

Will the Great Game move to the Arctic by 2050?

Who are the stakeholders in the Arctic Region?

Melting ice is not the only thing to watch for in the Arctic region. Geopolitical stakeholders are positioning to take advantage of the newly accessible natural resources, fisheries and transportation routes in the high north, sending a signal that the “The Great Game” could be shifting to the Arctic.

The “Great Game,” describes the power struggle between great nations as a “game of sorts.” Originally it represented the geopolitical struggle between British and Russian Empires over territories, transit routes and natural resources in Central Asia. With the collapse of the Soviet Union in the late 1990’s, a “New Great Game” seemed to emerge, as Western Powers strategically befriended the oil and resources rich nations of the former Soviet Republics. Again, Central Asia became the center of geopolitical strategy and conflict, and this time with new players; Russia, China and North America.

Currently, China’s Belt and Road Initiative (BRI) is expanding beyond Central Asia through the “Ice Silk Road”, while Russia continues to invest heavily in transportation infrastructure to support the opening trade routes in the Arctic region. There are signals that The Great Game is quickly moving outside the sphere of the Central Asian Heartland, all the way to the High North.

As ice-free zones in the Arctic circle continue to widen year after year, Russia, China, North American and European nations are quickly mapping out and implementing strategies to gain access to undiscovered natural resources, fisheries, trade routes, and strategic geographical and military positions. Unlike the original Great Game, potential conflicts may be mitigated by The Arctic Council, which was created in 1996 as a forum for promoting cooperation, coordination, and interaction among the Arctic states. On the surface it seems nations are cultivating a collaborative environment based on the rule of law, however, several nations have already taken strategic steps to secure and expand their piece of the Arctic, increasing the potential for conflict in the region.

Russia claims that the Northern Sea Route (NSR), which connects Northeast Asia with Northwestern Europe, has been historically established as part of the Russian Federation. With the NSR opening, transportation would be diverted from the Suez Canal, reducing travel time from 15 to 10 days. The NSR would also provide Russia with direct access to the Pacific Ocean, increasing the viability of extracting and exporting oil and gas and other natural resources from the Arctic.

China is forming strategic bilateral partnerships to expand its sphere of influence on the region. China claims to be a “near Arctic state” and in 2018 unveiled the “Polar Silk Road,” an extension of the BRI. China continues to legitimize itself as an important player in the Arctic

region through financial investments in Russia and expanding scientific research in Norway and Iceland.

The Western Powers are taking a more cautious and measured approach in the Arctic region. North American nations have established a 5-year moratorium (ending in 2021) on offshore drilling in the Arctic, due to growing environmental concerns and a shift in focus on renewable energy sources. The United States and Canada also favor stakeholder cooperation to ensure that transit routes remain open and safe for international trade.

Canada, Denmark and Russia have made well-researched claims of ownership of the North Pole, with the intention of extending their Exclusive Economic Zone (EEZ) to secure the future rights to newly accessible natural resources and fisheries. Norway has also petitioned the U.N. to extend their EEZ. Six Arctic indigenous communities have Permanent Participation Status with the Arctic Council. However, without a stakeholder nation champion, the role that Indigenous people play in shaping Arctic geopolitics may be severely limited.

As the melting ice opens up the Arctic region to increased exploration and exploitation, geopolitics in the Arctic region will continue to heat. Although Russia, China, North America and European nations claim to favor a rule-of-law based approach to Arctic development, there are signals that the Great Game is being played in the Arctic, with increasing conflict over stakes in future transit routes, fisheries and natural resources as they become more accessible.

What are the environmental changes fueling the shift?

It is estimated that the Arctic could experience ice-free summers as early as 2050. However, the changes in the region are not uniform, resulting in an uneven distribution of stakeholder nation accessibility to trade routes, fisheries, and trillions of dollars in natural resources. Although the Arctic is considered a single region, in reality it is a climate with diverse zones. The maritime areas are opening at a faster rate, specifically along the coasts of Norway and Russia. One of the more important geopolitical consequences of this uneven ice-melting is that the Northern Sea Route (NSR), which links Northeast Asia and Northwestern Europe, is rapidly increasing in accessibility. This will reduce shipping times between Northeast Asia and Northeastern North America via the Greenland, Iceland, and the United Kingdom (GIUK) Gap.

The opening of the NSR has allowed Russia and Norway to expand their Arctic operations over the past decade with investments in gas and oil infrastructure, deep-water ports, and arctic ships, including ice-breakers, that are essential for navigating the iceberg populated seas. These developments increase the potential for the NSR to become a viable alternative to the Suez Canal trade route, and could cut transportation times from 15 to 10 days.

