



**U.S.-China Economic and Security  
Review Commission Staff Research Report**

April 13, 2012

**China and the Arctic:  
Objectives and Obstacles**



by  
Caitlin Campbell  
USCC Policy Analyst, Foreign Affairs and Energy

**Disclaimer:**

*This report is the product of professional research performed by staff of the U.S.-China Economic and Security Review Commission, and was prepared at the request of the Commission to support its deliberations. Posting of the report to the Commission's website is intended to promote greater public understanding of the issues addressed by the Commission in its ongoing assessment of U.S.-China economic relations and their implications for U.S. security, as mandated by Public Law 106-398 and Public Law 108-7. However, the public release of this document does not necessarily imply an endorsement by the Commission, any individual Commissioner, or the Commission's other professional staff, of the views or conclusions expressed in this staff research report.*

**Cover photo:**

China's icebreaker vessel *Xue Long*. Source: China Tech Gadget, "China Has Rights To Carry Normal Research Missions In Arctic," February 1, 2012.

<http://www.chinatechgadget.com/china-has-rights-to-carry-normal-research-missions-in-arctic.html>.

## **China and the Arctic: Objectives and Obstacles**

Although there is no authoritative statement of policy from the Chinese government on the Arctic, scientists and academics in China are increasingly showing interest in the region, and suggesting policies and actions for the nation. Given that the United States is an Arctic littoral state<sup>\*</sup> with interests in the region, this memo seeks to provide an overview of Chinese environmental, energy, economic, and security interests in the increasingly open and navigable Arctic.

It is the consensus of many within the scientific community that large areas of the Arctic region will be ice-free during summer months in the coming decades.<sup>†1</sup> This potential environmental transformation will likely have profound impacts on regional and global trade and security, especially related to shipping patterns and resource extraction activities. While China is not an Arctic littoral state, the melting of Arctic sea ice will impact China's environmental, energy, and trade circumstances. As a result, official and unofficial Chinese actors have expressed greater interest in the forthcoming "opening" of the Arctic in recent years. However, without a claim to territory in the region, China is largely excluded from regional politics and regulatory management of Arctic resources. For this reason, China has thus far pursued a low-profile approach in its policies toward the region, and will likely have to rely on the invitation and cooperation of the Arctic states – especially Russia and Canada – in order to advance its interests there.

### ***China's official Arctic policy – a work in progress***

High-level officials in China have yet to make any significant policy announcements regarding the Arctic region. China's Assistant Minister of Foreign Affairs Hu Zhengyue stated in 2009 that "China does not have an Arctic strategy,"<sup>2</sup> and no significant policies have been announced since then. However, a few mid-level officials in the Ministry of Foreign Affairs and the State Oceanic Administration have commented publicly on China's interests and activities related to the Arctic. Most of these official remarks or writings emphasize China's interests in environmental and climate change developments in the region. Official commentary has also stressed that Arctic states must ensure that the Arctic remains a global commons, with non-Arctic states having access to the region and its resources.<sup>3</sup>

To date, official Chinese comments on the Arctic have been limited to noting the importance of the Arctic to China and the value of open access to the region for all. At a 2009 Arctic forum in Norway, Assistant Minister of Foreign Affairs Hu emphasized that the Arctic impacts China's environment, economy, society, and consequently, the trajectory of its sustainable development, noting, "[t]he government of China is, therefore, greatly concerned" about Arctic issues.<sup>4</sup>

Hu also expressed that China respected the territorial rights of Arctic countries, but also warned that "Arctic countries should protect the balance between the interests of states with shorelines in the Arctic Ocean and the shared interests of the international community" in settling territorial claims. Some western analysts suggest that this comment reflects Chinese anxieties about being denied access to Arctic waterways by Arctic countries. This is reflected also in a 2010 article published by China's State

---

<sup>\*</sup> The five Arctic littoral states are Canada, Denmark (of which Greenland is a territory), Norway, Russia and the United States (by virtue of Alaska). An additional three countries have territory in the Arctic Circle: Finland, Iceland and Sweden.

