



Coast Guard Cutter *Polar Star* breaks channel through ice in McMurdo Sound, Antarctica, December 30, 2023 (U.S. Coast Guard/Jeremy Burgess)

The Other Arctic

Competition, Cooperation, or Coexistence?

By John B. Kelley, Christopher J. Sarton, Scott A. Curtice, and Charles C. York III

I am hopeful that Antarctica in its symbolic robe of white will shine forth as a continent of peace as nations working together there in the cause of science set an example of international cooperation.

—RADM RICHARD E. BYRD, USN (RET.)

In 1959, 12 countries signed the Antarctic Treaty to ensure scientific freedom and equal access for all nations of the world to the continent. Since then, the number of states acceding to the treaty has grown to 56 from all parts of the globe, with just over half—29 states—now granted

“consultative” status to make decisions regarding the future protection and use of Antarctica through the Antarctic Treaty Consultative Meeting (ATCM).¹ For over 60 years, the Antarctic Treaty System (ATS) has provided the world with a peaceful and stable environment to conduct scien-

tific inquiry, protect unique biodiversity, and promote regional tourism.

As climate change continues to open new opportunities in polar regions, however, international concern has grown over the potential for the future irresponsible use of the area by actors more concerned with military and economic advantage than conservation efforts.² U.S., ally, and partner apprehension over the People’s Republic of China (PRC)’s activities raises more significant concerns that Antarctica may become a region of military competition instead of global cooperation.

Colonel John B. Kelley, USAF, is Director of Safety at Mobility Operations Command. Commander Christopher J. Sarton, USN, is a JPME II Instructor at the Joint and Combined Warfighting School. Major Scott A. Curtice, USA, is a Counter-Weapons of Mass Destruction Planner at the Defense Threat Reduction Agency. Major Charles C. York III, USA, is the Joint Mobility Officer at U.S. Transportation Command.



Chinese researchers for China's 35th Antarctic expedition begin work on second phase for Taishan Station, Antarctica, December 26, 2018 (Xinhua/Alamy Live News/Liu Shiping)

This apprehension is well-founded but not without remedy; solutions are grounded in both historical precedent and international norms. As in the past, the joint force, in concert with interagency, intergovernmental, and multinational actors, will enable the United States to competitively prevail in Antarctica through coordinated whole-of-government action, renewed engagement with like-minded consultative party nations, and new incentives for future opportunities with the PRC to cooperate in the international community to preserve Antarctica's unique status.

The role of the joint force becomes clear through understanding the operations, activities, and interests of both the PRC and the United States in Antarctica. The research methodology for understanding these roles included a broad literature review of research articles, books, and news publications for data to provide insights into how the joint force might support U.S. strategy in Antarctica. This research focused on U.S. and PRC goals, commitments, access, and actions

in Antarctica from both internal and external perspectives through the lens of competition and historical norms.

