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U.S. Arctic Situational Awareness Capacity-Building: Motivations, Paths and Its Implications for China's Promotion of the "Polar Silk Road"

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Abstract: As the United States increasingly identifies the Arctic region as a strategic area of competition, there is a corresponding emphasis on developing situational awareness capabilities in the region. The United States' motivations for enhancing its situational awareness in the Arctic include the opportunity of climate change, the implications of great power competition and geopolitics, and the necessity of ensuring security in the region. The United States' practical paths to developing Arctic situational awareness capabilities entails collaboration with private enterprises and academic institutions, internal mechanism coordination, C5ISR capability building, joint promotion with allies, and the advancement of AI technology. China has made significant contributions to the Arctic region in three key areas: these include the governance of the Arctic, scientific exploration, and economic development. In promoting the "Polar Silk Road"，China can learn from the experience of the United States, enhance its knowledge of the Arctic environment through technological empowerment, strengthen international cooperation with Arctic countries, actively participate in Arctic governance, and strengthen its basic capabilities to cope with geopolitical competition. Against the backdrop of Trump's return, China needs to prepare for geopolitical changes, maintain flexibility and strategic certainty, and contribute China's strength to peace, stability, and sustainable development in the Arctic.

Keywords: American Arctic Strategy; Situational Awareness; Arctic Governance; Polar Silk Road

1. Introduction

Since the 21st century, the geopolitical situation in the Arctic region has become increasingly contentious, with the United States putting the Arctic on the track of strategic competition. On October 7, 2022, the Biden administration issued the National Strategy for the Arctic Region (NSAR 2022), which outlined the U.S. approach to the region in the context of growing great power competition. On 18 October 2023, the Biden administration published the Implementation Plan for the 2022 National Strategy for The Arctic Region (2022 Arctic Strategy implementation plan), and in July 2024, the U.S.

Department of Defense (DoD) launched the 2024 DoD Arctic Strategy. U.S. Arctic situational awareness capabilities are emphatically highlighted in these reports, and relevant content repeatedly appears in these reports.

Current academic research on U.S. Arctic strategy focuses on the historical evolution of U.S. Arctic strategy, the latest trends, the interpretation of the U.S. government's overall Arctic strategy, and issue-specific Arctic policy analyses. First, a number of studies have focused on the historical evolution of the U.S. Arctic strategy, from which regular explanations are sought. Some scholars value the importance of international cooperation (S Haycox, 2020), while most agree that the main consideration of US Arctic strategy is security (WANG, 2020; CAI, 2023). Secondly, a number of studies have focused on the analysis of Arctic policies implemented by a specific US administration. Some scholars have conducted an analysis of the Obama administration's Arctic strategic framework from three distinct perspectives: the strategic value of the Arctic region, the necessity of aligning interests, and geopolitics (LIU, 2014; SUN & YANG, 2016). In the context of the Trump administration, research has concentrated on the influence of the 'America First' philosophy on Arctic policy (XIN & ZHANG, 2021; SON & GENG, 2021). Thirdly, a number of studies have followed the latest trends in United States Arctic policy. After the Russian-Ukrainian conflict, some scholars believe that the Arctic will become an important arena for the United States to promote a “Rules-Based International Order” (XU, 2023). Fourthly, a number of scholars have conducted detailed examinations of specific topics within the field of U.S. Arctic policy. This area of study encompasses both internal mechanisms and external system building. The internal mechanisms include the scientific community, think tanks, and the role of the U.S. Coast Guard, among others (HUANG et al., 2023; SON, 2023; WU, 2024). At the external level, numerous scholars have contributed to the study of factors such as the formation of alliances, geopolitical dynamics, and climate and environmental change (JIANG, 2023; M Paul, 2023; VN Konyshev & AA Sergunin, 2022).

