Borderlines and Baselines: Geopolitics of Greenland in the 21st Century

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Introduction

Greenland is where geography becomes strategy. Straddling the North American and European security spaces, it anchors the GIUK Gap, overlooks emerging Arctic sea lanes, and hosts capabilities central to missile warning, space tracking, and North Atlantic defense. At the same time, Greenland is a society in motion—advancing self-rule within the Kingdom of Denmark, developing its economy, and navigating the pressures that come with great-power attention. This book examines how these strands weave together to shape the geopolitics of the Arctic in the twenty-first century.

The stakes are not confined to maps and bases. Climate change is redrawing the operating environment faster than institutions can adapt, altering ice conditions, expanding navigable seasons, and exposing new resource frontiers—from fisheries and hydrocarbons to rare earths and critical minerals. These shifts amplify commercial opportunity and environmental risk, inviting foreign capital and infrastructure proposals while challenging governance, regulatory capacity, and community resilience. Greenland’s choices will reverberate across supply chains, energy security, and the balance of regional power.

Great-power competition further complicates the picture. The United States seeks assured access and domain awareness; Denmark manages alliance obligations alongside domestic politics; the European Union looks to secure critical materials and uphold norms; Russia expands military capabilities in the High North; and China advances a “near-Arctic” identity through science, investment, and logistics. Each actor brings distinct tools—defense posture, diplomacy, development finance, technology partnerships, and information influence—that can stabilize or disrupt the region depending on how they are combined.

Security in the Arctic is broader than hard power. It encompasses search and rescue, maritime safety, environmental protection, and the reliability of communications and satellite services. It also includes the integrity of democratic processes, safeguards against strategic dependence through investment screening, and protections for critical infrastructure with dual-use potential. For Greenlanders, security is intimately tied to sustainable livelihoods, cultural continuity, and the capacity to make sovereign decisions about development pathways.

This analysis is designed for analysts and policymakers who require both depth and practicality. The book integrates defense assessments with legal, economic, and environmental perspectives. It moves from foundational context to specific national interests and instruments of power, then to sectoral issues such as shipping, minerals,

and fisheries. Case studies and data-informed assessments illustrate where interests align or collide, and what that means for regional stability.

A central feature of the book is scenario planning. Instead of predicting a single future, we map plausible pathways shaped by technological change, market dynamics, governance reforms, and crisis triggers—from maritime accidents to cyber incidents and information campaigns. For each scenario, we identify leading indicators, risk thresholds, and decision points, offering concrete options to mitigate escalation, build resilience, and harness cooperative opportunities.

Ultimately, Borderlines and Baselines argues that Greenland’s agency is a decisive variable in Arctic geopolitics. Effective policy will require respectful engagement with Greenlandic institutions and communities; coherent alliance coordination; investment standards that privilege transparency, sustainability, and security; and a renewed commitment to Arctic institutions that manage competition without foreclosing collaboration. By grounding strategy in local realities and rigorous analysis, we can chart baselines that keep borderlines from becoming fault lines.

CHAPTER ONE: Greenland at the Crossroads of the Arctic

Greenland sits where maps fold, where the Atlantic meets the Arctic and the lines drawn by history, geography, and power meet the ice. It is the world's largest island, a landmass bigger than Mexico and Saudi Arabia combined, yet its population is smaller than many city neighborhoods, scattered along a coastline longer than the circumference of most continents. The scale is arresting: an island that is not quite a continent, a society that is not quite a nation-state, and a location that makes it a strategic crossroads for the world's most powerful actors. It is a place where geography does not simply exist; it performs.

The Arctic is often depicted as a distant frontier, but in the twenty-first century it is a connected neighborhood. Greenland sits near the top of that neighborhood, flanked by Canada, Iceland, and the European continent, and looking across the Arctic Ocean toward Russia's northern coast. It is here that the North American and European security spheres overlap and interlock. For the United States, Greenland is part of the maritime backyard and a vital node in early warning and domain awareness. For Denmark, it is the anchor of the Kingdom's strategic weight. For Europe, it is a gateway to Arctic resources and shipping lanes. For Russia and China, it is an object of interest that touches the outer edges of their ambitions.