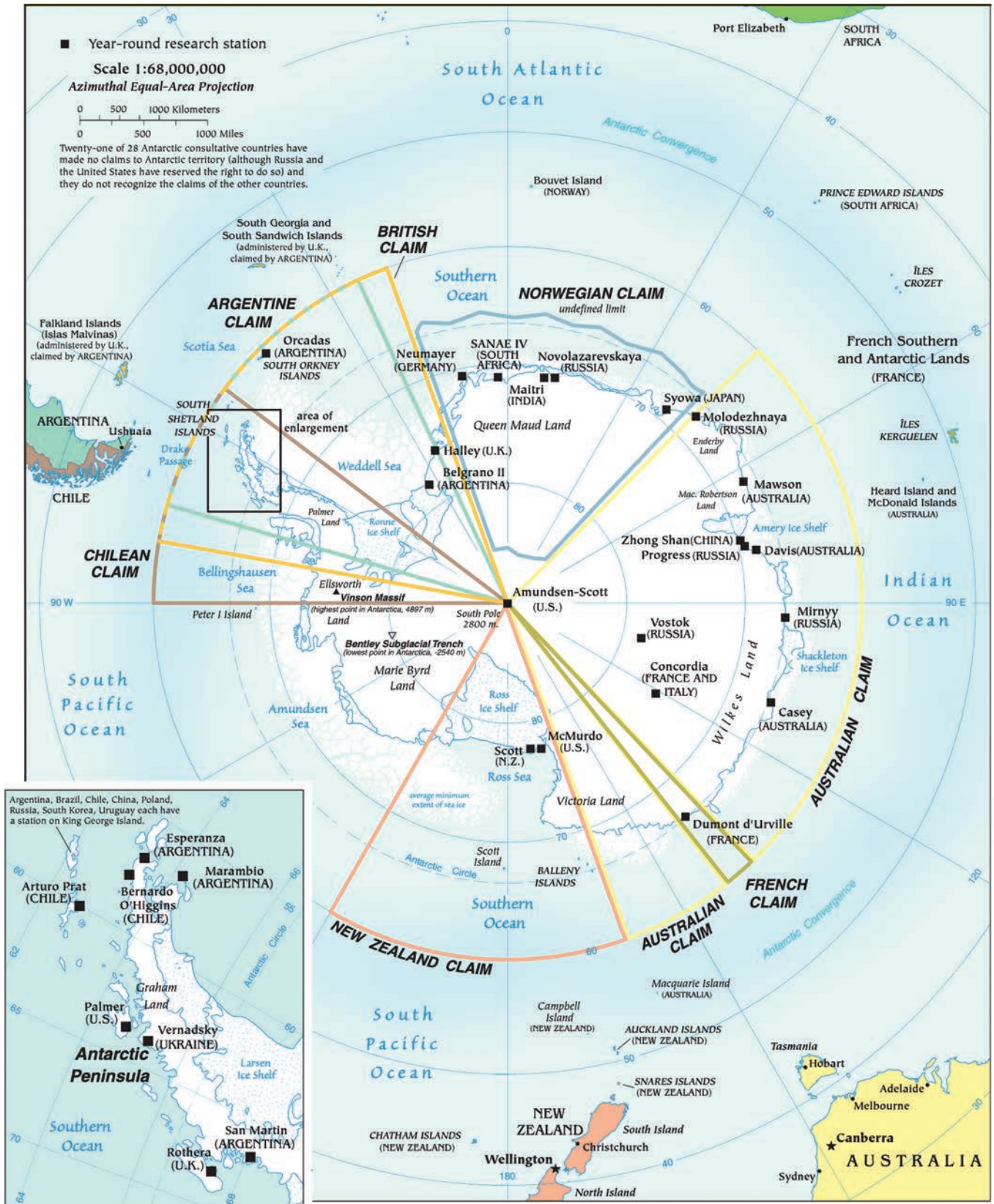
Background and Strategic Interests

In the first half of the 20th century, seven countries claimed sovereignty over territory in Antarctica: Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom. However, none of these claims were fully recognized by the international community.³ To forestall future claims and preserve global access to the region, the United States proposed the Antarctic Treaty in 1959, signed by the 12 countries conducting Antarctic research at the time.⁴ The number of signatories has grown to 56 nations since then, but only nations that meet the requirement established by the ATCM of "conducting substantial research activity" on the continent are invited to become one of the Consultative Parties. Only these nations have a vote in policies and important founda-

tional decisions adopted by the body, such as the upcoming review of the Madrid Protocol in 2048.⁵

The Antarctic Treaty and its complementary agreements forming the ATS constitute the primary regulatory framework for Antarctic activity. The treaty prohibits military maneuvers and specifies that military assets can be used only for assisting scientific research, logistics, and search-and-rescue missions.⁶ Alongside the ATS are several additional protocols and conventions, with three additional primary governing documents. The Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol), signed in 1991, designates Antarctica as a "natural reserve devoted to peace and science."⁷ The Convention for the Conservation of Antarctic Seals, signed in 1972, protects seal populations from hunting and other economic activities.⁸ The Convention on the Conservation of Antarctic Marine Living Resources, signed in 1980, covers the conservation and "rational use" of krill, fin fish, and other marine living resources.⁹

Antarctic Region





Coast Guard Cutter *Polar Star* visits U.S. research station Palmer Station, on Anvers Island, Antarctica, March 3, 2023, after completing successful deployment in support of Operation Deep Freeze 2023 (U.S. Coast Guard/Aidan Cooney)

The Madrid Protocol specifically prohibits activities related to mineral resource extraction because of its environmental impact. With nearly 98 percent of Antarctica’s surface covered in ice and large swaths of inhospitable terrain, mineral and energy resources remain hard to acquire as few deposits are likely to be exposed. Reporting the continent’s resource potential is challenging because of the thick layer of ice covering the land.¹⁰ Additionally, exposed rock on Antarctica is about the size of Colorado, but it is spread across a landmass greater in size than the United States and Mexico combined. The logistics of conducting a prospecting or exploration program are immense, and some large rock exposures have never been visited because of difficulties in weather and accessibility.¹¹

However, experts believe that vast mineral deposits—perhaps 200 billion barrels of oil and 500 billion tons of natural gas—may lie underneath Antarctica’s icy surface, and as climate change opens the polar regions, efforts to extract these resources may become less costly.¹² As the

environmental barriers to breaching the ATS change, the role of the joint force in supporting the international efforts to sustain Antarctica’s unique status becomes increasingly important—especially with the PRC’s growing interest in the continent.

PRC Operations, Activities, and Interests

The PRC has several legitimate goals, commitments, and activities in Antarctica and the waters surrounding it. Its science and research presence in Antarctica has been dynamic, with the construction of four bases—Changcheng (Great Wall), Kunlun, Taishan, and Zhongshan—in a 30-year period, followed by Qinling, a fifth base that began operating in February 2024.¹³ Since 1988, the Chinese Antarctic Research Expedition has presented research activities to the Scientific Committee on Antarctic Research in the following broad disciplines:

- meteorology
- ionosphere
- geomagnetism, geology, and geography

- surveying and mapping
- biology
- human physiology
- marine hydrology and chemistry.¹⁴

The production of valid and credible scientific work is the “coin of the realm” in Antarctica. The quantity and quality of a country’s scientific research affect its status and influence at the ATCM.¹⁵ Only nations that meet the requirements established by the ATCM in terms of research and activities on Antarctica are invited to become one of the Consultative Parties, and only these nations have a vote in policies and decisions adopted by the body.¹⁶ The PRC has been a signatory of the Antarctic Treaty since 1983, becoming a Consultative Party of the ATCM in 1985.¹⁷

