, emerging needs can be identified for governance in several areas:

- (i) ship design, construction and operation;
- (ii) sea lanes, vessel traffic separation schemes, routing systems, and rules of the road;
- (iii) consumptive uses of fish and marine mammals; and
- (iv) environmental and social protection.

While options relating to each of these needs are explored in the following, note is made that it may not make sense to segregate these needs, establishing separate sectoral arrangements in an effort to devise governance systems to fulfill them. For this reason, in this section the option of establishing a BSR Authority through which the United States and Russian Federation would manage human activities in the region on a collaborative basis subject to the provisions of applicable international laws is explored. Such an authority might be an elaboration of the Bering Straits Regional Commission, offering a basis to work out a division of labor between the United States and the Russian Federation in a manner that would improve efficiency and avoid unnecessary duplication of infrastructure.

There are issues relating to the organizational capacity and built infrastructure required to implement and administer any governance systems established to deal with issues in the BSR. Implementation and administration involve matters ranging among:

- (i) enhancing compliance and law enforcement mechanisms;
- (ii) monitoring, reporting, and verification systems; and
- (iii) built infrastructure, including aids to navigation, search-and-rescue capabilities, emergency services, salvage operations, and normal port facilities commensurate with expanded or newly developed governance systems.

In this sense, sustainable infrastructure will combine built elements and governance mechanisms.

Governance systems

One issue to consider at the outset centers on timing. New needs for governance in the BSR will not spring up overnight. They will emerge gradually and become increasingly prominent over years, if not decades. This makes it important to think carefully about when to put in place new governance arrangements and how to ensure that these arrangements are able to adapt easily to changing conditions. Should steps be taken now to create new arrangements, so that they will be in place as needs for governance become more intense? Or is it better to wait until the needs become more well defined in order to ensure that the arrangements are designed properly to fit actual rather than anticipated needs?

One approach would be to identify possible trigger points or circumstances associated with increased likelihood of impacts that would require actions to avoid or mitigate the risks. Revealing options in advance of such trigger points, so that the decision makers can be

nimble in their actions, would be efficient, especially as more is learned about the exact nature of the relevant needs.

Ship design, equipment, and operation

The navigation season in the BSR currently runs from sometime in June to sometime in November (see [Figure 4](#)), depending on weather and sea-ice conditions in any given year. The length of the open-water season may increase in the future, though it is important to note that ice conditions and related hazards need to be considered on a year-round basis. There is no reason to expect that the Bering Strait will be ice free throughout the year during the foreseeable future, though the ratio of first-year ice to multiyear ice is rapidly increasing across the Arctic Ocean.⁸⁶

Ships operating in this environment will need to be properly prepared for conditions in the BSR. Will the provisions of the Polar Code suffice? It may be appropriate to consider supplemental regulations applicable specifically to the BSR dealing with issues like speed limits in sensitive areas, seasonal restrictions on the location of sea lanes, the use of heavy fuel oil (HFO), emissions of black carbon, impacts on marine mammals, and the control of invasive species. These concerns might result or require additional amendments to SOLAS or MARPOL.

Could UNCLOS Art. 234 provide a legal basis for more stringent regulations for the BSR to be adopted by the Russian Federation and the United States and administered on a collaborative and nondiscriminatory basis? Might any of the existing bilateral arrangements reviewed in the preceding be relevant to regulating ships operating in the BSR? Would an operational system similar to the Norwegian Havbase system⁸⁷ be an attractive option for the BSR?

Vessel traffic systems

The number of ships operating in the BSR is currently small enough that there is no need for elaborate systems to manage vessel traffic. But as [Figure 3](#) makes clear, the number of transits of the BSR more than doubled between 2008 and 2012. The human activities reviewed in the previous section may lead to a growth in the volume of vessel traffic in the BSR to the point where there will be a need for well-defined rules of the road.

Will the spatial and seasonal sensitivity of the BSR require special regulations dealing with the designation of “no go” areas and variable speed limits? Can these needs be handled under existing agreements, including but not limited to IMO regulations? Can a cooperative bilateral U.S.-Russian management system in this realm be envisioned?

Such an arrangement might include a coordinated system to advise ships to take one route or another through the Strait depending upon relevant ice and weather conditions. The 2011 U.S.-Russian Presidents’ Joint Statement⁸⁸ or the 2012 Clinton-Lavrov Joint Statement⁸⁹ could provide a basis for elaborating such a system.

Living resources

Two sets of issues relating to living resources arise in thinking about needs for governance in the BSR. One set includes issues relating to commercial fishing. At this stage, the United States and the Russian Federation handle fisheries management within their own EEZs.