It is easy to think of the Arctic as static—a frozen periphery whose challenges melt away in the summer months. That image is obsolete. The Arctic is dynamic, with rapid environmental change and accelerating human activity. Greenland's ice sheet is thinning, though not uniformly, and its glaciers are retreating, though not in neat patterns. The sea ice is receding in some seasons and thickening in others, creating windows of navigability for shipping and opening new spaces for fisheries. These changes are not abstract. They are felt in coastal communities where hunting routes shift, in harbors where ice-free days extend the shipping season, and in ecosystems where species migration patterns change.

Strategically, Greenland matters because of where it sits. The Greenland–Iceland–United Kingdom Gap, known as the GIUK Gap, is a choke point for naval and air traffic between the North Atlantic and the Arctic Ocean. Historically pivotal during the Cold War, the gap remains central to contemporary defense planning. It shapes the calculus of antisubmarine warfare, air policing, and maritime surveillance. Military planners think in terms of lines of communication and layers of coverage; Greenland is both a line and a layer. The island's radar and sensor coverage extends the reach of early warning systems and space tracking, giving it outsized

relevance to missile defense and orbital domain awareness.

Security in Greenland is not a single-domain concept. It spans undersea cables and satellite links, air corridors and sea lanes, and the increasingly relevant cyber domain. It also encompasses the human terrain: communities with distinct languages, cultures, and governance expectations. The Arctic does not reward one-dimensional strategies. Effective engagement requires integrating defense posture with diplomacy, development, and environmental stewardship. In a place where infrastructure is sparse and the weather is harsh, any security approach that neglects logistics and resilience is bound to falter.

Resources add another layer of complexity. Greenland’s subsoil contains rare earth elements, graphite, nickel, zinc, and iron ore, alongside potential hydrocarbons in offshore basins. These resources are not just commodities; they are tied to global supply chains for batteries, semiconductors, wind turbines, and electric vehicles. A new rare earth project in Greenland can influence discussions on critical mineral strategies in Brussels, Washington, and Beijing. The calculus is not purely economic. Resource projects bring infrastructure—ports, airstrips, power grids—that can have dual-use implications. They also bring questions of ownership, benefit-sharing, and environmental risk.

Shipping is another axis of change. As seasonal ice retreats, the Northern Sea Route along Russia’s coast and the Northwest Passage through Canada’s archipelago attract attention for potential time and fuel savings. Greenland sits adjacent to these corridors and offers options for staging, refueling, and search and rescue support. The island’s fjords and harbors could become crucial nodes for trans-Arctic logistics. At the same time, increased traffic raises safety concerns in remote waters, where salvage and spill response capabilities are limited. For shippers, the Arctic is a calculated risk; for coastal communities, it is a lived reality.

Fisheries are both a livelihood and a geopolitical variable. Greenland’s waters are rich and productive, supporting shrimp, halibut, cod, and increasingly, mackerel moving northward with warming waters. Stock health is influenced by ocean temperature, salinity, and acidification, making fisheries management a moving target. Access rules, quotas, and enforcement are domestic matters but are shaped by regional cooperation and international norms. Fisheries interact with marine ecosystems and protected areas, and they intersect with shipping lanes and resource exploration. A decision on a marine protected area can ripple through local economies and international markets.

Governance in Greenland is layered. As an autonomous territory within the Kingdom of Denmark, Greenland controls a broad set of domestic policies, including natural resources, fisheries, and policing, while Denmark retains authority over foreign affairs, defense, and currency. The Self-Government Act of 2009 laid out a pathway for further

autonomy and recognized the Greenlandic people as a distinct people under international law. Political parties debate the pace and scope of independence, while practical realities—budget dependencies, market exposure, and security needs—shape the choices. Denmark manages alliance commitments; Greenland manages development priorities. These tensions are not dysfunction; they are the fabric of shared sovereignty.

Great powers approach Greenland with different tools and timelines. The United States brings defense cooperation, scientific partnerships, and a long-standing presence at Thule Air Base. It also brings clout in Arctic security institutions and leverage in shaping allied posture. Denmark balances its NATO commitments with domestic politics and an emphasis on multilateralism and the rule of law. The European Union seeks to diversify critical materials and uphold environmental and governance standards, sometimes at odds with national capitals. Russia advances an assertive Arctic strategy with military modernization and infrastructure, while China pursues a “near-Arctic” identity through science, shipping, and investment proposals. Each actor reads Greenland’s signals differently.

