INTRODUCTION

Subsistence foods are distinct from those that line grocery stores’ shelves throughout the United States. Mother Nature offers no guarantee that a particular kind of food will be available on demand. The Food and Drug Administration does not provide quality assurance. To procure, protect, and store subsistence foods throughout the year, Alaska Native subsistence users must use their traditional knowledge.

When the Alaska Native Claims Settlement Act (ANCSA) was enacted by the United States Congress in 1971, many Alaska Natives saw it as an encroachment on their subsistence rights. Over the last few decades, another threat to the ability of Alaska Natives to meet their subsistence needs has emerged—climate change. Climate change impacts the availability and safety of subsistence foods, the costs and risks of subsistence activities, and the very knowledge on which subsistence depends. While there are laws and programs in place to address some of the environmental and health impacts related to climate change, there is little to ensure that Alaska Natives will be able to continue their traditional subsistence lifestyles.

This article suggests that climate change impacts subsistence-dependent Alaska Natives more than the Lower 48 Natives and other United States populations. The first part of the article discusses research and observations from the 2000s, suggesting that climate change affects the Alaskan environment more than that of any other state. It also considers how climate change affects subsistence and Alaska Natives’ control over their subsistence activities. The second part of the article considers how the legal and political framework unique to Alaska limits the ability of Alaska tribes to control land and resources needed for subsistence. Finally, the article considers whether any non-tribal entity will be able to protect Alaska Natives’ subsistence interests in the face of escalating climate change.

There are a number of caveats regarding this article’s analysis of climate change. First, it is based on the premise that the earth has embarked on a period of overall warming, exacerbated by anthropogenic greenhouse gas emissions. There are still a large number of Americans who disagree with this premise. Second, many of the observations included in the article are based on weather changes, and the distinction between weather change and climate change is not always clear. Publicity surrounding climate change may influence interpretation of weather observations, whether or not this is appropriate. Third, the impacts of climate change cannot be understood in isolation from other changes, particularly those associated with economic development and rapid social and cultural change. Finally, there are 229 federally recognized tribes in Alaska. Alaska tribes have different cultures and economic situations and may have different views on the impacts of climate change.

A. The Nature of Subsistence

Alaska law defines “subsistence uses” as:
[T]he noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption.\textsuperscript{13}

This definition does not convey the significance of subsistence to many Alaska Natives who value it as a fundamental part of their culture.\textsuperscript{14} Alaska Native culture has traditionally been based on communal sharing of subsistence foods to satisfy individual and community needs.\textsuperscript{15} Communities dependent on subsistence consider it a collective or *50 cultural right (and duty) rather than an individual right,\textsuperscript{16} since a limited number of individuals usually provide for a larger community.\textsuperscript{17}

Economic development has allowed most Alaska Native communities to shift from a “pure” subsistence economy into a mixed economy, in which hunting is more efficient, comfortable, and humane.\textsuperscript{18} But subsistence has remained a critical part of Alaska Native culture, and persists even in communities with the financial means to exist in a pure market economy.\textsuperscript{19} For example, in the North Slope Borough,\textsuperscript{20} where the average household income was $55,793 in 2003,\textsuperscript{21} 56 percent of households reported that they obtained at least half of their food from subsistence sources.\textsuperscript{22} (The North Slope and other locations within *51 Alaska are displayed on the map located at the end of this article.) Most Inupiat Eskimos\textsuperscript{23} have expressed a preference for subsistence foods supplemented with store-bought food and regard a healthy lifestyle as one involving subsistence activities and foods.\textsuperscript{24}

\textbf{B. The Changing Nature of Alaska and the Arctic}

Climate change is more visible in the Arctic than anywhere else.\textsuperscript{25} In the past two decades, Arctic ambient temperatures have warmed at twice the rate of the rest of the world.\textsuperscript{26} Alaska, which contains all of the United States’ Arctic lands, has seen a rise in winter temperatures of six to eight degrees Fahrenheit over the last fifty years.\textsuperscript{27} With this warming, Alaska is experiencing changes in ocean pH levels, thawing permafrost, reductions in sea ice, changes in precipitation, storm surges, flooding, erosion, biozone shifts, and increased *52 weather variability.\textsuperscript{28} The following examples of these phenomena from recent studies and interviews with Alaska residents are meant to be illustrative rather than comprehensive.\textsuperscript{29}

