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► Executive Summary

Many Arctic narratives cast suspicion on China, based on concern that the Asian power will seek to undermine the sovereignty of Arctic states and co-opt regional governance mechanisms to facilitate access to resources and new sea routes to fuel and connect its growing global empire. This paper focuses on China's Arctic maritime capabilities to analyze and infer possible Arctic interests of this self-declared "near-Arctic" state. Do Chinese state officials mean what they say about the Arctic, or are they using the cover of polar scientific research and thinly veiled language in an attempt to normalize their presence and advantageously position themselves? Assuming that acceptance of China's presence – or at least apathy to it – serves as a necessary precondition to access and exploit Arctic resources, the authors deduce how Chinese scientific research reflects and fits with the country's regional interests and its global commercial, resource extraction, and power projection goals. After producing a timeline of key inflection points in Chinese academic and official discourse, the authors analyze the activities of Chinese icebreaker Xue Long and the 11 Chinese national Arctic research expeditions (CHINARE). They conclude that China has successfully used its scientific community as an instrument to normalize its presence in the region for skittish Arctic nations. This is consistent with China's "near-Arctic state" narrative, thus laying the foundation for the broader strategic goal of accessing the region and exploiting its resources.



As a permanent member of the UN Security Council, China shoulders the important mission of jointly promoting peace and security in the Arctic. The utilization of sea routes and exploration and development of the resources in the Arctic may have a huge impact on the energy strategy and economic development of China, which is a major trading nation and energy consumer in the world. China's capital technology, market, knowledge and experience is expected to play a major role in expanding the network of shipping routes in the Arctic and facilitating the economic and social progress of the coastal States along the routes.

– China's Arctic Policy, January 2018¹

Recent U.S. strategic documents have elevated China to the status of a primary threat to Arctic security and prosperity (alongside Russia). This increasingly assertive messaging is informed by the framework established in the U.S.'s 2017 *National Security Strategy* and 2018 *National Defense Strategy*, both of which identify strategic competition with China and Russia as “the principal challenge to long-term U.S. security and prosperity.”² Accordingly, these global assumptions guided the Department of Defense's (DoD) *Arctic Strategy* (2019), which subordinates regional interests to a general American imperative to “deter, and if necessary, defeat great power aggression.” Given China's avowedly limited Arctic military capabilities (particularly compared to Russia), the U.S. considers other variables to frame China as a strategic threat:

Despite having no territorial claims in the region, China is seeking a role in Arctic governance. As part of China's “One Belt, One Road” initiative, it has linked its economic activities in the Arctic to its broader strategic objectives, as articulated in its first Arctic policy white paper in January 2018. China's stated interests in the Arctic are primarily focused on access to natural resources and the opportunities offered by the Arctic sea routes for Chinese shipping. China does not currently have a permanent Arctic military presence, but is increasing its presence through economic outreach, investments in Arctic states' strategic sectors, and scientific activities. China maintains research stations in Iceland and Norway and has pursued energy development and infrastructure projects in Russia, such as the Yamal liquefied natural gas project. China also continues to seek opportunities to invest in dual-use infrastructure in the Arctic. Despite China's claim of being a “Near Arctic State,” the United States does not recognize any such status.³

¹ State Council Information Office of the People's Republic of China (PRC), *China's Arctic Policy*, January 2018, http://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm.

² U.S. 2017 *National Security Strategy* and 2018 *National Defense Strategy*.

³ U.S. Department of Defense (DoD), *Arctic Defense Strategy* (2019) ties China's presence to surreptitious efforts to “support a strengthened, future Chinese military presence in the Arctic Ocean, potentially including deployment of submarines to the region.” <https://media.defense.gov/2019/Jun/06/2002141657/-1/-1/1/2019-DOD-ARCTIC-STRATEGY.PDF>, 4–5.

Opaque language in U.S. documents conceals a lack of specificity about the immediate risks to U.S. national security interests. “China and Russia pose discrete and different challenges in their respective theaters,” the DoD’s *Arctic Strategy* observes, “but both are also pursuing activities and capabilities in the Arctic that may present risks to the homeland.” No examples of Chinese threats are provided. The next section declares that, “in different ways, Russia and China *are* challenging the rules-based order in the Arctic,” and provides specific examples of how Russia is doing so. In terms of China, however, the report asserts that “China is attempting to gain a role in the Arctic in ways that *may* undermine international rules and norms, and there is *a risk that* its predatory economic behavior globally *may* be repeated in the Arctic [emphasis added].”⁴

In 2018, Xi Jinping’s Chinese Communist Party (CCP) confidently released its Arctic policy, which officially frames China as a self-identified “near-Arctic Nation” and an “Arctic Stakeholder.”⁵ China’s 2018 Arctic policy confirms the sovereignty and sovereign rights of the Arctic states as well as its continuing efforts to assert and normalize its own rights as a “near-Arctic state.” Attempts to use history to reinforce this position, such as asserting that China has been present in the Arctic since 1925 when it became a signatory of the Spitsbergen Treaty (now known as the Svalbard Treaty), remain unconvincing.⁶ Instead, China emerged as a polar player when it arrived in Antarctica in 1985⁷ and sent its first national scientific research expedition to the Arctic in 1999, and has been active over the last two decades in increasing its presence and asserting its interests in the region.

China’s vertical world map (Figure 1) depicts the country in the centre of, and connected to, a world dominated by oceans. This map reflects its perception of itself as a polar power,⁸ with Antarctica occupying a central, almost dominant, position. The Arctic Ocean is situated in a less dramatic position, resembling the Mediterranean Sea from a classic Western world map, and it is through this ocean that the CCP is endeavouring to flow a Polar Silk Road. Although Xi’s China has grown more assertive in its immediate neighbourhood, it has largely maintained the low-

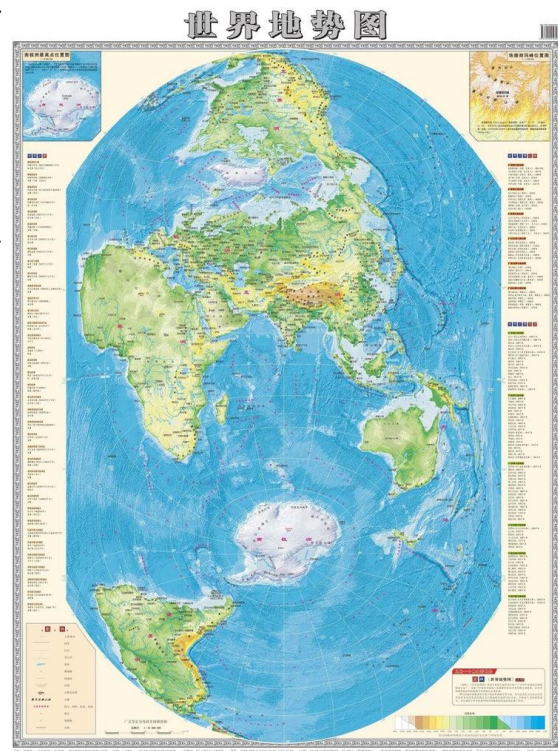


Figure 1: Hao Xiaoguang’s
Vertical World Map

⁴ Ibid., 6.

⁵ PRC, *China’s Arctic Policy*, section II.

⁶ *The Svalbard Treaty*, February 9, 1920, <https://www.jus.uio.no/english/services/library/treaties/01/1-11/svalbard-treaty.xml>.

⁷ Global Security, “‘Xiangyanghong 10 – II’ Ocean Survey Ship,” <https://www.globalsecurity.org/military/world/china/xiangyanghong-10-2.htm>.

⁸ Frank Jacobs, “Is This the World Map of the Future?” *Big Think*, August 12, 2019, <https://bigthink.com/strange-maps/future-world-map?rebellitem=1#rebellitem1>.



profile approach in the Arctic region laid down by Deng Xiaoping.⁹ Unlike the “race for resources” narrative proffered in popular media, the Arctic’s protracted opening allows China “to take a long-term view of its objectives,”¹⁰ permitting it to deliberately manoeuvre elements of national power without generating excessive international alarm. Accordingly, the specific nature of China’s burgeoning Arctic interest remains contested in the academic literature.

Many Arctic narratives emanating from Western sources cast suspicion on China, based on concern that the Asian power will seek to undermine the sovereignty of Arctic states and co-opt regional governance mechanisms to facilitate access to resources and new sea routes to fuel and connect its growing global empire.¹¹ In May 2019, then-U.S. secretary of state Mike Pompeo tied China’s growing presence to surreptitious efforts to “support a strengthened, future Chinese military presence in the Arctic Ocean, potentially including deployment of submarines to the region.” On the other hand, some scholars have laid out the conditions under which China might play a constructive role in circumpolar affairs and Arctic development.¹² In their view, positive relations are inherently predicated on China respecting Arctic states’ sovereignty and coastal states’ rights to their exclusive economic zones (EEZ) and extended continental shelves. This is consistent with international law, which China promises to respect in its 2018 Arctic policy. Appropriate Chinese involvement in Arctic governance, with due respect for Arctic states, can also bolster regional stability. Chinese investments can help to advance resource development projects, thereby helping Arctic nations achieve the UN’s vision for sustainable development.¹³

China’s scientific activities in the Arctic region since 1999 have invited less critical scrutiny than one might expect. While a few scholars have gestured towards the risks posed by the scientific research that China promotes, most have trumpeted these activities and contributions as constructive forms of the polar knowledge building and scientific diplomacy that the international community expressly desires. Can we responsibly take China’s messaging at face value? In November 2019, the Danish Defence Intelligence Service (DDIS) released an annual risk assessment report, which observed that “a great power play is shaping up between Russia, the United States and China, which is increasing the level of tension in the [Arctic] region.” Noting China’s growing investments in Arctic research, DDIS chief Lars Findsen suggested that Chinese scientific expeditions in the region serve a “dual purpose,” with an “increasing interest” by the Chinese military in this research. “It is likely that a part of China’s build-up of knowledge about the Arctic and capacity to operate in the Arctic will take place in a collaboration between civilian and military actors,” the report explained.¹⁴

⁹ Camilla T. N. Sørensen and Ekaterina Klimenko, “Emerging Chinese-Russian Cooperation in the Arctic,” Stockholm International Peace Research Institute, Policy Paper 46, June 2017: 10.

