

ARCTIC SOVEREIGNTY AND STRATEGIC INTERESTS: POLICY ANALYSIS

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I. ISSUE BRIEF

The Arctic region represents a critical priority for Canadian sovereignty, economic development, security, and national identity. Canada possesses the world's longest coastline (243,042 kilometers total, with approximately 162,000 kilometers of Arctic coastline),[1] exercises sovereignty over the Canadian Arctic Archipelago comprising thousands of islands, and maintains jurisdiction over vast northern territories (approximately 40% of Canada's landmass, representing 3.9 million square kilometers).[2] The Arctic is central to Canadian national identity—the image of Canada as a northern nation pervades political discourse, cultural narratives, and international positioning.[3]

Canada's legal position rests on historical sovereignty over Arctic lands and waters, reinforced by the United Nations Convention on the Law of the Sea (UNCLOS), ratified in 2003.[4] Under UNCLOS, Canada exercises territorial sovereignty, exclusive economic zone rights (200 nautical miles), and continental shelf rights potentially extending beyond 200 nautical miles. Canada's 2019 submission to the UN Commission on the Limits of the Continental Shelf (CLCS) claims extended shelf rights over approximately 1.2 million square kilometers of Arctic seabed, including areas overlapping with Russian and Danish (Greenland) claims based on shared underwater ridges (Lomonosov Ridge, Alpha-Mendeleev Ridge complex).[5]

Current realities reflect increasing accessibility and competition driven by climate change. Arctic sea ice extent has declined approximately 13% per decade since 1979,[6] opening previously inaccessible waters including the Northwest Passage through the Canadian Arctic Archipelago. This transformation creates opportunities for resource development (oil, gas, minerals estimated at billions in value), commercial shipping routes potentially reducing Asia-Europe transit times by 40% compared to Panama Canal,[7] and expanded fisheries. Simultaneously, accessibility increases security concerns—foreign naval vessels transiting Canadian-claimed waters, increased maritime traffic requiring search and rescue capabilities, environmental threats from shipping accidents or resource extraction, and sovereignty challenges from states disputing Canadian maritime claims.[8]

The Northwest Passage legal status remains the most contentious sovereignty issue. Canada claims the waters of the Northwest Passage as internal waters subject to complete Canadian sovereignty, requiring foreign vessels (including warships) to seek permission for passage and comply with Canadian regulations.[9] The United States, European Union, and other maritime powers reject this claim, arguing the Northwest Passage constitutes international

straits where the right of transit passage applies under UNCLOS Article 37, preventing Canadian restrictions beyond safety and environmental standards.[10] This fundamental legal disagreement creates persistent friction with the United States despite the broader alliance relationship, as demonstrated by U.S. Coast Guard icebreaker transits without Canadian permission and official U.S. government statements rejecting Canadian sovereignty claims.[11]

Strategic competition involves multiple dimensions. Russian military buildup in its Arctic, including reopened bases, advanced missile systems, and expanded Northern Fleet operations, creates security concerns despite geographic distance.[12] Chinese interest in Arctic shipping routes (promoting "Polar Silk Road" as Belt and Road Initiative extension) and resource development generates concerns about long-term strategic intentions, particularly given China's characterization of itself as a "near-Arctic state" despite being located thousands of kilometers from the Arctic Circle.[13] Climate change accelerates these dynamics while creating environmental challenges—permafrost thawing undermining infrastructure, coastal erosion affecting communities, ecosystem disruption impacting Indigenous livelihoods, and methane release from thawing tundra contributing to global warming feedback loops.[14]

Indigenous peoples constitute the majority of Canada's Arctic population (approximately 52% of territorial North residents are Indigenous, including Inuit, First Nations, and Métis),[15] with constitutionally protected rights under Section 35 of the Constitution Act, 1982.[16] Arctic governance requires balancing sovereignty assertion, economic development, environmental protection, and Indigenous rights—particularly contentious given historical colonial policies, ongoing socioeconomic disparities, and Indigenous demands for meaningful self-determination.[17]

The fundamental policy challenge lies in: asserting and defending Canadian sovereignty over Arctic territories and waters against legal challenges and unauthorized transits; developing Arctic resources and infrastructure while respecting environmental sustainability and Indigenous rights; maintaining credible military and civilian presence demonstrating effective control; managing complex relationships with the United States (close ally disputing Northwest Passage claims), Russia (potential adversary with competing continental shelf claims), and China (economic partner with unclear long-term Arctic ambitions); and positioning Canada as responsible Arctic steward balancing development with environmental protection and Indigenous self-determination.

II. STRATEGIC INTERESTS

Primary Interests:

Preservation of territorial sovereignty over Canadian Arctic lands and waters constitutes a non-negotiable core interest grounded in historical control, legal rights, and national identity. Canadian sovereignty over the Arctic Archipelago—thousands of islands including Baffin Island, Victoria Island, Ellesmere Island, and numerous smaller islands—derives from British territorial transfers (1870, 1880) and effective occupation subsequently established through settlements, administration, and scientific expeditions.[18] Any territorial loss or sovereignty compromise would constitute fundamental breach of national integrity and generate severe domestic political consequences given the Arctic's centrality to Canadian identity.