\textit{i. Changes in Ocean pH Levels}

Oceans have always absorbed carbon dioxide, but they have only recently had to withstand the twenty-two million tons released each day by human activity.\textsuperscript{30} Increased levels of carbon dioxide in the air have resulted in increased levels of carbonic acid in the water and lower ocean pH levels.\textsuperscript{31} Waters in the vicinity of Alaska can hold more carbon dioxide than waters near the lower forty-eight, because more absorption takes place in colder waters, and because there is less mixing from deep ocean waters in the shallow waters of Alaska’s broad continental shelves.\textsuperscript{32}

The change in pH levels is a stressor for some Alaska crab and fish species\textsuperscript{33} and for shellfish larvae.\textsuperscript{34} A 2009 report found multiple sites in the Gulf of Alaska “where the concentrations of shell-building minerals were so low that shellfish and other organisms in the region would be unable to build strong shells.”\textsuperscript{35}

Changing ocean pH levels impact not only those subsistence users who depend on the animals that are directly harmed, but also those who depend on animals that are higher in the food chain. For example, the Inupiat depend on bowhead whales, which feed on small crustaceans such as copepods\textsuperscript{36} that are vulnerable to lower pH levels. An upset in the bowhead whales’ food supply could result in a decrease in the bowhead whale population, which would lead to reduced availability for subsistence and possibly a lowering of the Inupiat subsistence whaling quota set by the International Whaling Commission. An upset in the bowhead whales’ food supply could result in a decrease in the bowhead whale population, which could result in the International Whaling Commission reducing the bowhead whale quota for the Inupiat.

\textit{*53 ii. Thawing Permafrost}

Alaska is the only state in the Union with permafrost\textsuperscript{37} throughout most of its territory.\textsuperscript{38} Throughout much of subarctic...
Alaska, there has been a general increase in permafrost temperatures during the last several decades. Some models predict that the thirty-foot layer of permafrost closest to the surface will disappear from most of subarctic Alaska by 2100.

Thawing permafrost leads to landscape changes that can contribute to further climate change. Thermokarst (uneven terrain resulting from thawing permafrost) are becoming more common, and providing niches for new plants and shrubs. This adds "to the ‘greening’ of the tundra and warming of the soil, which in turn favors more shrub growth." Thawing permafrost also releases greenhouse gases that contribute to further warming. Finally, thawing permafrost can cause lakes and ponds to drain, contributing to dry conditions in the vicinity and increasing the likelihood of tundra fires. The abnormally high incidence of tundra fires upsets the tundra vegetation on which caribou (and in turn, subsistence hunters) depend.

*54 iii. Reductions in Sea Ice

"Alaska is also the only state in which large portions of the coastline are affected by sea ice." Sea ice is usually present along or close to the northern coast for at least eight to ten months of the year. But sea ice has been forming and attaching to the Beaufort and Chukchi Sea coasts later in the year, and breaking up earlier, resulting in less overall ice coverage. The Arctic ice caps that formed in 2007, 2008, and 2009 were the smallest three in 30 years. In the summer of 2009, roughly 50 percent of the Arctic ice cap was just a year old. In the past, multi-year ice represented 75 percent of the ice cap. It is possible that as early as 2015, the Arctic Ocean may be ice-free for part of the summer. "This would mean the disappearance of multi-year ice, as no sea ice would survive the summer melt season." With less snow and ice to reflect sunlight, more heat is absorbed into the earth--driving more snow and ice to melt.