Greenlandic authorities have shown a preference for transparent and sustainable development, which translates into cautious treatment of large foreign projects. Some proposals have been welcomed; others have been blocked on environmental or security grounds. The debate is not anti-growth or pro-isolation; it is about the shape of growth. For a society of roughly fifty-six thousand people, scale matters. A large mining project can transform the economy but also strain public services, labor markets, and ecological balance. The question is not whether to develop, but how, at what pace, and with which partners. Sovereignty is not a slogan; it is the daily work of making choices under constraints.

Climate change underlies many of these dynamics. Scientific observations point to accelerated warming in the Arctic, though variability persists. Glacial melt contributes to sea-level rise globally, while changing albedo and ocean circulation influence regional weather patterns. The human footprint is visible in coastal erosion, permafrost thaw, and shifting marine habitats. These are not merely environmental concerns; they are operational realities. Airfields and ports require adaptations to thawing permafrost; search and rescue teams must respond to longer seasons of hazardous conditions; infrastructure must withstand storms that are becoming more frequent or intense. The baseline is moving.

Security has broadened beyond military competition. Hybrid tactics—ambiguous cyber intrusions, disinformation, and strategic investments—create risks that do not follow traditional escalation ladders. A compromised communications cable or a manipulated public narrative can be as destabilizing as a surface-to-air missile deployment. Greenland’s limited bandwidth—both literal and figurative—makes resilience a strategic priority. Information integrity, cybersecurity, and investment screening are

now part of the Arctic toolbox. The line between economic cooperation and strategic leverage is thin, and state actors test it regularly.

Maritime governance is central to order at sea. The Law of the Sea provides the framework for Exclusive Economic Zones, continental shelf claims, and navigation rights. Scientific surveys to delineate the outer limits of the continental shelf are ongoing, with submissions and reviews under the Commission on the Limits of the Continental Shelf. These legal processes are technical but have strategic implications. Clear baselines and boundaries reduce the risk of miscalculation; unresolved claims can incentivize unilateral action. Greenland’s maritime zones and Denmark’s submissions are part of a larger Arctic mosaic that requires coordination, transparency, and patience.

Search and rescue (SAR) and environmental protection are practical avenues for cooperation. The Arctic Council’s SAR agreement establishes obligations and protocols for coordinating emergency response across jurisdictions. In a region where distances are vast and weather is unforgiving, capacity is a shared interest. Joint exercises, information sharing, and interoperability matter whether the emergency is a downed aircraft, a ship in distress, or an oil spill. Cooperation on SAR does not eliminate competition, but it builds habits of communication and trust that can stabilize relations during crises.

Science and domain awareness are pillars of Arctic security. Satellites provide essential coverage for weather, navigation, and surveillance. Research stations and sensors contribute to oceanographic and atmospheric models that inform shipping, defense, and environmental management. Scientific diplomacy—collaborative research programs, data sharing, and student exchanges—can bridge political divides. It can also be leveraged for intelligence collection and influence. The dual-use nature of Arctic science is not a flaw; it is a feature. The challenge is to protect sensitive capabilities while enabling transparent research that benefits local communities and global understanding.

Economic development in Greenland is intertwined with infrastructure and investment screening. Ports, airports, and energy systems have both civilian and military utility. External financing can accelerate projects but raises questions of dependency, oversight, and national security. Governments are increasingly attentive to the origins and intentions of capital, especially from state-linked entities. The interplay of development finance and security policy is delicate: restrict investment too broadly, and projects stall; welcome it too uncritically, and vulnerabilities open. Greenland’s choices in this space will shape its resilience and autonomy.

Diplomacy in the Arctic is both institutional and ad hoc. The Arctic Council remains the primary forum for multilateral cooperation, though its work has been strained by geopolitical tensions outside the region. Other bodies—such as the International

Maritime Organization for shipping standards and regional fisheries management organizations—also play roles. Smaller groups, including the Arctic Seven (the seven Arctic states with territorial claims), and bilateral channels between capitals complement these forums. Greenland's voice is felt through Denmark and directly in regional dialogues. The challenge is maintaining functionality when great-power friction rises.