¹⁰ Linda Jakobson and Jingchao Peng, “China’s Arctic Aspirations,” Stockholm International Peace Research Institute, Policy Paper 34, November 2012: 22.

¹¹ Anne-Marie Brady, *China as a Polar Great Power* (Cambridge: Cambridge University Press, 2017); and David Curtis Wright, “The Dragon and Great Power Rivalry at the Top of the World: China’s Hawkish, Revisionist Voices within Mainstream Discourse on Arctic Affairs.” Canadian Global Affairs Institute, 2018.

¹² See, for example, P. Whitney Lackenbauer, Adam Lajeunesse, James Manicom, and Frédéric Lasserre, *China’s Arctic Ambitions and What They Mean for Canada* (Calgary: University of Calgary Press, 2018).

¹³ <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>.

¹⁴ Danish Defence Intelligence Service (DDIS), *Intelligence Risk Assessment 2019* (Copenhagen: DDIS, November 2019), https://fe-ddis.dk/globalassets/fe/dokumenter/2020/risk-assessments/-risk_assessment2019-.pdf.



This paper focuses on China’s Arctic maritime capabilities to analyze and infer possible Arctic interests of this self-declared “near-Arctic” state. As an authoritarian regime, the CCP is not transparent, and publication in any language is controlled. Although language is a good indicator of the desired messaging for a target audience, it is not necessarily indicative of the full truth – particularly when it comes from a surveillance state that has tremendous influence and control over domestic actors and audiences. Do Chinese state officials mean what they say about the Arctic, or are they using the cover of polar scientific research and thinly veiled language in an attempt to normalize their presence and advantageously position themselves?

Focusing on the activities of Chinese icebreaker Xue Long, this paper suggests that China has successfully used its scientific community as an instrument to normalize its presence in the region for skittish Arctic nations. Assuming that acceptance of China’s presence – or at least apathy to it – serves as a necessary precondition to access and exploit the region’s resources, we attempt to deduce some of the more subtle roles in which the CCP has employed its scientific platforms. What is Xue Long’s role in the Arctic? How does Chinese scientific research fit with the country’s regional interests and its global commercial, resource extraction and power projection goals? We begin by providing a timeline of what we discern to be key inflection points in Chinese academic and official discourse. We then establish the respective capabilities of Xue Long 1 and 2 before reflecting on the 11 Chinese national Arctic research expeditions (CHINARE) in terms of their pace, the places they went and their expressed – and unstated – purposes. Ultimately, we deduce that China has used Xue Long as a scientific platform to normalize its regional presence consistent with its “near-Arctic state” narrative, thus laying the foundation for the broader strategic goal of accessing the region and exploiting its resources.¹⁵

China in the Arctic: A Timeline

Discerning China’s political bearing and messaging over time helps to contextualize how and why Beijing has used Xue Long as a tool to normalize the country’s presence in the Arctic region. A deluge of academic articles and books, think-tank reports and newspaper articles produced over the past 15 years, as well as selected Chinese statements either released in English or subsequently translated into English by scholars, facilitate this effort. Viewed comprehensively, we propose that a pattern emerges, with Beijing intentionally designing its activities in periods three and four to serve broader strategic purposes.

Table 1: Phasing of China’s Arctic Ambitions

Phase	Timeframe	Characterization of Phase
1	Pre-2007	Interest & Orientation
2	2007 – 2011	Awakening & Alarm
3	2011 – 2018	Discipline & Control
4	2018 – present	Confidence & Investment
5	TBD	Exploitation

¹⁵ PRC, *China’s Arctic Policy*.



The leading-edge work published by Linda Jakobson and her colleagues at the Stockholm International Peace Research Institute (SIPRI) is instrumental to our analysis. With the benefit of hindsight, *SIPRI Insight 1002: China Prepares for an Ice-free Arctic* (2010) and *SIPRI 34: China's Arctic Aspirations* (2012) not only laid an essential foundation for future academic analysis of China's Arctic interests and goals, but they also bridge the critical periods of alarm and control. The 2010 document offers a historical lens into the period of alarm that followed China's first bid for accredited Arctic Council observer status but preceded its 2011 clampdown on messaging, which defines its period of control. The 2012 report followed the Arctic Council's second deferral/rejection of China's application for observer status, providing valuable insight into the effects that this decision had on the CCP's approach and its subsequent tightening of a national Arctic narrative. China's success in securing accredited observer status in 2013 later changed the political dynamic, providing it with more leeway.

Phase 1: Interest and Orientation (to 2007)

The period of interest and orientation before 2007 included China's entry into the International Arctic Science Committee (IASC) in 1997, its establishment of the Yellow River Station in 2004 and its entry into the Ny-Ålesund Science Managers Committee in 2005.¹⁶ The State Oceanic Organization officially adopted Hao Xiaoguang's vertical world map in 2004, and the People's Liberation Army followed suit in 2006, affirming a fundamental reorientation of how those organizations view the world.¹⁷ Although China publicized some of its Arctic ambition,¹⁸ Beijing did so in incremental steps with no discernible sense of urgency.

Phase 2: Awakening and Alarm (2007-2011)

The second period represented China's awakening to the growing strategic competition in the Arctic and alarm that it might lose out on opportunities. Intense international media coverage of the region in 2007 – including reports of the lowest sea ice extent on record, Russian explorer and politician Artur Chilingarov's planting of a titanium flag on the seabed at the North Pole, surging oil and gas prices integrated into narratives about a regional “race for resources,” Russia's resumption of long-range bomber patrols and Arctic state announcements of investments in defence – collectively served as a catalyst for Beijing to take more direct interest in the Arctic.

The Arctic coastal states' Ilulissat Declaration in 2008 insisted that “[b]y virtue of their sovereignty, sovereign rights and jurisdiction in large areas of the Arctic Ocean, the five coastal states are in a unique position to address [regional] possibilities and challenges.” While reaffirming that an “extensive international legal framework applies to the Arctic Ocean” which provided “a solid foundation for responsible management by the five coastal States and other users of this Ocean,” the Declaration unambiguously placed the “Arctic five” littoral states at the centre of regional governance and revealed their preference to manage the region as an exclusive club “through national implementation and application of relevant provisions” of international

¹⁶ Linda Jakobson, *China Prepares for an Ice-Free Arctic*, (Stockholm: Stockholm International Peace Research Institute, 2010), 3.

¹⁷ Brady, 4.

¹⁸ *Ibid.*, 3; Polar Research Institute of China (PRIC) Deputy Director Yang Huigen is the first to publicly mention China's aspirations to become a “polar great power.”



law.¹⁹ By amplifying non-Arctic coastal state fears of “an alliance of Arctic states”²⁰ locking them out of the Arctic region, the Ilulissat Declaration served as a wedge issue between the Arctic littoral states and countries such as Iceland and China.²¹

Foreseeing Iceland's potential role as a shipping hub, China established an embassy in Reykjavík in 2008, and Iceland became the first European country to sign a free trade agreement with China in 2013. In October of that year, a former president of Iceland founded the Arctic Circle as an open forum embracing international partners from all backgrounds.²² China was an active supporter and participant in the Arctic Circle from the onset, which provided a platform from which to advance an internationalist perspective on the region. These initiatives also raised questions about Chinese political influence on Iceland and how this could affect dynamics within the Arctic Council or other international bodies, including NATO.

While the Chinese government remained “fear[ful] of causing alarm and provoking countermeasures among the Arctic states”²³ during this period, Chinese scholars and professionals were given ample space to take a less cautious stance on China's perceived rights, interests and stakes in the Arctic region. Jakobson summarized how:

In a major step to enhance China's understanding of the political, legal and military dimensions of the Arctic, in September 2007 the Chinese Government launched a research project entitled Arctic Issues Research involving scholars and officials from around China. The 10 research topics are: the Arctic and human society, Arctic resources and their exploitation, Arctic scientific research, Arctic transportation, Arctic law, Arctic politics and diplomacy, military factors in the Arctic, China's Arctic activities, the Arctic's strategic position, and China's Arctic policy and recommendations. The research project, organized by the CAA [(Chinese Arctic and Antarctic Administration)], was completed by 2009, but the reports were not made public.²⁴

Some Chinese scholars offered bold recommendations that Beijing formulate an assertive Arctic policy, even if that entailed rejecting established governance norms dictated by the Arctic states and the Arctic Council.²⁵ These strong opinions appeared not only in leading Chinese academic

¹⁹ Ilulissat Declaration. Adopted at the Arctic Ocean Conference hosted by the government of Denmark and attended by the representatives of the five coastal states bordering on the Arctic Ocean (Canada, Denmark, Norway, the Russian Federation and the U.S.), Ilulissat, Greenland, May 27–29, 2008.

²⁰ Jakobson, 12.