iv. Water in the Wrong Place

Sea ice along the shore has historically protected coastal villages from fall and winter storm surges. Now, with little or no shore ice to stop them, storm waves can surge against the coast--eroding the shoreline and flooding the villages. "[V]illages in low-lying areas along riverbanks or in river deltas are susceptible to flooding and erosion caused by ice jams, snow and glacial melts, rising sea levels, and heavy rainfall." The General Accounting Office ("GAO") found that more than 86 percent of the two hundred Alaska Native villages are already subject to flooding and erosion. The villages of Kivalina, Koyukuk, Newtok, and Shishmaref are in imminent danger from flooding and erosion, and are planning to relocate. In the village of Point Hope, residents "estimate that between [five] to [eight] feet of land are lost to erosion annually" (although "a single storm could take as much as [twenty] feet"). The United Nations Intergovernmental Panel on Climate Change (IPCC) has projected that infrastructure in the Alaskan villages of Shishmaref, Nome, and Barrow and that of the Alaska Dalton Highway will be at moderate to high hazard flood risk by the mid-twenty-first century.

Meanwhile, residents further inland from the coast have reported unusually dry conditions in recent years. Plants and trees adapted to short, cool summers have grown more quickly with rising temperatures, but have then dried out before the end of the growing season.

A study of Alaska forest fires from 1959 to 1999 shows increased large fire activity co-related with drought during the fire season. Fires are more intense, and intervals between fires are decreasing. Drought at the end of the summer has extended fire season, sometimes until the snow falls in September. Forests that burn may have a harder time regenerating in the increasingly warm and dry landscape. This, in turn, reduces the habitat on which some species used for subsistence depend.

*56 Fires are rare events north of the Arctic Circle. But during the summer of 2007, high temperatures, low summer rainfall, ice retreat, and other factors created prime conditions for fires. Five lightning-induced fires burned more than 250,000 acres of Alaska’s North Slope.

v. Water Quality

Changes in water quantity may be accompanied by changes in water quality. Increased drought (or intense but infrequent rainstorms) can impact water sources by limiting groundwater restoration. Flooding and salt-water intrusion from rising
sea levels and increased precipitation can affect villages’ clean water reserves and contribute to waterborne diseases. The northward movement of wildlife can contribute to surface water contamination, as has been the case with beavers changing the course of streams and introducing Giardia to surface water supplies. In Point Hope, “warming is contributing to changes in Seven Mile Lake, the community drinking water source.”

“Temperature-influenced blooms of organic material have clogged water filters, adversely affecting water treatment.”

Climate change may allow pollutants that have been stored in glaciers or along waterways to be released as glaciers melt and shorelines erode. This is already occurring in Alberta, Canada, where persistent organic pollutants that have been frozen in Bow Glacier are being released into Bow Lake. On the North Slope, some of the persistent organic pollutant-containing landfills associated with previous Distant Early Warning sites are now eroding into the ocean and waterways.

vi. Changes in the Weather

Alaska residents have reported increasing variability and unpredictability in the weather, particularly in the patterns of wind, temperature, ice, and currents. Seasons have become less consistent, and there have been more extreme weather events and sudden storms.

vii. Lack of Baseline Data

While there are historical weather records and traditional knowledge regarding climate conditions, overall, there are relatively few baseline measurements of Arctic environmental and climate conditions. Gaps are apparent in the scientific data pertaining to the Arctic Ocean and its surrounding seas, migratory birds and marine mammals, human health, and air quality.

This lack of baseline data makes it more difficult to assess the severity of climate change (and to respond to the change) in Alaska than in other parts of the United States. Projects that may worsen the impacts of climate change may be allowed to proceed without a full understanding of the implications.

C. Direct Impacts on Subsistence

i. Subsistence Animal Mortality and Morbidity

A 2004 study forecasts that by 2100, tundra will largely disappear from the Alaskan landscape, along with the related plants and animals that inhabit the area—plants and animals on which subsistence users depend. Alaska residents have already noted changes in the location, characteristics, number, and health of plant and animal species in their areas. The examples below relate to Brant, caribou, and walruses.

The Alaska Science Center estimates that at least 30 percent of the Pacific Brant population is no longer migrating out of Alaska for the winter. The study cites climate change as the cause for the shift, and suggests that a severe cold snap could thin the already dwindling population of the birds.

During the winter, Alaska’s caribou herds must dig through snow to find lichens to eat. When there is rain instead of snow, it can freeze into a nearly-impenetrable sheet of ice, and caribou may starve. This was the case with the Western Arctic Herd in December 2005, when rain soaked the snow cover for two days. Between 2003 and 2007, the Western Arctic Herd population dropped from 500,000 to about 377,000.