As noted in the preceding, the United States has imposed a moratorium on all commercial fishing within its EEZ north of the Bering Strait. But this is not the case with regard to

the Russian Federation. Both countries allow commercial fishing within their own jurisdictions of the Bering Sea south of the Bering Strait. Because fish do not respect arbitrary limits like jurisdictional boundaries in the Bering and Chukchi Seas, efforts to manage the fisheries of these areas on a unilateral basis are not likely to produce sustainable results.

It may be possible to build on the 1994 bilateral Agreement on Cooperation regarding the Environment and Natural Resources⁹⁰ to develop a cooperative regime designed to manage fish stocks sustainably. The bilateral arrangement between Norway and the Russian Federation respecting the fish stocks located in the vicinity of the maritime boundary between the two countries in the Barents Sea might well provide a source of useful precedents regarding cooperation in managing the fish stocks of the BSR.⁹¹

The other issue relating to marine living resources involves subsistence harvests of fish and marine mammals on the part of residents of the coastal communities located within the BSR. Perhaps the most complex issues center on subsistence harvesting of whales, walrus, seals, and polar bears, all of which are impacted by the changing biophysical conditions associated with climate change and other large-scale environmental changes.

Harvesting of these resources takes place within the arrangements set forth in the International Whaling Convention⁹² and the 1973 Agreement on the Conservation of Polar Bears.⁹³ But these activities are also subject to local co-management arrangements, such as those established under the Alaska Eskimo Whaling Commission,⁹⁴ the Eskimo Walrus Commission,⁹⁵ and the 2000 U.S.-Russian Agreement on Polar Bears.⁹⁶

There is no doubt that the recession and thinning of sea ice is affecting the condition of walrus and polar bear stocks. But this does not constitute a compelling reason to prohibit subsistence harvesting of these resources. What is needed are practices that not only encourage bilateral cooperation between the United States and Russian Federation, but also provide opportunities for building effective forms of cooperation between local organizations reflecting the insights and concerns of the user communities, as well as public agencies that have the authority to make decisions about regulations pertaining to living resources located within the EEZs of the two states.

Environmental and Social Protection

During the foreseeable future, the growth of human activity in the BSR will be motivated primarily by a desire to move ships and the cargoes and passengers they carry through the region, rather than by an interest in large-scale development in the region itself. But the resultant activities will impact the region in a variety of ways, ranging from the effects of industrial activities (e.g., mining) on the natural environment to the economic and social side effects of these activities on the small (predominantly indigenous) communities located within the region.

A major need for governance in this setting is to minimize the negative externalities arising from increased human activities in the region, as well as to take advantage of any positive externalities arising from these activities. Environmental impacts may include ship strikes of whales, the effects of noise on marine mammals, the consequences of oil spills arising from accidents at sea, the spread of invasive species, and the side effects of burning HFOs (e.g., emissions of black carbon). Some externalities may have positive social effects, creating job opportunities and justifying the development of built infrastructure of use to communities located in the BSR. But social impacts may prove negative when they interfere with subsistence hunting and gathering or disrupt the social fabric of coastal communities.

One option to consider is the establishment of a system of marine protected areas (MPAs) located either wholly within the BSR or in areas encompassing portions of the BSR. Several (not mutually exclusive) options are worthy of consideration in this context.⁹⁷

One option is to establish MPAs under the provisions of general international regimes, such as environmentally and biologically sensitive areas (EBSAs) under the 1992 Convention on Biological Diversity⁹⁸ or particularly sensitive sea areas (PSSAs) under MARPOL.⁹⁹ A second option would be to integrate protected areas in the BSR into a circumpolar network of MPAs along the lines proposed within the Arctic Council.¹⁰⁰ A third option would be for the United States and Russian Federation to establish one or more jointly administered MPAs covering parts of the BSR straddling the jurisdictional boundary between the two states. Yet a fourth option would be for the United States and Russian Federation to establish separate MPAs within their respective sectors of the BSR, but to do so in a manner featuring informal coordination.

In the case of the third and fourth options, it would make sense to think about linking MPAs to the Shared Beringian Heritage Program that has evolved in recent years relating to the management of United States and Russian national parks in the region.¹⁰¹

There are two general issues to be considered in thinking about the role of MPAs in the governance of the BSR. One of these has to do with the location, regulatory content, and administration of the MPAs themselves. Are there ways to situate MPAs to maximize environmental protection while minimizing interference with other activities (e.g., shipping or subsistence harvesting)? What activities should be permitted or banned within the confines of individual MPAs? What administrative arrangements would be needed, especially for MPAs established under broader international regimes or covering areas under the jurisdiction of both the United States and Russian Federation?