²¹ See, for example, Klaus Dodds, “The Ilulissat Declaration (2008): The Arctic States, ‘Law of the Sea,’ and Arctic Ocean,” *SAIS Review of International Affairs* 33/2, Summer-Fall 2013: 45–55; and Nong Hong, “Emerging Interests of Non-Arctic Countries in the Arctic: A Chinese Perspective,” *Polar Journal* 4/2, 2014: 271–286.

²² See Duncan Depledge and Klaus Dodds, “Bazaar Governance: Situating the Arctic Circle,” in *Governing Arctic Change: Global Perspectives*, Kathrin Keil and Sebastian Knecht, eds. (London: Palgrave Macmillan, 2017), 141–160.

²³ Jakobson, 12.

²⁴ *Ibid.*, 5.

²⁵ Li Zhenfu, “Obstacles and Countermeasures: China's Participation in International Mechanisms of the Arctic Route,” [中参与北极航线际机制的障碍及对策], *China Navigation* [中国航海] 32/2, 2009; Shengjun Zhang and Li Xing, “Chinese Energy Security and the Positioning of China's Arctic Strategy,” [中国能源安全与中国北极战略定位], *International Observations* [国际观察] 2010: 64–71; Cheng Baozhi, “Arctic Aspirations,” *The Beijing Review* 4, August 24, 2011; Jakobson, 6; David Curtis Wright, “The Dragon Eyes the Top of the World: Arctic Policy Debate and Discussion in China,” U.S. Naval War College, China Maritime Studies Institute no. 8, August 2011; and Guo Peiqing, “An Analysis



journals, but also on government news network websites, such as Xinhua and Sina.com. The publications had to pass through multilevel editorial reviews, so they likely passed through commissions and political institutions, but Jakobson observes that “this kind of criticism of the government’s approach by Chinese scholars is rare.”²⁶

The viewpoint diversity expressed by Chinese academic commentators during this period of awakening and alarm may represent a failed experiment, as many of those voices were constrained after 2011. On the other hand, they may have served their intended purpose in signalling that China did not have to play by the established Arctic rulebook – but that, after 2011, consistent messaging from nearly all sectors of that country emphasized that it would. Reinforcing a narrative of Chinese compliance with existing legal and governance frameworks thus facilitated the normalization of its presence in the Arctic region. In 2010, Jakobson astutely noted that China’s simplest strategy would be to employ repetition until the global perception has changed in favour of its, and other non-Arctic states’, rights within the region:

The notion that China has rights in the Arctic can be expected to be repeated in articles by Chinese academics and in comments by Chinese officials until it gradually begins to be perceived as an accepted state of affairs ... Based on official statements by the Chinese Government and the open-source literature written by Chinese Arctic scholars, China can be expected to continue to persistently, yet quietly and unobtrusively, push for the Arctic in spirit being accessible to all.²⁷

In 2011, historian David Wright, a Chinese linguist, cautioned that “China’s recent interest in Arctic affairs is not an evanescent fancy or a passing political fad but a serious, new, incipient policy direction.” He anticipated more deliberate diplomatic efforts by Beijing to secure “its fair share of access to Arctic resources and sea routes,” including an accelerated investment in “human, institutional, and naval resources.”²⁸ His alarmist narrative left out marine science, on which China would focus its resources after 2011.

Phase 3: Discipline and Control (2011-2018)

In 2012, Jakobson and Jingchao Peng framed the transition from the second to the third phase. The Arctic Council’s second deferral of China’s observer status served as the principal catalyst for Beijing to enforce a more disciplined approach to its strategic messaging that constrained Chinese commentators from expressing varied perspectives on China’s Arctic interests and regional futures. During this phase, China’s approach became more sophisticated, identifying and targeting climate change science as the key issue on which it could build its influence. Jakobson and Peng presciently observed that:

of New Criteria for Permanent Observer Status on the Arctic Council and the Road of Non-Arctic States to the Arctic,” *KMI International Journal of Maritime Affairs and Fisheries* 4/2, 2012: 21–38.

²⁶ Jakobson, 7.

²⁷ *Ibid.*, 13.

²⁸ Wright, “Dragon Eyes the Top of the World,” 32.



Over the past few years an evolution has taken place in public analysis by Chinese scholars of China's interests and rights in the Arctic. Before 2011 it was commonplace for Chinese analysts to air assertive, even hawkish views. Since late 2011, following the Arctic Council's second deferral of decisions on permanent observership applications, Chinese Arctic scholars have become more subdued in public. The concern that overly proactive statements run the risk of offending Arctic states and consequently undermining China's position in the Arctic today shapes the public face of Chinese analysis. Several scholars advocate that China should try to avoid sensitive issues such as resource exploration and focus instead on climate change considerations, which will allow China to constructively participate in global cooperation.²⁹

Mirroring the Arctic countries that have used environmental issues to achieve political ends, such as Norway's establishment of a fisheries protection zone 200 nautical miles around the island of Svalbard to temper the sensitivities of the EEZ debate,³⁰ China's deliberate focus on climate change sought "to circumvent the sensitivity of Arctic resources and sovereignty issues, and to calm outsiders' jitters about China as a rising power."³¹

The CCP's increasingly controlled narrative during this timeframe also suggests a deliberate intent to furnish the Arctic states with messages that they wanted to hear. For example, Jakobson and Peng cite how, "[i]n 2011, Qu Tanzhou, the director of the CAA, informed an annual national polar research meeting that the words 'evaluation of polar resource potential' were dropped from the title of the Five-Year Plan's polar project because of outsiders' fears about China's interest in polar resources." Rather than suggesting a diminishing Chinese interest in polar resources, it pointed to a deliberate effort to conceal interests that might alarm others.³² Nevertheless, China's Polar Research Plan for 2011-15 identified three high-level priorities: to increase China's concrete presence in the polar regions, to enhance China's status and influence in international polar affairs and to advance China's long-term interests in the polar regions. The first – accomplished through scientific practices – would facilitate the latter two strategic objectives.

In 2012, Yang Jian, vice-president of the Shanghai Institute for International Studies, explained how China envisaged the Arctic Council's role:

China maintains that global Arctic affairs need to be handled through global governance and multi-party participation, because such trans-continental issues as climate change, ice melting, environmental pollution and ecological crisis all pose serious challenges to humankind as a whole and cannot be solved by any

²⁹ Jakobson and Peng, v.

³⁰ Lt.-Col. Michael Zimmerman, "High North and High Stakes: The Svalbard Archipelago Could be the Epicenter of Rising Tension in the Arctic," *PRISM* 7/4, 2018: 110, https://cco.ndu.edu/Portals/96/Documents/prism/prism7_4/181204_Zimmerman_PDF.pdf?ver=2018-12-04-161238-993.

³¹ Jakobson and Peng, 16.

³² *Ibid.*, 15. The authors also cite, as another example of "China's desire to avoid drawing attention to its interest in Arctic resources ... the request by the [Ministry of Foreign Affairs'] Department of Law and Treaty to avoid discussion of resources at a 2012 SIPRI workshop in Beijing on prospects for Nordic and Chinese cooperation in the Arctic ... MFA approval was a prerequisite for organizing the workshop, and an MFA official justified the request by saying that the resources sector is not an Arctic research priority in China."



single country or region. Instead, solving them requires that all nations work together to provide the necessary public goods that Arctic governance entails. Certainly, countries of the region bear more responsibilities in Arctic affairs, yet non-Arctic countries also have their interests and responsibilities to assume. As an important international body leading the governance of Arctic issues, the Arctic Council should provide an inclusive and open platform that can bring in all the positive forces to facilitate good governance for the Arctic and for the planet. Such is the rationale behind China's bid for permanent observer status in the Arctic Council.³³

China had participated as an ad hoc observer to the Arctic Council since 2007 and began to request admission on a permanent basis in 2009. In late 2011, it submitted a formal application to become an observer in accordance with the prevailing criteria and procedures. Although these applications are not public documents, official Chinese statements provided insight into the country's rationale for and interest in seeking this status. In November 2012, Lan Lijun, China's ambassador to Sweden, argued that the participation of more non-Arctic states as observers would have a "positive significance to the work of the council," and that "by accepting observers and therefore enhancing its openness and inclusiveness, the Council will help the international community to better appreciate its work, thus expanding its international influence."³⁴

Lan also emphasized the significant impact that climate change and resource development in the Arctic had "on China's climate, ecological environment, agricultural production as well as social and economic development." In this context, Lan called China a "near Arctic state," one that is particularly affected by the changing climate in the Arctic and its global implications. Accordingly, China continued to invest in scientific research in the region – something best accomplished through co-operation with other states.³⁵ When notified of its accreditation as an Arctic Council observer in Kiruna in 2013, China's official statement welcomed the decision that would facilitate communication and co-operation with relevant stakeholders within the framework of the Council and "promote peace, stability and [the] sustainable development of the Arctic region." Foreign Ministry spokesperson Hong Lei reiterated that "China supports the Council's principles and purposes, recognises Arctic countries' sovereignty, sovereign rights and jurisdiction in the Arctic region as well as their leading role in the Council, and respects the values, interests, culture and tradition of the indigenous people and other people living in the Arctic region."³⁶

During this period, Chinese officials and academics alike extolled the virtues of science as a conduit for international collaboration, influence and confidence building. Liu Huirong of the Oceanic University of China argued that an ongoing focus on climate change offered China the best opportunity for constructive engagement on Arctic issues, serving as a conduit to raise issues

³³ Yang Jian, "China and Arctic Affairs," *2012 Arctic Yearbook*, <http://arcticyearbook.com/index.php/commentaries#commentary2>.