<sup>†</sup> Some scientists have predicted that this will happen as soon as 2013.

Oceanic Administration, which concludes that the Arctic is the “inherited wealth of all humankind...The Arctic Ocean is not the backyard of any country and is not the ‘private property’ of the Arctic Ocean littoral states. As with Europe’s other oceans, under the framework of international law, every country in the world has an equal right to exploit the Arctic Ocean.”<sup>5</sup>

Observed patterns of policy formation in China suggest that Beijing has not fully developed an overarching strategy for the region. Typically, the first stages of policy development in China involve a period of public debate over a particular issue. Following this, Beijing will bring the debate behind closed doors, thereby ending public discussion. After a period of internal policy wrangling, an official policy line will be announced.<sup>6</sup> Given that (1) there have been no high-level policy pronouncements from Beijing regarding the Arctic, and (2) there currently is an ongoing, public debate over what China’s Arctic policies should look like, it is likely that China’s leaders still are in the early stages of developing an official policy toward the region. The current proliferation of voices and opinions on Chinese interests and goals in the Arctic suggest that academics, political commentators, the military, and other interest groups are all looking to inform and influence policymakers.<sup>7</sup>

While China currently has no official Arctic strategy, current Chinese activity in the region and the discussion of Arctic issues within China provide some insight into a possible future Chinese approach to Arctic. A summary of these discussions and activities are provided below.

### ***China’s environmental research in the Arctic***

China’s Arctic interests and activities are heavily focused on environmental issues: the impacts of melting polar ice on China’s continental and oceanic environment, and implications for the country’s agricultural and economic development.<sup>8</sup> Accordingly, Chinese policymakers have emphasized the importance of conducting scientific work in the region, and the country has made considerable investments in polar research since the 1990s. It has undertaken four research expeditions, has an Arctic research station in Norway’s Svalbard archipelago, and has a number of elite academic institutes dedicated to Arctic research.<sup>9</sup> It also owns the world’s largest icebreaker vessel, *Xuelong* (Snow Dragon), which has been central to China’s polar research activities.<sup>10</sup> China’s most recent Five-Year Plan (2011-2015) calls for strengthened polar and oceanic scientific research and active “integrated marine management,” indicating that China’s interest and investment in polar environmental research will continue to grow.<sup>11</sup>

China's participation in regional cooperative activities in the Arctic also is focused primarily on environmental research. China has had a role in several regional research projects and has been invited to participate in a number of international polar research organizations, including the International Polar Year Program, the Ny-Ålesund Science Managers Committee, and the International Arctic Science Committee.<sup>12</sup> China has a history of robust cooperation with Norway on Arctic environmental and scientific research. The Svalbard research station, for example, has been operating since 2004, and since 2009, the two countries have conducted a formal Bilateral Dialogue on Arctic Issues, which has identified climate and environmental issues as areas of mutual interest.<sup>13</sup>

## ***China's energy prospects in the Arctic***

In 2008, the U.S. Geological Survey (USGS) estimated that the Arctic contains up to 30 percent of the world's undiscovered gas and 13 percent of the world's undiscovered oil resources.<sup>14</sup> These untapped resources will become more readily accessible as Arctic sea ice melts.<sup>5</sup> According to the USGS, most of the potential oil and gas resources in the region are located within the territorial jurisdiction of Arctic states, and will thus be subject to the management and legal oversight of those countries.<sup>15</sup> China's territorial disadvantage, combined with its lack of cold-water drilling expertise, will preclude any substantive energy acquisitions by China in the Arctic, according to several analysts.<sup>16</sup>

Still, there will be attractive opportunities for Chinese energy investments in the region. A promising destination for these investments is Russia. China and Russia already have extensive energy ties and could cooperate on Arctic energy as well.\*\* Speaking at the 2010 Shanghai Expo, the governor of the Yamalo-Nenets Autonomous region in Russia - a coastal region which accounts for over 90 percent of Russian natural gas production - welcomed resource cooperation with China, saying "[w]e are ready to act as intermediaries between an investor country and the oil and gas sector and create a good investment climate."<sup>17</sup>

