

# **National and Indigenous Security, Infrastructure, and Climate Change in the Arctic**

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## **1. Project Overview**

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Today, about one in every two thousand people lives in the Arctic. By and large, the region is as forbidding as it ever has been. Even so, little by little, climate change makes it more accessible, and its ample hydrocarbon and mineral resources lure state and non-state actors to explore and exploit. Global powers draft new Arctic policies, while multinational corporations lease tracts of Arctic land from those powers. Their agenda should sound familiar—claim, administer, develop, and extract, all with a dutiful eye toward sustainability, of course. On the one hand, there is much to recommend that course of action, as it has long been an engine of prosperity. On the other, though, the effects of climate change and land use campaigns are becoming increasingly hard to ignore.

As the sociopolitical cachet of sustainability continues to rise, and given the formative state of Arctic policy and action itself, the region represents a pivotal decision point. Do state powers maintain the status quo by pursuing what are ultimately programs of exploitation? Or do they reconceptualize what it means to be secure and prosperous on a planet where the stability of human society is ever more vulnerable to changing environmental conditions? Doing the latter perhaps entails questioning basic patterns of production and consumption, rethinking cross-cultural cooperative schema, considering anew the normative deployment of new infrastructure, and leveraging both scientific and traditional knowledges to identify opportunity amidst hardship. In this project, these four lines of inquiry converge and synergize, as any efficacious approach within one necessarily demands corresponding treatment in the others. Achieving that synthesis will require sustained transdisciplinary effort among regional stakeholders, social and political scientists, natural systems scientists, industry specialists, and philosophers.

## **2. Background & Significance**

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Until recently, the climatic and geographic features of the Arctic discouraged extensive engagement by state and non-state actors. If the modest ecosystem services of the region provided for the subsistence livelihood of a relatively small human population, its unforgiving topography, sheer size, and frigid temperatures kept most everyone else away (Greaves 2016). Even during the Cold War, when the Arctic was of considerable geostrategic importance, the global powers expended little effort safeguarding their interests from the threat of invasion by ground force. The action would be either below the sea ice (e.g., nuclear submarines) or above it (e.g., bombers, missiles) but certainly not on it. In 2009, the Canadian General Walter Natynczyk gestured at that absurdity when he said, “If someone were to invade the Canadian Arctic, my first task would be to rescue them” (Keupp 2015, p. 23). The Arctic was just too inhospitable for such an endeavor. And while presence in the region could potentially have furthered certain other geostrategic interests, like hydrocarbon resource acquisition, it made more sense to pursue those ends elsewhere, like the

Middle East, a locus of both hydrocarbon plenitude and Cold War proxy conflict (Tamnes and Holtsmark 2014).

In large part, this remains the case, but one wonders for how much longer. The economic and political costs of Western intrusion into Middle Eastern affairs continue to mount. Meanwhile, the effects of anthropogenic climate change are making the Arctic more and more accessible. Consider the loss of Arctic sea ice. “[C]overage has declined by nearly 12 per cent each of the past three decades, for a remarkable total decrease of 34 per cent” (Brigham 2013a, p. 1). Thinning of that sea ice which remains has also been measured (Brigham 2013a). Of course, scientific data and computational modeling offer a range of forecasts, but one frequently cited prediction suggests iceless Arctic summers within the next 30 years or so (Wang and Overland 2009). Note, however, that none of the existing research shows sea ice disappearing entirely (Tittley and St. John 2010). Rather, “the significance of this physical change in the Arctic Ocean will be the disappearance of multiyear ice... It is this older sea ice that is difficult to break, and its presence makes it more challenging to operate in the Arctic offshore” (Brigham 2013a, p. 3). Even so, “the Arctic will still be a very challenging environment in which to operate” (Tittley and St. John 2010, p. 36). But the upshot is this: For motivated actors, it is becoming increasingly feasible to develop the region.

Other impacts of climate change include reduced snow cover, deglaciation, melting permafrost, and rapidly warming temperatures (Greaves 2016). Climate change, though, is not the only anthropogenic environmental harm currently transpiring. “[A]ir and water contamination, overfishing, increasing levels of ultraviolet radiation due to ozone depletion, habitat alteration and pollution due to resource extraction, and increasing pressure on land and resources related to the growing human population in the region” contribute to ecosystem degradation, as well (Hassol 2004, p. 5). Moreover, “[t]he sum of these factors threatens to overwhelm the adaptive capacity of some Arctic populations and ecosystems” (Hassol 2004, p. 5).

Among those at-risk populations are, of course, human ones, especially those Indigenous to the region. Take Alaskans, for instance. Following the general American trend, they mostly live in cities, but “a largely indigenous population [live] in small communities with no road access and no connection to the electrical grid... with minimal connection to the global economy” (Cochran et al. 2013, p. 558). Their livelihoods depend directly on the health and functionality of natural systems, even as dual pressures from climate change and land use erode those foundations. A brief survey of some ramifications will suffice. Climate change lowers water levels and causes unpredictable freeze-thaw sequences, both of which impede mobility overall but specifically reduce access to vital hunting grounds (McNeeley and Shulski 2011, Moerlein and Carothers 2012). Warmer temperatures alter behavior in some fish and game species, making them more difficult to take (McNeeley and Shulski 2011, Moerlein and Carothers 2012); for killed fish and game, warmer temperatures increase meat spoilage (McNeeley and Shulski 2011). In some sectors of the subsistence economy, climatic effects can even lead to greater competition between humans and other species (Moerlein and Carothers, 2012).