³⁴ Lan Lijun, "Statement by H.E. Ambassador Lan Lijun at the Meeting between the Swedish Chairmanship of the Arctic Council and Observers," November 6, 2012.

³⁵ *Ibid.*

³⁶ Ministry of Foreign Affairs (MFA), PRC, "Foreign Ministry Spokesperson Hong Lei's Remarks on China being Accepted as an Observer of the Arctic Council," May 6, 2013.



related to biodiversity, shipping, fishery management and Indigenous rights.³⁷ China also supported track-two dialogues between Chinese and Arctic state academics on Arctic issues, as well as reaching a formal research agreement with Iceland.³⁸

Consistent with these observations, we extrapolate that the party-led CHINARE Arctic expeditions maintained a quiet interest and constrained scope in terms of controversial topics, including dual-use science and the assessment of resources, while maintaining rigorous discipline with respect to the CCP's climate science narrative. An old and highly effective sleight-of-hand magic trick, strategic messaging can be used to maintain an audience's focus on an issue perceived as legitimate (e.g., climate science) while achieving more discreet goals out of sight. Xue Long, as the public face of Chinese polar science during the period of control, served as the principal agent for China to reinforce this narrative while progressively normalizing China's presence in the region for Arctic nations.

Phase 4: Confidence and Investment (2018-present)

In contrast to the subdued narrative that defined the period of control, China's 2018 white paper trumpets Chinese ambitions for the polar Silk Road, suggesting that Beijing believes that it has normalized China's presence for Arctic states and can return to a more assertive position vis-à-vis Arctic resources and sovereignty. The white paper discloses that Xue Long has "actively conducted studies on [Arctic shipping] routes and continuously strengthened hydrographic surveys"³⁹ – an affirmation that these scientific expeditions had an eye to shipping prospects as well as climate science.

Shifting Chinese discourse on Arctic governance is also revealing. With the Arctic states still considering China's application for accredited observer status in 2012, Chinese policy-makers touted the Arctic Council as "the most influential international institution for developing Arctic governance and cooperation."⁴⁰ Six years later, China's white paper downplayed the Council's role, instead reinforcing the message that the Arctic is managed by "law-based governance" under the "existing framework of international law including the UN Charter, the UN Convention on the Law of the Sea (UNCLOS), treaties on climate change and the environment, and relevant rules of the International Maritime Organization."⁴¹ These statements of fact affirm Arctic state sovereignty as well as the rights of non-Arctic states in the region; they also suggest that China (with all the constraints associated with observer status in the Arctic Council) may seek to minimize the Council's status as a governance body. Given the Council's established role as a forum for the co-production and exchange of scientific information, one might assume that China – having emphasized its primary interest in Arctic science as it sought observer status – would seek to amplify its involvement. Instead, emphasizing the authority of the UN, where China boasts a strong diplomatic position as a permanent member of the UN Security Council, and other

³⁷ Liu, quoted in Jakobson and Peng, 16.

³⁸ Yang Jian, "China has a Key Role in Safeguarding the Arctic," *China Daily*, June 29, 2012.

³⁹ PRC, section IV.3.(1).

⁴⁰ Jakobson and Peng, 11.

⁴¹ PRC, section II.



international bodies allows China to communicate that it will continue to work within the law while exercising its rights to access the region and its resources.

The 2018 white paper is also more unequivocal on the topic of Arctic resources, particularly in those “certain areas of the Arctic Ocean [that] form part of the high seas and Area.” China’s policy then advertises the country’s legal rights:

States from outside the Arctic region do not have territorial sovereignty in the Arctic, but they do have rights in respect of scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines in the high seas and other relevant sea areas in the Arctic Ocean, and rights to resource exploration and exploitation in the Area, pursuant to treaties such as UNCLOS and general international law. In addition, Contracting Parties to the Spitsbergen Treaty enjoy the liberty of access and entry to certain areas of the Arctic, the right under conditions of equality and, in accordance with law, to the exercise and practice of scientific research, production and commercial activities such as hunting, fishing, and mining in these areas.⁴²

What does this shift in language to asserting specific rights in and to the region portend for China’s use of information gained from its scientific expeditions? While keeping with the spirit of state self-interest in the international system, China expresses its vested interest in maximizing the amount of international “Area” beyond coastal state jurisdiction that it can legally exploit. In the cases of Russia and Canada, the reference to navigation rights also raises vexing questions about the status of waters, given the longstanding international strait-versus-internal waters debates about the Northwest Passage and northern sea route that strain relations between Arctic states.

Dissecting the Dragons

China has been operating vessels in the polar regions since its oceanographic vessel, Xiang Yang Hong 10, sailed to Antarctica in 1985⁴³ to build the Great Wall Station on King George Island.⁴⁴ Next came Jidi, an ice-strengthened cargo ship that was purchased and retrofitted from Finland in 1985, and which made a total of six Antarctic voyages.⁴⁵ Retired in 1994, it was immediately followed by China’s first icebreaker, Xue Long. This vessel has since completed the first nine of the 11 Chinese Arctic expeditions, while the oceanographic research vessel, Xiang Yang Hong 01, completed the 10th and Xue Long 2 the 11th.

After purchasing Xue Long (translated as “Snow Dragon”) from Ukraine in 1993, China modified it for an estimated US\$3.7 million, followed by an extensive US\$27 million refit in 2007, which

⁴² Ibid., section I.

⁴³ Global Security, “Xiangyanghong 10 – II’ Ocean Survey Ship.”

⁴⁴ Council of Managers of National Antarctic Programs, “About the Chinese National Antarctic Program,” <https://www.comnap.aq/Members/CAA/SitePages/Home.aspx>.

⁴⁵ Chinese Arctic and Antarctic Administration, “Stations and Vessels.” Accessed June 2020 (no longer available), <http://ipolar.org/en/index.html?pid=stations&st=vessels>.



included a new superstructure.⁴⁶ Six years later, the main engine was replaced and its cargo capacity was tripled to 9,600 tonnes, with the intention to extend its life into the 2030s.⁴⁷ Polar scholar Anne-Marie Brady suggests that this last refit likely signals how Xue Long “will go from acting as an all-purpose vessel to carrying out full-time cargo duties,” while Xue Long 2, “a new, purpose-built ice vessel[,] will greatly expand Chinahi polar marine research capabilities.”⁴⁸



MV Xue Long. Source: Wikimedia Commons

In its present configuration, Xue Long is a large ship: 548 feet long, over 15,000 tonnes displacement, a crew complement of 40-45 and accommodations for up to 80 personnel (with surge capacity to 120 as required). Icebreaking expert Lawson Brigham describes its “large amount of surface area/windage during open water operations” and how its “long flat sides create considerable friction” while operating in the ice “particularly in areas of thick snow cover.”⁴⁹ The vessel has a single shaft, screw and rudder, with neither bow nor stern thrusters, and therefore it relies heavily on tugs in port. It can produce 13,200MW or 17,700hp, allowing it to continuously break approximately one metre of ice at 1-1.5 knots at max power and full displacement. China has installed more capable cranes (built domestically), and it can house two helicopters in its hangar. Brigham surmises that, due to its low power-to-size ratio, Xue Long was likely originally built by Ukraine’s Kherson Shipyard “with the premise that it would be escorted in convoy along the Northern Sea Route by Russian nuclear and non-nuclear icebreakers during extended ice navigation seasons...[as] it is a large polar logistics ship with very modest icebreaking capability and limited maneuverability.”⁵⁰ Despite these limitations, Xue Long has facilitated and enabled China’s growing polar ambitions and will continue to sustain them through the next decade.

⁴⁶ Global Security, “AGB Xuelong/Snow Dragon,” <https://www.globalsecurity.org/military/world/china/agb-xuelong.htm>; and Lawson W. Brigham, “Observations – Visit in Shanghai Onboard China’s Polar Research Ship Xue Long 1 – 20 October 2019,” November 1, 2019: 1.

⁴⁷ Brigham, 2; and Brady, 154.

⁴⁸ *Ibid.*, 155.

⁴⁹ Brigham, 3.

⁵⁰ *Ibid.*, 2–3.



MV Xue Long 2. Source: Xinhua⁵¹

The Finnish-designed (Aker Arctic) but domestically built Xue Long 2 icebreaker was laid down at Shanghai's Jiangnan Shipyard on December 20, 2016 and launched ahead of schedule on September 10, 2018.⁵² Although smaller than Xue Long, it is a purpose-built Polar Class 3 bi-directional icebreaker that represents a technological leap forward for China. Its diesel-electric engines can produce 15,000MW or 20,015hp, allowing it to continuously break approximately 1.5 metres of ice at 2-3 knots at max power and full displacement. It can break ice while moving forwards or backwards, thanks to both its hull form and its two (fore and aft) azimuthing podded drive (Azipod) propulsion units. This technology also makes it highly manoeuvrable, "especially along the complex and narrow coastal South Pole"⁵³ – an attribute that is also relevant to overcoming navigational conditions in the littoral waters of Canada's Arctic archipelago.

Designed with seakeeping over long transits from China in mind, Xue Long 2 can comfortably house a total complement of 90. Lawson Brigham notes that it "is designed to carry two helicopters, has extensive wet and dry laboratories, multiple cranes, large cargo spaces, and spacious working decks for scientific operations."⁵⁴ He equally notes the importance of Xue Long 2's "moon pool," which allows personnel to access the water from inside the relative safety of the ship despite how challenging the environmental conditions may be outside. This capability also affords Xue Long 2 an enhanced level of discretion by rendering many of its operations unobservable.