Another potential partner for China's Arctic energy ambitions is Canada. In recent years, Chinese energy investments in Canada have grown significantly, with Chinese state-owned companies purchasing minority and controlling stakes in Canadian oil and gas projects worth \$16 billion in 2010 and 2011.<sup>18</sup> Meanwhile, Canadian policymakers seem to be looking to Asia to diversify the country's energy trade away from the United States (which is the destination for the vast majority of Canadian energy exports).<sup>19</sup>

Norway is another likely partner on energy. During meetings of the Bilateral Dialogue on Arctic Issues between China and Norway, discussions have been held on energy and resource issues. Norway's cold-water drilling expertise will likely be targeted by Chinese energy firms looking to gain know-how and investment.<sup>20</sup> However, some reports suggest that current diplomatic tensions between Norway and China might hinder these collaborative efforts. Since the Oslo-based Nobel Committee awarded Chinese dissident Liu Xiaobo the Nobel Peace Prize in 2010, China has stalled or halted economic and diplomatic relations between the two countries. It has been reported that in response to China's behavior, Norway might block Beijing's attempts to gain permanent observer status in the Arctic Council, a high-level intergovernmental regional forum that addresses environmental, resource, and climate issues in the Arctic.<sup>11</sup> These reports contradict a recent foreign policy address by Norway's Minister of Foreign Affairs, expressing support for China's application for permanent observer status.<sup>21</sup> While gaining permanent

---

<sup>‡</sup> Besides gas and oil, the region contains large amounts of chromium, coal, copper, diamonds, gold, lead, manganese, nickel, rare earths, silver, titanium, tungsten, and zinc. Greenland is endowed with many of these resources and is an attractive destination for Chinese investment as a result.

<sup>§</sup> On the other hand, warming temperatures will pose a number of obstacles to the successful exploration and acquisition of subsurface resources. Permafrost instability can threaten project infrastructure, and unpredictable weather conditions and floating ice can endanger survey and extraction activities.

<sup>\*\*</sup> U.S.-Russian cooperation on Arctic energy is also likely to increase. In 2011, Exxon Mobil Corporation won a major Arctic oil exploration contract with Russia's state-owned energy giant Rosneft. It competed with several international oil companies - including China's CNPC - for the deal.

<sup>††</sup> The Arctic Council has eight voting members: Canada, Denmark (including Greenland), Finland, Iceland, Norway, Russia, Sweden, and the United States. There are six permanent observer states (all European) and several ad-hoc observer states, including China, Japan, and South Korea. China has been vying for permanent observer status since 2008.

observer status will not allow China any decision-making powers in the region, it would grant China unrestricted access to Arctic Council meetings.<sup>22</sup>