The majority of extant research concentrates on the particular policy initiatives of the United States government in the Arctic region. Conversely, there is a paucity of attention devoted to the investment and development of the United States in high-technology fields in the region, particularly the construction of situational awareness capabilities. It is evident that situational awareness capabilities, a pivotal element of U.S. strategic forces in the Arctic, offer meticulous technical assistance for strategic decision-making and bolster its responsiveness to potential threats and opportunities in the Arctic. The United States employs effective situational awareness to monitor environmental changes, military dynamics, and other security threats in the Arctic region in real time. This enables the achievement of strategic objectives in a complex international situation. Consequently, an exhaustive examination of the United States' construction of situational awareness capability in the Arctic region will not only elucidate the technical foundation of its Arctic strategy but also furnish invaluable lessons for China's proposal of the "Polar Silk Road" as well as its involvement in the governance and development of the Arctic.

2. The United States' Motivations for Enhancing Arctic Situational Awareness Capacity

Arctic situational awareness can be defined as the process of establishing a comprehensive understanding of the Arctic region, including the potential impact of Arctic-related conditions on U.S. security, the economy, and the environment. This understanding is crucial for effective decision-making and response strategies. The United States government considers the construction of an enhanced Arctic situational awareness capability to be conducive to more effective Arctic policymaking and to provide a fundamental capability for responding to climate change and great power competition. The range of opportunities presented by climate change, great power competition, and geopolitics, as well as the necessity for United States security in the Arctic, have motivated the United States to build situational awareness capabilities in the Arctic.

2.1 Opportunities Arising from Climate Change

The Arctic is undergoing rapid climate change, which is resulting in the gradual melting of the ice. According to the American Science Association, since 2012, the Arctic has had almost no perennial ice remaining for more than four years. A U.S. Department of Defense report suggests that the Arctic could potentially have ice-free summers as early as 2030.

Driven by climate change, the region will see new opportunities, including richer fisheries, more navigable Arctic shipping lanes, and more easily exploitable hydrocarbon resources. The accelerated melting of sea ice in the Arctic due to climate change is increasing the navigability of Arctic shipping lanes, enhancing the strategic value and economic potential of the Arctic region, which will require enhanced situational awareness to protect its resource interests in the Arctic and to participate in rule-making. Responding to the range of environmental and ecological issues posed by climate change is also placing greater demands on the U.S. Arctic science detection system.

2.2 Increased Great Power Competition and the Return of Geopolitics

The United States is seeking to enhance its situational awareness capabilities in the Arctic, with the objective of tackling the return of great power competition and geopolitics. The United States posits that the Arctic's growing strategic importance is a primary driver of increased competition in the region. This is largely attributed to the heightened activity of China and Russia in the Arctic. The United States is seeking to reinforce its dominant position in the context of growing strategic competition.

Russia has persisted in bolstering its military presence in the Arctic, encompassing the reinforcement of the Arctic region's strategic importance in national defense, the advancement of maritime capabilities, the enhancement of its situational awareness in the region, the expansion of the Northern Fleet, and the approval of the 2022 Maritime Code of the Russian Federation. These actions undoubtedly reinforce U.S. threat perceptions of Russia in the Arctic. China's normal activities in the Arctic have also given rise to concerns among the United States about its own security in the region. Some politicians in the United States have accused China of dramatically increasing its economic

development and scientific research activities in the Arctic over the past decade with the actual purpose of military involvement.

2.3 The Security Needs of US Arctic Interests

The absence of suitable situational awareness and communication capabilities not only impairs the U.S. military's capacity to respond to competitors' activities in the Arctic but also undermines the U.S. ability to protect its Arctic interests as a whole.

The distinctive environment of the Arctic region gives rise to a heightened need for security measures in this region. The continuous exposure of sparse infrastructure to extreme weather conditions, restricted satellite coverage, and distinctive electromagnetic phenomena that impair communication quality pose significant challenges to U.S. capabilities in the Arctic. The United States has historically encountered a dearth of capabilities in the Arctic region. The U.S. Coast Guard has repeatedly asserted that it lacks an adequate number of polar icebreakers, thereby limiting its capacity to provide robust and effective security services for US interests in the Arctic.