Since then, the PRC has made great efforts to build relationships with other regional ATS members and improve its capabilities and capacity to operate in the region. The PRC organizes its activities in Antarctica through a governmental agency named the Polar Research Institute of China, which oversees the



various scientific pursuits at the PRC's Antarctic research stations.¹⁸ By these efforts, the PRC has steadily built influence through increased engagement in Antarctic governance, building research stations in strategic terrain, securing long-term agreements for support nodes, and gaining prestige through scientific discovery and naming of sites.¹⁹ To date, the PRC remains publicly outspoken about adherence to the ATS regime and has ratified the additional Antarctic protocols and conventions that extend protections to marine living resources and ban mineral exploitation.²⁰

Beginning in 2018, the PRC implemented domestic legislation to govern Chinese citizens' actions in Antarctica, covering not only scientists but also tourists and other private users.²¹ The PRC's first Antarctic white paper, published in 2017 during the 40th ATCM and titled "China's Antarctic Activities," stated, "The Chinese Government is in persistent support of the purposes and gist of the Antarctic Treaty and has been committed to safeguarding the stability of the

ATS."²² Given the amount of public support and legally self-binding agreements concerning Antarctica, the PRC appears as a model citizen supporting the ATS regime and following international norms.

International concern about the PRC's interest in the Antarctic is not about its publicly stated policies and commitments but about its revisionist approaches to international norms and agreements, as in the cases of the Arctic and Antarctic.²³ The PRC's actions in international spaces and gray areas of policy detract from its credibility. The PRC has drawn international criticism for its development projects such as the Belt and Road Initiative and coercive economic investments in developing countries. Moreover, rising tensions in the South China Sea and southern Pacific over territorial disputes and natural resources have driven key Antarctic gateway countries Australia and New Zealand to review and revise their defense policies regarding the PRC.²⁴

Apprehension over the PRC's conduct in Antarctica is compounded by claims

from observers of unapproved satellite ground stations, high-frequency radar sites, and airstrip development that imply military use. Many of these developments occurred at the Kunlun station situated at Dome Argus—the highest altitude on the continent, which commands unrestricted access and visibility of all satellites in polar orbits.²⁵ Anne-Marie Brady, a professor of political science and international relations and a research associate at Gateway Antarctica, points out numerous People's Liberation Army (PLA) activities over the past 20 years that went unreported in required annual reports to the ATCM.²⁶ She describes two instances where PLA experts traveled to Antarctica to construct first a high-frequency radar station in 2007–2008 and later a ground station for the Chinese global navigation satellite system BeiDou.²⁷ Neither activity was mentioned in the official Chinese report to the ATCM. While these activities are not expressly prohibited in the language of the Antarctic Treaty documents, they do show a willingness of the PRC to place critical dual-use

technologies at scientific research stations while attempting to avoid notice by the international community.

Enforcement of the ATS relies on observers having free access to all areas of Antarctica, including stations, installations and equipment, all ships and aircraft, as well as aerial observation and required notifications of expeditions, under Article VII of the ATS.²⁸ In practice, the harsh climate and limited access by member states mean that surprise inspections to validate scientific operations are difficult at best. Furthermore, the joint force could use surveillance assets in Antarctica to augment inspection efforts for potential flashpoints or crisis events, as is the case in the South China Sea or Eastern Europe. Additionally, the weak legal enforcement mechanism within the ATS has been discussed in international law journals in 1985 and 1998, highlighting concerns about gray areas where the treaty can be subverted or bypassed.²⁹ These concerns will likely remain relevant into the future, underscoring the need for a larger and better integrated U.S. investment in Antarctica today.

The PRC has also attempted to use the ATCM structure to create conditions to limit oversight and observation of its operations, activities, and interests. The PRC delegation recently proposed an Antarctic Specially Managed Area (ASMA) at Kunlun, arguing for additional protection for the environment around the base while limiting other nations from participation without PRC approval and coordination. This proposed action increased distrust and widened suspicions about its primary use.³⁰ Fortunately, key allies and consultative party members, led by the United States, rejected this proposal and efforts by the PRC delegation to change the code of conduct concerning the ASMAs.³¹

Assuming current climate change trends, Antarctica is decades away from any relevant military use beyond GPS satellite development, and the Madrid Protocol banning mineral exploitation will not be under review until 2048. But understanding the long-term effects of PRC influence on the southern continent cannot wait for decades. By building research stations with potential dual-use capacity, the PRC lays the groundwork for future

influence in strategic locations and those areas that host significant living marine resources, that is, fisheries and krill.³²

As the PRC increases its presence and influence in Antarctic governance through credible and visible scientific investments, it opens the door for changing current ATS norms. The increased status and influence could be used to shape one of the primary regional concerns, which is the interpretation of ATS phrasing about “rational use” in the Commission for the Conservation of Arctic Living Marine Resources Convention. The PRC opposed the creation of new marine protected areas, ostensibly to prevent the expansion of territorial claims by other ATS members. Preventing creation of marine protected areas also leaves those areas open for “rational use,” including limited commercial fishing.³³ Alongside concerns about living marine resources, there are concerns regarding mineral resource extraction—the PRC could seek to open the region in 2048 when the Madrid Protocol comes up for review, or even sooner through a special review request. Since any changes to the protocol would require a three-fourths majority of consultative members, the long-term growing influence of the PRC could allow for removing or at least relaxing the mineral exploitation protections through a combination of PRC prestige, influence, and perhaps economic coercion.³⁴