In short, Xue Long is an ice-hardened cargo vessel employed as a research platform to message Chinese polar interests, while Xue Long 2 is a purpose-built icebreaker that provides China with significantly more capability and more options to operate in diverse polar conditions. Choosing the appropriate platform for messaging is almost as important as the message itself. We observe

⁵¹ Liu Zhen, "China Breaks the Arctic Ice with Launch of New Research Vessel Snow Dragon II," *South China Morning Post*, September 12, 2018, <https://www.scmp.com/news/china/military/article/2163784/china-breaks-arctic-ice-launch-new-research-vessel>.

⁵² David Tinsley, "China Builds First Polar Research Ship," *The Motorship*, April 17, 2018, <https://www.motorship.com/news/101/ships-and-shipyards/china-builds-first-polar-research-ship>; Franz-Stefan Gady, "China Begins Construction of Polar Icebreaker," *The Diplomat*, December 22, 2016, <https://thediplomat.com/2016/12/china-begins-construction-of-polar-icebreaker/>; and Franz-Stefan Gady, "China Launches First Domestically Built Polar Icebreaker," *The Diplomat*, September 11, 2018, <https://thediplomat.com/2018/09/china-launches-first-domestically-built-polar-icebreaker/>.

⁵³ Li Yan, "China's Xuelong 2 Icebreaker to be Completed Next Year," *ECNS*, March 29, 2018, <http://www.ecns.cn/news/sci-tech/2018-03-29/detail-ifysxfxs1344841.shtml>.

⁵⁴ Staff, "China Mixing Military and Science in Arctic Push: Denmark," *Reuters*, November 29, 2019, <https://www.reuters.com/article/us-usa-arctic-idUSKBN1Y3116>.



that Xue Long's effectiveness as a strategic messaging platform is partly reflected in its limitations. As an old Soviet ice-hardened cargo vessel meant to be escorted through the Northern Sea Route, it represents an ideal platform to message the viability of commercial shipping through the Arctic for more capable Polar Code-compliant vessels. In other words, wherever the Xue Long can safely sail, surely a modern Polar Code-compliant vessel, like the Arc-7 class of liquefied natural gas (LNG) vessels, can operate safely. This assertion becomes particularly relevant to the narrative of an Arctic "open for business" (Polar Silk Road) and China's economic desire to have its shipbuilding industry construct and sell Polar Class vessels.

Controlling the 'Pace': Scientific Icebreakers and Polar Presence

CHINARE expeditions to the Arctic demonstrate a gradual increase in the Chinese presence in the circumpolar North. Table 1 provides a synopsis of the key events or milestones associated with these expeditions, indicating a two-year cycle of expeditions from 2008-16, followed by annual expeditions since 2017. We highlight the correlation between expedition tempo and the phase of Chinese messaging, with consistent two-year spacing during the periods of "awakening and alarm" and "discipline and control." Having successfully normalized its operations using Xue Long, the decision to mount annual expeditions from 2017 onward reflects China's increasing confidence and sense that it has succeeded in legitimizing its presence.

Table 2: CHINARE Arctic Expeditions, 1999-2020⁵⁵

Expedition	Vessel	Start	End	Notes
CHINARE Arctic 1	Xue Long	1 Jul 1999	09 Sep 1999	
CHINARE Arctic 2	Xue Long	15 Jul 2003	26 Sep 2003	
CHINARE Arctic 3	Xue Long	11 Jul 2008	24 Sep 2008	Post-2007 refit. IPY expedition 1/2.
CHINARE Arctic 4	Xue Long	01 Jul 2010	23 Sep 2010	IPY expedition 2/2.
CHINARE Arctic 5	Xue Long	02 Aug 2012	27 Sep 2012	
CHINARE Arctic 6	Xue Long	11 Jul 2014	23 Sep 2014	Post-2013 refit.
CHINARE Arctic 7	Xue Long	11 Jul 2016	26 Sep 2016	
CHINARE Arctic 8	Xue Long	15 Jul 2017	01 Oct 2017	Guides published 2014 & 2015.
CHINARE Arctic 9	Xue Long	10 Jul 2018	30 Sep 2018	Post-Arctic policy.
CHINARE Arctic 10	Xiang Yang Hong 01	01 Jun 2019	01 Oct 2019	Non-ice-strengthened vessel.
CHINARE Arctic 11	Xue Long 2	15 Jul 2020	27 Sep 2020	

Initially, CHINARE Arctic expeditions were launched infrequently for practical reasons, given capacity issues, until the 2007-2008 International Polar Year (IPY) China program "helped China's polar research to mature" and "raised public awareness of the importance of the Polar regions."⁵⁶ Viewed through the lens of official statements, China's emerging interest in the Arctic

⁵⁵ National Arctic and Antarctic Data Center, <https://www.chinare.org.cn/expedition>.

⁵⁶ Lackenbauer et al., 63.



related primarily to climate change and associated scientific research efforts.⁵⁷ The country's IPY project that focused on the region (ARCTML: The Study of Arctic Change and its Tele-impacts on Mid-Latitudes) involved two Arctic expeditions (the third and fourth CHINARE expeditions in 2008 and 2010) in which scientists from Canada, Finland, France, Norway and the United States participated. In summarizing the achievements, Huigen Yang noted that:

IPY 2007-2008 provided China with a great opportunity to explore polar science frontiers and to raise public polar awareness through international cooperation. By participating in IPY with a national program, China achieved multidimensional polar linkages, increased its understanding of the earth's system and climate change, raised public awareness of polar environmental conservation and protection, and advanced polar science, technology and culture. In the coming decades, a more comprehensive development of polar linkages will be achieved for the benefit of mankind. And a more creative and harmonious polar culture will be cultivated for a sustainable planet.⁵⁸

In short, building prestige by marketing a fully overhauled Xue Long, China leveraged the 2008 and 2010 expeditions to foster international co-operation. Beijing also offered its contributions to IPY and Arctic scientific research as a key justification in its applications for accredited observer status in the Arctic Council, which it successfully secured in May 2013.

That biennial expeditions became the norm suggests that either the political payoff for Xue Long's IPY activities raised China's profile enough to cement funding for a biennial Arctic expedition program, or that China used the IPY as a catalyst to quietly increase the pace of and to normalize China's regular presence in the Arctic. As one Chinese official explained, the Arctic represents an "important area for China to enhance its sense of national pride and cohesion," given that most of the countries conducting Arctic scientific research are developed countries. Furthermore, efforts "to strengthen dialogue, enhance understanding, promote scientific exchange, and expand cooperation with Arctic states, [are] very important for the further development of China's polar research capabilities."⁵⁹ Jakobson and Peng astutely noted how prominent Chinese researchers and commentators recommended that China prioritize climate change research in its public agenda to generate a "new public narrative" through which Chinese scholars could "strive to circumvent the sensitivity of Arctic resources and sovereignty issues, and to calm outsiders' jitters about China as a rising power."⁶⁰ Xue Long's biennial expeditions, pursuing this steady course, continued for nearly a decade, culminating with the eighth Arctic expedition in 2017. Following this expedition (in which Xue Long completed its first circumnavigation of the Arctic), Lin Shanqing, the deputy director of the State Oceanic Administration (SOA), publicly confirmed the permanent doubling of Arctic expeditions from biennial to annual, citing how "Arctic shipping routes which have been opened by thawing in the region" have significance given China's heavy

⁵⁷ See, for example, Yang Huigen, "Development of China's Polar Linkages," *Canadian Naval Review* 8/3, Fall 2012: 30.

⁵⁸ *Ibid.*

⁵⁹ A Chinese participant's presentation to the Second Sino-Canadian Arctic Exchange, 2012 meeting, held under Chatham House rules.

⁶⁰ Jakobson and Peng, 16.



economic dependence on maritime transport.⁶¹ The explicit messaging from a high-level CCP official supports the assertion that the party deliberately controls the pacing of Arctic expeditions.



Snow Dragons during China's 36th Antarctic Expedition. Source: Xinhua⁶²

Xue Long 2, a new player plying Arctic waters, is a critical enabler for China to maintain this accelerated pace of annual Arctic expeditions. Although the icebreaker's increased capability will allow expeditions to extend into the shoulders of the Arctic's navigable seasons, the environment will restrict any further acceleration of activity. More practically, Xue Long 2 is likely required to return to China in time to refit for its annual Antarctic expedition. The next change in pace will therefore not be based on timing, but on numbers. We anticipate a future where multiple Chinese vessels are working in Arctic waters synchronously or asynchronously – in both time and space – and either under the same or separate CHINARE mandates (e.g., multiple CHINARE Arctic expeditions in a single navigable season). This is not restricted solely to Xue Long and Xue Long 2, but may also include other types of vessels, as per the use of Xiang Yang Hong 01 for CHINARE Arctic 10. CHINARE's 36th Antarctic expedition has already set a precedent for this type of activity.

Controlling the Place and Purpose

A ship's route data can be a telling source of information. Thanks to the legal requirement prescribed by the International Maritime Organization (IMO) that vessels larger than 300 gross tonnes must carry an Automatic Identification System (AIS),⁶³ and the UNCLOS Article 143

⁶¹ Mengjie, "China's Arctic Expeditions Increase to Once a Year," *XinhuaNet*, October 10, 2017, http://www.xinhuanet.com/english/2017-10/10/c_136670118.htm.