Crisis scenarios are the stress tests for any strategy. Maritime accidents, environmental disasters, cyber incidents, and gray-zone provocations can escalate quickly in remote areas with limited response capacity. Scenario planning is not about crystal balls; it is about mapping plausible pathways and identifying indicators and triggers. For Greenland, scenarios include clashes over fisheries access, incidents near military facilities, and disruptions to undersea cables or satellite links. The objective is to design response options that de-escalate, maintain freedom of navigation, protect civilians, and preserve critical infrastructure.

The United States has enduring interests in Greenland that are rooted in geography and technology. Missile warning and space tracking depend on sensor coverage that benefits from high-latitude locations. Undersea surveillance requires understanding the acoustic environment of the North Atlantic and Arctic basins. Air and naval operations rely on access to bases and staging points. These needs are not theoretical; they are embedded in alliance planning and force posture. U.S. engagement with Greenland is therefore a mix of defense cooperation, scientific collaboration, and political outreach, calibrated to Greenlandic and Danish priorities.

Denmark's stewardship of the Kingdom is an exercise in balancing obligations and aspirations. Denmark provides budget support, administrative capacity, and international representation while recognizing Greenland's autonomy. It is responsible for foreign and defense policy, but it cannot ignore Greenland's preferences. This layered sovereignty creates flexibility and friction. Denmark's Arctic strategy emphasizes multilateralism, international law, and environmental stewardship, but it also prepares for hard security contingencies. The challenge for Copenhagen is to align NATO commitments with domestic consensus and the aspirations of Greenlandic society.

Russia's Arctic strategy is clear and ambitious: secure northern sea lanes, expand military infrastructure, and leverage resources. Russia's Northern Fleet and Arctic bases are designed to project power and protect lines of communication. Moscow's approach to the region combines nationalist rhetoric with pragmatic economic goals, from hydrocarbons to shipping. The Kremlin views Greenland through a strategic lens, attentive to NATO's posture and any perceived encirclement. Cooperation is possible—SAR, scientific research—but the baseline is competitive. Russia's Arctic policy is not static; it adapts to sanctions, climate trends, and military balances.

China’s Arctic posture is defined by a search for influence without territorial claims. Beijing describes itself as a “near-Arctic” state, a framing that invites debate but signals intent. China’s tools include research vessels, satellite cooperation, investment proposals, and engagement in Arctic institutions. Its interests range from shipping efficiencies to access to critical minerals and scientific data. Greenland has been a focal point for Chinese investment interest, met with caution by local authorities and allies. The interplay of economic opportunity and security risk is central to China’s role in Greenland and the wider Arctic.

Resource competition is not just about geology; it is about positioning along supply chains. Greenland’s rare earth elements and graphite are relevant to batteries and clean energy technologies. Nickel, zinc, and iron ore feed industrial ecosystems. Offshore hydrocarbons, though controversial and uncertain, remain part of the energy transition debate. The economic viability of projects depends on global prices, infrastructure, and regulatory certainty. The strategic dimension is about resilience: diversified supply chains, reduced dependence on single sources, and transparency in extraction and processing. Greenland’s resources matter because they sit at the intersection of markets and security.

Fisheries underscore the human dimension of Arctic geopolitics. Stocks are moving, sometimes across maritime boundaries, creating new disputes and requiring adaptive management. Scientific assessments inform quotas, but local knowledge is equally vital. Enforcement is costly and requires cooperation between jurisdictions. The prospect of new fisheries, including species moving north with warming waters, adds complexity. Governance must balance biological sustainability with economic necessity. For Greenlandic communities, fisheries are not only income; they are culture, identity, and food security. Policy is most stable when it respects these intertwined realities.

Maritime safety and shipping standards are areas where rules can mitigate risk. The International Maritime Organization has developed guidelines for Arctic shipping, addressing vessel design, crew training, and pollution response. Environmental conditions—ice, fog, storms—demand higher standards than in temperate waters. Ports and rescue infrastructure are sparse, so prevention and preparedness are paramount. National regulations and bilateral agreements complement global rules. For Greenland, enabling safe shipping while protecting marine ecosystems is a balancing act that will shape its role in trans-Arctic logistics.