Northwest Passage sovereignty represents the most critical maritime jurisdiction question. Canada's internal waters claim rests on: historical use and assertion (1973 Arctic Waters Pollution Prevention Act establishing Canadian regulatory jurisdiction),[19] drawing of straight baselines around Arctic Archipelago (1985) creating internal waters under UNCLOS Article 7,[20] and Indigenous customary use of waters for millennia establishing occupation predating contemporary international law.[21] Canadian control enables: regulatory authority over vessel traffic including environmental, safety, and security standards; exclusion of foreign military vessels without permission protecting sovereignty; revenue generation through potential future transit fees or service charges; and symbolic assertion of Canadian Arctic sovereignty against challenges. Loss of internal waters status would reduce Canadian jurisdiction to territorial sea (12 nautical miles) and EEZ regime, permitting unregulated foreign transit and undermining sovereignty claims fundamentally.[22]

Extended continental shelf claims represent vital economic interests. CLCS approval of Canadian claims would grant sovereign rights over seabed resources potentially including hydrocarbons, minerals, and other valuable deposits. The 2019 Canadian submission claims areas based on Lomonosov Ridge and Alpha-Mendeleev Ridge as natural prolongations of Canadian continental landmass.[23] However, these claims overlap substantially with Russian and Danish submissions over the same underwater features,[24] requiring either CLCS determinations favoring one party or negotiated maritime boundary delimitation. Extended shelf resources could provide economic benefits for decades while establishing precedents for Canada's maritime claims globally.

Secondary Interests:

Arctic resource development serves economic and national development interests. Canadian Arctic contains substantial proven and potential resources: oil and gas (Beaufort Sea offshore estimated billions of barrels), minerals including diamonds (Northwest Territories producing approximately \$2 billion annually),[25] rare earth elements, gold, iron ore, and other deposits. Indigenous communities depend partially on resource development for employment and economic opportunities in regions with limited alternative economic activities. However, development faces substantial challenges: extreme climate increasing operational costs, remote location requiring expensive logistics, environmental sensitivities restricting extraction methods, Indigenous land claims and consultation requirements, and global commodity price volatility affecting project economics.[26]

Northern communities' sustainability and Indigenous rights constitute legal, moral, and political imperatives. Approximately 118,000 people live in Canada's territories (Yukon, Northwest Territories, Nunavut), with additional Arctic populations in northern Quebec, Labrador, and Manitoba.[27] Indigenous peoples constitute majorities in many Arctic regions and hold constitutionally protected rights including land claims settlements, self-government agreements, and resource co-management provisions.[28] Effective Arctic policy requires: meaningful consultation meeting constitutional duties; benefit-sharing ensuring communities gain from development on their traditional territories; environmental protection preserving resources supporting traditional livelihoods (hunting, fishing, gathering); infrastructure investment addressing deficits in housing, healthcare, education, and transportation; and self-determination respecting Indigenous governance and decision-making authority.[29]

Environmental stewardship and climate leadership serve international reputation and domestic values. Canada positions itself as environmental leader and "Arctic steward,"

contrasting with characterizations of other Arctic states as exploitative or militaristic.[30] This reputation provides: soft power and moral authority in international forums; domestic political support particularly from environmental constituencies; Indigenous community trust essential for development approvals; and differentiation from Russia or China in geopolitical competition. However, environmental stewardship requires substantive policies rather than rhetoric—restrictions on resource extraction potentially conflicting with economic interests, emissions reductions affecting fossil fuel industries, and marine protected areas limiting fishing or shipping.[31]

Tertiary Interests:

Search and rescue capacity and maritime safety serve humanitarian and sovereignty functions. As Arctic waters become more accessible, shipping, fishing, tourism, and resource exploration increase accident risks in remote areas with extreme conditions. Canadian Coast Guard and Canadian Armed Forces provide search and rescue services, but capabilities remain limited—only one heavy icebreaker (CCGS Louis S. St-Laurent, commissioned 1969, approaching retirement),[32] with planned new icebreaker procurement delayed repeatedly. Enhanced SAR capacity demonstrates effective control supporting sovereignty claims while meeting humanitarian obligations protecting mariners regardless of nationality.[33]

Arctic Council leadership and circumpolar cooperation serve multilateral interests. The Arctic Council, headquartered in Canada (Tromsø, Norway houses the permanent secretariat, but Indigenous Permanent Participants' secretariat is in Canada), provides multilateral framework for cooperation on environmental protection, sustainable development, scientific research, and emergency response.[34] Canadian participation demonstrates commitment to cooperative Arctic governance, provides venue for advancing positions on environmental protection and Indigenous rights, and constrains unilateral actions by other Arctic states through consensus requirements. However, Council limitations include exclusion of military security issues from mandate and consensus requirements enabling any member to block initiatives.[35]