Given that marine systems are fluid and dynamic, would it be useful to develop a management mechanism to adjust the boundaries of MPAs in this region as needed to accommodate biophysical changes occurring over time? Is the 1989 United States–Russian bilateral Agreement on Combating Pollution¹⁰² a useful point of departure in this realm? Could the 2013 Draft Joint Parks Agreement¹⁰³ be applied and extended to offer protection for the coastal communities or marine ecosystems located in the BSR?

The other general issue deals with the interplay between MPAs and regimes governing other human activities, such as shipping, offshore energy development or fishing. Should there be regulations designed not only to designate sea lanes open to vessel traffic, but also to minimize harmful effects of ship traffic (e.g., ship strikes, noise pollution) on marine mammals? What should be the relationship between the rules governing MPAs and fisheries regulations covering matters like area closures and gear restrictions?

An area of special concern in this connection is the need to protect the coastal communities of the BSR. This may involve cooperative arrangements aimed at protecting the rights of residents of these communities to engage in subsistence harvesting of living resources, while at the same time ensuring the integrity of the biophysical systems of the protected areas.

A bilateral BSR authority

As human activity in the BSR rises, it may make sense to consider the creation of a joint U.S.–Russian BSR Authority operating under the general principles of international law, but addressing the specific needs for governance in the BSR. Such an authority could build on elements of the Bering Straits Regional Commission.

Such arrangements are common at the domestic level when activities requiring complex coordination extend across the jurisdictional boundaries of two or more states, provinces, or other regional governments. Familiar examples in the United States context include the Port Authority of New York and New Jersey, which coordinates a variety of transportation systems in the greater New York City area, and the Tennessee Valley Authority, which coordinates the generation of hydroelectric power and other commercial activities involving several states that share the valley of the Tennessee River.

There also are parallels at the international level. A prominent example is the Saint Lawrence Seaway, which allows oceangoing vessels to access the Great Lakes of North America and is operated as a cooperative arrangement by Canada and the United States.¹⁰⁴ Prior to 1999, the bilateral (United States and Panama) Panama Canal Commission was responsible for the operation of the Panama Canal Zone. Since the reversion of the Canal Zone to Panama, this function has been taken over by the Panama Canal Authority operated by Panama.¹⁰⁵ The Suez Canal Authority owns, operates, and maintains the Suez Canal. Established initially by Egypt, the authority is an independent body that has legal personality and organizational capacity in its own right.¹⁰⁶

A bilateral BSR Authority could be rooted in the 1994 bilateral Agreement regarding the Environment and Natural Resources¹⁰⁷ and constitute a logical application of provisions from the 2011 U.S.-Russian Presidents' Joint Statement on cooperation¹⁰⁸ in the BSR.

The BSR Authority could encompass a system of regulatory measures together with decision-making procedures and an administrative mechanism designed to manage the system on a day-to-day basis. Created under an agreement between the United States and the Russian Federation, this arrangement could provide opportunities for regional and local constituencies to participate in such a way as to ensure the protection of their interests relating to human activities in the BSR.

If the BSR Authority were established in the near future, it could include a mechanism to allow for regular reassessments and suitable adjustments as human activities in the region increase over time. It is worth noting that rising tensions between the United States and Russian Federation, at the level of high politics,¹⁰⁹ have not impeded the ability of the two countries to engage in cooperative activities at the level of day-to-day issues like the management of human activities in the BSR.

Organizational capacity and built infrastructure

Whatever arrangements are devised to address needs for governance in the BSR, they will require a concerted effort to address matters of implementation or, in other words, to move their provisions from paper to practice, as well as to create an adequate infrastructure to operate these arrangements on a day-to-day basis. These concerns can be divided into three distinct yet interlinked categories: (i) procedures designed to enhance compliance and law enforcement; (ii) requirements for monitoring, reporting and verification; and (iii) provisions of additional infrastructure.

Compliance and law enforcement

Every governance system must find ways to address matters of compliance on the part of those subject to its provisions. In the case of the BSR, it is realistic to assume that both the United States and the Russian Federation will have limited assets (e.g., ships, aircraft, trained

personnel) to assign to this task on a regular basis. This will place a premium on the use of low-cost measures (e.g., shifting the burden of proof to operators by requiring any ship intending to enter the BSR to demonstrate in advance that it has a valid certificate for operating in the area) and on the development of cooperative procedures to minimize redundancy in the assignment of assets to address issues of compliance.