3. The Practical Path of the United States to Build Situational Awareness Capability in the Arctic Region

The U.S. government has explicitly highlighted the importance of enhancing the resilience of the Arctic region in numerous strategic documents, emphasizing the necessity to bolster situational awareness capabilities in the region. The 2024 DoD Arctic Strategy outlines a plan to enhance the construction of Arctic situational awareness capabilities, including C5ISR, through a range of approaches. These strategies exhibit a multifaceted and pragmatic character. As far as the main body of construction is concerned, the United States not only emphasizes capacity building at the government level but also actively promotes public-private partnership construction and joint development with allies. In terms of construction content, the program encompasses the construction of scientific systems for the purpose of climate and environmental governance at the non-traditional security level, as well as the construction of military situational awareness systems at the traditional security level.

3.1 Arctic Situational Awareness Capacity-Building in Cooperation with Corporate Universities and Internal Coordination

The United States depends on the collaboration between companies and research institutions to transform cutting-edge technologies into practical situational awareness tools. The collaboration between companies and universities has resulted in innovations in sensor technology, AI algorithms, and unmanned aerial and satellite systems. To illustrate, Lockheed Martin and the Massachusetts Institute of Technology have collaborated to develop remote sensing technology that can more accurately monitor changes in the polar environment, thereby assisting the defense sector in better understanding the situation in the Arctic. The Alaska Center for Climate Assessment and Policy (ACCAP) at the University of Alaska Fairbanks established a sustained scientific study of the Alaska region and conducted long-term trend analyses (1957-2021) of key Alaskan climatic parameters, including temperature, precipitation, and sea ice, which informed the U.S. Fifth National Climate Assessment. The Department of Homeland Security (DHS), with more than fifty partners, including corporate university government agencies, has undertaken the Arctic Domain Awareness Center

(ADAC) program in the hope of improving situational awareness and crisis response capabilities to address emerging maritime challenges posed by the dynamic Arctic environment. The U.S. National Oceanic and Atmospheric Administration (NOAA) established the U.S. Arctic Observing Network (U.S. AON) to develop a platform for sustained and integrated scientific observations of the rapidly changing Arctic environment and to make targeted recommendations on the regional and global environmental risks it poses.

The United States is also working on intergovernmental coordination and resource integration to increase the ability to coordinate the building of polar situational awareness. The United States seeks to provide efficient resource coordination among agencies such as the Department of Defense, the Department of Homeland Security, and the intelligence community to optimize the allocation of resources for Arctic situational awareness capacity-building, reduce duplication, and establish a network of systems. The United States has been implementing enhancements to its leadership structure for Arctic affairs. During the Trump administration, the U.S. State Department established the position of U.S. Coordinator for Arctic Affairs. In contrast, the Biden administration has nominated an ambassador for Arctic regional affairs, who will assume the role of coordinating Arctic foreign affairs. In addition, the United States uses the Arctic Executive Steering Committee (AESC) as a mechanism to promote U.S. Arctic interests and coordinate federal actions in the Arctic, and its members include the undersecretaries of the relevant U.S. departments, such as the Departments of State, Defense, and Homeland Security, and the Office of the Director of National Intelligence, among others.

In terms of specific actions, the Ted Stevens Center for Arctic Security, which was established on 9 June 2021 at Joint Base Elmendorf-Richardson in Anchorage, Alaska, integrates the U.S. Departments of Defense, the Defense Security Cooperation Agency, and NORTHCOM with the objective of providing intellectual support for U.S. defense affairs in the Arctic. The Center's key mission is to enhance situational awareness and capacity building in the Arctic. Furthermore, the Centre has established the School of Arctic and Climate Security Studies, which aims to enhance the comprehension and professional advancement of Arctic security practitioners, encompassing both military and civilian roles, on a spectrum of security matters pertaining to the Arctic and regional climate.

3.2 U.S. Army C5ISR Capacity Building in the Arctic Region

In 2024 DoD Arctic Strategy, a major operational orientation is the development of C5ISR capabilities for command, control, communications, computers, networks, intelligence, surveillance, and reconnaissance, in addition to improving knowledge of the electromagnetic spectrum, among other things.