Scientific research and climate monitoring serve knowledge generation and policy development. Canadian Arctic research institutions conduct studies on: climate change impacts and Arctic amplification; permafrost dynamics and infrastructure vulnerability; marine ecosystems and species migration; Indigenous knowledge systems; and geopolitical developments. Research provides evidence base for policy decisions, supports continental shelf claims through geological data, and positions Canada as Arctic knowledge leader. International cooperation through bilateral programs and multilateral initiatives (International Arctic Science Committee, Arctic Monitoring and Assessment Programme) enhances Canadian research capacity while demonstrating cooperative approach.[36]

III. CONSTRAINTS

Military-Operational Constraints:

Geographic vastness and harsh climate create severe operational challenges. Canada's Arctic spans approximately 3.9 million square kilometers with minimal infrastructure—limited roads, few airfields capable of supporting military aircraft, no deep-water ports accessible year-round, and extreme distances from southern Canadian population centers where military

forces are based.[37] Operating costs in Arctic conditions far exceed southern Canadian or temperate climate operations: equipment requires Arctic modifications or specialized procurement; personnel need extensive training and cold weather gear; fuel and supplies must be transported vast distances; and seasonal accessibility limits operations to ice-free periods for many locations.[38]

Military capability gaps constrain sovereignty assertion and defense. The Canadian Armed Forces Arctic capabilities include: Canadian Rangers (part-time reservists, primarily Indigenous residents, totaling approximately 5,000 across Canada with substantial Arctic presence) conducting patrols and surveillance;[39] occasional Arctic Response Company Group deployments for exercises; CF-18 fighter patrols from southern bases (limited Arctic basing infrastructure); Royal Canadian Navy Arctic presence through annual Operation NANOOK exercises and Halifax-class frigate deployments during ice-free season;[40] and limited surveillance through satellites, long-range patrol aircraft (CP-140 Aurora, aging fleet requiring replacement), and ground-based sensors. Capability deficits include: no heavy icebreakers under Canadian Armed Forces control (Coast Guard operates civilian icebreakers); limited submarine capability with Victoria-class submarines unable to operate under ice year-round; no permanent forward operating bases enabling rapid response to incidents; and surveillance gaps in vast areas enabling unauthorized transits potentially undetected.[41]

Procurement delays and budget constraints prevent capability acquisition. Major Arctic procurement programs face chronic delays: Arctic and Offshore Patrol Ships (AOPS, Harry DeWolf-class) initially planned for 2013 delivery, first vessel commissioned 2020 with six planned total;[42] Canadian Surface Combatant program replacing frigates, timeline extended to 2030s; Canadian Patrol Submarine Project exploring submarine replacement with possible under-ice capability, feasibility studies ongoing without firm timeline;[43] polar icebreaker (CCGS John G. Diefenbaker) to replace CCGS Louis S. St-Laurent, repeatedly delayed with current timeline projecting late 2020s delivery at earliest.[44] Defense budget constraints (approximately 1.3% of GDP, below NATO 2% guideline)[45] create trade-offs where Arctic capabilities compete with other priorities including NATO commitments, United Nations peacekeeping, continental defense (NORAD), and force modernization.

Economic-Fiscal Constraints:

Resource development faces unfavorable economics in many Arctic regions. High operational costs (cold weather requirements, remote logistics, limited infrastructure) combine with commodity price volatility making many projects economically marginal. Offshore Arctic oil and gas development requires massive capital investment (multi-billion dollar platforms, specialized ice-resistant infrastructure) with uncertain returns given global energy transition pressures reducing long-term fossil fuel demand.[46] Mining projects face similar challenges—the Baffinland Mary River iron ore mine required \$1.2 billion investment for infrastructure in remote Nunavut,[47] while other potential projects remain undeveloped awaiting more favorable economics.

Infrastructure deficits constrain development and community sustainability. Northern communities face: inadequate housing creating overcrowding (Nunavut has 54% core housing need versus 12% Canadian average);[48] unreliable electricity from diesel generators creating high costs and emissions; limited telecommunications with many communities lacking high-speed internet; inadequate healthcare facilities requiring medical evacuations to

southern Canada for many conditions; poor roads and lack of all-weather connections between communities; and minimal port facilities limiting marine access.[49] Infrastructure investment requires federal funding given limited territorial revenue bases, but competes with other national priorities within constrained budgets.

Climate change adaptation costs create additional fiscal pressures. Permafrost thawing undermines infrastructure including buildings, roads, airfields, pipelines, and runways, requiring expensive repairs or replacement (estimated billions in coming decades).[50] Coastal erosion threatens communities requiring relocation (Tuktoyaktuk, NWT facing severe erosion)[51] at massive per-capita costs. Emergency response to extreme weather events, wildfires, and other climate-related disasters strains territorial and federal resources. These adaptation costs occur during fiscal constraint periods when federal government faces deficit pressures limiting new spending.[52]

Legal-Diplomatic Constraints:

United States Northwest Passage position creates alliance friction. The U.S. government officially rejects Canadian internal waters claims, characterizing the Northwest Passage as international straits where transit passage applies.[53] This position reflects: U.S. Navy operational requirements for global freedom of navigation; precedent concerns where accepting Canadian claims might legitimize other states' excessive maritime claims (South China Sea, Russian Northern Sea Route); and consistent U.S. policy opposing "creeping jurisdiction" over international waters.[54] U.S.-Canada disagreement manifests through: official statements rejecting Canadian sovereignty; U.S. Coast Guard icebreaker transits without requesting Canadian permission (most recently USCGC Healy operations);[55] and diplomatic tensions requiring careful management to prevent broader alliance deterioration. However, U.S. position remains primarily legal-formal rather than operationally confrontational—U.S. vessels generally provide notifications even while denying legal requirement, and cooperation occurs on practical Arctic issues through bilateral forums.[56]