⁶² Staff, "Xuelong and Xuelong 2 Sail at new Broken-Through Path in Antarctica," *Xinhua*, November 23, 2019, <https://www.shine.cn/news/nation/1911236702/>.

⁶³ IMO, "AIS Transponders," <https://www.imo.org/en/OurWork/Safety/Pages/AIS.aspx>.



requirement that China share its scientific data,⁶⁴ the information is also readily available. Ships are inherently limited in time and space by the environment and their own capabilities and limitations, such as speed and sustainment. This means that every expedition must be well planned and choices made based on clear priorities. In China, the CCP's priorities rule. Therefore, where Xue Long travels, how far, how often it revisits an area, where it stops and for how long are all key to determining the CCP's strategic intent and priorities for an expedition. This is especially true for China, – as a self-proclaimed “near-Arctic nation” – whose ships are approximately 2,500 nautical miles (4,630 km) from the Aleutian Islands, a nine-day transit at a generous 12 knots speed of advance, and about 3,500 nautical miles (6,482 km) from the Bering Strait, a 12-day transit at a generous 12 knots speed of advance.⁶⁵

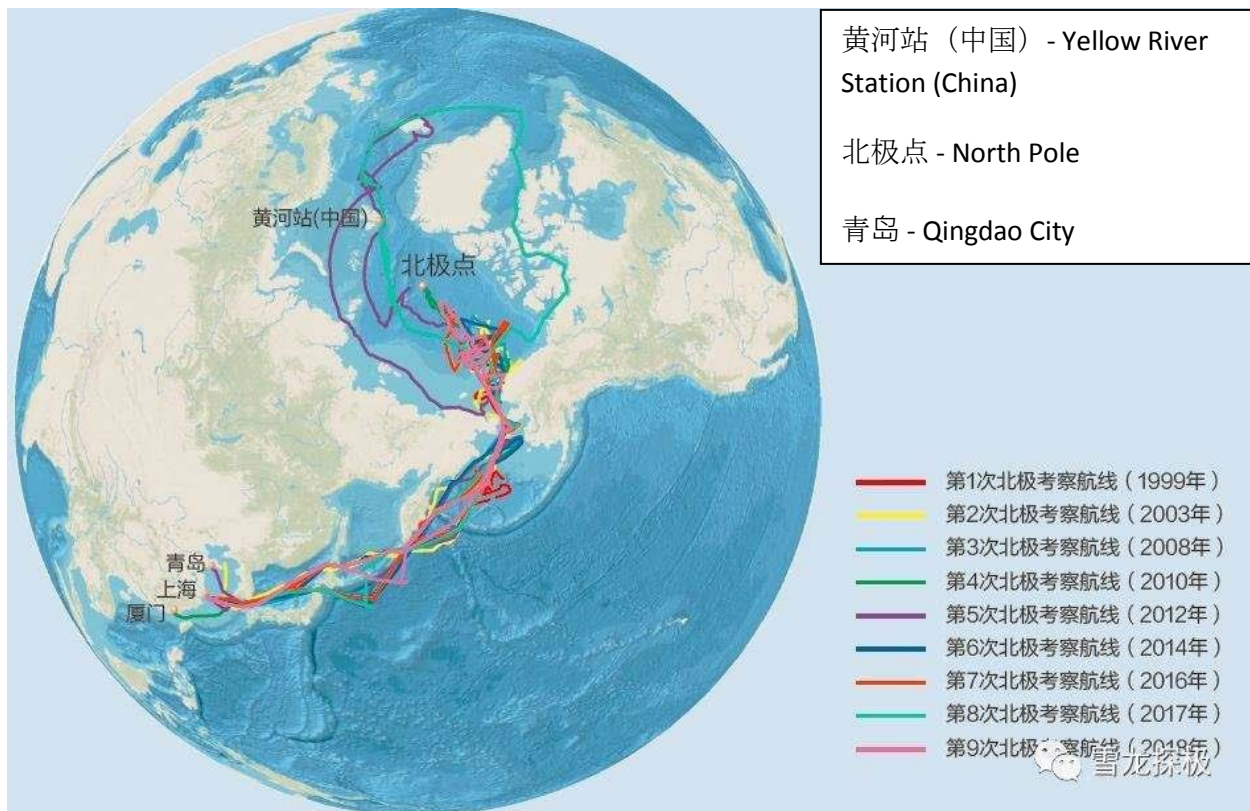


Figure 2: CHINARE Arctic Expedition Routes, 1999-2018⁶⁶

Source: Polar Research Institute of China

Working from a macro perspective, overlaying the successive CHINARE Arctic expedition routes reveals a geographical pattern. For the most part, Chinese activities are concentrated within the Bering, Chukchi and Beaufort seas. Although not depicted, both the 10th and 11th expeditions were also concentrated in these waters. The expeditions consistently pushed further north,

⁶⁴ See Polar Research Institute of China (PRIC), “Data Sharing Platform of Polar Science,” <http://www.chinare.org.cn/en/index/>. Please note that the English version of this database is often inaccessible.

⁶⁵ Calculated using routes overlain onto Google Earth and then consulting naval officials to confirm likely speed of advance.

⁶⁶ PRIC, “Gate to the Poles,” <http://www.polar.org.cn/en/index/>.



attempting to make high-latitude records and gain the national prestige of reaching the North Pole (90°N). We anticipate that China will aspire for North Pole glory using Xue Long 2, seeking to accomplish this feat with China's first domestically built icebreaker.

Table 3: CHINARE Arctic Expeditions Latitude Achievements

Expedition	Vessel	Highest Latitude
CHINARE Arctic 1	Xue Long	75°02'N
CHINARE Arctic 2	Xue Long	80°N
CHINARE Arctic 3	Xue Long	85°25'N
CHINARE Arctic 4	Xue Long	88°26'N
CHINARE Arctic 5	Xue Long	87°40'N
CHINARE Arctic 6	Xue Long	~80°N
CHINARE Arctic 7	Xue Long	82°52'N
CHINARE Arctic 8	Xue Long	N/A
CHINARE Arctic 9	Xue Long	84°48'N
CHINARE Arctic 10	Xiang Yang Hong 01	N/A
CHINARE Arctic 11	Xue Long 2	Unknown

This concentration of activity around the Bering Strait and surrounding seas may also lend support to concerns that Arctic marine scientific research (particularly hydrography) is inherently dual-use and designed to enable Chinese naval operations in the North Pacific or Arctic waters. The Bering and surrounding seas, like the Greenland-Iceland-U.K. (GIUK) gap, is key terrain and from a Chinese perspective, it would be strategic folly not to hydrographically survey it.⁶⁷ The dual-use nature of the research calls into question China's altruistic narrative about conducting climate science, especially when Xue Long 2's moon pool makes much of the work it is conducting unobservable.

Expeditions five in 2012 and eight in 2017 represent notable exceptions to China's concentrated activity. Both of these expeditions circumnavigated the Arctic, but with different return routes, with the ship returning via the Transpolar Route in 2012 and through the Northwest Passage in 2017. The official report of the fifth expedition emphasized how it set various new records, representing the first Chinese scientific expedition to transit the Arctic Ocean as an "Arctic seaway" and thus opening a "new chapter in China's maritime history" and "laying a material foundation" for "China's Arctic sea-related assessment work."⁶⁸ The report on the 2017 expedition is sparser, but highlights "crossing the Arctic Central Channel and the Northwest Passage for the first time" and how "the regional scope and content of China's Arctic marine environmental operational surveys have made positive contributions to building China's Arctic operational survey system, Arctic environmental assessment and resource use and Arctic frontier scientific

⁶⁷ From these waters, Chinese submarines' increased survivability and/or reduced proximity to both Russia and North America could enhance their nuclear deterrence. See, for example, Brady, 79–86. For a contrary view, see Adam Lajeunesse and Timothy Choi, "Are Chinese Submarines Coming to the Arctic?" NAADSN *Quick Impact*, July 19, 2020, <https://www.naadsn.ca/wp-content/uploads/2020/07/20-July-Are-Chinese-Submarines-Coming-to-the-Arctic-Lajeunesse-and-Choi-final.pdf>.

⁶⁸ "China's 5th Arctic (Arctic Ocean) Scientific Expedition," <http://www.polar.org.cn/expeditionDetail/?id=1023>.



research.”⁶⁹ Noting that the ship deviated from its original plan to spend more time in the central Arctic Ocean, Chinese news agency CGTN tied the voyage to China’s desire “to play a bigger role in Arctic development.”⁷⁰ While some Western commentators and U.S. strategic documents emphasize how the Chinese could apply this underwater survey work to submarine operations in the Arctic,⁷¹ thus drawing a direct link to material security threats, China’s broader strategic messaging – which we contend is more aligned with its core regional aspirations – has received less attention.