Depending on the domain, the United States is progressively improving its Arctic-wide C5ISR sensing network of sea, land, air, space, and electromagnetism. In the sea-based domain, the US Naval Research Laboratory (NRL) has developed ice-tethered acoustic buoys (IBAs) to monitor the changing acoustic and oceanic environment of the Arctic. They use buoys to provide real-time monitoring and operational capabilities in the Arctic environment, as well as under-ice acoustic communications and navigation capabilities for mobile platforms such as ocean gliders and underwater autonomous vehicles. The Assured Arctic Awareness (AAA) program of the US Defense Advanced Research Projects Agency

(DARPA) is developing new technologies for advanced distributed sensor systems to monitor the Arctic ice surface and subsurface to provide full-time situational awareness.

In the air-based domain, the US Department of Defense claims that by the 21st century and 30s, the US and its Arctic allies will have more than 250 multi-purpose combat aircraft processing Arctic data to improve Arctic data coverage and capabilities. The University of Maine and the U.S. Air Force (DAF) have also completed a partnership on Arctic research that aims to improve the nation's ability to monitor the Arctic. The University of Maine will form the team that will evaluate current methods, research techniques, sensors, and perception systems used in the U.S. Air Force Weather Agency to observe and predict weather patterns that affect Air Force operations.

In the land-based domain, improving Arctic infrastructure and environmental resilience has become an important underpinning of the U.S. C5ISR buildout. In the U.S. Department of Defense Climate Adaptation Plan, it is stated that the North American Aerospace Defense Command and U.S. Northern Command staffs are working on operational standards for the Arctic Fuel Supply Chain Distribution System (AFSCDS) to better understand its deficiencies and advocate for future Arctic infrastructure development to enhance resilience to climate change.

In the space domain, the United States Department of Defense, in partnership with commercial satellite operators such as SpaceX, Iridium, and OneWeb, is attempting to build a high-coverage, high-bandwidth, high-availability communications capability in the Arctic using low-Earth-orbit (LEO) satellites. In the electromagnetic domain, the United States Space Force has also emphasized the modernization of Arctic-related space assets and overcoming the unique orbital mechanics and electromagnetic barriers of the Arctic through technology development and capacity building.

3.3 Work with Allies to Build Arctic Situational Awareness

Collaboration among allies to build an Arctic situational awareness system not only reduces the U.S. technical and cost burden but also promotes alliance relations and helps the U.S. lead Arctic governance, which encompasses not only bilateral joint construction but also multilateral joint research programs as well.

For example, the United States, together with NATO allies such as Norway, has developed the Integrated Remote Sensing System for the Arctic (IRSA), which is used to optimize Arctic remote sensing data acquisition and decision support analysis, communications, and enhanced navigation. The IRSA platform system integrates communications and remote sensing satellites, high-, medium-, and high-altitude long-endurance manned aircraft, unmanned aircraft, and observation facilities such as submarines and surface vehicles. On 24 March 2023, Biden and Canadian Prime Minister Trudeau issued a joint statement to modernize and upgrade the surveillance systems of the North American Aerospace Defense Command, including, among other things, the procurement and deployment of a next-generation radar system with polar coverage.

At the multilateral level, the United States is also committed to working with Arctic allies to advance Arctic situational awareness capabilities. During the Obama years, the United States, along with Canada, Denmark, Finland, New Zealand, Norway, and Sweden, formed the International Cooperative Polar Research Participation Programme (ICE-PPR). The program, under the primary responsibility of each country's defense ministry, aims to leverage their respective research and technology development capabilities to improve defense capabilities and joint warfighting requirements through new and emerging technologies, and one of the key areas of focus is Arctic situational awareness capability cooperation.

3.4 Enhanced AI technology Enablement for Arctic Situational Awareness Capabilities

The U.S. government is using machine learning and other AI technologies to optimize its Arctic situational awareness system in order to strengthen the situational awareness capabilities it needs to achieve its Arctic strategic objectives. In July 2023, the U.S. Coast Guard (USCG) icebreaker Healy crossed the Arctic and captured a large number of images, the data from which will be used to develop artificial intelligence tools, in particular the application of computer vision for automated analysis in the Arctic environment. A team of researchers led by MIT's Lincoln Laboratory used these image datasets to train AI to help improve its ability to provide situational awareness of Arctic waters.