UNCLOS framework creates both opportunities and constraints. While providing legal basis for extended continental shelf claims, it also imposes: scientific evidence requirements for geological surveys demonstrating ridge connections; CLCS review processes where commissioners examine submissions and may request additional data or decline approval; overlapping claims with Russia and Denmark requiring negotiated delimitation where CLCS cannot resolve competing submissions over same features; and navigational freedoms provisions that may support U.S. arguments regarding transit passage if Northwest Passage passages qualify as international straits under Article 37.[57] The 2013 Ilulissat Declaration by Arctic coastal states (Canada, Denmark, Norway, Russia, United States) emphasized UNCLOS as legal framework for Arctic maritime issues,[58] constraining Canadian options for unilateral assertion outside UNCLOS parameters.

International environmental obligations constrain development options. Canada ratified the Paris Agreement committing to emissions reductions,[59] faces international pressure on climate leadership given Arctic amplification visibility, and maintains domestic environmental assessment processes requiring project approvals considering environmental impacts. These frameworks create: restrictions on offshore Arctic drilling given spill response challenges in ice conditions; limitations on emissions-intensive projects conflicting with climate commitments; lengthy approval processes for major developments incorporating

Indigenous consultations and environmental reviews; and international reputation costs if Arctic policies perceived as environmentally destructive.[60]

Domestic Political Constraints:

Federal-territorial relations create governance complexities. Yukon, Northwest Territories, and Nunavut possess territorial rather than provincial status, meaning federal government retains greater jurisdiction over lands, resources, and development than in southern provinces.[61] This creates: federal-territorial tensions over resource revenues and development authorities; coordination challenges between federal departments and territorial governments; and Indigenous grievances that federal control perpetuates colonial relationships. Devolution processes transferring authorities to territories occur gradually (Northwest Territories received resource management 2014),[62] but territorial governments demand faster devolution and revenue-sharing comparable to provinces.

Indigenous rights and reconciliation imperatives require meaningful consultation and accommodation. Section 35 of the Constitution Act, 1982 protects Aboriginal and treaty rights,[63] while Supreme Court jurisprudence (*Haida Nation v. British Columbia*, *Tsilhqot'in Nation v. British Columbia*)[64] establishes Crown duties to consult and potentially accommodate Indigenous interests. Modern treaties and land claims settlements (Inuit land claims creating Nunavut 1999, Inuvialuit Final Agreement 1984, others)[65] grant Indigenous communities: land ownership, resource co-management authority, consultation requirements for development, revenue sharing, and self-government powers. Effective Arctic policy requires: early and meaningful consultation meeting legal standards; benefit-sharing ensuring communities gain economically from development; respect for Indigenous knowledge and decision-making; and addressing historical grievances including residential schools, forced relocations, and cultural suppression. Failure generates: project delays or cancellations from Indigenous opposition; legal challenges potentially blocking development; domestic political costs from reconciliation constituency criticism; and international reputation damage.[66]

Public opinion and environmental constituencies influence policy flexibility. Canadian public generally supports Arctic sovereignty assertion (polling shows 80%+ view Arctic sovereignty as important),[67] environmental protection, and Indigenous rights, creating political imperatives for governments. However, specific policies face divergent pressures: resource development interests (industry, northern communities seeking employment) versus environmental organizations opposing extraction; infrastructure spending advocates versus fiscal conservatives opposing deficits; military expansion proponents versus peace constituencies questioning militarization. Navigating these requires careful political management and communication framing policies as balancing competing values.[68]

IV. POLICY OPTIONS

Option A: Maximum Sovereignty Assertion Through Unilateral Action

Pursue comprehensive strategy asserting maximum Canadian sovereignty claims through: formal declaration and enforcement of Northwest Passage as Canadian internal waters, implementing strict regulations requiring all foreign vessels including warships to request permission and comply with Canadian standards, interdicting unauthorized transits; substantial military buildup deploying permanent Arctic bases, year-round naval presence

through additional icebreakers under Armed Forces control, under-ice capable submarines, enhanced fighter capabilities at forward Arctic bases, and comprehensive surveillance networks; unilateral resource development in disputed continental shelf areas prior to CLCS final delimitation, establishing facts on ground through exploration licenses and installations; and aggressive diplomatic campaign demanding international recognition of Canadian claims.