Arctic marine mammals adapted to spending most of their lives on sea ice may not be able to adapt to the rapid changes taking place to the sea ice. Yupik Eskimos have reported seeing thinner walruses and fewer and weaker seals. In 2007, large numbers of walruses were first seen gathered on shores (as opposed to sea ice). In 2009, seventy-one walruses were found dead along the shore near Icy Cape. Scientists attributed the deaths to trampling as well as exhaustion from coming to shore after being out at sea a long time.
ii. Reduced Access

Subsistence resources are moving away. As sea ice melts or moves away earlier in the year, ice-dependent marine mammals move with it—sometimes too far away to be safely hunted. North Slope whalers have reported that they must now travel farther out to hunt. Increased travel time and distances add to fuel and maintenance costs and increase the risk of an accident occurring far from home.

Changes in snow cover can make snow-machine travel difficult, such that hunters may delay fall hunting until later in the season when there is more snow. Summer hunting may be upset by drought-like conditions that reduce water levels and prevent boat access to hunting areas. The result in both cases is a reduction in opportunities to hunt.

iii. Increased Risk and Reduced Efficiency

Less sea ice cover and more broken ice have made spring whaling more difficult for North Slope residents, as the water is rougher and more perilous to navigate. As ice gets thinner, it becomes too thin to support butchering. Inupiat whalers explain that “at least six feet of solid ice” are needed to bring a whale up onto the ice. With thinner ice, there is a higher risk of ice breaking, causing injury or even death. This has resulted in the harvest of smaller whales, as well as the loss of some whales that could not be brought up onto ice.

More rapid ice recession and thinner ice conditions have also affected walrus hunting, such that hunters are more often butchering walruses in the water. These conditions are not as conducive for securing a carcass, or salvaging it as completely as possible, as when on ice.

D. Indirect Impacts on Subsistence

i. Increased Ocean Traffic

Enough ice is melting to allow a new Arctic shipping route north of Alaska. In 2008, two German tourist ships passed through the area (one stopped in Barrow, Alaska). The Northwest Passage is expected to open to regular commercial shipping during summer, sometime between 2013 and 2050. The open water will not only provide for longer possible seasons of navigation, but will also likely result in increased interaction between migrating species and ships.

Increased shipping activity may have a number of repercussions on marine mammals used for subsistence. Vessels may strike marine mammals or bring alien species (for example, through ballast exchange) into the environment. An increased volume of ocean traffic heightens the risk of oil releases through accidental or illegal discharge. Vessel noise (ranging from the low frequency sounds associated with their operation to sonar used in navigation) may impact marine mammals’ ability to feed, communicate, and reproduce. Disturbance during feeding may deprive some animals of the food they need to breed, raise their young, and sustain themselves on their long migrations. In extreme cases, too much noise can lead to habitat avoidance or even death.

Black carbon emissions from ships operating in the Arctic may have indirect impacts on the Arctic region by accelerating ice melt. Ships may also emit oxides of nitrogen and sulfur, which may negatively impact air quality and human health.

ii. Effects of Oil and Gas Activity

The relation between oil and gas activity, climate change, and subsistence is complex and deserves more attention. While oil and gas activity on the North Slope serves as a source of revenue that indirectly funds subsistence activities, it has directly impacted subsistence activities by causing animal populations to relocate and precluding access to subsistence areas. North Slope hunters interviewed in 2007 reported that climate change increases the cumulative impacts of oil and gas development. Hunters attribute new species on the North Slope and changes in species behavior to both climate changes and increasing development activities.
Climate change may negatively impact onshore oil and gas activity by increasing damage to facilities and infrastructure (mainly due to melting permafrost).\textsuperscript{132} Climate change may also result in shorter, more hurried onshore winter drilling seasons, as there are fewer days during which tundra travel by ice road is possible.\textsuperscript{133} Conversely, climate change is allowing increased access and exploitation of offshore oil areas, sustaining oil demand.\textsuperscript{134}

Reduced onshore activity may mitigate some of the impacts on subsistence use of caribou, birds, and other species, while increased offshore activity will likely exacerbate the impacts on marine mammals.