In sum, climate change makes subsistence foods harder and more dangerous to acquire. A

sympathetic study by the Alaska Native Tribal Health Consortium identified the following critical health issues: “food insecurity from thawing traditional underground food cellars, reduction in source water quality due to warming and algae blooms, and an increased risk of injury from travelling on thin sea ice” (Brubaker et al. 2011, p. 271). Furthermore, land use campaigns like “oil, gas and mineral extraction, along with their associated infrastructure..., affect watersheds via hydrological responses such as run-off, sedimentation, inputs of contaminants, and alteration of habitat” (Alessa et al. 2008, p. 258). As the Arctic becomes more accessible to state and non-state participation and exploitation, the risk is that stressors like these—far from abating—will only intensify and further strain Indigenous ways of life.

Thus far, land use campaigns aside (e.g., Prudhoe Bay), the lion’s share of Arctic change has originated from outside the region. In coming decades, that may no longer be the case; the Arctic itself could be “at the threshold of a new stage in the history of its use and exploitation” (Tamnes and Holtmark 2014, p. 13). And it contains much to use and exploit. As of 2008, “400 oil and natural gas fields [had been discovered onshore] north of the Arctic Circle. These fields account for approximately 240 billion barrels of oil and oil-equivalent natural gas, which is almost 10 percent of the world’s known conventional petroleum resources” (Bird et al. 2008, p. 1). Even so, the vast majority of the region’s untapped hydrocarbon potential is predicted to lie offshore, on the continental shelves; according to the United States Geological Survey, those fields could amount to 13 percent of the planet’s undiscovered oil and 30 percent of its undiscovered natural gas (Gautier et al. 2009). In terms of absolute quantity, that means volumes approaching 90 billion barrels of oil and almost 1700 trillion cubic feet of natural gas, as well as 44 billion barrels of natural gas liquid (Bird et al. 2008). In the past, “the inaccessibility of many Arctic resources made them geopolitically insignificant” (Greaves 2016, p. 664), but receding sea ice in the Arctic ocean is changing that. Beyond liquid hydrocarbons, and touching again on land use campaigns, “significant deposits of zinc, lead, gold and coal have so far been underexplored [in, at least, the American Arctic]. Given technological advancements, increased access to these resources, and the probability of improved infrastructure, there is significant potential for growth for mining operations in the Arctic” (Conley et al. 2013, p. 19).

And so the Arctic is once again geostrategically significant. The United States, Canada, Russia, Denmark, Finland, Norway, Sweden, and Iceland have, since 2006, all announced either new or retooled “comprehensive Arctic strategies,” and sovereignty, security, development, and sustainability feature as dominant policy themes (Heininen 2012, p. 2; see also Brosnan, Leschine, and Miles 2013). Meanwhile, non-Arctic states like China, Japan, South Korea, France, Germany, and the United Kingdom are eyeing the region, as well (Heininen 2012). While cooperative development receives emphasis in policy statements, “Canada, Denmark, Norway, Russia, and the United States have all either begun to rebuild their Arctic [military] capabilities, or have indicated their plans to do so in the near future” (Huebert 2010, p. 4; see also Brigham 2013b). Even so, “[t]oday’s Arctic is governed by eight developed states that arguably cooperate more than they have at any other period in history,” and the “resource boom” is much likelier to function as an axis of cooperation than conflict, given the economic potential it represents (Brigham 2013b, p. 375). So perhaps fears of Arctic war can be overblown; nevertheless, dynamics that demand normative

analysis abound. In particular, should these peaceful, cooperative, extractive designs proceed, one wonders where even the best-case scenarios will leave Indigenous subsistence economies, cultures, and so on and so forth.

### **3. Research Agenda**

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In contrast to many other research projects, this agenda prioritizes both empirical and normative dimensions of national and human security in the Arctic: interstate conflict and cooperation, strategic development of infrastructure supporting shipping and Indigenous economies, and modes of just cooperation between Indigenous and non-Indigenous communities in the circumpolar north. It focuses on both what is happening and what should happen to secure the Arctic.

This agenda is led by the following questions, each discussed in later sections: How do stakeholders conceptualize Arctic security? How does cross-cultural cooperation integrate with Arctic security? How should Arctic stakeholders approach strategic infrastructure? How can vulnerable Arctic communities best adapt to changing environmental conditions?

It is impossible to maximize all stakeholder interests simultaneously; tradeoffs and dissatisfaction are inevitable. Nonetheless, conceptions of security pervade state Arctic policies and reify cross-cultural understanding and cooperation, hence their importance. We tentatively posit that a state seeing security in terms of economic benefit is less likely to cooperate with Indigenous communities interested in food access. Similarly, a state exhibiting advanced cross-cultural understanding is less likely to militarize its Arctic aggressively. In terms of both content and participation, policy making regarding security and securitization processes will diverge according to value sets and modes of cross-cultural understanding and cooperation.

Meanwhile, the harmful effects of climate change receive a fair amount of coverage, and rightly so, as they will continue to antagonize human activities in the Arctic for the foreseeable future. But stakeholders would be remiss not to invest in identifying positive opportunities that climate change might bring. Subsistence agriculture, emergent sources of food to replace those in decline, and new vectors for mobility could develop. In light of predicted climate-related hardships, prudent stakeholders will be keen to leverage changes that admit constructive possibility. Preconditions of doing so will entail careful scientific scrutiny and flexible public policy.

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