### ***China's Shipping Prospects in the Arctic***

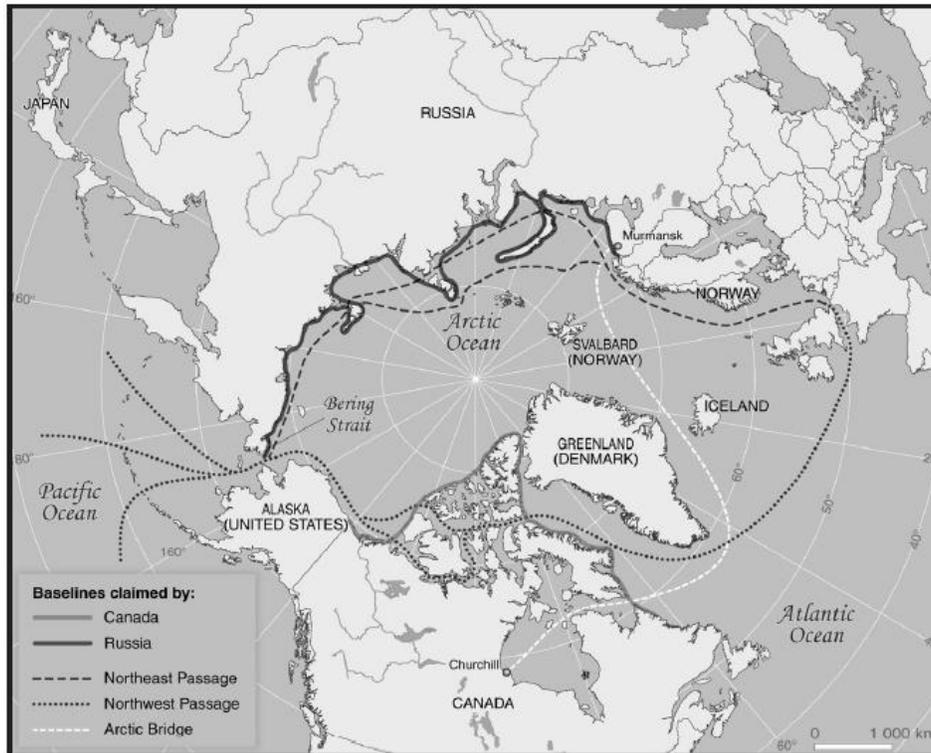
In 2009, China was the largest exporter and second-largest importer of globally shipped goods.<sup>23</sup> As Arctic sea ice melts, two international shipping routes - the Northwest Passage and the Northeast Passage (also known as the Northern Sea Route) - will become increasingly usable for commercial shipping purposes (see map below). China's access to these alternate shipping routes could have profound impacts on China's trade and shipping patterns in the future. For example, the Northeast Passage, which runs along Russia's northern border from the Bering Strait to Nova Zemlya, is 6,400 kilometers shorter than China's route to Europe via the Malacca Strait and the Suez Canal.<sup>24</sup> China will conduct its first expedition through the Northeast Passage in the summer of 2012.<sup>25</sup>

China stands to benefit from the Northeast Passage most obviously from the lower logistical and regulatory costs associated with shorter trips through less-traveled waters. According to Dr. Guo Peiqing, Associate Professor at the Ocean University of China in Qingdao and respected expert on Arctic issues, the Northeast Passage "will change the structure of global trade. It may well bring about the emergence of a new, circumpolar super-economic belt made up of Asia, North America and Northern Europe."<sup>26</sup> Increased use of Northeast Passage would also alleviate dependence on the Malacca Strait, helping to address China's "Malacca Dilemma."<sup>27</sup> Moreover, piracy is a powerful disincentive for the use of conventional shipping routes; insurance costs for ships traveling via the Gulf of Aden toward the Suez Canal increased by 1000 percent between September 2008 and March 2009.<sup>28</sup>

---

<sup>##</sup> The Malacca Dilemma refers to China's high dependence upon the Malacca Strait for seaborne trade. 78 percent of its energy imports pass through this narrow thoroughfare. The perceived threats of bottlenecks or blockades of Chinese trade via the Malacca Strait have driven analysts and policymakers to consider alternate routes to secure China's shipped exports and imports.

**Figure 1. Arctic Shipping Routes**



Source: Lasserre, "Les détroits arctiques canadiens et russes."

The benefits shipping companies might gain from a shortened Arctic passage could be offset, however, by logistical and technical challenges. First, shippers would have to contend with unpredictable and often violent weather conditions. These include ice storms, extreme temperatures that can impair deck machinery, and destructive and undetectable blocks of ice.<sup>29</sup> Such obstacles can block passages in the region and cause costly delays.