U.S. Operations, Activities, and Interests

While many students of strategic competition will point to the Cold War as the genesis of joint force interest in the poles, the true history is much longer. The U.S. desire to understand, invest in, and explore the Antarctic continent is 200 years in the making. An American seal hunter named Nathaniel Palmer is credited with making the first sighting of the Antarctic Peninsula.³⁵ This prompted the U.S. Congress to commission the U.S. Exploring Squadron (or Wilkes Expedition), led by the U.S. Navy’s Lieutenant Charles Wilkes, to explore and map the continent.³⁶ The expedition departed Hampton Roads in 1838 and charted over 1,500 nautical

miles of Antarctic coastline, discovered 280 islands, and proved that Antarctica was the seventh continent.³⁷ U.S. domestic events would preclude further exploration for the rest of the century, but the Wilkes Expedition would lay the groundwork for 16 more expeditions over the next 80 years. These expeditions by Australia, Belgium, England, France, Germany, Japan, Norway, Scotland, and Sweden would build on each other and eventually reach the South Pole in 1911.³⁸ They would also form the basis for many of the sovereign claims on the continent that exist today.

U.S. Antarctic science activity in the 20th century began with Richard Byrd’s privately financed expeditions in 1928–1930 and 1933–1935. Research on the continent paused during World War II, but after the war, the Navy Antarctic Developments Project (Operation *Highjump*) in 1946–1947 was by far the largest Antarctic expedition, with more than 4,700 naval and marine personnel, 44 observers, 13 ships, and several aircraft. The expedition covered over a million square miles of Antarctica, half of it previously unexplored, and took aerial photographs suitable for mapping. However, the stations were generally considered unsuitable for science.³⁹

The aftermath of World War II and the expansion of the Cold War with the Soviet Union thrust Antarctica into the global strategic competitive consciousness. By 1958, escalating nuclear tensions, an ongoing scramble for sovereignty in Antarctica, and the scientific success of the International Geophysical Year (IGY) inspired President Dwight Eisenhower to invite the 12 IGY nations to Washington to draft the Antarctic Treaty.⁴⁰ The resulting treaty has been remarkably effective at both establishing international norms for the continent and precluding, but not resolving, the issues of territoriality and sovereignty.⁴¹ Equally important, the Antarctic Treaty created a pragmatic framework where the United States and Soviet Union could avoid confrontation while preserving their strategic advantages.⁴² This framework for superpower engagement and use of the joint force to further American interests



Destination Alpha of Amundsen-Scott South Pole Station, February 27, 2018 (Courtesy Cmiche167)

in Antarctica would prove successful and become an example for today's competition efforts with the PRC.

The Antarctic Treaty and subsequent agreements became collectively known as the ATS. These agreements shaped and solidified the current U.S. policy on Antarctica expressed as four principles:

- The United States recognizes no foreign territorial claims.
- The United States reserves the right to participate in any future uses of the region.
- Antarctica shall be used for peaceful purposes only.
- There shall be free access for scientific investigation and other peaceful pursuits.⁴³

In the spirit of the ATS and its mandates, the American approach to Antarctica is science- and research-focused through the National Science Foundation (NSF) as the administrator

of the U.S. Antarctic Program (USAP).⁴⁴ The NSF operates three year-round scientific stations: McMurdo Station, Amundsen-Scott South Pole Station, and Palmer Station. These stations support an average of 3,500 scientists and support staff over the course of each year. They conduct research covering a range of disciplines, including astronomy, atmospheric sciences, biology, earth science, environmental science, geology, glaciology, marine biology, oceanography, and geophysics.⁴⁵ Additionally, the research vessel R/V *Nathaniel B. Palmer*—with capabilities equal to those of the scientific fleet—accommodates more scientists than crew members.⁴⁶

Since the United States engages with the continent through its participation in the ATS, policy coordination is through the Department of State's Office of Ocean and Polar Affairs (OPA).⁴⁷ This office works closely with NSF to lead the U.S. delegation to the annual ATCM

and maintains close ties to the Antarctic Treaty Secretariat (based in Buenos Aires), which facilitates communication among parties to the Antarctic Treaty.⁴⁸ Additionally, OPA conducts inspections of foreign stations, equipment, and vessels under Article VII of the Antarctic Treaty and Article 14 of the Protocol for Environmental Protection to the Antarctic Treaty to ensure access to all and to strengthen ATS norms.⁴⁹ Below these levels, there are numerous official joint, interagency, academic, and commercial supporting organizations.

The Department of Defense (DOD)'s operational support organizations include:

- Joint Task Force–Support Forces Antarctica (JTF-SFA/Operation *Deep Freeze*), which provides logistics and support and oversees Navy, Air Force, Air National Guard, Air Force Reserve Command, and Coast Guard personnel



Russian orthodox chapel at Russia's Antarctic research station Bellingshausen Station, on King George Island, South Shetland Islands, Antarctica, February 9, 2019 (Alamy/Ashley Cooper)

- 109th Airlift Wing (LC-130 air support from New Zealand)
- 62nd Airlift Wing (C-17 airlift from New Zealand to McMurdo station)
- Coast Guard Pacific Area Icebreaker Operations (channel clearing and fuel resupply operations)
- Naval Information Warfare Center (weather forecasting, air traffic control, and base operations).⁵⁰