Messaging: The Arctic is Open for Business

The 2012 plan for Xue Long was to transit the Northern Sea Route and conduct a state visit in Iceland as part of China’s concentrated engagement with that country. What could not be anticipated, and what surprised the expedition, was that its return to China would coincide with the world’s lowest recorded Arctic ice extent, allowing the ship to easily navigate the Transpolar Sea Route.⁷² This undoubtedly influenced CCP perceptions of a rapidly opening or a seasonally open Arctic Ocean. The China Maritime Safety Administration’s publication of twin navigation guides for the northeast (2014) and northwest (2015) sea routes⁷³ affirmed this enthusiasm, as did a domestic press conference following the eighth expedition, in which SOA director Lin Shanqing (a CCP official) highlighted that the Arctic routes were already open for shipping. This proclamation stands in sharp contrast to Western characterizations of an Arctic Ocean that is melting, but that is not yet open for widespread shipping given ongoing geophysical constraints on operations.⁷⁴

China’s desire to promote the Arctic as being open for business connects to its polar Silk Road initiative, aimed at advancing its larger Belt and Road Initiative (BRI) to reconfigure and develop trade networks and infrastructure throughout Eurasia, and extending it to the circumpolar world more broadly. While actual Arctic transit shipping activity over the last two decades has not lived up to the hype of boosters projecting the imminent emergence of major global sea lanes in the region, China has embraced the prospect of securing access to alternative global shipping routes. China is by far the largest foreign operator of vessels along Russia’s Northern Sea Route, and a

⁶⁹ “China’s 8th Arctic (Arctic Ocean) Scientific Expedition,” <http://www.polar.org.cn/expeditionDetail/?id=1190>.

⁷⁰ Gong Zhe, “Chinese Ice Breaker Xuelong Crosses Central Arctic during Rim Expedition,” CGTN, August 18, 2017, https://news.cgtn.com/news/344d444d30557a6333566d54/share_p.html.

⁷¹ See, for example, Rob Huebert, “Xue Long and the Northwest Passage,” *Canadian Naval Review* 13/3, Fall 2017: 2–3. The 2019 U.S. DoD *Arctic Defense Policy* ties China’s presence to surreptitious efforts to “support a strengthened, future Chinese military presence in the Arctic Ocean, potentially including deployment of submarines to the region.”

⁷² “China’s 5th Arctic (Arctic Ocean) Scientific Expedition.”

⁷³ Editorial Team, “China Issues Guidances on Arctic Navigation in the Northwest Route,” *Safety4Sea*, May 11, 2016, <https://safety4sea.com/china-issues-guidances-on-arctic-navigation-in-the-northwest-route/>.

⁷⁴ See, for example, Ben Ellis and Lawson Brigham, *Arctic Marine Shipping Assessment 2009 Report* (Arctic Council, Protection of the Arctic Marine Environment Working Group, 2009); Leah Beveridge, Mélanie Fournier, Frédéric Lasserre, Linyan Huang, and Pierre-Louis Têtu, “Interest of Asian Shipping Companies in Navigating the Arctic,” *Polar Science* 10/3, September 2016: 404–414; Shanshan Fu, Floris Goerlandt, and Yongtao Xi, “Arctic Shipping Risk Management: A Bibliometric Analysis and a Systematic Review of Risk Influencing Factors of Navigational Accidents,” *Safety Science* 139, July 2021: 105254; and Mingyang Zhang, Di Zhang, Chi Zhang, and Wei Cao, “Navigational Risk Factor Analysis of Arctic Shipping in Ice-covered Waters,” in *Maritime Transport and Regional Sustainability*, Adolf K. Y. Ng, Jason Monios, and Changmin Jiang, eds. (Oxford: Elsevier, 2020), 153–177.



subsidiary of the China Ocean Shipping Group (COSCO) operates nine of the 15 Arc-7 LNG carriers active along the NSR.⁷⁵ While shipping and resource development in the North American Arctic remain more modest, and a commercially feasible transpolar route remains a future possibility, Chinese scientific expeditions send the deliberate message that the country's increasingly "normal" operating patterns mark its place in the circumpolar maritime space.

The limitations of Xue Long (which is effectively an ice-hardened cargo vessel) also support deductions that expeditions are designed to "test the feasibility of moving container ships through the melting Arctic seas"⁷⁶ and to act as "a flag to Chinese shipping that the Arctic route is now open."⁷⁷ Chinese shipyards' aspirations to build ice-hardened vessels for international clients also point to broader economic interests in messaging that Arctic waters are already open for business seasonally.⁷⁸ Like Elon Musk's creation of reusable rockets to lower the costs of space flight, sufficiently robust ice-hardened commercial vessels may reduce the need for icebreaking services along the Northern Sea Route and improve the economic calculus in favour of realizing the Polar Silk Road vision.⁷⁹

Messaging: Exercising Rights to an International Commons in the Arctic Ocean

China's Arctic white paper acknowledges that the Arctic Ocean is subject to a clear and widely accepted international legal regime. In accordance with UNCLOS, this "near-Arctic state" does not dispute the Arctic states' sovereign rights to exclusive economic zones, nor does it deny coastal state rights to continental shelf resources – rights which China itself claims. This still leaves about one-fifth of the Arctic Ocean (2.8 million km²) beyond national jurisdiction.⁸⁰ Accordingly, the melting and prospective opening of the central Arctic Ocean introduces a new chapter into regional governance in which areas of high seas will be a focal point.⁸¹

This logic and their "open for business" perspective may imply that the CCP feels more confident than Western countries that it can begin conducting extensive resource extraction in Arctic

⁷⁵ Malte Humpert, "Chinese Shipping Company COSCO to Send Record Number of Ships through Arctic," *High North News*, June 13, 2019, <https://www.highnorthnews.com/en/chinese-shipping-company-cosco-send-record-number-ships-through-arctic>.

⁷⁶ Robert Fife and Steven Chase, "Chinese Ship Making First Voyage through Canada's Northwest Passage," *Globe and Mail*, August 31, 2017, <https://www.theglobeandmail.com/news/politics/chinese-ship-making-first-voyage-through-canadas-northwest-passage/article36142513/>.

⁷⁷ Brady, 133.

⁷⁸ Staff, "Breaking the Ice: China Launches its 1st All-season Arctic LNG Tanker," RT, December 6, 2018, <https://www.rt.com/business/445707-china-launches-lng-tanker/>; Malte Humpert, "Novatek to Order up to 42 New Arc7 LNG Carriers Totaling \$12bn," *High North News*, January 27, 2020, <https://www.highnorthnews.com/en/novatek-order-42-new-arc7-lng-carriers-totaling-12bn>; Malte Humpert, "China Looks to Further its Arctic Role by Constructing Arc7 LNG Carriers," *High North News*, January 22, 2020, <https://www.highnorthnews.com/en/china-looks-further-its-arctic-role-constructing-arc7-lng-carriers>; and Trym Aleksander Eiterjord, "China's Shipbuilders Seek New Inroads in Arctic Shipping," *The Diplomat*, January 14, 2020, <https://thediplomat.com/2020/01/chinas-shipbuilders-seek-new-inroads-in-arctic-shipping/>.

⁷⁹ Atle Staalesen, "Rosatom Hints it Might Not Need that Many New Icebreakers After All," *Barents Observer*, March 10, 2021, <https://thebarentsobserver.com/en/arctic/2021/03/rosatom-hints-it-might-not-need-many-new-icebreakers-after-all>.

⁸⁰ Vito De Lucia, Christian Prip, Kristine Dalaker Kraabel, and Raul Primicerio, "Arctic Marine Biodiversity in the High Seas between Regional and Global Governance," *Arctic Review on Law and Politics* 9/1, 2018: 264–266.

⁸¹ See, for example, Timo Koivurova and Erik J. Molenaar, *International Governance and Regulation of the Marine Arctic: Overview and Gap Analysis* (Oslo: World Wildlife Foundation, 2009); Valentin Schatz, Alexander Proelss, and Nengye Liu, "The Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean: A Critical Analysis," *International Journal of Marine and Coastal Law* 34, 2019: 195–244; and Mathieu Landriault, Andrew Chater, Elana Wilson Rowe, and P. Whitney Lackenbauer, *Governing Complexity in the Arctic Region* (London: Routledge, 2019).



international waters. During its 2012 and 2017 voyages, Xue Long planned its course to conduct scientific activity in the international waters between Norway, Iceland and the Faroe Islands. China's 2018 Arctic policy emphasized its rights in areas beyond national jurisdiction, noting that "coastal States have within their jurisdiction internal waters, territorial seas, contiguous zones, exclusive economic zones, and continental shelves in the Arctic Ocean," while "certain areas of the Arctic Ocean form part of the high seas and the Area." Accordingly, the policy highlighted that:

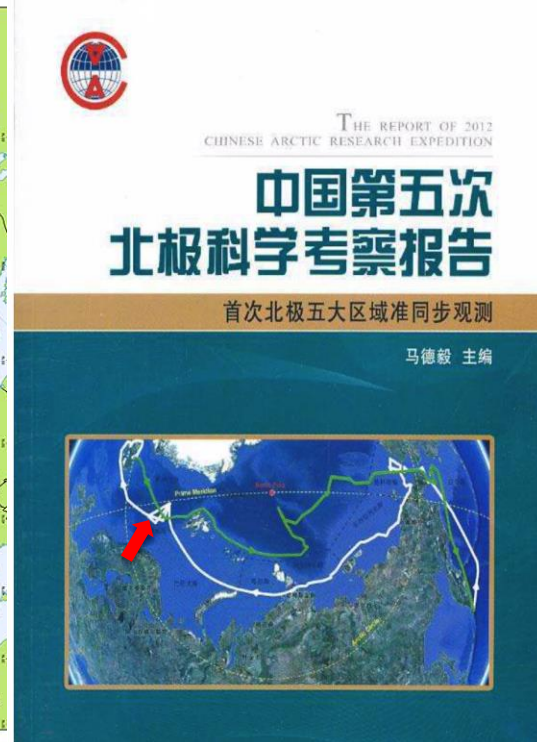
States from outside the Arctic region do not have territorial sovereignty in the Arctic, but they do have rights in respect of scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines in the high seas and other relevant sea areas in the Arctic Ocean, and rights to resource exploration and exploitation in the Area, pursuant to treaties such as UNCLOS and general international law.⁸²

Given the constraints imposed by ice conditions in the central Arctic Ocean, China has focused its efforts on an oddly shaped patch of international water, appropriately named the "banana hole,"⁸³ that bridges the Norwegian and Greenland Seas. Norway, Iceland, Greenland and the Faroe Islands border the banana hole, as does the United Kingdom (a non-Arctic state). Internationally, the water space is subject to UNCLOS, while fish stock management falls under the UN Food and Agriculture Organization (FAO) and associated international conventions, regulations and treaties. Notably, the North Atlantic Salmon Conservation Organization (NASCO) and its North-East Atlantic Commission manage salmon stocks in this region.⁸⁴ Other maritime species are regionally managed by the North East Atlantic Fisheries Commission (NEAFC), whose management practices and policies are informed by the scientific data of the International Council for the Exploration of the Sea (ICES). China is a party to neither NASCO nor NEAFC.