Relatively simple actions, such as banning a ship that fails to comply with the applicable rules from operating in the BSR or from using U.S. and Russian port facilities or aids to navigation, may be useful in this context. The fact that there are no areas of high seas within the BSR should facilitate efforts on the part of the United States and the Russian Federation to deal with the challenge of compliance. The newly established multinational Arctic Coast Guard Forum may be able to make a constructive contribution in this realm with its remit to ensure safety, security and stewardship of Arctic waters.¹¹⁰

Monitoring, reporting, and verification

All governance systems require some means to determine whether the actions of subjects conform to the rules and regulations. When the relevant activities take place in regions that are both remote and sensitive in geopolitical terms, it is important to create information systems that are accurate and unbiased but at the same time as unobtrusive as possible. In this sense, it may be that satellite observations have a key role in meeting the needs for governance in the BSR by providing a critical alternative to ground-based inspections that can be too sensitive politically to be acceptable.

Under SOLAS,¹¹¹ for example, the Automatic Identification System (AIS) data that can be collected by ground stations as well as satellites are being used to track the location and movements of vessels in the Arctic Ocean. In the future, to track and verify compliance with the Polar Code,¹¹² AIS metadata for each ship (e.g., ship registry, dimensions, cargo, type) could be expanded to include appropriate details of the Polar Ship Certificate.

Since both the United States and the Russian Federation have advanced capabilities in this area, there is room for collaboration to fulfill the Polar Code objectives. In addition, private providers operating under arrangements approved by the United States and the Russian Federation may be able to participate in public-private partnerships dealing with vessel tracking and verification.

Such observing systems would contribute to the realization of the Arctic Council initiatives that are being developed on a pan-Arctic basis regarding Sustaining Arctic Observing Networks (SAON).¹¹³ Within the BSR, RUSALCA¹¹⁴ provides a bilateral initiative between the United States and the Russian Federation that could be enhanced with additional types of marine monitors to assess natural as well as anthropogenic impacts to further facilitate sustainable development of the region. As a common Arctic issue that has been agreed by all Arctic states and indigenous peoples organizations in the 1996 Ottawa Declaration that established the Arctic Council,¹¹⁵ such sustainability involves balance between economic prosperity, environmental protection and societal well-being in view of the urgencies of today and the needs of future generations.

Other built infrastructure

Governing human activities in the BSR will require the development and operation of various types of infrastructure, which require coordination, consistency and cooperation between the United States and the Russian Federation to be sustainable. Moreover, as

already noted, built elements complement governance mechanisms, neither of which is sufficient alone to ensure sustainable outcomes. The built elements include mobile and fixed assets, as well as observing, communication, research, and information systems.

Some of these built elements will take the form of aids to navigation (e.g., better hydrographic charts, weather forecasting systems, search-and-rescue facilities, emergency services, salvage capacity, oil spill prevention and cleanup capabilities). Advanced technologies (e.g., AIS) may also play a role in this realm. The capacity to protect MPAs and coastal communities from the impacts of oil spills and other industrial accidents constitutes another relevant consideration.

There has been consideration of establishing a deepwater port in the BSR and upgrading airfields and associated infrastructure. On the U.S. side, for example, the closest major port is Dutch Harbor, which is a thousand miles south of the Chukchi Sea. When an icebreaker that was part of Shell's 2015 flotilla sustained damage to its hull in the Bering Sea, it had to sail south to Portland, Oregon for repairs. There may be a strong case for collaboration between the United States and the Russian Federation in developing port facilities both to maximize effectiveness and to avoid redundancy.

As an alternative to a deep-water port facility along the coast of the United States or Russian Federation, it may be worthwhile to consider development of an emergency response platform in the Chukchi Sea at the confluence of the Northern Sea Route, the Northwest Passage, the transpolar routes, and the BSR.¹¹⁶ It may make sense also to create and administer an oil spill contingency fund that shipping companies would be required to underwrite in the form of a system of fees linked to transits of the Bering Strait. Similar arrangements might be of interest regarding other threats to the natural environment or coastal communities.

Conclusion

The Bering Strait Region (BSR) is a sensitive area in both socioecological and geopolitical terms. While the region has long been a remote area involving only limited human activities, this condition is changing. There are good reasons to expect more far-reaching changes during the foreseeable future, largely as a result of human activities leading to a growth of ship traffic in the region.

Specific needs for governance are not easy to determine in advance. But new needs for governance will undoubtedly arise and the basic character of these needs can be discerned. General international law (e.g., most of the provisions of UNCLOS) as well as more specialized international arrangements (e.g., the Polar Code applicable to the operation of commercial ships in polar waters) will provide a solid foundation for addressing these needs.

Because the waters and coastal areas of the BSR lie wholly within the jurisdiction of the United States and the Russian Federation, these states have both an opportunity and an obligation to establish and implement more specialized governance arrangements for the region. At one and the same time, such arrangement would provide stable expectations, allowing ship operators to make concrete plans regarding the use of the waters of the BSR, and include restrictions that offer adequate protection to the sensitive ecosystems and human communities of the region. One attractive option would be to establish a joint U.S.–Russian BSR Authority to provide coherent, effective, and flexible management practices applicable to the BSR as a whole.