A strategic whole-of-government approach, however, does not seem to be the norm for the region. Interagency actions are limited to coordination among the U.S. Antarctic Program, JTF-SFA, and other entities for transportation and logistics. In 2019, General Charles Q. Brown, Jr., then the Pacific Air Force commander, commented that Great Power competition in the region could eventually spread to Antarctica and that the Nation should think about the capability the military required for the Arctic and Antarctic regions.⁵¹ Yet 3 years later, the U.S. Indo-Pacific Command posture did not have a comprehensive joint, interagency, intergovernmental, and multinational approach to strategic competition in Antarctica, a strategic area

of responsibility assigned to the combatant command.⁵²

Furthermore, DOD's 2022 report to Congress, *Military and Security Developments Involving the People's Republic of China*, mentions Antarctica only three times in 196 pages. It touches on new icebreakers for the Coast Guard, comments on space support capabilities from Antarctica research stations, and devotes just three sentences to the PRC's increased presence and strategy for the region.⁵³ Compared to the 194 mentions of Taiwan in the report, the 45 mentions of the Belt and Road Initiative, or the 40 of the South China Sea, it seems that the role of Antarctica in global competition with the PRC is being afforded only minimal attention.⁵⁴

Call to Action

Over the past 50 years, the U.S. Arctic program, based on science and research requirements, has served the Nation well. The U.S. approach must be revisited in this new era of strategic competition, where the PRC challenges historical norms in the international order. First, the U.S. agencies and

their leaders should recognize that the PRC views the Antarctic continent as a gray zone with no attribution of sovereignty.⁵⁵ Second, the Arctic is similar in climate to Antarctica, but its international status is quite different. The Antarctic is defined by the Antarctic Treaty System, while the Arctic falls under the United Nations Convention on the Law on the Sea. These facts require the U.S. Government to treat them differently.

In 2022, DOD established the Arctic Strategy and Global Resilience Office to ensure that U.S. interests are protected in the Arctic.⁵⁶ However, if the U.S. Government were to apply the same thinking to the Antarctic, it might become a distraction, as doing so would imply that the United States has military objectives in Antarctica. As the United States is bound by the language of the ATS, it makes sense for the Department of State's Office of Ocean and Polar Affairs to retain its role as the coordinator of U.S. policy in Antarctica. Since the USAP, under the NSF, conducts the day-to-day activities in Antarctica under the policy of the State Department, how should the joint force integrate through

a whole-of-government approach to ensure long-term strategic competition elements are not lost and the force is postured for the future?

Art Lykke's theory of strategy describes a three-legged stool among ends, ways, and means where an imbalance creates risk.⁵⁷ Using a similar construct for Antarctica, only two legs of a stool are in place with the NSF-USAP and State Department-OPA. Having DOD as a third leg in this construct could help prevent future strategic risk to American interests by incorporating a military perspective into policy and research. DOD provides a unique perspective and resources to combat the revision of international norms in Antarctica. It has technical means to observe and identify malign behaviors and provide strategic context to those behaviors. Additionally, the joint force has the capacity for broad contingency planning and can review and adjust those plans based on changing environments and priorities, abilities that are not present in the State Department or NSF. The Office of Science and Technology Policy in the Executive Office of the President already provides a venue for discussing Cabinet-level issues in Antarctica and informing Presidential decisionmaking.⁵⁸ This council could include a deliberate forum where research, policy, and military perspective integrate to inform U.S. decisions.

One way to help integration at the action officer level would be to connect the joint force more directly to the other U.S. stakeholders in Antarctica. For example, JTF-SFA and the NSF reside thousands of miles apart and have multiple bureaucracies between them. Although there are two military positions in NSF's Office of Polar Programs—one for an Air National Guard member and one for a DOD liaison—the office's location within NSF's Geosciences Directorate means that these liaisons are not positioned to be able to communicate the strategic competition aspects to NSF leadership.

To combat this inefficiency, the joint force should provide additional liaison positions to the NSF Office of the Director and State Department-OPA. Establishing a more robust liaison

presence would also be consistent with the President's Memorandum Regarding Antarctica (6646).⁵⁹ It would enable military personnel to advise agency directors on the strategic significance of actions in Antarctica and craft a multiagency integrated response to actions taken in or near Antarctica. These positions on the State Department staff augment the military advisor and focus on strategic competition and abilities of the joint force in service to interagency efforts.

Although this three-legged approach would reduce risk, strategic cooperation with other ATS members provides another way to achieve national interests. The Navy and Air Force have a long history of bona fide support to research. As mentioned, some of the first science on the continent was supported by the Navy's Operation *Highjump* in 1946–1947, which actively enabled hydrographic, geographic, meteorological, geological, and electromagnetic studies.⁶⁰ These military research support activities could be valuable as platforms for cooperation with other militaries that support their national interests. Working with ATS members to achieve a shared interest in military-assisted research would raise awareness of activities in Antarctica and provide a unique opportunity for confidence-building in a neutral environment.