Assessment: Maximizes sovereignty assertion demonstrating Canadian resolve and effective control. Comprehensive Northwest Passage enforcement establishes practical authority regardless of U.S./international legal positions. Military buildup provides capabilities for surveillance and interdiction. Unilateral shelf development creates possession facts complicating competing claims. Domestic political benefits include strong nationalist support and demonstration of Arctic commitment. However, generates severe alliance and economic costs outweighing benefits. Strict Northwest Passage enforcement against U.S. vessels would trigger major crisis in most important bilateral relationship—U.S. might respond through: formal diplomatic protests and demands for Canadian reversal; UNCLOS dispute resolution proceedings or International Court of Justice litigation challenging Canadian internal waters claims; economic pressure through trade restrictions or investment limitations; reduction of defense cooperation including NORAD participation constraints; and operational defiance through repeated unauthorized transits. Canadian capability to actually interdict U.S. Coast Guard or Navy vessels is questionable given force imbalance—U.S. military vastly exceeds Canadian capabilities, making physical confrontation scenarios untenable. Massive military buildup requires spending increases Canada cannot afford—procurement programs estimated at \$50-100+ billion for comprehensive Arctic capabilities (heavy icebreakers, submarines, bases, surveillance) vastly exceeding available defense budget even if Arctic became sole priority.[69] Unilateral shelf development before CLCS approval violates UNCLOS procedures undermining Canadian reputation as international law defender. Option fundamentally unrealistic given Canada's constraints and risks destroying most important bilateral relationship over issue where Canadian legal position faces substantial international law challenges from leading maritime powers.

Option B: Accommodation and Bilateral Agreement With United States

Pursue pragmatic resolution of Northwest Passage dispute through: bilateral Canada-U.S. agreement establishing cooperative management framework where Canada accepts U.S. position that passages constitute international straits subject to transit passage rights, while U.S. acknowledges Canadian environmental, safety, and security interests by agreeing to: mandatory notifications of transits with route and purpose; compliance with Canadian environmental standards (Arctic Waters Pollution Prevention Act provisions); information sharing on vessel movements; joint search and rescue coordination; and consultation on security concerns. Accept reduced Canadian jurisdiction in exchange for practical cooperation and alliance preservation.

Assessment: Resolves persistent alliance friction enabling cooperation on Arctic security challenges (Russian military activities, Chinese presence, environmental protection). Bilateral framework provides practical Canadian input on vessel transits while acknowledging legal realities that Canadian internal waters claim faces substantial international law challenges and cannot be enforced against determined U.S. opposition. Economic benefits include avoiding U.S. trade retaliation and maintaining investment flows. However, politically catastrophic domestically and strategically undesirable despite pragmatic logic. Any Canadian government explicitly accepting that Northwest Passage constitutes international straits

would face: massive public backlash given 80%+ view Arctic sovereignty as important;[70] opposition party criticism as "selling out" Canadian sovereignty; Indigenous community opposition viewing accommodation as betraying territorial rights; nationalist constituency revolt potentially threatening government survival in elections. Symbolically, accommodation would represent abandonment of Canadian Arctic sovereignty claims, contradicting national identity narratives and historical positions maintained by all governments since 1970s. Legally, accepting international straits status would: eliminate future claims to internal waters regardless of changing circumstances (increased Canadian Arctic presence, international law evolution); establish adverse precedent potentially affecting other Canadian maritime claims; and provide no guarantee U.S. would honor bilateral agreement terms in future administrations or during crises. Strategically, accommodation signals Canadian willingness to concede core sovereignty positions under pressure, potentially encouraging challenges elsewhere (Hans Island settlement with Denmark required compromise, but reciprocal; unilateral Canadian concession might encourage Russian or Chinese pressure on other claims).[71] Fundamentally, option trades irreversible sovereignty loss for temporary alliance benefits, unacceptable to any foreseeable Canadian government.

Option C: Cooperative Sovereignty Through Enhanced Presence and Bilateral Partnership

Implement comprehensive strategy combining practical sovereignty assertion with alliance management: substantially increase Canadian civilian and military Arctic presence through: accelerated icebreaker procurement (6-8 vessels total including Coast Guard and Armed Forces), completing Arctic and Offshore Patrol Ships program, forward operating base development, year-round surveillance capabilities, and Canadian Rangers expansion demonstrating effective control; maintain official Canadian position that Northwest Passage constitutes internal waters requiring permission for transit, but implement pragmatic bilateral cooperation with United States through: informal coordination where Canadian authorities receive advance notification of U.S. transits and coordinate on timing/routes, U.S. vessels comply with Canadian environmental standards and safety recommendations even while formally denying legal requirement, joint Arctic exercises and patrols, information sharing on Russian and Chinese Arctic activities, and cooperative research programs; pursue extended continental shelf claims through UNCLOS processes while engaging Russia and Denmark on potential negotiated delimitation of overlapping claims; and position Canada as Arctic steward through: ambitious climate policies demonstrating environmental leadership, marine protected areas balancing conservation with sustainable development, Indigenous partnership models showcasing rights-based approach, and Arctic Council leadership on environmental and sustainable development issues.