Second, China has limited technical expertise in polar navigation. This impairs China's ability to have a robust shipping (or resource extraction) presence in the region. Most vessels and related machinery used in Arctic waters are designed and constructed in Northern Europe, and China has little indigenous expertise in this field. China's sole icebreaker vessel, *Xuelong* (Snow Dragon), was purchased from Ukraine in 1993. A second icebreaker was commissioned in 2009 after China's State Council announced that in order to support China's growing needs in the Arctic, *Xuelong* needed "brothers and sisters."<sup>30</sup> The new vessel, China's first domestically-constructed icebreaker, is slated for completion in 2014.<sup>§§31</sup>

Third, China's activities in the Arctic (trade or otherwise) are privy to the regulations of the Arctic Council and the territorial claimants therein. Russia, which has jurisdiction over much of the Northeast Passage, has the power to impose regulations on international vessels traversing its waters. Linda

<sup>§§</sup> By way of comparison, the United States has three icebreakers, two of which are designed for heavy ice. Of these two icebreakers, only one is currently in commission; the other is undergoing repairs until 2013. Some scholars and U.S. Navy personnel have called for the United States to invest more in heavy icebreakers in order to ensure that the United States has sufficient means to operate in increasingly navigable Arctic waters.

Jakobson, an expert on China's Arctic policies, told the *Financial Times* in an interview that "China is particularly wary of Russia and whether or not it might demand high passage fees, which could erase some or most of the potential efficiency gains [for Chinese shippers in Russian Arctic waters].<sup>32</sup> The chief executive of Russia's state shipping company Sovkomflot, the world's biggest supplier of ice-class vessels, has indicated that China's wariness is well-founded. He told the *Financial Times* that while Russia's northern route would not be closed to foreign shipping companies, users would have to comply with Russian environmental and navigation regulations. He added that unpredictable Arctic conditions and high insurance fees for container ships rendered a Chinese shipping presence there "nonsense."<sup>33</sup> Sovkomflot has, however, been sending shipments of natural gas condensate to China via the Northeast Passage; 300,000 – 400,000 tons were planned to be shipped in 2011.<sup>34</sup>

### ***Territorial and Strategic Developments of Concern to China***

The issue of territorial control over the Arctic has figured prominently in Chinese and other discussions of the Arctic. Every Arctic state – except the United States – is a signatory to the United Nations Convention on Law of the Sea (UNCLOS) which gives a littoral state sovereign rights to the management of resources in its territorial sea and exclusive economic zone (EEZ) extending 200 nautical miles from its shores.<sup>\*\*\*</sup> UNCLOS requires that littoral states submit individual claims on the extent of their continental shelf to the U.N. Commission on the Limits of the Continental Shelf (CLCS), which reviews and approves or disapproves submissions.<sup>35</sup> All Arctic states except the United States have submitted claims to the CLCS (the United States cannot submit a claim since it is not party to UNCLOS). The most significant unsettled territorial claim in the Arctic is Russia's claim to the underwater Lomonosov Ridge. If designated Russian territory by the CLCS, nearly half of the Arctic region would come under Russian jurisdiction.<sup>36</sup> These claims have been watched closely in China, with some observers worrying that Russia's claim, if recognized by the CLCS, could substantially restrict access of non-Russian entities to large areas of the Arctic.<sup>37</sup>

Chinese discourse on Arctic territorial issues is diverse. At one end of the spectrum, commentators emphasize that China must not "stand idly by with hands in pockets," and should preserve its "right to speak up" lest Arctic states choose to divvy up Arctic territory and resources amongst themselves, denying China (and the rest of the world) access.<sup>38</sup> Some writers and analysts suggest that territorial claims in the region could cause tension or even conflict. Dr. Guo Peiqing of the Ocean University of China, one of the more assertive voices, has opined that the territorial disputes in the Arctic constitute "Russia and some other states' challenge to the international order and international law after the cold war."<sup>39</sup> One senior People's Liberation Army (PLA) colonel asserted sovereignty disputes in the Arctic might require the use of military force.<sup>40</sup> Such commentators generally promote a more assertive stance by China in Arctic affairs.