The United States is particularly well suited to this approach; 16 of the current 29 Antarctica Treaty Consultative Meetings are with treaty allies of the United States, and most others are longstanding partners with close military-to-military relationships with the joint force.⁶¹ The National Security Strategy and National Defense Strategy both highlight the necessity for strong allies and partners to combat authoritarianism around the world and uphold the rules-based world order, so strengthening U.S. ties to ATS members for solidarity of action could help prevent malign influences that would infringe on the current system or seek change to the scientific endeavors on the continent.⁶²

Antarctica may also provide an avenue for future noncompetitive engagements with the PRC to build trust and confidence in a treaty-neutral geographic

area. While this may seem unlikely in the current geopolitical arena where tensions only seem to be rising between the nations, similar efforts with the Soviet Union during the Cold War led to better communication pathways during crisis and arms control agreements. The Lacy-Zarubin Agreement of 1958, considered a key driver in Cold War stability, provides an excellent example of how scientific and technical exchanges promote interpersonal relationships, reduce hostility, and open avenues for diplomatic overtures.⁶³

Conducting military-to-military cooperation with the PLA under the mantle of scientific support for Antarctica could provide transparency for all nations, reinforce the primacy of science, and ensure that all military operations would be peaceful in nature. These cooperative actions would also support the legitimacy of national interests regarding Antarctica and the ATS. Many of the resupply missions to research stations require military support through various means, such as transportation assets, icebreakers, and weather data. These missions could be conducted through multinational efforts, allowing the U.S. and PRC militaries to interact jointly in support of Antarctic scientific endeavors. The remote environment and international observation of these events would help promote cooperative behavior as supporting agencies to the scientific communities instead of competition between military instruments as is happening in the Arctic Ocean.

Conclusion

In Antarctica, the United States must mitigate risks stemming from competitive influences working to alter the current paradigms, but it also should seize the opportunities that Antarctica's unique status affords. The 2022 National Security Strategy states, "We cannot succeed in our competition with the major powers . . . unless we understand how a more competitive world affects cooperation and how the need for cooperation affects competition. We need a strategy that not only deals with both but recognizes the relationship between them and adjusts accordingly."⁶⁴

In a similar vein, recent PRC stated strategy encourages the concepts of a “community of shared future for mankind” and “Chinese wisdom and strength for solving world problems” while also outlining that the “most important goal of the 21st century for China [is] to achieve national rejuvenation and build a modern powerful country.”⁶⁵ What is left unsaid in the PRC official statements is the desire to lead the “shared future of mankind” and revise the existing status quo to Chinese benefit.⁶⁶ Both countries not only recognize the need for cooperation to solve transregional problems but also are bound by Great Power competition, especially as tensions rise in the Indo-Pacific region. PRC fears about U.S. containment policies and U.S. alarm over PRC revisionist tendencies and authoritarian approaches to regional issues focus global attention on acute issues and diminish diplomatic exchanges aimed to achieve a global community and stability among world powers.

Since policy and actions help underpin the current rules-based international order, the United States must work within the established framework to uphold international norms and secure its interests in Antarctica. This requires the United States to take steps to ensure that other nations with interests in the southern continent will continue to be free to act when the time comes, whether that time is tomorrow, 2048, or further into the future. Focused and intentional support to the ATS regime through a whole-of-government approach integrating the three legs of the State Department, NSF, and DOD should help ensure that U.S. policy and scientific endeavors in Antarctica support and are supported by DOD strategic campaigning to limit malign influences and prevent attempts to subvert the treaty. When the time comes to decide the fate of Antarctica, the United States, at a minimum, must ensure each nation is free to vote for its interests without interference or coercion from the PRC and prevent the PRC’s presence on the continent from rendering any decision by the international community meaningless.

Historically, the United States is no stranger to strategic competition or cooperation in Antarctica. During the Cold War, ATCM members avoided conflict and promoted cooperation in Antarctica by reinforcing the sovereignty of science, the devotion to the peaceful use of the continent, and the legitimacy of the ATS. Although the United States may have lost that focus after the Cold War, it still has the necessary institutions, policies, and resources to do so again if those entities are integrated for unity of effort. The novel threat the PRC poses to the ATS is its efforts to legitimize PRC-centric revisions and gain a leadership role in the international governance of the continent.⁶⁷

The ATS, through 70 years of U.S. leadership, is well positioned to repel such efforts because of the deep and abiding commitment of most ATCM members to scientific cooperation and the peaceful use of the continent for the betterment of humankind, but it is vulnerable to modern influences stemming from strategic competition. Ultimately, Antarctica’s place in the strategic environment rests on the ability of the United States to unite its efforts across the whole of government to inspire and lead the international community, including the PRC, toward a shared vision of cooperation in Antarctica. JFQ

Notes

¹ “The Antarctic Treaty,” Secretariat of the Antarctic Treaty, https://www.ats.aq/e/antarctic_treaty.html; “ATCM and Other Meetings,” Secretariat of the Antarctic Treaty, <https://www.ats.aq/e/atcm.html>.

² Nong Hong, “China and the Antarctic: Presence, Policy, Perception, and Public Diplomacy,” *Marine Policy* 134 (December 2021), 4, <https://doi.org/10.1016/j.marpol.2021.104779>.

³ Rebecca Strating, “Assessing the Maritime ‘Rules-Based Order’ in Antarctica,” *Australian Journal of International Affairs* 76, no. 3 (May 2022), 291, <https://doi.org/10.1080/10357718.2022.2056874>.

⁴ “The Antarctic Treaty,” Secretariat of the Antarctic Treaty.

⁵ “ATCM and Other Meetings.”

⁶ “The Antarctic Treaty,” National Science Foundation (NSF), <https://www.nsf.gov/geo/opp/antarct/anttrty.jsp>.