The United States government has employed the use of artificial intelligence-enabled Arctic situational technologies with the objective of enhancing its Arctic military situational awareness capabilities. The United States, in collaboration with its NATO allies, has established the Andøya Space Surveillance and Sensing project in the Arctic. This initiative encompasses a significant investment in satellite, drone, unmanned ship, and unmanned submarine technologies, with the objective of enhancing military surveillance capabilities and facilitating the real-time exchange of data on enemy vessels, aircraft, and submarines with NATO allies.

Furthermore, the United States is employing AI technology to augment the implementation of situational awareness capabilities in Arctic communities, particularly in the domains of environmental security and animal protection. The Polar Bears International team in the United States employed artificial intelligence (AI) technology and radar systems to develop a system, colloquially termed a "bear-dar," that monitors the approach of any animal to a human community. This allows sufficient time for humans to utilize non-lethal deterrents to repel the animal, thereby reducing the threat to the safety of community members and the risk of harm to endangered animals. The Alaska Fisheries Science Center has also developed artificial intelligence systems to monitor ice seals, polar bears, and other mammalian marine animals photographed during aerial surveys of Arctic sea ice, allowing for more rapid assessments of Arctic mammal populations and more effective conservation plans. Artificial intelligence vision tools are being used to help the United States Coast Guard plan guard missions and automatically analyze images at sea, adding to the effectiveness of the Cold Regions Imaging and

Surveillance Platform (CRISP), jointly developed by the Coast Guard and Lincoln Laboratory, in combating illegal fishing.

4. China's Efforts and Contributions to Arctic Development and Governance

China has historically demonstrated a keen interest in matters pertaining to the polar regions. It has actively engaged in, contributed to, and continues to play a pivotal role in Arctic affairs. China's stance on the Arctic is one of commitment to the promotion of peaceful development and global governance. Additionally, it strives to contribute Chinese wisdom and Chinese power to the development of the Arctic. In May 2013, China was formally designated as an official observer state of the Arctic Council. In December 2017, the concept of the "Polar Silk Road" was proposed. This initiative aims to facilitate cooperation with Arctic countries with a view to developing shipping lanes, promoting maritime trade, and facilitating infrastructure construction in the region.

4.1 China's Participate in Arctic Governance

In 2018, China published a white paper titled "China's Arctic Policy", which explicitly delineates China's Arctic policy objectives, which may be summarized as follows: "participation in, understanding of, protection of, and use of the Arctic." China plays an active role in the formulation of international norms and standards pertaining to global environmental governance, climate change, marine resources, and fisheries management and is committed to fulfilling its associated obligations. China is committed to conducting its Arctic activities within the framework of existing international law, including the Charter of the United Nations, the United Nations Convention on the Law of the Sea, multilateral treaties on climate change and environmental protection, and the relevant rules of the International Maritime Organization. China promotes maritime safety and environmental protection within the International Maritime Organization, advocates technical cooperation with the objective of reducing greenhouse gas emissions from shipping, and has participated in the negotiation of international instruments on biodiversity conservation.

4.2 China's Scientific Expedition to the Arctic

The year 2024 will mark the 40th anniversary of China's polar expedition, and China has been committed to making a significant contribution to Arctic scientific research and study. China has currently organized 14 expeditions of a scientific nature in the Arctic region. Furthermore, in July 2004, the Yellow River Station was established in the Arctic, and in July 2019, the MV Xue Long 2, which was the first polar icebreaker to be constructed independently by China, was delivered and put into use. China has assumed a pioneering role in the implementation of international cooperation programs, including the Joint Exploration of the Mid-Ocean Ridge of the International Arctic Ocean, the joint surveys of the East Siberian Sea with Russia, and the international cooperative expeditions and scientific research initiatives undertaken in collaboration with the United States, Canada, Russia, Finland, and numerous other countries. China's scientific expeditions to the Arctic have encompassed a range of

disciplines, including climate change, marine biodiversity, geology, and the environment. These endeavors have made significant contributions to the maintenance and promotion of peace, stability, and sustainable development in the Arctic.