A somewhat divergent circle of thought tends to deemphasize territorial wrangling and advocate a much more cautious Chinese approach to the region.<sup>41</sup> It would seem that proponents of such an approach fear that an assertive position regarding other countries' sovereignty claims in the Arctic might undermine China's position on its own rights and sovereignty in contested maritime spaces like the South China Sea. This line of thought has been reflected in commentary by Chinese officials, whose discussions of territorial developments in the region emphasize China's respect for the sovereign

---

<sup>\*\*\*</sup> The United States, while not a signatory to UNCLOS, generally recognizes and abides by the terms of the convention.

territorial rights of Arctic countries and reassure that China's interests in the region are benign and cooperative in nature.<sup>42</sup> Officially, China does not take a stance on any of the sovereignty disputes in the Arctic.<sup>43</sup>

## ENDNOTES

<sup>1</sup> Ronald O'Rourke, "Changes in the Arctic: Background and Issues for Congress" (Washington, DC: Congressional Research Service, March 2010), p. 7. <http://www.fas.org/sgp/crs/misc/R41153.pdf>.

<sup>2</sup> Linda Jakobson, "China Prepares for an Ice-Free Arctic" (Stockholm, Sweden: Stockholm International Peace Research Institute, March 2010), p. 9. <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>.

<sup>3</sup> David Curtis Wright, "The Dragon Eyes the Top of the World," (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011), pp. 28-32; *Beijing Times*, "China dismisses accusations of its activities in the Arctic," February 3, 2012. <http://english.people.com.cn/90883/7719474.html>.

<sup>4</sup> David Curtis Wright, "The Dragon Eyes the Top of the World," (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011), pp. 28-30.

<sup>5</sup> David Curtis Wright, "The Dragon Eyes the Top of the World," (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011), pp. 31-32.

<sup>6</sup> Maryanne Kivlehan et al, "Doctrinal Change in the People's Liberation Army: Institutions, Processes, and Influences," (Alexandria, VA: CNA, August 2003), pp. 57-76.

<sup>7</sup> David Curtis Wright, "The Dragon Eyes the Top of the World," (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011), pp. 6, 28.

<sup>8</sup> Linda Jakobson, "China Prepares for an Ice-Free Arctic" (Stockholm, Sweden: Stockholm International Peace Research Institute, March 2010), p. 6. <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>.

<sup>9</sup> Xinhua, "Chronology of China's Arctic Expedition," January 16, 2010. [http://news.xinhuanet.com/english2010/database/2010-01/16/c\\_13138300.htm](http://news.xinhuanet.com/english2010/database/2010-01/16/c_13138300.htm); Linda Jakobson, "China Prepares for an Ice-Free Arctic" (Stockholm, Sweden: Stockholm International Peace Research Institute, March 2010). <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>.

<sup>10</sup> Polar Research Institute of China, "M/V Xuelong." <http://www.pric.gov.cn/enindex.asp?sortid=18>.

<sup>11</sup> Tianjin Oceanic Administration, "中华人民共和国国民经济和社会发展第十二个五年规划纲要: 第十四章 推进海洋经济发展[12<sup>th</sup> National Economic and Social Development Five-Year Plan: Chapter 14, Promote the Development of Marine Economy]." <http://www.tjoa.gov.cn/textContent.aspx?cid=2315&tid=39>.

<sup>12</sup> Linda Jakobson, "China Prepares for an Ice-Free Arctic" (Stockholm, Sweden: Stockholm International Peace Research Institute, March 2010), p. 4. <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>.

<sup>13</sup> Ministry of Foreign Affairs of the People's Republic of China, "China and Norway." <http://www.mfa.gov.cn/eng/wjb/zzjg/xos/gilb/3346/t16984.htm>; Linda Jakobson, "Preparing for an ice-free Arctic (Part 3 – Charting Political Waters)," *China Dialogue*, April 21, 2010. <http://www.worldchanging.com/archives/011128.html>.

<sup>14</sup> Donald L. Gautier et al, "Assessment of undiscovered oil and gas in the Arctic," *Science* (May 29, 2009). <http://www.sciencemag.org/content/324/5931/1175.abstract>.