On the opposite side of the circle, the Northwest Passage (NWP), primarily linking Canada, USA and Northeast Asia, is opening at a slower rate. Infrastructure Investment and resource

accessibility in the region is more limited. Opening of the NWP, or even a Transpolar Passage, would benefit China's trade operations and increase its role in the region. The uneven pace of ice melting favors investments in the Russian and Norwegian owned regions, with investment in North American regions remaining more uncertain.

Even with the increase in ice-free zones in the Arctic and the promise of shorter transportation times, the steady increase in vessels utilizing the routes must factor in new costs and risks into the investment equation. Access to new routes will be subject to transit and insurance fees, depend heavily on ice-breaker escorts and infrastructure, and will have limited search and rescue support. At the same time, the Arctic routes offer shipping companies the opportunity to utilize larger shipping vessels. Currently, ship capacity is constrained by the Straits of Malacca, the world's second busiest waterway. With larger shipping vessels utilizing the Arctic sea routes, companies could offset the increase in costs by reducing the freight cost per unit.

Along with continued opening of new sea routes, stakeholder nations are also looking for opportunities to extend their Exclusive Economic Zone (EEZ) to claim a future stake in the resources hidden below the melting ice. It is estimated that 13 percent of the world's undiscovered oil and 30 percent of its undiscovered gas are in the Arctic. Current Arctic mining operations of minerals, precious metals, and construction materials (rock, stone, sand, and gravel) could also expand.

Due to warmer waters pushing into the High North and changes in nutrient conditions and water currents, Arctic fisheries are transforming. Some harvest sites are experiencing an increase in stock productivity, while others are seeing a decline as fish migrate north to find colder water. For example, Greenland has seen an influx of Bluefin tuna and mackerel into their fishing region, boosting their export revenue. With the melting ice, fishing vessels will be able to move further north to follow the changing migration patterns, but this could result in disputes over EEZ lines. If history repeats itself, we could see Cod War like scenarios.

If the ice continues to melt in the Arctic, competition in the region is more likely to be about access to transportation routes, oil/gas deposits, precious natural resources and fisheries, than it is about claiming new territory. The borders of stakeholder nations in the arctic region are well established. However, current organization structures, such as the Arctic Council and the U.N. Convention on the Law of the Sea (UNCLOS), are weak buffers of potential Great Game conflicts.

The Arctic region is both an environmentally and geopolitically complex system; melting ice does not equal decreased costs and accessibility does not equal economic feasibility. A reversal of ice-melting trends would rapidly shift the trajectory of infrastructure development, sea route access, and fish migration patterns. And the hunt for trillions of dollars of undiscovered natural resources beneath the melting ice could be another Eldorado.

What is the continued future trajectory of the region?

The Arctic region is currently demilitarized, largely un-commercialized and has limited infrastructure. Currently the Arctic Council has limited ability to balance new economic developments, environmental protection, and geopolitical competition. The council's role will remain limited with a focus on ensuring that transportation, resource extraction, and scientific exploration remain safe and open. However, if an expanded scope of governance does not emerge in the region, there will be growing tensions over military exercises, resource ownership, and environmental stewardship.

Arctic Sea Route usage will continue to grow, especially along the Northern Sea Route (NSR) and Greenland, Iceland, and the United Kingdom (GIUK) Gap. Russia will expand its already dominant capabilities by increasing the capacity of sea routes to harbor more foreign flag ships. Cooperation between Russia and China, as part of the Arctic Silk Road, will increase shipping infrastructure development and resource extraction projects. Shipping transit fees will allow Russia to diversify its economy away from energy resources and circumvent US sanctions. As the Northwest Passage and the Northern Sea Routes open, shipping will be diverted away from the Panama Canal and Suez Canal trade routes, resulting in decreased shipping time and cost from East to West coast of US, and from Northeast Asia into Northern Europe, US, and Canada.

Military operations will expand to increase "security" in the region. The US will seek a renewed military interest in the Bering Straits and the GIUK as strategic choke points in response to increased Russian and Chinese activity. This will require the US to develop new military bases and vessels, while increasing military cooperation with their allies. Other Arctic states will need to adjust and adapt to the growing tension, increasing the likelihood that NATO will be invited by Norway and Iceland to play a more significant role in maintaining stability in the region. Rising military tensions will be buffered by economic and natural resource interests.

Resource extraction is currently constrained by profitability, limited Infrastructure, and safety concerns. Ice-free summers will allow the development of new infrastructure to support mining operations. Low oil costs, larger ships, and decreased shipping time will increase the financial and logistical feasibility of natural resource extraction.

The drive for oil and gas resources in the region will continue to be stalled by a complex cost-benefit analysis equation. Globally, countries will expand their renewable energy demand, reducing the pressures on oil and gas production. Arctic resources will be an essential part of Russian geopolitical strategy and outside investment will expand their oil and gas developments. These developments will initially be slowed by environmental concerns and western sanctions, but will speed up as Russia expands its commercial infrastructure in the region.