Assessment: Balances competing imperatives without requiring binary choice between sovereignty assertion and alliance accommodation. Enhanced presence provides practical demonstration of effective control supporting sovereignty claims under international law (which requires not just assertion but actual exercise of authority). Icebreaker fleet expansion enables: year-round monitoring of Northwest Passage transits; search and rescue response capacity; environmental enforcement; and symbolic sovereignty assertion. Informal U.S. coordination provides practical benefits (notification, route coordination, environmental compliance) without requiring Canada to formally abandon internal waters position or U.S. to formally accept it—both maintain legal positions while cooperating operationally. This parallels historical approach where disagreement existed but did not prevent functional

cooperation. Extended shelf pursuit through UNCLOS demonstrates commitment to international law and due process, providing strongest possible claim if CLCS approves. Indigenous partnership and environmental leadership differentiate Canada from Russia/China, providing soft power and moral authority. However, faces implementation challenges and limitations. Enhanced presence requires sustained funding—icebreaker fleet of 6-8 vessels estimated at \$8-12 billion total procurement cost;[72] forward bases require construction and ongoing operations funding; surveillance systems need continuous investment. These compete with other defense priorities and face procurement delays characteristic of Canadian defense acquisition. Informal U.S. coordination depends on American willingness to participate—if U.S. decides to conduct unannounced transits asserting transit passage rights, Canadian options are limited without interdiction capabilities and willingness to confront ally. Sovereignty assertion remains incomplete—legal ambiguity continues, Canadian jurisdiction remains contested, and no definitive resolution achieved. However, option represents realistic balancing of constraints—providing maximum achievable sovereignty protection within available resources while preserving alliance relationship and positioning Canada favorably on environmental and Indigenous rights issues where comparative advantages exist.

Option D: Multilateral Arctic Governance Through Institutionalization

Pursue comprehensive multilateral framework for Arctic governance establishing binding rules for maritime navigation, resource development, environmental protection, and security cooperation: strengthen Arctic Council by: expanding mandate to include security issues currently excluded, creating binding dispute resolution mechanisms, establishing permanent secretariat with greater authority, and converting from consensus-based soft law forum to treaty-based organization with enforceable obligations; negotiate Arctic maritime navigation agreement specifying: vessel standards for Arctic transit, environmental protection requirements, search and rescue responsibilities, and maritime boundary delimitation procedures for continental shelf overlaps; propose Arctic Treaty System modeled on Antarctic Treaty establishing: demilitarization zones, environmental protection protocols, scientific cooperation frameworks, and moratorium on contested sovereignty claims pending negotiated settlements; and increase Indigenous participation through: formal co-management roles, veto powers over development decisions affecting traditional territories, and enhanced representation in all Arctic governance institutions.

Assessment: Addresses systemic governance gaps through institutional mechanisms rather than unilateral assertion or bilateral deals. Strengthened Arctic Council with security mandate would provide venue for discussing Russian military buildup, Chinese activities, and sovereignty disputes through multilateral diplomacy rather than bilateral confrontation. Binding navigation agreement could establish Canadian environmental standards as international norms applying to all Arctic transits, achieving Canadian regulatory objectives regardless of legal characterization of waters. Antarctic Treaty model potentially freezes territorial/maritime disputes while enabling cooperation on shared challenges. Enhanced Indigenous participation fulfills reconciliation commitments while leveraging Indigenous knowledge and legitimacy. However, fundamentally unrealistic given other Arctic states' incentives and negotiating positions. Russia and United States both oppose expanding Arctic Council to security issues—Russia views security as bilateral/alliance matter not subject to multilateral interference, U.S. maintains NATO as appropriate security forum and Arctic Council should remain focused on soft security/environmental issues.[73] Neither Russia nor U.S. would accept binding dispute resolution potentially requiring sovereignty concessions.

Arctic Treaty System faces massive obstacles: unlike Antarctica which had no permanent populations or settlements and minimal resource development when treaty negotiated, Arctic has 4 million residents including substantial Indigenous populations with existing rights, developed resource industries, and sovereignty claims backed by effective occupation making "freezing" disputes impossible; Russia and U.S. would reject demilitarization preventing their military operations; and economic interests far exceed Antarctic context making resource moratorium unacceptable.[74] Binding navigation agreement faces resistance from maritime powers (U.S., EU, China) defending freedom of navigation principles against coastal state regulations. Enhanced Indigenous participation, while normatively desirable, faces resistance from Arctic states protective of sovereignty—formal Indigenous veto powers would constitute unprecedented transfer of state authority. Multilateral approach underestimates the degree to which Arctic states, including Canada, prioritize national sovereignty over cooperative governance when conflicts arise.

V. RISK ASSESSMENT AND RECOMMENDED COURSE OF ACTION

Recommended Strategy: Option C – Cooperative Sovereignty Through Enhanced Presence and Bilateral Partnership

This approach optimally balances Canada's competing interests given severe constraints from limited military capabilities, fiscal pressures, alliance dependencies, and legal ambiguities. The strategy acknowledges that absolute sovereignty assertion is unachievable against U.S. opposition while recognizing that formal accommodation is politically impossible and strategically undesirable.

Implementation Framework:

Enhanced Arctic Presence Component:

Accelerate icebreaker procurement as highest infrastructure priority. The Coast Guard requires: replacement for CCGS Louis S. St-Laurent (polar icebreaker program, currently estimated delivery late 2020s, should receive maximum priority for timeline acceleration);[75] three additional medium icebreakers beyond current fleet enabling simultaneous operations in multiple Arctic regions; and armed icebreakers under Armed Forces control (potentially 2-3 vessels) providing sovereignty enforcement capability. Total fleet target: 6-8 major icebreakers (combination Coast Guard and Armed Forces) providing year-round Arctic coverage.