⁷ Ryan Burke and Jahara Matisek, “The Polar Trap: China, Russia, and American Power in the Arctic and Antarctica,” *Journal of Indo-Pacific Affairs*, October 25, 2021, <https://www.airuniversity.af.edu/JIPA/Display/Article/2820739/the-polar-trap-china-russia-and-american-power-in-the-arctic-and-antarctica/>.

⁸ “Related Agreements,” Secretariat of the Antarctic Treaty, <https://www.ats.aq/e/related.html>.

⁹ Ibid.

¹⁰ Pervaze A. Sheikh, Bruce Vaughn, and Kezee Procita, *Antarctica: Overview of Geopolitical and Environmental Issues*, R46708 (Washington, DC: Congressional Research Service, March 10, 2021), <https://crsreports.congress.gov/product/pdf/R/R46708>.

¹¹ James Mielke, *Potential Mineral Resources in Antarctica and the Antarctic Minerals Convention* (Washington, DC: Congressional Research Service, February 5, 1990), 19.

¹² Christopher D. Booth, “From Kashmir to the Land of Ice and Snow: Countering China in Antarctica Through Combined Training With India,” *Modern War Institute*, June 9, 2021, <https://mwi.usma.edu/from-kashmir-to-the-land-of-ice-and-snow-countering-china-in-antarctica-through-combined-training-with-india/>.

¹³ “In Pic: China’s 5th Research Station in Antarctic on Inexpressible Island,” Xinhua, February 8, 2018, http://www.xinhuanet.com/english/2018-02/08/c_136958901.htm; Zhao Lei, “China Opens Fifth Antarctic Research Station,” *China Daily*, February 7, 2024.

¹⁴ Mengzhu Zhang and Marcus Haward, “The Chinese Antarctic Science Programme: Origins and Development,” *Antarctic Science* 34, no. 2 (April 2022), 193, <https://doi.org/10.1017/S095410202200013X>.

¹⁵ Anne-Marie Brady, “China and Antarctica,” presentation at the Wilson Center, Washington, DC, May 13, 2014, <https://www.wilsoncenter.org/event/china-and-antarctica>.

¹⁶ “ATCM and Other Meetings.”

¹⁷ Zhang and Haward, “The Chinese Antarctic Science Programme,” 192.

¹⁸ Hong, “China and the Antarctic,” 2.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² Nengye Liu, “What Are China’s Intentions in Antarctica?” *The Diplomat*, June 14, 2019, <https://thediplomat.com/2019/06/what-are-chinas-intentions-in-antarctica/>.

²³ Heidi Holz et al., *Exploring the Relationship Between China’s Investment in the Arctic and Its National Strategy* (Arlington, VA: CNA, January 2022), 4, <https://www.cna.org/reports/2022/01/exploring-the->

relationship-between-chinas-investment-in-the-arctic-and-its-national-strategy.

²⁴ *National Defence: Defence Strategic Review 2023* (Canberra: Australian Government, 2023), 23, <https://www.defence.gov.au/about/reviews-inquiries/defence-strategic-review>; *Defence Assessment 2021: He Moana Pukepuke e Ekengia e Te Waka* (Wellington: New Zealand Ministry of Defence, 2021), 14, <https://www.defence.govt.nz/publications/publication/defence-assessment-2021>.

²⁵ Hong, "China and the Antarctic," 2.

²⁶ Anne-Marie Brady, *China's Expanding Antarctic Interests: Implications for Australia*, Special Report (Barton, ACT: Australian Strategic Policy Institute, August 2017), 15, <https://www.aspi.org.au/report/chinas-expanding-interests-antarctica>.

²⁷ *Ibid.*, 15.

²⁸ "The Antarctic Treaty," NSF.

²⁹ Gillian Triggs, "The Antarctic Treaty Regime: A Workable Compromise or a Purgatory of Ambiguity," *Case Western Reserve Journal of International Law* 17, no. 2 (1985), <https://scholarlycommons.law.case.edu/jil/vol17/iss2/2>; Christopher C. Joyner, "Recommended Measures Under the Antarctic Treaty: Hardening Compliance With Soft International Law," *Michigan Journal of International Law* 19, no. 2 (1998), <https://repository.law.umich.edu/mjil/vol19/iss2/5>.

³⁰ Hong, "China and the Antarctic," 4.

³¹ Jeffrey McGee, Bruno Arpi, and Andrew Jackson, "'Logrolling' in Antarctic Governance: Limits and Opportunities," *Polar Record* 56 (December 2, 2020), 1–11, <https://doi.org/10.1017/S003224742000039X>.

³² Hong, "China and the Antarctic," 2.

³³ *Ibid.*, 6.

³⁴ *Ibid.*, 3.

³⁵ "Antarctica—Past and Present," in *The United States in Antarctica: Report of the U.S. Antarctic Program External Panel* (Washington, DC: NSF, 1997), 17–25, <https://www.nsf.gov/pubs/1997/antpanel/antpan05.pdf>.

³⁶ "Exploring the Antarctic 1840: The Wilkes Expedition," Naval History and Heritage Command, September 12, 2017, <https://www.history.navy.mil/content/history/nhhc/research/library/online-reading-room/title-list-alphabetically/e/exploring-the-antarctic-1840-the-wilkes-expedition.html>.

³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ "Antarctica—Past and Present."