4.3 China's Arctic Economic Development

China persists in its efforts to advance economic growth in the Arctic region. With regard to mineral investment, Chinese enterprises have been making incremental efforts to invest in the Arctic mining industry, with participation in the operation of 13 projects, primarily in Denmark (Greenland), Canada, and the United States. With regard to oil and gas resources, the Chinese Yamal project was initiated in 2017. This represents the inaugural mega energy cooperation project implemented in Russia subsequent to China's proposal of the “Polar Silk Road” initiative. Following the successful implementation of the Yamal project, the Arctic LNG 2 Project was officially initiated in September 2019. In the context of waterway development, the Nordic countries of Finland, Iceland, and Norway undertook their inaugural joint visit to China in 2018, expressing their desire for enhanced Arctic cooperation with China in the realms of climate change response, maritime waterways, undersea fiber optic cables, and ecology. In August 2024, the China-Russia Sub-Committee on Arctic Waterway Cooperation was established with the specific objective of promoting the development of the Arctic waterway. Despite the current suspension of China's involvement in the Arctic economic development initiative for various reasons, the underlying potential for Chinese engagement in this field remains significant.

5. U.S. Arctic Situational Awareness Capacity Building Implications for China's Promotion of the Polar Silk Road

In promoting the 'Polar Silk Road' initiative, China can draw on the experience of the United States in developing situational awareness capabilities in the Arctic region. This was achieved through the utilization of technology, international collaboration, active involvement in Arctic governance, and the enhancement of fundamental capabilities. This approach enabled a more effective response to the evolving challenges and changes in the Arctic region.

5.1 Enhancing Environmental Awareness in the Arctic with Technology Utilization

Awareness of environmental changes in the Arctic can be significantly enhanced through technology Utilization. The United States has placed special emphasis on the importance of technological empowerment in the construction of situational awareness capabilities in the Arctic, especially when it comes to the application of artificial intelligence technology. China can learn from this practice, strengthen the application of AI technology in this field, establish a green and intelligent polar three-dimensional monitoring network through the development of air-, ice-, and sea-based intelligent observation equipment, and enhance its ability to monitor Arctic climate change, sea ice melting, and other environmental changes. At the same time, it has strengthened cooperation with

scientific research institutions at home and abroad and made use of advanced remote sensing technology, ocean observation technology, and environmental monitoring technology to enhance its ability to monitor and recognize environmental changes in the Arctic. This will not only help China to better understand and adapt to the Arctic environment but also provide a scientific basis for China's shipping, resource development, and scientific research in the Arctic.

5.2 Promote International Cooperation in the Arctic Through Technical Exchanges and Data Sharing

In promoting the construction of the “Polar Silk Road”, China can promote international cooperation and jointly address the challenges of Arctic governance by strengthening technical exchanges and data sharing with Arctic countries. China could play an active role in the international governance of the Arctic. This can be achieved by establishing and participating in multilateral cooperation platforms, which would facilitate technical exchanges and data sharing with Arctic countries and other stakeholders. Such platforms could take the form of joint expeditions, the construction of field observation stations, and the sponsorship of large-scale scientific programs. Such an approach would not only facilitate the acquisition of further information on the Arctic environment and resources but would also contribute to the establishment of strategic mutual trust in the Arctic region, the promotion of international cooperation, and the joint addressing of the challenges posed by changes in the Arctic environment.

5.3 Promoting the “Polar Silk Road” Agenda Through Active Participation in Arctic Governance

The United States' establishment of an international collaborative mechanism in the context of Arctic governance serves as a model for China's potential involvement in this field. As an observer state to the Arctic Council, China has the potential to promote regularity through active participation in Arctic governance, thereby facilitating coordination and cooperation in areas such as climate change, the protection of indigenous cultures, and scientific research.