Complete Arctic and Offshore Patrol Ships program delivering all six vessels and establish regular patrol schedules. AOPS vessels, while limited by ice capability (Type 4 icebreaking, suitable for first-year ice but not heavy multi-year ice), provide: improved presence over current Halifax-class frigates unable to operate in ice; platforms for surveillance and monitoring; search and rescue capabilities; and sovereignty assertion through regular patrols.[76] Operations should emphasize: Northwest Passage transits during navigation season; presence near disputed areas; cooperation with Coast Guard and Canadian Rangers; and visible demonstrations of Canadian control.

Establish forward operating bases enabling rapid response. Priority locations: Resolute Bay, Nunavut (central Arctic location, existing infrastructure, proposed Canadian Armed Forces facility);[77] Nanisivik, Nunavut (deep-water port facility under construction, refueling station for Arctic vessels); Inuvik, NWT (existing airport, Rangers base, potential for expanded facilities); and Iqaluit, Nunavut (capital, largest Arctic community, existing infrastructure). Forward bases require: airfields supporting fighter operations and long-range patrol aircraft; berthing facilities for patrol vessels; fuel storage and maintenance facilities; personnel accommodations; and communications infrastructure.

Enhance surveillance through: satellite monitoring (RADARSAT Constellation providing maritime surveillance);[78] expanded long-range patrol aircraft operations (CP-140 Aurora replacement program should prioritize Arctic-optimized sensors and endurance); unmanned aerial vehicles for persistent surveillance; coastal radar installations on key islands and straits; and subsurface sensors monitoring submarine activities. Comprehensive surveillance demonstrates awareness of Arctic activities and provides evidence of effective control supporting sovereignty claims.

Expand Canadian Rangers program recruiting additional Indigenous members providing: local knowledge and presence in remote communities; sovereignty patrols and reporting of unusual activities; search and rescue capabilities; and symbolic demonstration that Canadian sovereignty includes Indigenous peoples as active participants.[79] Rangers require: improved equipment and communications; increased training and exercises; integration with regular Armed Forces operations; and recognition as vital sovereignty asset.

Bilateral Partnership With United States Component:

Maintain official Canadian legal position that Northwest Passage constitutes internal waters under Canadian sovereignty while implementing practical cooperation avoiding confrontation. Official statements should: reiterate Canadian sovereignty over Arctic waters; reference historical Canadian jurisdiction and Indigenous customary use; cite UNCLOS straight baseline provisions (Article 7) supporting internal waters classification;[80] but avoid gratuitous provocations or ultimatums forcing U.S. responses.

Establish informal bilateral coordination mechanisms ensuring Canadian awareness and input on U.S. Arctic activities without requiring formal U.S. acknowledgment of Canadian sovereignty: advance notifications where U.S. Coast Guard or Navy inform Canadian authorities of planned Arctic transits, providing routes and timing (U.S. can characterize as courtesy rather than legal requirement); environmental standards compliance where U.S. vessels follow Canadian Arctic Waters Pollution Prevention Act provisions regarding vessel construction, pollution prevention, and routing (U.S. frames as prudent seamanship rather than mandatory jurisdiction); joint operations including combined exercises, coordinated patrols, shared surveillance data, and cooperative search and rescue planning; and security cooperation on Russian activities, Chinese Arctic presence, and other mutual concerns. This approach provides practical benefits both seek—Canada receives notification and environmental compliance, U.S. maintains legal position—without forcing resolution of underlying legal dispute.

Strengthen NORAD modernization cooperation ensuring Arctic considerations integrate into continental defense planning. NORAD modernization (estimated \$30-40 billion over 20 years)[81] includes Arctic components: northern surveillance systems, fighter basing, and

command and control. Canadian participation demonstrates: sovereign capability to defend Canadian Arctic airspace; alliance commitment sharing defense costs; and practical cooperation on mutual security interests. NORAD provides venue for U.S.-Canada Arctic security coordination without requiring resolution of maritime jurisdiction disputes.

Engage United States on extended continental shelf coordination where overlapping U.S.-Canada claims exist in Beaufort Sea. The maritime boundary dispute—U.S. claims equidistance line, Canada claims line perpendicular to coast—affects continental shelf delimitation.[82] Rather than litigating, pursue negotiated delimitation establishing boundary through compromise potentially involving: median line between respective positions; resource-sharing arrangements for deposits straddling boundaries; or joint development zones pending final delimitation. Cooperative approach on Beaufort demonstrates Canadian willingness for pragmatic bilateral solutions building trust applicable to Northwest Passage management.

Extended Continental Shelf Component:

Continue CLCS submission process providing requested additional data. The 2019 Canadian submission requires supporting evidence including: updated bathymetric surveys mapping seabed depth and topography; seismic data demonstrating crustal structure and geological composition; sediment samples showing continental origin; and gravitational/magnetic measurements confirming ridge connections to Canadian landmass.[83] Geological Survey of Canada and university partners possess capabilities for this research despite budget constraints requiring adequate funding.