Such an authority would have its own unique features. There is considerable experience with arrangements of this sort operating both within and across the jurisdictions of states that could prove helpful to those responsible for designing and administering a BSR Authority. Despite growing tensions at the level of high politics, the United States and the Russian Federation have demonstrated an ability to cooperate effectively in addressing day-to-day issues in the BSR. One desirable side effect of the development of a BSR Authority would be to demonstrate the feasibility of successful collaboration between the two countries in an area of increasing importance for the global community.

Notes

1. U.N. Convention on the Law of the Sea, 1833 *U.N.T.S.* 397.
2. Agreement between the United States and the Union of the Soviet Socialist Republics on the Maritime Boundary (1990), 29 *I.L.M.* 942.
3. Oran R. Young, “Arctic Futures: the Power of Ideas,” in P.A. Berkman and A.N. Vylegzhanin, eds., *Environmental Security in the Arctic Ocean* (Springer: Cambridge, UK, 2013), pp. 123–124.
4. P.A. Berkman and A.N. Vylegzhanin, “Preface: International, Interdisciplinary and Inclusive Perspectives,” *ibid.*, p. XXIII.
5. “Lotsia Beringova morja,” Ministerstvo oboroni Rossiyskoy Federatsii, (“The Sailing Directions for the Bering Sea,” The Ministry Defense of the Russian Federation), Moscow, 2001, 663 pp. (in Russian), and “Lotsia Zapadnoy chasty Chukotskogo morja, Beringova proliva i Severo-Zapadnoy chasty Beringova morya” (“The Sailing Directions for the Western part of the Chukchi Sea, Bering Strait and North-Western part of the Bering Sea,” The Ministry of Defense of the Russian Federation), Moscow, 1999, 239 pp. (in Russian).
6. R. Laffont, *Les Grandes Routes Maritimes*, (Paris, 1970), pp. 252–253 (in French).
7. Joint Statement of the President of the United States of America and the President of the Russian Federation on Cooperation in the Bering Strait Region, May 26, 2011, available on the website of the U.S. Presidency, Statements and Releases, www.whitehouse.gov/the-press-office/2011/05/26/joint-statement-president-united-states-america-and-president-russian-federation.
8. A. Hartsig, I. Fredrickson, C. Yeung, and S. Senner, “Arctic Bottleneck: Protecting the Bering Strait Region from Increased Vessel Traffic,” *Ocean and Coastal Law Journal*, (2014), 18: 35–53.
9. “Joint Statement,” *supra* note 7.
10. “The Sailing Directions for the Western part of the Chukchi Sea,” *supra* note 5, p. 147.
11. *Ibid.*, p. 166.
12. Donald R. Rothwell, “Maritime Security in the Polar Regions,” in Erik J. Molenaar, A.G. Oude Elferink, and D.R. Rothwell, eds., *The Law of the Sea and the Polar Regions, Interactions between Global and Regional Regimes* (Martinus Nijhoff: Leiden, Boston, 2013), p. 384, and Hartsig et al., *supra* note 8.
13. Treaty concluded between Russia and United States on ceding Russian North American Colonies, March 1867, *Consolidated Treaty Series* (ed. C. Parry), Vol. 134, 133.
14. U.S.–U.S.S.R. Maritime Boundary Agreement, *supra* note 2.
15. “The Sailing Directions for the Western part of the Chukchi Sea,” *supra* note 5, p. 149.
16. As a result, the description of the Bering Strait as “three navigational channels,” for example, by Rothwell, *supra* note 12, pp. 384–385, does not seem to be accurate.
17. A complete list of documents can be found in *The Workshop on Integrated Policy Options for the Bering Strait Region: Report*, 20–24 October 2014, Table 3, at arcticoptions.org/events, and see the website the knowledge bank of “Bering Strait Maritime Governance” at beringstrait-governance.knohow.co.
18. Paul Arthur Berkman, “Unstructured Data Practices In Polar Institutions and Networks: A Case Study with the Arctic Options Project,” *Data Science Journal*, (2014), 13:64–71.
19. *Corfu Channel Case*, [1949] *I.C.J. Reports*, p. 28.
20. *Ibid.*