Fisheries will continue to adapt to the warming waters, driving fish north. Fishing vessels will brave climate challenges to chase fish migrations, resulting in conflicts in EEZ. The Increase in fisheries micro-conflicts will challenge the durability of the Arctic Council.

International cooperation on scientific research in the region will grow in importance. Scientific exploration will increase the development of polar-fit stations, technology and communication systems. The strategic location of the Arctic for satellite access will lead to the development of polar stations for collecting intelligence, surveillance, and reconnaissance data. More accurate science and data will support infrastructure development and investment decisions, while also growing the connection between science, business and policy. China will become a bigger player in the region as it expands its Arctic research partnerships.

Publicly Arctic nations will continue to support a de-politicized, de-militarized and consensus-based approach to activity in the region. At the same time, strategic competition will increase as military exercises expand, commercial infrastructure develops, economic and scientific partnerships are formed, and EEZ resource ownership is disputed. Open communication and open seas, within a backdrop of increasing military presence, will be essential ingredients in maintaining stability and security in the region. If cooperation remains beneficial and increases resilience, then it will be sustained. If not, then geo-political competition could act to destabilize the Arctic region.

What emerging factors could displace the current geopolitical system?

The Arctic is currently one of the most stable geopolitical regions in the world, supporting both bilateral agreements and multinational cooperation. As the Great Game moves to the high north, there will be an emerging background of strategic competition. In its current form, the Arctic Council (AC) has limited ability to ensure that cooperation and coordination are sustained. However, expansion or contraction of the AC's role could have a destabilizing effect on the region and lead to the displacement of the current geopolitical system.

A stronger AC could become an authority for mitigating geopolitical competition, but this would require Arctic Nations to give up some of their unilateral and even bilateral pursuits, while also being constrained by legal agreements. The strategic and economic opportunities in the Arctic are far too significant for US and Russia to support the development of a superior legal authority. Oversight of military operations is a strict no-go for the US and could lead to the US distancing itself from the AC. This would grant Russia and China more political power to pursue their interests in the region.

If a stronger AC uses its power to manage resource extraction or sea routes, it would see push back from Russia, who has already invested heavily in the region as part of their national strategy. Further, because Russia is a political outlier, the Allied nations could use the AC as a

means to constrain Russian efforts. This might force Russia to take a more enclosed approach in the Arctic.

In contrast, decreasing the AC's role could also undermine the geopolitical stability in the region. Funding for the AC is already sparse, which severely constrains its ability to operate at full capacity. If the role of the AC is reduced further, then it would become irrelevant. Devoid of a collaborative forum, the Arctic Nations could split into two camps: the US, Canada, and Western Europe on one side, and Russia and China on the other. An open Arctic would begin to enclose, starting a slippery slope to a Polar Cold War.

Even if the AC's current role is sustained, other factors could lead to the displacement of the current system. As bilateral agreements between Russia and China continue to grow, or even expand into military cooperation, western nations could seek economic, political, and military pressures that limit Russia-China activities. China's Polar Silk Road initiatives will lead to the expansion of bilateral agreements with European nations, while also increasing tension with the US.

Russian military operations will create more tension in the region, but the US and Western Europe will be limited in their ability to respond. Although the US has the most powerful military in the world, its ability to operate in the region is limited because it has not invested in Arctic ports or polar-fit military bases and vessels, which take years to develop. NATO's interest in the region could also increase, alienating Russia and China while hastening the militarization and destabilization of the region.

As the great game moves to the Arctic, competition in the region will heat up. Arctic nations will have to choose between an Arctic that is open for the common good, as it is now, or an Arctic that is enclosed and focused on national interests. Maintaining the Arctic as a common good could lead to the call for a stronger governing body in the Arctic region, especially by smaller Arctic Nations and observer Nations. However, Russia's continued petitioning to the UN to increase its territorial claim is a signal that a more enclosed Arctic will exist in the future.

What alternative could arise?

Sustaining the current geopolitical system in the Arctic will become increasingly challenging. Alternative scenarios will be shaped by continued collaboration and/or growing strategic competition. Regardless of what emerges, the Arctic Council's role in the region might be forced to either expand or become irrelevant. Five scenarios help frame what could arise in the region: (1) Sustained Current State, (2) Polar Cold War (3) Diplomacy Triumphs (4) Polar Commons, and (5) The Bering Plug.

A sustained current state would require the Arctic Nations to agree to keeping the Arctic open for the common good, while also yielding competition in favor of collaboration. However, the

Arctic Council has limited powers to ensure that collaboration is sustained. Even if Arctic Nations verbally commit to cooperation, competition over sea routes and natural resources will continue to rise. The Arctic Council does not have the political or financial resources to mitigate the growing tension in the region.