<sup>15</sup> Kristine Offerdal, "High North Energy: Myths and Realities," in Sven G. Holtsmark and Brooke A. Smith-Windsor, *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome, Italy: NATO Defense College, May 2009), pp. 152-153.

<sup>16</sup> Frédéric Lasserre, *China and the Arctic: Threat of Cooperation Potential for Canada* (Toronto, Ontario: Canada International Council), p. 7. <http://www.opencanada.org/wp-content/uploads/2011/05/China-and-the-Arctic-Frederic-Lasserre.pdf>.

<sup>17</sup> UPI, "Russia invites China to explore Arctic," May 3, 2010. [http://www.upi.com/Business\\_News/Energy-Resources/2010/05/03/Russia-invites-China-to-explore-Arctic/UPI-40391272903186/](http://www.upi.com/Business_News/Energy-Resources/2010/05/03/Russia-invites-China-to-explore-Arctic/UPI-40391272903186/).

<sup>18</sup> China Mining Association, "Canada in energy deals with China," February 9, 2012. <http://www.chinamining.org/News/2012-02-09/1328751130d54145.html>; Isabella Mrockowski, "China's Arctic

---

Century?” *Project 2049 AsiaEye Blog*, February 10, 2012. <http://blog.project2049.net/2012/02/chinas-arctic-century.html>.

<sup>19</sup> Theophilos Argitis and Andrew Mayeda, “Harper’s Courting of China Wins Praise from Canada Companies,” *Bloomberg Businessweek*, February 12, 2012. <http://www.businessweek.com/news/2012-02-12/harper-s-courting-of-china-wins-praise-from-canada-companies.html>.

<sup>20</sup> Linda Jakobson, “China Prepares for an Ice-Free Arctic” (Stockholm, Sweden: Stockholm International Peace Research Institute, March 2010), p. 11. <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>; *The Barents Observer*, “Norway Welcomes China to the Arctic,” August 31, 2010. <http://www.barentsobserver.com/index.php?id=4813544>.

<sup>21</sup> Jonas Gahr Støre, Foreign Policy Address to the Storting. Norwegian Ministry of Foreign Affairs, March 14, 2012. [http://www.regjeringen.no/en/dep/ud/Whats-new/Speeches-and-articles/speeches\\_foreign/2012/policy\\_address1202.html?id=672235](http://www.regjeringen.no/en/dep/ud/Whats-new/Speeches-and-articles/speeches_foreign/2012/policy_address1202.html?id=672235).

<sup>22</sup> Isabella Mrockowski, “China’s Arctic Century?” *Project 2049 AsiaEye Blog*, February 10, 2012. <http://blog.project2049.net/2012/02/chinas-arctic-century.html>.

<sup>23</sup> World Shipping Council, “Global Summary of Liner Trade.” <http://www.worldshipping.org/about-the-industry/global-trade/trade-statistics>.

<sup>24</sup> International Northern Sea Route Programme, <http://www.fni.no/insrop/>.

<sup>25</sup> *RIA Novosti*, “China to conduct first Northern Sea Route expedition,” March 12, 2012. <http://en.rian.ru/science/20120312/172118469.html>.

<sup>26</sup> *Maritime Magazine*, “China eyes Arctic resources and shipping potential,” November 18, 2010. [http://www.maritimemag.com/index.php?option=com\\_content&view=article&id=94:china-eyes-arctic-resources-and-shipping-potential&catid=4:news&Itemid=6](http://www.maritimemag.com/index.php?option=com_content&view=article&id=94:china-eyes-arctic-resources-and-shipping-potential&catid=4:news&Itemid=6).

<sup>27</sup> Malte Humpert, “The Future of the Northern Sea Route: A ‘Golden Waterway’ or a Niche Trade Route,” The Arctic Institute Center for Circumpolar Security Studies, October 3, 2011. <http://www.thearticinstitute.org/2011/10/part-5-future-of-northern-sea-route.html>.