21. As for the total number of ships passing through the Corfu Channel, the Court mentioned that according to UK data, “during the period of one year nine months, the total number of ships was 2,884. The flags of the ships are Greek, Italian, Rumanian, Yugoslav, French, Albanian and British,” *Ibid.*, p. 29. During the period of 2 years, the total number of ships passing through the Russian waters of the Bering Strait (including foreign ships) was: in 2010–2012, not more than 40 ships annually; in 2013, 71; and in 2014, 4, according to data from the Northern Sea Route Administration.
22. Vienna Convention on the Law of Treaties, 1969, 1155 *U.N.T.S.* 331, Art. 53.
23. Third United Nations Conference on the Law of the Sea, Doc.A/CONF.62/WS/37; Add. 1–2, p. 243.
24. R. Armando, “United States Policy in the Arctic,” in Berkman and Vylegzhanin, *supra* note 3, p. 86.
25. UNCLOS, *supra* note 1, Art. 42.
26. “The Sailing Directions for the Western part of the Chukchi Sea,” *supra* note 5, p. 149–166.
27. *Ibid.*, p. 149.
28. Memorandum of Understanding Between the National Ocean and Atmospheric Administration of the Department of Commerce of the United States of America and the Russian Academy of Sciences of the Russian Federation on Cooperation in the Area of the World Oceans and the Polar Regions done at Washington, on 5 December 2003, available on the webpage of the Russian-American Long-term Census of the Arctic, at www.arctic.noaa/rusalca/rusalca-memorandum-understanding.
29. Russian-American Long-Term Census of the Arctic (RUSALCA) website, at rusalcaproject.com.
30. International Code for Ships Operating in Polar Waters (Polar Code), IMO Doc. MSC 68/21/Add. 1, Annex 10, available on the IMO website at www.imo.org/en/MediaCentre/HotTopics/polar/Documents/POLAR%20CODE%20TEXT%20AS%20ADOPTED.pdf.
31. International Convention for the Safety of Life at Sea, 1974, 1184 *U.N.T.S.* 2, as amended.
32. International Convention for the Prevention of Pollution from Ships and the Protocol of Amendment, (MARPOL), 1973/1978, 1340 *U.N.T.S.* 61, as amended.
33. Polar Code, *supra* note 30, Preamble, para. 2.
34. *Ibid.*, Introduction, para. 3.1.
35. Convention on the Conservation of Migratory Species of Wild Animals, 1979, 1651 *U.N.T.S.* 333.
36. *Ibid.*, Art. II(2).
37. International Convention for the Regulation of Whaling, 1946, 161 *U.N.T.S.* 72, Art. 1.
38. *Ibid.*, Art VIII; Art. I of the Protocol to the 1946 Convention; and para.5 of the Part II of the Schedule. See in general: O.R. Young et al., “Subsistence, Sustainability, and Marine Mammals: Reconstructing the International Whaling Regime,” *Coastal and Ocean Management* (1994), 23: 117–127.
39. U.S.–U.S.S.R. Maritime Boundary Agreement, *supra* note 2.
40. N.A. Robinson and G.R. Waxmonsky, “The U.S.–U.S.S.R. Agreement to Protect the Environment: 15 Years of Cooperation,” *Environmental Law*, (1988), 18: 408–410.
41. Agreement on Cooperation in the Field of Environmental Protection between the United States and the U.S.S.R., 1972, *T.I.A.S.* 7345.
42. Robinson and Waxmonsky, *supra* note 40, at p. 408.
43. Convention between the United States and the U.S.S.R. Concerning the Conservation of Migratory Birds and Their Environment, 1976, *T.I.A.S.* 9073. For more detail on the Convention, see R.B. Ryumina, *Legal Regulation of Cooperation between the USSR and the USA in the Field of Migrant Birds—Legal Environment Protection* (Editing House of the Institute of State and Law of USSR) (1985), pp. 110–119 (in Russian).
44. The preamble of the Agreement between the Russian Federation and the United States on Cooperation in the Field of Protection of the Environment and Natural Resources, 1994, *T.I.A.S.* 12550.
45. Agreement between the United States and the U.S.S.R. concerning Cooperation in Combatting Pollution in the Bering and Chuckchi Seas in Emergency Situations, 1989, 2190 *U.N.T.S.* 179.
46. *Ibid.*, Art. 2.