A Polar Cold War might be on the Horizon. The US claim that the Arctic is in an “era of strategic competition” is a signal that tensions will grow in the region. Although the US is lagging behind in Arctic military developments it could shift course and seek to expand military operations in response to Russian and Chinese activities. China’s maritime access has several choke points, but these will be alleviated as scientific and commercial BRI partnerships with Russia, Finland and Iceland continue to expand. These partnerships could also lay the foundation for a wider military strategy and China’s Beidou-3 Satellite system is already in place to support the navigation of both missiles and Arctic ships. Russia’s military developments will expand to include the revitalization of cold war military installations, while new airbases, radar stations and monitoring systems will bolster Russia’s already strong maritime presence in the Arctic. As the Polar Cold War scenario unfolds, the region will become militarized and Arctic Nations will seek to enclose their territories. The Arctic Council will play an increasingly smaller role in the region and bilateral and multilateral agreements will dominate.

A Diplomacy Triumphs scenario could emerge if the Arctic Council, or another multinational organization, is granted legal political powers to settle disputes and govern commercial and military operations in the region. In this scenario, as Arctic Nations pursue their national strategies, the tension in the region increases. However, diplomacy and legally binding cooperation keep things stable. Friction between Russia and US would become a norm, as Russia seeks to maintain its rights to a large portion of the Arctic and enclose its sea routes and territory.

To sustain a Polar Commons, the Arctic Nations agree to expand the role of the Arctic Circle to include legal governance over Arctic Circle developments. Military operations take the backseat to economic and scientific collaboration and cooperation. China expands the “Polar Silk Road” through bilateral and multilateral partnerships. The increased oversight and governance by the Arctic Council alienates Russia or the US, who are resistant to give up their rights to act unilaterally. In general, the Arctic is unenclosed, sea routes are open for international use, and economic developments are cooperative.

The rate of climate change and uneven ice melt could result in wildcard scenarios. Tides and wind could continue to create a much colder, ice covered Bering Strait. This Bering Plug is a growing possibility that would make access to, and development of the Northern Sea Route and North West Passage uncertain. Asian Nations would have inconsistent access to the new shipping route, decreasing China’s maritime interests in the region. This would reduce Russia’s

profits from transportation tariffs and curtail Russia-China developmental partnerships, shifting focus to Russia-European Partnerships. The Bering Plug would also reduce Russia-US tension that is created by maritime boundary lines and military operations through the straights. Overall, a Bering Plug might reduce some of the competition and strategic positioning in the region. If this is the case, then the current role of the Arctic Council might look similar for several years into the future.

Regardless, The Arctic region will continue to change in both climate and geopolitical landscapes. The emergence of these alternative scenarios will depend on the desired future outcomes of the Arctic Nations and the interplay of their national strategies.

What are stakeholders' envisioned futures and their elements?

On the surface, Arctic Nations envision an open and cooperative high north. However, some national strategies paint a different picture.

Russia's arctic strategy is one of "strategic-rule breaking," envisioning the expansion of their economic activities and military presence in the region, along with increased control over Arctic shipping routes. Continued financial partnerships with China will allow the development of infrastructure for LNG and Oil, and other natural resource extraction projects. Russia will also establish more infrastructure and control over transportation along the NSR to capitalize on the economic gains from transportation fees. Investments in rebuilding Soviet-era military facilities and building new bases along the northern coastal settlements and islands will grow. This will slowly fortify an Anti-Access/Area Denial (A2/AD) strategy, which extends around Russia to include the Baltic and Black seas, fulfilling the craving for access to warm water ports since the time of the Czars.

China's arctic strategy is "opportunistic," envisioning continued expansion of the Polar Silk Road as part of the BRI within an open and cooperative Arctic. This means the continued development of unilateral partnerships on scientific research with Arctic Nations, sea port infrastructure development with Russia along the NSR, and resource extraction with Russia and Greenland. China will also pursue the development of Arctic worthy vessels, like ice-breakers, and overtime a growing military presence to protect their interests in the region.

The US arctic strategy is "sustain rule-of-law", envisioning an open and cooperative Arctic, within a growing context of strategic competition. Although there is growing US military concern over Russian and Chinese developments, US investment will continue to lag behind. The US is hoping that rule of law and climate challenges will limit the militarization of the Arctic region. However, as melting ice thins the barriers between US and Russian territories, strategic military operations and cooperation with allies will increase. The US will continue to take a reactive role to Russia and China developments, while slowly increasing investment in military, economic, and transportation infrastructure projects in the region.

Canada's arctic strategy is "environmental and economic balance," envisioning an open and cooperative Arctic that is guided by a shared vision. This vision includes, monitoring climate change, safeguarding the environment, sustainable development, open sea routes, and economic cooperation. Canada is shifting away from Arctic oil development and focusing on developing infrastructure and economic opportunities that support their northern indigenous population. Canada will also work to strengthen the mutual-defense initiatives with the US.