\textit{iii. Food Insecurity, Changes in Diet, and Related Health Problems}

Climate change is resulting in reduced availability and access to subsistence foods. It may also interfere with food storage on the North Slope, where melting permafrost has made it more difficult to store food in traditional ice cellars.\textsuperscript{135} As soil temperatures rise, the cellars are less likely to protect food from pathogens that cause foodborne illness.\textsuperscript{136}

Climate change may add to other factors that contribute to a reduction in the consumption of subsistence foods, and exacerbate the health problems associated with this \textsuperscript{64} reduction.\textsuperscript{137} It is true that store bought food can be an essential source of fresh vegetables and whole grains. But in remote grocery stores, these items are far more expensive than foods that are high in fat and sugar.\textsuperscript{138} The increased use of less expensive and less healthy store-bought foods is linked with an increased rate of nutrition-related diseases in Alaska Natives.\textsuperscript{139}

Because subsistence plays such an important role in Alaska Native culture and society, a reduction (or even a perceived reduction)\textsuperscript{140} in the availability of subsistence foods impacts food security\textsuperscript{141} and contributes to social pathology.\textsuperscript{142} Impacts on food security may be aggravated by reports of pollutants being released into the environment and bioaccumulating in the food chain.\textsuperscript{143}

\textit{iv. Impacts on Traditional Knowledge}

Subsistence activities require traditional knowledge based on the synthesis of observations and interpretations made over from past generations.\textsuperscript{144} Particularly on the North Slope, knowledge of the environment and the ability to monitor and predict changes are critical to hunting success and safety.\textsuperscript{145} As the world has focused more attention on climate change in the Arctic, there is recognition of the value of this traditional knowledge regarding the environment.\textsuperscript{146}

\textsuperscript{65} With climate change, traditional knowledge (particularly that related to weather and ice) is becoming less reliable.\textsuperscript{147} “[H]unters increasingly rely on FM radio broadcasts instead of traditional knowledge for weather forecasts and communication about dangerous conditions.”\textsuperscript{148} The inability to forecast has caused limited mobility and increased anxiety.\textsuperscript{149} Also, the skills of traditional weather forecasting are no longer passed on to younger generations.\textsuperscript{150}

\textit{v. Reduced Ability to Adapt}

While Alaska Natives have a long tradition of adapting to changing conditions, the move from a pure subsistence economy to a mixed economy has complicated adaptation on some levels.\textsuperscript{151} Subsistence now requires funding, which requires a source of income. Many hunters take on wage-earning jobs unrelated to subsistence to earn this income.\textsuperscript{152} Almost all Alaska Natives live in permanent communities, which represent millions of dollars of infrastructure investment,\textsuperscript{153} and which provide jobs and schools. In past centuries, many groups of Alaska Natives were nomadic.\textsuperscript{154} The present legal system of private property, ownership, taxes, and required school attendance impedes a migratory existence. Thus, in the 21st century, adapting subsistence lifestyle to climate change may be more difficult.\textsuperscript{155}

A reduction in the availability and use of subsistence foods may lead more Alaska Natives in rural villages to move to cities, where there is better access to jobs, education, and lower energy costs and store bought food.\textsuperscript{156} This would contribute to the general trend of rural residents migrating to urban centers.\textsuperscript{157} Damage to coastal villages from flooding and erosion may also contribute to urban migration, as many villages may not have the resources to relocate inland.\textsuperscript{158} This migration not only takes Alaska Natives away from customary hunting grounds; it relocates them to areas where subsistence is not protected.\textsuperscript{159} (It also dilutes their legislative representation.\textsuperscript{160}) Adaptive capacity may be reduced even further as fewer people carry on
subsistence hunting practices and some traditional knowledge is lost.161

E. How the Current Legal Scheme Deprives Alaska Tribes of Control over Subsistence

The previous sections discussed how climate change impedes the ability of Alaska Natives to conduct subsistence activities. If Alaska tribes owned the land on which subsistence takes place, or if Alaska tribes were legally empowered to control subsistence resources, it would be easier for them to mitigate the impacts of climate change on their members. For example, tribes could adjust the timing of hunting seasons to match the times during which subsistence animals are now present. Additionally, they might consider modifying development to ensure access to areas that are important to subsistence.