47. Available in Russian at morspas.com/wp-content/uploads/2013/05/%D0%A1%D0%BE%D0%B2%D0%BC%D0%B5%D1%81%D1%82%D0%BD%D1%8B%D0%B9-%D0%BF%D0%BB%D0%B0%D0%BD-%D0%A0%D0%A4-%D0%A1%D0%A8%D0%90-2011.pdf.
48. J.M. Broadhus and R.V. Vartanov, eds., *The Oceans and the Environmental Security: Shared US and Russian Perspectives* (Island Press, 1994), pp. 182–183.
49. Agreement between the United States and the Union of Soviet Socialist Republics Concerning Mutual Visits by Inhabitants of the Bering Straits Region, 23 September 1989 (1989), 28 *I.L.M.* 1424.
50. Agreement between the United States and the Union of Soviet Socialist Republics Concerning the Bering Straits Regional Commission, 23 September 1989 (1989), 28 *I.L.M.* 1424.
51. Mutual Visits Agreement, *supra* note 49, Art. 2(1).
52. Bering Straits Regional Commission Agreement, *supra* note 50, Art. 3.
53. *Ibid.*
54. Russian Acts prohibiting taking polar bears are available in Russian at www.sevin-expedition.ru/netcat_files/File/strategy_PolarBear_FINAL.pdf.
55. Agreement between the United States and the Russian Federation on the Conservation and Management of the Alaska–Chukotka Polar Bear Population, 2000, *T.I.A.S.* 07-923.
56. *Ibid.*, Art. 6.
57. Agreement on the Conservation of Polar Bears, (1973), 13 *I.L.M.* 203.
58. Available in Russian, personal library of Prof. A.N. Vylegzhanin.
59. *Ibid.*
60. Joint Statement U.S. Secretary of State Hillary Clinton and Russian Minister of Foreign Affairs Segay Lavrov on Cooperation in the Bering State Region, 8 September 2012, at www.state.gov/r/pa/prs/ps/2012/09/197522.htm.
61. Joint Statement, *supra* note 7.
62. U.S. Department of State, “United States and Russia Sign Agreement to Prevent Illegal Fishing,” 11 September 2015, at www.state.gov/r/pa/prs/2015/09/246833.htm.
63. D.J. Summers, “US, Russia Sign Deal Aimed at Curbing Illegal Fishing,” *Alaska Journal*, 3 September 2015.
64. James A. Oliver, *The Bering Strait Crossing: A 21st Century Frontier between East and West* (London: Information Architects, 2006).
65. The Land Bridge was actually a great plain 1000 miles wide at its narrowest point. See David Hopkins, ed., *The Bering Land Bridge* (Stanford, CA: Stanford University Press, 1967).
66. Among the more extraordinary visions for the region are recurrent suggestions for a rail link between Asia and North America using a tunnel, bridge, or some combination of the two to cross the Bering Strait.
67. See generally: Robert L. Friedheim, ed., *Toward a Sustainable Whaling Regime* (Seattle: University of Washington Press, 2001).
68. For example, Roger Howard, *Arctic Gold Rush: The New Race for Tomorrow’s Natural Resources* (London: Continuum, 2009), and Richard Sale and Eugene Potapov, *The Scramble for the Arctic: Ownership, Exploitation and Conflict in the Far North* (London: Frances Lincoln, 2010).
69. Bjørn Gunnarsson, “The Future of Arctic Marine Operations and Shipping Logistics,” in Oran R. Young, Jong Deog Kim, and Yoon Hyung Kim, eds., *The Arctic in World Affairs: A North Pacific Dialogue on the Future of the Arctic* (Seoul: KMI and EWC, 2013), pp. 37–61.
70. Lawson Brigham, “International Cooperation in Arctic Marine Transportation: Safety and Environmental Protection,” in *ibid.*, pp. 115–136.
71. David Pumphrey, “The Impacts of Shifting World Energy Markets on Arctic Resource Developments,” paper presented at the 2015 North Pacific Arctic Conference, Honolulu, Hawaii, 5–7 August 2015.
72. Steven Lee Myers, “U.S. Is Seen as Laggard as Russia Asserts Itself in Warming Arctic,” *New York Times*, 29 August 2015.
73. David L. Gautier et al., “Assessment of Undiscovered Oil and Gas in the Arctic,” *Science*, 324 (29 May 2009): 1175–1179.
74. Treaty between Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and Arctic Ocean, 2010, 77 *Law of the Sea Bulletin* 24.