The European strategy is "preservation and sustainability," with a vision that is along the same lines as Canada. European nations will expand their unilateral cooperation with Russia and China, especially in the areas of scientific research, resource extraction, and sea route development. However, some of these unilateral agreements and economic activities will lead to growing tensions. To mitigate conflict, the European nations might envision a stronger Arctic Council or the development of a legal governing body in the Arctic.

As Arctic nations seek to realize their visions and pursue national military, economic, and political interests, the trade-offs they are willing to make will determine if the region remains open and cooperative or transitions into to closed and conflicting.

What future do the Arctic stakeholders want?

Russia will utilize "strategic rule breaking" to realize a vision of arctic dominance by expanding their EEZ and increasingly enclose the Arctic region. Not only does Russia claim the largest area of Arctic coastline, but ice in their region is melting faster than in other areas. Russia will exploit this early access to natural resources, while also taking the opportunity to control trade sea routes for economic gain. Russia will attempt to build a strong military presence in the region to fortify their resources and sea routes, while also controlling the airspace. Economy and security take precedence over sustainability and cooperation. Overall the Arctic Council remains a weak force of governance and Russia is free to do as it pleases with its portion of the arctic.

China will utilize the "opportunistic" strategy to slowly claim more rights to the Arctic region as it expands the BRI and builds the Polar Silk Road. This will include access to oil, gas, mineral resources, research, fishing and tourism in the region through unilateral partnerships. Further, China sees the Arctic as its 'golden route' in shipping and will develop the military, technology, and agreements required to secure its ability to ship goods through the region. China will develop a growing co-dependence with Russia, while also advocating for an open and cooperative arctic.

The US vision of the arctic relies on the hope that "rule-of-law" and climate challenges will disrupt Russia and China ambitions. The US vision is that the Arctic Nations continue to have a strong agreement that the region remain open and cooperative, while the Arctic Council

remains weak. This allows the US to retain the right to unilateral actions in response to strategic competition with Russia and China. However, the US wants to keep proactive investment in the Arctic low. The hope is that the climate will continue to challenge the militarization and development of the region, slowing Russia and China access to strategic global positions.

Canada's vision will be realized through a strategy of "environmental and economic balance" and further alignment with European nations. Canada will continue to seek an open and cooperative Arctic that is stabilized by a more proactive Arctic Council. Canada will pursue resource extracting within the context of building more economically sustainable indigenous communities, protecting the natural environment, and collaborating on climate change mitigation. Multilateral military agreements and alliances, especially with the US, will support a Canada First defense strategy and Canadian Arctic Sovereignty.

A general European vision is realized through a strategy of "preservation and sustainability." European nations support the development of a more proactive Arctic Council that can develop into a legal governing body. A more powerful third-party actor in the region would allow the rule-of-law to be enforced. This will ensure that cooperation on climate change mitigation, sustainable resource extraction, safe and open transportation, and arctic peace, can be preserved.

Although the visions of the Arctic Nations have some overlap and consensus, there is also the potential for future divergence that leads to conflict. Russia and China are the key actors in the region because they have strong visions along with access and resources to explore and exploit. Without proactive collaboration and a stronger governing body in the region, the US, Canada, and European nations will be forced to take reactive measures. In general, as nations reach their milestones, the other nations will be forced to adapt or push back.

What milestones alert us to these futures?

There are some key milestones that can serve as guideposts for determining a nations success in the Arctic region as they move from the baseline to the preferred future.

One of the key milestones for Russia would be 5-10% of shipping rerouted through the NSR. This will diversify Russia's economy and increase their control in the region. A pathway to that metric requires a consistent trend of melting ice in the region, which will support an increase in investor confidence in commercial operations. It is predicted that an ice free Arctic could occur between 2030 and 2040. Ice is melting faster along the Northern Sea Route than other parts of the Arctic. If this trend continues we will see more investor confidence in Russian transportation infrastructure and natural resource extraction. Although unlikely, another key milestone to look for would be a move to approve an extension of Russia's EEZ all the way to the center of the high north.

One of the key milestones for China's success in the region is an increase in Chinese yuan flowing into the region. China has already invested billions into the region to support the development of a Polar Silk Road. The flow of yuan into the region will be supported through bilateral partnerships. Some of the biggest financial investments have occurred in Iceland, Greenland, Norway and, to a large extent, Russia. A diversity of long-term bilateral agreements will secure China's place in the region as a near-arctic state. As Chinese money increases its flow into the Arctic, China will become more deeply embedded in the geopolitics of the region. Another sign that there is a trend towards reaching this milestone is an increase in Chinese shipping and icebreaker activity in the region supported by its satellite technology.

A key milestone to look for that supports US success is a reversal of climate change and a decrease of melting ice in the region. This would hamper Russian and Chinese developments, while also reducing the need for a stronger Arctic Council. This would also maintain the secure ice wall between Russia and the US, blocking a transpolar route.