⁴⁰ "U.S. Antarctic Policy—Historical Perspective," NSF, <https://www.nsf.gov/geo/opp/antarct/usaphist.jsp>. The original 12 countries conducting research as part of the International Geophysical Year were Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa,

the Soviet Union, the United Kingdom, and the United States.

⁴¹ "The Antarctic Treaty Explained," British Antarctic Survey, <https://www.bas.ac.uk/about/antarctica/the-antarctic-treaty/the-antarctic-treaty-explained/>.

⁴² Sanjay Chaturvedi, "Antarctica," in *International Encyclopedia of Human Geography*, ed. Rob Kitchin and Nigel Thrift (Oxford, UK: Elsevier, 2009), 134.

⁴³ "U.S. Policy for Antarctica," NSF, <https://www.nsf.gov/geo/opp/antarct/uspolicy.jsp>.

⁴⁴ "Antarctic Region," Department of State, <https://www.state.gov/key-topics-office-of-ocean-and-polar-affairs/antarctic/>.

⁴⁵ "U.S. Antarctic Program," NSF, January 10, 2013, https://www.nsf.gov/news/news_summ.jsp?cntn_id=102869.

⁴⁶ "Antarctica—Past and Present."

⁴⁷ "Antarctic Region."

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

⁵⁰ "About USAP Participants," U.S. Antarctic Program, NSF, <https://www.usap.gov/aboutusapparticipants/>.

⁵¹ Mandy Mayfield, "Senior Officer Concerned About Competition Extending to Antarctic," *National Defense Magazine*, July 30, 2019, <https://www.nationaldefensemagazine.org/articles/2019/7/30/air-force-commander-concerned-about-great-power-competition-extending-to-antarctic>.

⁵² "Statement of Admiral John C. Aquilino, U.S. Navy Commander, U.S. Indo-Pacific Command Before the House Armed Services Committee on U.S. Indo-Pacific Command Posture," 117th Cong., 2nd sess., March 9, 2022, <https://docs.house.gov/meetings/as/as00/20220309/114487/hhrg-117-as00-wstate-aquilinoj-20220309.pdf>.

⁵³ *Military and Security Developments Involving the People's Republic of China: Annual Report to Congress* (Washington, DC: Office of the Secretary of Defense, 2022), 76, 91, 162, <https://media.defense.gov/2022/Nov/29/2003122279/-1/-1/1/2022-military-and-security-developments-involving-the-peoples-republic-of-china.pdf>.

⁵⁴ *Ibid.*

⁵⁵ Brady, "China's Expanding Antarctic Interests," 7.

⁵⁶ Jim Garamore, "DOD Establishes Arctic Strategy and Global Resilience Office," *DOD News*, September 27, 2022, <https://www.defense.gov/News/News-Stories/Article/Article/3171173/dod-establishes-arctic-strategy-and-global-resilience-office/>.

⁵⁷ Harry R. Yarger, "Toward a Theory of Strategy: Art Lykke and the Army War College Strategy Model," in *U.S. Army War College Guide to National Security Policy and Strategy*, 2nd ed., ed. J. Boone Bartholomees, Jr. (Carlisle, PA: U.S. Army War College

Press, June 2006), 107–112, <https://press.armywarcollege.edu/cgi/viewcontent.cgi?article=1077&context=monographs>.

⁵⁸ "Office of Science and Technology Policy," The White House, <https://www.whitehouse.gov/ostp/>.

⁵⁹ Memorandum 6646, *President's Memorandum Regarding Antarctica* (Washington, DC: The White House, February 5, 1982), https://www.nsf.gov/geo/opp/ant/memo_6646.jsp.

⁶⁰ "1946: Operation HIGH JUMP," U.S. Coast Guard Aviation History, <https://cgaviationhistory.org/1946-operation-high-jump/>.

⁶¹ The following nations are both Antarctica Treaty Consultative Meeting (ATCM) members and treaty allies with the United States: Australia, Belgium, Bulgaria, the Czech Republic, Finland, France, Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Poland, the Republic of Korea, Spain, and the United Kingdom. The United States has healthy military-to-military relationships through the National Guard's State Partnership Program with all other ATCM countries except for China, India, and the Russian Federation. The United States regularly has military relationships with Sweden and India through bilateral and multilateral exercises.

⁶² *National Security Strategy* (Washington, DC: The White House, October 2022), 16–18; and *2022 National Defense Strategy of the United States of America* (Washington, DC: Department of Defense, 2022), 2, 14.

⁶³ Olga Krasnyak, "How U.S.-Soviet Scientific and Technical Exchanges Helped End the Cold War," *American Diplomacy*, November 2019, <https://americandiplomacy.web.unc.edu/2019/11/how-u-s-soviet-scientific-and-technical-exchanges-helped-end-the-cold-war/>; "Text of Lacy-Zaroubin Agreement, January 27, 1958," *Passing Through the Iron Curtain: Librarians and the U.S.-Soviet Cultural Exchange, 1950–1965*, <https://librariesandcoldwarculturalexchange.wordpress.com/text-of-lacy-zaroubin-agreement-january-27-1958/>.

⁶⁴ *National Security Strategy*, 9.

⁶⁵ Rush Doshi, *The Long Game: China's Grand Strategy to Displace American Order* (New York: Oxford University Press, 2021), 279.

⁶⁶ Holz et al., *Exploring the Relationship Between China's Investment in the Arctic and Its National Strategy*, 3.

⁶⁷ Doshi, *The Long Game*, 282.