<sup>28</sup> P. Gullestrup and M.B. Stumbaum, “EU maritime interests and the piracy problem: a perspective from the shipping industry” in *The International Response to Somali Piracy: Challenges and Opportunities* (Leiden, Netherlands: Martinus Nijhoff, 2010).

<sup>29</sup> Ronald O’Rourke, “Changes in the Arctic: Background and Issues for Congress” (Washington, DC: Congressional Research Service, March 2010), p. 13-14. <http://www.fas.org/sgp/crs/misc/R41153.pdf>.

<sup>30</sup> Xinhua, “我国新建一艘极地科学考察破冰船 计划2013年投入使用 [China will build a new polar expedition icebreaker and plans to put it in use in 2013],” November 9, 2009. [http://news.xinhuanet.com/tech/2009-11/19/content\\_12495351.htm](http://news.xinhuanet.com/tech/2009-11/19/content_12495351.htm); Xinhua, “China plans to build 4<sup>th</sup> Antarctic research station,” October 26, 2010. [http://news.xinhuanet.com/english2010/china/2010-09/26/c\\_13530784.htm](http://news.xinhuanet.com/english2010/china/2010-09/26/c_13530784.htm).

<sup>31</sup> *China Daily*, “New icebreaker to improve China’s polar research,” November 4, 2011. [http://www.chinadaily.com.cn/usa/china/2011-10/25/content\\_13976000.htm](http://www.chinadaily.com.cn/usa/china/2011-10/25/content_13976000.htm).

<sup>32</sup> Kathrin Hill and Isabel Gorst, “China looks to Arctic shipping route,” *Financial Times*, March 1 2010. <http://www.ft.com/cms/s/0/8360ad4c-2553-11df-9cdb-00144feab49a.html#axzz1On2kCu20>.

<sup>33</sup> Kathrin Hill and Isabel Gorst, “China looks to Arctic shipping route,” *Financial Times*, March 1 2010. <http://www.ft.com/cms/s/0/8360ad4c-2553-11df-9cdb-00144feab49a.html#axzz1On2kCu20>.

<sup>34</sup> “Russians to Send Oil to China via Northern Sea Route,” *Russia Briefing*, April 21, 2011. <http://russia-briefing.com/news/russians-to-send-oil-to-china-via-northern-sea-route.html/>.

<sup>35</sup> United Nations, *United Nations Convention on the Law of the Sea* (New York, New York: December 10, 1982). [http://www.un.org/depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf).

<sup>36</sup> Ronald O’Rourke, “Changes in the Arctic: Background and Issues for Congress” (Washington, DC: Congressional Research Service, March 2010), p. 11. <http://www.fas.org/sgp/crs/misc/R41153.pdf>.

<sup>37</sup> Linda Jakobson, “China Prepares for an Ice-Free Arctic” (Stockholm, Sweden: Stockholm International Peace Research Institute, March 2010), p. 9. <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>.

<sup>38</sup> David Curtis Wright, “The Dragon Eyes the Top of the World,” (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011), pp. 7, 13.

<sup>39</sup> Linda Jakobson, “China Prepares for an Ice-Free Arctic” (Stockholm, Sweden: Stockholm International Peace Research Institute, March 2010), p. 10. <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>.

---

<sup>40</sup> David Curtis Wright, "The Dragon Eyes the Top of the World," (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011), p. 4.

<sup>41</sup> David Curtis Wright, "The Dragon Eyes the Top of the World," (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011).

<sup>42</sup> Linda Jakobson, "China Prepares for an Ice-Free Arctic" (Stockholm, Sweden: Stockholm International Peace Research Institute, March 2010), p. 9. <http://books.sipri.org/files/insight/SIPRIInsight1002.pdf>; David Curtis Wright, "The Dragon Eyes the Top of the World," (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011). pp. 28-30.

<sup>43</sup> David Curtis Wright, "The Dragon Eyes the Top of the World," (Washington, DC: U.S. Naval War College China Maritime Studies Institute, August 2011). p. 30.