A key milestone for European Nations would be a strong Arctic Council to increase the capacity and capability to create legally binding agreements in the region. The path to this milestone might require an increase in multilateral cooperation to keep the Arctic open, sustainable and demilitarized. This milestone could also be inspired by increase conflict over EEZ, fisheries, and strategic military developments. To prevent these conflicts from escalating, the European nations might demand stronger governance in the region.

A key milestone for Canadian success would be for the United Nations Convention on the Law of the Sea (UNCLOS) to confirm recognition of the outer limits of the continental shelf in the Arctic Ocean. While Canada supports an open and cooperative Arctic, it also wants to maintain sovereignty in the region. Canada aligns with the European Nations, supporting sustainable and environmentally friendly economic developments. These aligned goals could increase support for a favorable UNCLOS ruling and if a stronger Arctic Council develops it could also move to recognize Canada's desired future.

As nations strive for their preferred futures in the Arctic, not all these milestones will be reached. There will be a dynamic balance of powers through trade-offs, negotiations, and strategic conflicts. It will be difficult to define which nations are "winning" and which nations are "losing."

Who are the stakeholders of these alternative futures?

As Arctic nations pursue their interests, stakeholder relevance and opportunities will depend on which futures emerge. We can image four alternative futures that will shape the stakeholder landscape in the region: (1) A White Arctic with no change in ice levels, or a reversal of ice melt, leading to a decrease in access to the region. (2) A Blue Arctic featuring an increase in open and navigable waters governed by the rule of law (3) A Red Arctic featuring open waters

within a context of strategic competition and conflict, and (4) A Green Arctic featuring open waters within a context of sustainable economic development and cooperation.

If the ice melt stalls, or shows signs of reversal, we will see a White Arctic future emerge. Current stakeholders will dominate the landscape with little change in power dynamics. Financial investment and overall risk will be extremely high for new stakeholders to venture into the region. Further, a trend of ice melt reversal would make future investments in the region and the promises of past investments less tenable. Overall, very few stakeholders would be in a position to make investments in the region. Russia would be an exception simply because they control the largest portion of the Arctic circle, but even their efforts would be stalled.

If the ice melt continues on the current trend, it will result in a Blue Arctic future with longer periods of ice-free waters. In the Blue Arctic rule-of-law is the norm and the Arctic Council is a relevant power. Russian transportation and natural resources extraction companies, and their partners become larger stakeholders in the region. In general, the shipping industry takes a larger and long-term stake in the region. Chinese research and investment partnerships expand their access in the region. US stakeholders continue to lag behind in their efforts to access the region. Canada solidifies control over their portion of the Arctic and increases indigenous people's relevance to their region. Military stakeholder access will be limited by agreed upon rules and cooperation efforts.

The Blue Arctic could easily slip into a Red Arctic future if the rule-of-law is compromised by strategic competition and conflict. If this future emerges, the military could become the dominate stakeholder in the region. Russia will extend its control over the shipping routes and form new partnerships with China to invest in closing off a portion of the Arctic. The US will be forced to increase its military presence in the region, and Russia and China will respond with similar build ups. Shifts in fisheries could lead to naval conflict. In this Red Arctic future economic development stakeholders are overshadowed by military stakeholders in the region.

The Blue Arctic could also transform into a Green Arctic with a stronger Arctic Council to ensure the rule-of-law and support sustainable development and continued cooperation in the region. In this alternative future the environment and indigenous people become more important stakeholders in the decision making process. Stakeholders that bolster cooperation, follow sustainable development guidelines, and increase safety, while decreasing risk, will thrive in the region. This could include resources extraction businesses, transportation operations and research partnerships. Tourism could also open up the region to a more global stakeholder perspective as more people are able to experience the Arctic's mystique.

As milestones alert us to which alternative future is most likely to arise, stakeholders will begin to position themselves to take advantage of emerging long-term possibilities. The stakeholders

who are willing to take a risk and invest in their desired future will also shape the future of the region. This cycle will have local, national and global implications and will determine if Arctic geopolitics trend towards strategic conflict or economic and environmental cooperation.

What are the implications of these alternative futures?

Depending on how Arctic nations respond to the changes in the region will determine if a White Arctic with sustained ice, a Blue Arctic with an increase in open and navigable waters, a Green Arctic with a context of sustainable economic development and cooperation, or a Red Arctic featuring a context of strategic competition emerges. Each alternative Arctic future has different geopolitical, economic, environmental and military implications with unique flashpoints that threaten the stability of the region.