Engage diplomatically with Russia and Denmark (Greenland) regarding overlapping claims over Lomonosov Ridge and Alpha-Mendeleev Ridge. Rather than awaiting CLCS determinations which may approve overlapping claims requiring subsequent delimitation, pursue trilateral negotiations exploring: potential median lines dividing overlapping areas; scientific cooperation on shared geological research; and confidence-building measures preventing resource development disputes before boundaries established. Proactive diplomacy demonstrates Canadian reasonableness and commitment to international law while potentially achieving more favorable outcomes than imposed CLCS decisions.

Environmental Leadership and Indigenous Partnership Component:

Implement ambitious Arctic environmental policies demonstrating stewardship: marine protected areas covering significant portions of Canadian Arctic waters balancing conservation with sustainable development (current target 25% of marine areas by 2025);[84] emissions reductions from Arctic shipping through regulations on black carbon and other pollutants; oil spill prevention and response capacity including specialized equipment and trained personnel; and ecosystem-based management approaches considering climate change impacts on Arctic environments.

Strengthen Indigenous partnership through: early and meaningful consultation on all Arctic policies and developments exceeding minimal legal requirements; benefit-sharing agreements ensuring communities receive economic benefits from resource projects; co-management arrangements providing Indigenous communities formal authority over resource decisions affecting traditional territories; capacity building supporting Indigenous governments, organizations, and businesses participating in Arctic economy; and cultural preservation

programs protecting Indigenous languages, knowledge systems, and practices. The Inuit Circumpolar Council and other Indigenous organizations should be formal partners in Canadian Arctic policy development rather than merely consulted stakeholders.[85]

Position Canada as international Arctic governance leader through Arctic Council initiatives: championing environmental protection agreements; promoting Indigenous rights as governance principles; advancing sustainable development models; and leading scientific cooperation programs. Canadian Arctic Council chairmanship periods should emphasize concrete achievements distinguishing Canada from Russia (militaristic, authoritarian) and U.S. (climate skeptic, sovereignty-focused) positioning.

Risk Mitigation:

U.S. Alliance Management: Principal risk involves U.S. conducting high-profile unauthorized Northwest Passage transits challenging Canadian sovereignty. Mitigation requires: continuous diplomatic engagement explaining Canadian positions and requesting coordination; private communications during incidents avoiding public confrontation while documenting Canadian objections; seeking U.S. agreement to "agree to disagree" maintaining respective legal positions while cooperating operationally; and demonstrating through enhanced presence that Canadian sovereignty claims rest on effective control rather than merely legal assertions. If direct confrontation occurs, Canada should: avoid physical interdiction attempts against U.S. vessels (impossible militarily, catastrophic politically); issue formal diplomatic protests maintaining legal position; seek bilateral negotiations de-escalating; but prevent single incident from derailing broader alliance cooperation essential for Canadian security.

Fiscal Sustainability: Arctic procurement and operations require sustained funding competing with other priorities. Mitigation requires: realistic cost-benefit analysis prioritizing capabilities providing greatest sovereignty and security benefits per dollar (icebreakers and surveillance higher return than expensive submarine program); phased implementation spreading costs over decades; public-private partnerships where feasible (resource development infrastructure, telecommunications); and political consensus building across parties establishing Arctic investment as enduring priority transcending electoral cycles. Icebreaker program should receive protected funding status given multi-decade procurement timelines and critical importance.

Indigenous Relations: Risk of development proceeding without adequate Indigenous participation or benefit-sharing generating opposition and legal challenges. Mitigation requires: constitutional-level consultation meeting Haida Nation standards; free, prior, and informed consent approaches exceeding minimal legal requirements; equity partnerships providing Indigenous communities ownership stakes in projects; employment and business development ensuring economic benefits flow to communities; and environmental protection addressing community concerns about traditional territory impacts. The significant costs of meaningful partnership are unavoidable—failure generates greater costs through delays, litigation, and political crises.

Climate Change Adaptation: Physical infrastructure risks from permafrost thawing and coastal erosion require: comprehensive assessment of vulnerabilities; prioritized adaptation investments protecting critical facilities; community relocation planning and funding for severely affected settlements; and building code updates requiring climate-resilient

construction. Adaptation costs are mandatory rather than discretionary—infrastructure failure imposes greater costs than prevention.

This framework positions Canada to advance sovereignty interests through practical measures demonstrating effective control, maintain vital alliance with United States through cooperative approaches avoiding binary confrontation, pursue economic development balanced with environmental sustainability and Indigenous rights, and establish international leadership on Arctic governance issues where Canadian values and interests align. Success requires sustained implementation over decades, adequate resource commitments despite fiscal pressures, sophisticated diplomacy managing complex bilateral and multilateral relationships, and genuine partnership with Indigenous peoples whose knowledge, presence, and rights are essential to legitimate Canadian Arctic sovereignty.[86]

FOOTNOTES

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- [19] Arctic Waters Pollution Prevention Act, *supra* note 9.
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