75. Following the Deepwater Horizon disaster in 2010, the Minerals Management Service (MMS) was reorganized. The relevant successor agency is the Bureau of Ocean Energy Management (BOEM).
76. Available in English, personal library of Prof. A.N. Vylegzhanin.
77. Tim Brander, "Shell Flotilla Begins Assembly in Dutch Harbor," *Alaska Journal of Commerce*, 24 June 2015.
78. Robin Pagnamenta, "Shell Begins 'High-Risk' Drilling for Arctic Oil," *The Times*, 22 August 2015.
79. Dan Joling, "Shell Says It Will Abandon Oil Exploration in Alaska Arctic," *Alaska Dispatch News*, 27 September 2015. See also: Clifford Krauss and Stanley Reed, "Shell Exits Arctic as Slump in Oil Prices Force Industry to Retrench," *New York Times*, 28 September 2015, A1, A13, and Kirk Johnson, "Exuberance and Disappointment at Shell's About-Face in the Arctic," *New York Times*, 28 September 2015, A13.
80. The NANA Corporation, a regional corporation established under the provisions of the Alaska Native Claims Settlement Act passed by the U.S. Congress in 1971, is the principal private landowner in the area covered by the Northwest Arctic Borough.
81. Valeriy A. Kryukov, "Patterns of Investment in the Russian Onshore Arctic: An Area of Stable Growth," in Young, Kim, and Kim, *supra* note 69, pp. 41–61.
82. Herald Loeng, "Potential Arctic Fisheries: Natural Science Perspective," in *ibid.*, pp. 215–220, and A.B. Hollowed, B. Planque, and H. Loeng, "Potential Movement of Fish and Shellfish Stocks from the Sub-Arctic to the Arctic Ocean," *Fisheries Oceanography*, (2013) 22: 355–370.
83. This took the form of the adoption by the U.S. Secretary of Commerce of the Fishery Management Plan for the Fish Resources of the Arctic Management Area, at alaskafisheries.noaa.gov/sustainablefisheries/arctic.
84. See the Arctic Council, *Arctic Marine Shipping Assessment* (2009), available at www.arctic.noaa.gov.
85. Rob Lovitt, "Crystal Cruises Sets Its Sights on the Northwest Passage," *Business*, 8 September 2014.
86. National Snow and Ice Data Center, Arctic Sea Ice News, nsidc.org/arcticseaicenews.
87. Norwegian Coastal Administration, Automatic Identification System (AIS), Mapping of Ship Traffic in the Arctic Ocean, at havbase.no. Polar-orbiting satellite AIS data, provided by SpaceQuest Ltd., extend back to 2009 and are being analyzed by Arctic Options/Pan-Arctic Options, www.arcticoptions.org, to generate a circumpolar synoptic baseline of ship traffic in the Arctic Ocean.
88. Joint Statement, *supra* note 7.
89. Joint Statement of Clinton and Lavrov, *supra* note 60.
90. Agreement on Cooperation in the Field of Protection of the Environment and Natural Resources, *supra* note 44.
91. Russian–Norway Treaty, *supra* note 74, Annex I. See also: Olav Schram Stokke, *Disaggregating International Regimes: A New Approach to Evaluation and Comparison*, (Cambridge: MIT Press, 2012).
92. International Whaling Convention, *supra* note 37.
93. Polar Bear Convention, *supra* note 57.
94. Alaska Eskimo Whaling Commission, at www.aewc-alaska.com.
95. Eskimo Walrus Committee, at www.kawerak.org/ewc.html.
96. U.S.–Russia Polar Bear Agreement, *supra* note 55.
97. See: Thomas L. Laughlin, "Environmental Perspective," in Young, Kim, and Kim, *supra* note 69, pp. 129–134.
98. Convention on Biological Diversity, 1992, 1760 *U.N.T.S.* 79.
99. MARPOL Convention, *supra* note 32.
100. Arctic Council, "Framework for a Pan-Arctic Network of Marine Protected Areas" (April 2015), on the Arctic Council website, at oaarchive.arctic-council.org.
101. See *infra* notes 58–59.
102. Agreement concerning Cooperation in Combatting Pollution, *supra* note 45.
103. Draft Joint Parks Agreement, *supra* note 58.
104. See the Great Lakes–St. Lawrence Seaway System website, at www.greatlakes-seaway.com.
105. See the Panama Canal Authority website, at www.panamacanal.org.

106. See the Suez Canal Authority website, at www.suezcanal.gov.eg.
107. Agreement on Cooperation in the Field of Protection of the Environment and Natural Resources, *supra* note 44.
108. Joint Statement, *supra* note 7.
109. See U.S. Department of the Treasury Ukraine-/Russia-related Sanctions, at www.treasury.gov/resource-center/sanctions/Programs/Pages/ukraine.aspx.
110. U.S. Department of Homeland Security, "Coast Guard Leaders from Arctic Nations Sign Historic Joint Statement," 30 October 2015, at www.dhs.gov/news/2015/10/30/coast-guard-leaders-arctic-nations-sign-historic-joint-statement.
111. SOLAS Convention, *supra* note 31.
112. Polar Code, *supra* note 30.
113. See Arctic Council, Sustaining Arctic Observing Networks (SAON) at www.arcticobserving.org.
114. See *supra* note 29.
115. Declaration on the Establishment of the Arctic Council (1996), 35 *I.L.M.* 1387.
116. P.A. Berkman and J.G. Stavridis, "A Mechanism for Arctic Crisis Response," *Proceedings of the US Naval Institute*, 17 December 2015, 141: 36–37.