A White Arctic with sustained ice covering limits the ability of nations to develop transportation routes, extract economic resources, access fisheries and expand military activities and infrastructure. This will stifle the amount of investment in the region in the short-term and reduce potential disputes over EEZ zones and transportation routes in the long-term. Russia's ability to develop their portion of the Arctic would be decreased and the US would continue to limit their economic and military efforts. Strategic competition in a White Arctic would be mitigated by ice. Cooperative research in the region would continue, but with high risk and high cost. However, if climate change continues on the current trajectory, a White Arctic is the least likely scenario to emerge.

A Blue Arctic, with consistent ice melt and an expansion of access to navigable water, seems like the most likely future for the Arctic region. It is estimated by 2050 the Arctic Circle will experience consistent ice-free summers. In anticipation of this future investment, in transportation routes, resource extraction, fisheries and military infrastructure will steadily increase. As the Blue Arctic becomes increasingly accessible, developed and militarized we will either see a trajectory of continued cooperation or a pathway to increasing conflict.

A Blue Arctic could turn Green within a context of economic sustainability and sustained cooperation. The geopolitical activities in the Arctic region could become a model of global collaboration with the sharing of risks and rewards. Russia could develop their region of the Arctic and its transportation routes within the rules established by the Arctic Council. China could invest in research and economic developments while also supporting sustainable growth and multilateral cooperation with arctic nations. The US, Canada and European nations could develop their portions of the Arctic with a commitment to cooperation and sustainability. The Arctic nations would need to commit to a common goal of demilitarization and distributed safety and rescue efforts. This Green Arctic might also rally the Arctic Nations, and observer nations, to support collaborative efforts to mitigate climate change. A Green Arctic might seem like a utopian vision, but with some political will and a stronger Arctic Council it could be a potential reality.

A Blue Arctic could easily turn Red especially within a context of competition and conflict. With more accessibility in the region, tensions will rise even with an initial commitment to cooperation. The US has already labeled the Arctic as a region of strategic competition signaling a shift in the trajectory of their Arctic geopolitics. This could mean more US investment in military infrastructure in the region. Within a context of strategic competition, Russia might have an upper-hand because they have the largest portion of the Arctic and their portion is showing signs of faster ice melt. Russian development in the region, supported by Chinese investments, could trigger an increase in military activities by US, Canada or European nations. In response, this could trigger increased military activities by Russia, and even China, leading to real conflict. Leading up to a Red Arctic we could also see small micro conflicts over EEZ, transportation routes and fisheries. In a Red Arctic, the Arctic Council would have little influence in the region and nations would act unilaterally or in allied groups.

Another alternative that could arise is a White, Blue, Red, and Green spotted Arctic. We could see White Arctic regions that remain covered in ice even during the summers, preventing development in those areas. Although Blue Arctic regions would dominate the Arctic by 2050, the rate of ice melt will determine the rate of investment. A slow and steady ice melt will allow time for strategic conflict to be mitigated while also ensuring that infrastructure and economic development in the Blue Arctic regions remain sustainable. This would naturally favor larger Green Arctic spots, especially in Canadian and European zones. However, Red Arctic spots could emerge as the climate change shifts fisheries and allows access to strategic military positions. Russian and China will not be shy in exploiting the militarization of the region and the US will be right behind them in expanding military activities.

The geopolitical choices will be framed by the rate of ice melt in the region. Whether these choices lead to a White, Blue, Green, Red or Spotted Arctic will be determined by the Arctic nations investment in activities that foster cooperation or lead to strategic competition.

How can current and future stakeholders shape these specific futures?

The rate of climate change is the key driver for investment and decision making in the Arctic. Regardless of nation state actions, a Blue Arctic seems inevitable, with ice melt continuing on its current trajectory leading to ice free summers by 2050. A White Arctic is a future outlier, rather than a future norm. A reversal of ice melt would require drastic global initiatives to reduce climate change effects. The Arctic Nations cannot drive these changes alone. Even with drastic changes, the complexity of climate change makes it difficult to predict the outcomes. Planning for the needle to move towards a White Arctic future has limited strategic foresight value. Geopolitical strategies must originate from the context of a Blue Arctic. Nation states will then need to decide if they want to shape the Blue Arctic into a Green, Red or Spotted Arctic future over the next 30 years.

A Green Arctic seems like the most responsible and advantageous future state for several reasons. First, even with ice melt there is still an opportunity for sustainable development and responsible extraction and use of the Arctic resources. To shape this, nation states would need to develop a common commitment to shared suitability goals and enforceable measures for rule breakers. This could mean a strong Arctic Council or the creation of a new governing body.

Second, within a Green Arctic, nations can cooperate to reduce the risk of accessing new research, while expanding the availability of new economic and transportation opportunities. Multilateral economic development and collaborative research projects would be the norm, while unilateral and bilateral activity decreases. This would reduce conflict over EEZs, shifting fisheries and limit the focus on military buildup.