Concurrently, China should demonstrate respect for the sovereignty, rights, and interests of Arctic countries in matters pertaining to the Arctic. Furthermore, it is imperative that China advocate for the establishment of a fair and reasonable Arctic governance mechanism. Additionally, China must address the current shortcomings of Arctic governance, including the compartmentalization and exclusion of regional and multilateral governance, the deficiencies in the provision of institutional global public goods, the lack of convergence and coherence between internal and external rules, and the transmission of "high-political" rules to influence "low-political" rules. The objective is to facilitate the construction of the “Polar Silk Road” by ensuring the provision of effective public goods for the governance of the Arctic.

5.4 Strengthen Basic Capabilities to Cope with the Arctic Geopolitical Competition

In capacity-building efforts in the Arctic with regard to situational awareness, the United States has placed particular emphasis on the importance of basic capabilities, including communication, surveillance, and reconnaissance needs, as well as solutions to the problem of poor communication signals in the Arctic. As China advances the concept of the "Polar Silk Road", it is essential that it concurrently enhances its foundational capabilities. This entails, inter alia, the modernization of its polar icebreaking fleet, the reinforcement of polar scientific research and technological innovation, and so forth. The objective is to equip China with the means to navigate the challenges of Arctic geo-competition and environmental degradation while ensuring the security and efficiency of its maritime trade routes. By implementing these measures, China can more effectively protect its interests in the Arctic region, thereby establishing a robust foundation for the sustained operation of the "Polar Silk Road".

6. Conclusion

The return of Donald Trump to power in the 2024 US presidential election introduces a significant degree of instability to the future governance of the Arctic. It will be challenging for the region to revert to a system of assisted governance, and the prevailing geopolitical climate is likely to remain volatile.

In Trump's first term, the US Arctic policy has generally embodied distinctly conservative and isolationist colors, emphasizing resource development, national security, and economic growth while relatively neglecting the topics of environmental protection and climate change. First, the Trump administration has emphasized the development of energy resources in the Arctic, particularly in Alaska. In 2017, the Trump administration eased restrictions on resource extraction in Alaska's Arctic National Wildlife Refuge (ANWR) and pushed for oil and natural gas exploration in order to promote US energy independence and economic growth. Second, the Trump administration views the Arctic as a geopolitically competitive strategic region and has intensified its focus on Arctic military presence. The Trump administration has intensified its military deployments to the Arctic, military exercises, and cooperation with allies. Third, the Trump administration has taken a very conservative stance on climate change, denying climate change, withdrawing from the Paris Climate Agreement, and deregulating environmental regulations on Arctic energy extraction. Fourth, the Trump administration's Arctic foreign policy emphasizes the primacy of US interests and reduces multilateralism and international cooperation. The Trump administration's support for international organizations such as the Arctic Council has been more limited, and cooperation on environmental protection and climate change, in particular, has been less active than under previous administrations. The Trump administration prefers to negotiate bilaterally with other Arctic states rather than relying on multilateral frameworks. Fifth, the Trump administration supports increased development of Arctic shipping lanes, particularly the use of the Northeast Passage, and Trump has proposed increased investment in U.S. Arctic infrastructure to enhance U.S. strategic influence and economic interests in the region.

In light of the Trump administration's probable inclination towards unilateralism and a hard-line stance towards China, it is imperative for China to anticipate and prepare for potential geopolitical shifts. This entails the reinforcement of bilateral relations with other Arctic countries, in addition to the safeguarding of China's interests and influence within the multilateral framework. It would be prudent for China to maintain flexibility and strategic patience while remaining vigilant against potential shifts in U.S. Arctic policy. This approach would allow China to gradually promote multilateralism and the rule of law in Arctic governance through long-term cooperation and dialogue. China should have a clear understanding of the evolving patterns and characteristics of the Arctic region. This understanding should inform the implementation of China's Arctic policy, which should, in turn, facilitate the building of a community of human destiny. Communication and cooperation with relevant parties in the fields of energy development, waterway management, scientific research, and ecological protection should be strengthened. New areas and opportunities for cooperation should be constantly explored, and a blue partnership should be actively built. The “Polar Silk Road” should be promoted to achieve more positive results. We will continue to identify new areas of cooperation and opportunities, actively build a blue partnership, promote the “Polar Silk Road” to achieve more positive results, and contribute China's strengths to the peace, stability, and sustainable development of the Arctic region.

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The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

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