⁸² Andreas Østhagen, "Fish, Not Oil, at the Heart of (Future) Arctic Resource Conflicts," *Arctic Yearbook 2020*, 43–59, <https://arcticyearbook.com/arctic-yearbook/2020>.

⁸³ North-East Atlantic Fisheries Commission (NEAFC), "Map of the NEAFC Regulatory Areas," https://www.neafc.org/managing_fisheries/measures/ra_map.

⁸⁴ North Atlantic Salmon Conservation Organization (NASCO), *Handbook of Basic Texts*, 2–4, https://nasco.int/wp-content/uploads/2020/05/NASCO_Handbook.pdf. The legal basis for NASCO's convention is derived from UNCLOS Article 66, which deals with anadromous stocks – essentially fish that are born in fresh water but venture out to sea until they are ready to return to spawn. *Ibid.*, 62–63.



Figures 3 and 4: International waters (left) and cover of CHINARE's 2012 Arctic expedition report (right). Sources: NEAFC and Polar Research Institute of China (PRIC).⁸⁵ Arrows indicate the approximate location of Xue Long's loiter in both 2012 and 2017.

The accepted science indicates that oceanic warming is driving fish stocks northward in search of colder, nutrient-rich waters. This has led some commentators to suggest that maritime protein, and not hydrocarbons, may actually be the inflection point for the next conflict.⁸⁶ This issue therefore has implications for Arctic stability. Do Xue Long's activities foreshadow an attempt by China to wedge itself into the northeast Atlantic region's fishing grounds? Was the dual purpose of Xue Long's science in 2012 and 2017 to assess the banana hole's protein mass? Were the expeditions also scientific reconnaissance to inform China's distant-water fishing fleets, which have consistently demonstrated less than desirable behaviour, and even illegal practices, in other parts of the world?⁸⁷ Should we expect China to leverage its position as a signatory to the Spitsbergen Treaty to muscle its way in as a supposed regional player? Do the CCP's coercive

⁸⁵ <https://www.neafc.org/page/27>; and PRIC, "Gate to the Poles."

⁸⁶ PRC.

⁸⁷ Gregory Poling, "China's Hidden Navy," *Foreign Policy*, June 25, 2019, <https://foreignpolicy.com/2019/06/25/chinas-secret-navy-spratlys-southchinesea-chinesenavy-maritimemilitia/>; Justin McCurry, "North Korea's 'Ghost Ships' Linked to Illegal Fishing by China Fleet, Study Finds," *The Guardian*, July 22, 2020, <https://www.theguardian.com/world/2020/jul/22/hundreds-of-chinese-boats-fishing-illegally-off-north-korea-study-finds>; Staff, "Argentina Sinks Chinese Fishing Boat Lu Yan Yuan Yu 010," BBC News, March 16, 2016, <https://www.bbc.com/news/world-latin-america-35815444>; Paul Adams, "Is China's Fishing Fleet Taking All of West Africa's Fish?," BBC News, March 25, 2019, <https://www.bbc.com/news/av/world-africa-47698314>; and Dan Collins, "Chinese Fishing Armada Plundered Waters around Galápagos, Data Shows," *The Guardian*, September 17, 2020, <https://www.theguardian.com/environment/2020/sep/17/chinese-fishing-armada-plundered-waters-around-galapagos-data-shows>.



tactics used to place “one of its own top officials at the head of the Rome-based U.N. Food and Agriculture Organization (FAO)”⁸⁸ give credence to this possibility?⁸⁹

Conclusion

Science is the first step and bridgehead for China into the Arctic to pursue interests defined by the core interests of the Chinese leadership: political stability, territorial integrity and economic growth. Therefore, China's scientific involvement in the Arctic and other Arctic activities should be seen in the context of these core interests.

- Li Xing and Rasmus Gjedssø Bertelsen (2013)⁹⁰

Although Xue Long and Xue Long 2 will continue to message Chinese interests in the polar regions, this article focused on what we describe as the period of control (2011-18) into the beginning of the period of confidence and investment (2018-present). Eminent international legal scholar Aldo Chircop noted in 2011 that “beyond building knowledge and displaying increasing skill, China appears to be using marine scientific and climate change research as a way of engaging the Arctic region.” He also speculated that “China may be building confidence among regional states that it has something important to contribute and the capacity necessary to cooperate effectively in the region.”⁹¹ We contend that over the last decade, in addition to its overt scientific goals, Xue Long was and is intentionally employed under the cover of science and scientific collaboration to intentionally normalize, for skittish Arctic nations, China's presence in the region and the CCP's revisionist self-assertion as a near-Arctic nation.

In reaching this conclusion, we acknowledge the inherent evidentiary constraints in attempting to discern the interests of an authoritarian state where little state information is publicized in any language. While we agree with Brady's assertion that language is a discriminator that helps identify the target audience for the CCP's strategic messaging,⁹² this does not fundamentally change the secretive nature of the authoritarian regime. The CCP tolerates neither leaks nor dissent. Consequently, we must critically analyze recent history to deduce and anticipate the CCP's

⁸⁸ Colum Lynch and Robbie Gramer, “Outfoxed and Outgunned: How China Routed the U.S. in a U.N. Agency,” *Foreign Policy*, October 23, 2019, <https://foreignpolicy.com/2019/10/23/china-united-states-fao-kevin-moley/>.

⁸⁹ The 2017 ban on international fishing in the central Arctic Ocean, to which China is a signatory, would appear to counter this hypothesis. *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean*, 3, October 2018, https://eur-lex.europa.eu/resource.html?uri=cellar:2554f475-6e25-11e8-9483-01aa75ed71a1.0001.02/DOC_2&format=PDF. China's behaviour in Antarctica, however, might suggest otherwise. Brady astutely observes that China's membership in the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) deliberately excludes Hong Kong, which “is the main base of multinational fishing company Pacific Andes.” This “unusual” arrangement “is perfectly legal according to the Hong Kong Special Autonomous Region's unique status in the Chinese polity, which permits Hong Kong to establish and maintain a separate international legal personality” from the People's Republic of China. Brady, 98. With this precedent, Hong Kong-based enterprises may believe they have a legal loophole to operate in Arctic areas where other Chinese state-owned enterprises (SOEs) are prohibited, thus affording China the flexibility to bypass the treaty if needed (while the treaty buys it time to position itself to compete for Arctic resources).

⁹⁰ Li Xing and Rasmus Gjedssø Bertelsen, “The Drivers of Chinese Arctic Interests: Political Stability and Energy and Transportation Security,” in *China's Arctic Engagement: Following the Polar Silk Road to Greenland and Russia*, Justin Barnes, Heather Exner-Pirot, Lassi Heininen, and P. Whitney Lackenbauer, eds. (Peterborough: NAADSN, 2021), 17, <https://www.naadsn.ca/wp-content/uploads/2021/03/NAADSN-engage3-ChinaAY-JB-EXP-LH-PWL-upload-rev.pdf>.

⁹¹ Aldo Chircop, “The Emergence of China as a Polar-Capable State,” *Canadian Naval Review* 7/1, 2011: 9–14.

⁹² Brady, 15.



various intentions and plans. This allows us to speculate on possible ends that the CCP may be pursuing and how they may be trying to manipulate perceptions accordingly.

China has advanced its polar capabilities responsibly and conducted its Arctic activities in line with accepted international legal norms. Under the legitimate premise of conducting climate change science, we highlight how China has successfully used Xue Long to normalize its presence in the Arctic for the world, increasing its regional profile without evoking excessive alarmism or aggressive reactions from the Arctic states. Simultaneously, CHINARE expeditions enabled China to enhance its understanding of the environment and resources, which in turn supported its announcement of a Polar Silk Road in 2018. In short, science was the means of entry into the Arctic region, with Xue Long serving as a platform to advance other goals such as mapping commercial shipping routes and assessing Arctic resource potential – and, equally important, as a means to psychologically condition the Arctic states to accept China's presence as a regional stakeholder and rights-holder under international law. From a single icebreaker in 1999 carrying out seasonal expeditions, to its current multi-domain, persistent observation of the Arctic region, China has established its Arctic presence and demonstrated a growing capability to promote and autonomously support safe navigation of the Arctic routes and extract regional resources. Cautious engagement and responsible controls are more important than ever as Xue Long 2 joins its namesake in plying polar waters, with the intention of pursuing a “science agenda worthy of a great power”⁹³ and continuing to lay the foundations for a Polar Silk Road that will secure regional access through persistent presence.

⁹³ Li and Bertelsen, “Drivers of Chinese Arctic Interests,” 17.

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