Finally, a Green Arctic requires a commitment by Nation states to keep the arctic demilitarized. A demilitarized region decreases the burden of strategic competition on the region and removes the costs to develop, maintain, and operate an arctic-fit military. With a decreased threat of military conflict, multilateral cooperation and investment on arctic resource extraction and transportation infrastructure can flourish.

To avoid a Red Arctic future nation states must learn from past conflicts and be aware of how framing the future of the Arctic can create trajectories towards more competition. The Cod Wars provide insight into how micro conflicts in the region can escalate. If micro conflicts become widespread as nations pursue economic and military interests, the region can easily become destabilized. Micro conflicts need to be addressed quickly and multilaterally.

Further, the US has framed the Arctic as a place of strategic competition, while Russia is initiating plans to renew cold war military infrastructure. If this trajectory continues there will be a steady growth in military and activity in the Arctic. European Arctic Nations and Canada need to take more initiative in sustaining a demilitarized region by addressing both the US language and Russian activity. This might require a stronger Arctic Council that can enforce a rule of law. However, the development of a stronger Arctic Council will require approval and support by both US and Russia to limit unilateral operations in the region. Both countries might be hesitant to agree on this, especially as the melting ice decreases the barrier between them.

A Spotted Arctic future seems like the most likely outcome in the region. Some portions might remain ice covered, reducing accessibility and development of the area. Green Arctic areas can be developed through commitment to shared goals and be a path to cooperative prosperity. However, the threat of a Red Arctic, and the path towards competitive burden, can quickly overshadow the region and shape nation state strategies. The Arctic Nations are at a critical decision making juncture that will set the tone for the next 30 years.

Will the Great Game move to the Arctic by 2050?

As the world keeps a close eye on the threat of climate change, Arctic nations are in position to take advantage of the new opportunities that emerge from an ice-free Arctic. Russian and Chinese ambitions in the region are advancing rapidly, causing the US concern that the Arctic could become a landscape of strategic competition. At the same time European nations and Canada are hoping for sustained cooperation and sustainable economic development. Tensions between great nations could intensify as they take advantage of newly accessible transportation routes, LNG & oil reserves, shifting fisheries, and strategic military positions. There are clear signs that the Great Game could be moving to the Arctic.

Unlike previous Great Games, this one has three referees. First, climate change is still unpredictable and ice melt could stall or reverse. This makes investment and long-term planning in the region risky and uncertain. Second, the Arctic Council serves as a space for promoting cooperation, coordination, and interaction among the Arctic states. Although the Arctic Council's power is currently limited, its governance could play a more significant role in the future. Third, economic and political trends point towards a more climate aware and sustainable future. As countries transition towards alternative and renewable energy sources, financial investments in Arctic LNG and oil extraction could be limited, resulting in decreased tension over resource access.

Until now these three referees have supported the Arctic in becoming a model of harmonious geopolitics, but that could easily change. Russia will continue on a course of “strategic rule-breaking” to take advantage of their portion of the Arctic as a means to alleviate western sanctions. China, with the intention of expanding the BRI into the Polar Silk Road, will be an eager partner, dumping yuan into both transportation and natural resource extraction infrastructure development. This will allow the Northern Sea Route (NSR), which should be 100% open by 2050, to expand the transit of ships and cargo through the region. This will divert transportation and funds away from the Suez Canal and reducing travel time from 15 to 10 days.

The US is currently in a disadvantage position with limited investment in the Arctic. Further, the Bering Strait might be melting at a slower rate, increasing the uncertainty of long-term investments. Realizing that the “rule of law” might not be enough to stifle Russian and Chinese efforts in the region, the US has already shifted their tone in the Arctic to “Strategic Competition.” If this tone has weight, then we could see a slow buildup of US military infrastructure and operations, increasing the potential for Great Game conflicts.

Unless there is a move to create a more robust Arctic Council with the power to hold nations legally accountable to rule of law, the European Nations and Canada will have limited influence on the direction of the Great Game in the Arctic. Although they desire a demilitarized high north with cooperative and sustainable development in the region, they will be forced to react

and adapt to Russian, Chinese, and US unilateral and bilateral efforts. Micro-conflicts might arise in various forms, but these will be isolated and have limited impact on the long-term geopolitics.

Russia, China and the US will be the key players in the Great Game in the Arctic. Russia has a very clear desire to take full control of their portion, which could mean enclosing it and securing it through military operations. If Russian and Chinese bilateral partnership continue to expand unchecked and start to include military cooperation, then we could see an inflection point in Arctic Geopolitics.

The reality is the Great Game is already being played in the Arctic. Great nations are currently strategizing how they will gain access to new resources, build infrastructure for more efficient transportation and secure strategic military positions. However, the Great Game being played in the Arctic seems less visible because the game play is much slower, the moves take a lot more planning to execute, and there are very few pawns on the chess board. With the Great Game already being played a key question for Arctic nations to ask is, “Do we want a Green Arctic future or a Red Arctic future?”

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