Law of the Sea is the constitution of the ocean, and it applies in the Arctic. It sets the legal baseline for navigation rights, resource rights, and maritime boundaries. Scientific data on the continental shelf are crucial to claims; legal clarity reduces the risk of conflict. Arctic states generally respect this framework, but ambiguity persists where claims overlap or where scientific evidence is incomplete. Greenland’s maritime

zones and Denmark’s submissions to the Commission on the Limits of the Continental Shelf are part of this legal tapestry. Clear baselines help keep borderlines from becoming flashpoints.

Environmental security links climate change to policy and planning. It is about protecting people and infrastructure from hazards and ensuring that development does not undermine ecosystems on which communities depend. Environmental assessments are not bureaucratic hurdles; they are risk management tools. Pollution from shipping or mining can have long-lasting impacts in cold waters where natural recovery is slow. The precautionary principle is not an ideology; it is a practical approach in a data-scarce environment. Security is compromised when environmental health fails, and it is strengthened when stewardship and growth are aligned.

Infrastructure finance sits at the nexus of development and defense. Ports, airports, fiber optic cables, and energy grids enable both economic activity and strategic capabilities. External financing can accelerate timelines but carries conditions and potential leverage. Screening frameworks are evolving to address risks from state-linked capital and dual-use applications. Greenlandic authorities are mindful of the need for investment while preserving decision-making space. The key is to prioritize transparency, sustainability, and community benefit, aligning project design with long-term resilience rather than short-term gains.

Information operations and cybersecurity are the invisible threads of Arctic competition. Communications networks, public narratives, and data flows can be targeted to shape perceptions and decisions. For a small society, the impact of disinformation can be disproportionate, affecting trust in institutions and investment climate. Cybersecurity is not just a technical issue; it is about protecting essential services—power, communications, finance—that underpin daily life and security operations. Resilience requires layered defenses, public awareness, and international cooperation. The Arctic is as much a cognitive space as a physical one.

Diplomacy and institutions will be tested by the pace of change. The Arctic Council remains important, but its effectiveness depends on the ability of members to compartmentalize regional cooperation from broader tensions. Other forums and bilateral channels can fill gaps, but they lack the inclusiveness and mandate of the Council. Greenland’s voice, channeled through Denmark and expressed directly in regional dialogues, is essential for legitimacy. Effective diplomacy requires trust, patience, and practical deliverables, from search and rescue coordination to environmental monitoring. The goal is to manage competition while enabling collaboration where interests converge.

The strategic outlook for Greenland is shaped by multiple pathways. One scenario emphasizes integration—deeper alliances, standardized rules, and aligned investments—leading to stability through predictability. Another emphasizes

fragmentation—competing blocs, divergent norms, and zero-sum resource grabs—leading to instability and risk. A third pathway is pragmatic autonomy, where Greenland leverages external partnerships while safeguarding sovereignty, using selective engagement to balance opportunity and security. Each pathway has leading indicators, from shipping statistics to alliance exercises, from investment patterns to public opinion. Policy planning requires tracking these indicators and preparing flexible options.

A baseline is a reference point from which measurements are taken. In the Arctic, baselines are moving—shaped by ice, markets, and politics. The task for analysts and policymakers is to establish reliable reference points that inform decisions without ignoring the dynamism of the environment. Greenland’s agency is central to this work. By grounding strategy in facts, respecting local institutions, and designing cooperative mechanisms that can withstand friction, it is possible to keep borderlines from hardening into barriers. The Arctic is a complex neighborhood, but it is navigable with careful seams and smart tools.

Greenland’s crossroads status will persist. Its location will continue to draw attention; its resources will invite interest; its society will evolve. The Arctic is not a problem to be solved; it is a system to be managed. That management requires disciplined analysis, credible institutions, and pragmatic engagement. It also requires listening—first to Greenlandic priorities and community voices, then to allies and partners, and finally to the signals from the environment itself. Crossroads are places of choice. With clear baselines and durable seams, choices in Greenland can contribute to an Arctic that is secure, resilient, and open to cooperation.

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