*67 But for the past four decades, tribal control over land and resources needed for subsistence has been impeded by Alaska’s legal and political framework. As climate change intensifies, it may aggravate this lack of control.

i. Loss of Direct Control over Subsistence

In the Lower 48, the hunting and fishing rights of many tribes are protected by treaties. In interpreting these treaties, courts have adopted Indian canons162 that recognize the trust relationship between the federal government and tribes.163 Treaty provisions regarding fishing rights have been interpreted to guarantee access to tribes’ customary fishing grounds;164 allow tribal enforcement of tribal fishing regulations against tribal members off-reservation;165 immunize tribes from the enforcement of State fishing regulations in most circumstances;166 and ensure in-stream water flows adequate to support the fish upon which tribes rely.167 Alaska Natives do not have treaties with the United States that protect their subsistence rights.168 When the United States finally addressed the rights of *68 Alaska Natives in ANCSA, it extinguished aboriginal hunting and fishing rights in the State of Alaska.169 In *69 *7iupiat Community of the Arctic Slope v. United States170 the Ninth Circuit extended the effect of ANCSA to the use of sea ice many miles from shore.171 In *70 Native Village of Eyak v. Trawler Diane Marie, Inc.172 the Ninth Circuit held that “the federal paramountcy doctrine” barred aboriginal claims to the outer continental shelf, including those for exclusive hunting and fishing rights.173

Not only are Alaska tribes unable to assert treaty rights in order to meet their subsistence needs, they lack the benefit of Indian canons requiring interpretation favorable to tribes. While the Indian canons arguably apply to statutes as well as treaties,174 courts have held that ANCSA diminished the applicability of the canons.175 The concurring opinion in *71 Nenana Fuel Co., Inc. v. Native Village of Venetie176 interpreted ANCSA’s legislative history to mean that “Congress intended that after ANCSA’s enactment there was to be no trust *72 relationship between the federal government and the Native groups of Alaska, as there is between the government and the Native tribes of other states.”177

Congress attempted to address ANCSA’s impact on subsistence by passing the Alaska National Interest Lands Conservation Act (ANILCA) in 1980.178 ANILCA established a priority for the taking of fish and wildlife on public lands for nonwasteful subsistence uses over other uses.179 But the subsistence priority is based on a set of factors that includes rural residency but does not include Native status,180 and it does not apply to Native Corporation-owned lands.181 When subsistence resources are too scarce to satisfy for all users, ANILCA provides for limitations on take based on “(1) customary and direct dependence upon the populations as the mainstay of livelihood; (2) local residency; and (3) the availability of alternative resources.”182

Ever since the Alaska Supreme Court determined that the rural preference violated the Alaska Constitution,183 ANILCA has been applied only to federal public lands (about 67 percent of the State).184 State law governs subsistence on state and private lands, including those owned by Native Corporations.185 While state law prioritizes subsistence over other uses in subsistence areas,186 it does not distinguish between Natives and non-Natives or *73 urban and rural residents.187 In areas identified as “nonsubsistence areas” (generally urban areas), there is no subsistence priority at all.188

The Endangered Species Act (ESA) (administered by the U.S. Fish and Wildlife Service (FWS)) and the Marine Mammal Protection Act (MMPA) (administered by the National Marine Fisheries Service) generally exempt Alaska Native subsistence hunting from prohibitions on take.189 Likewise, the Migratory Bird Treaty Act190 exempts Alaska Native subsistence hunting from a prohibition on the take of migratory birds during the spring and summer seasons.191

But, if the relevant agency finds that subsistence is “materially and negatively affect[ing] the threatened or endangered
species”72 (including those protected by the Migratory Bird Treaty Act) or causing a “species or stock of marine mammal ... to be depleted,”73 the agency may prescribe regulations restricting subsistence take.

As climate change intensifies, it is likely that more species will be listed as threatened or depleted.74 North Slope tribes are concerned that listings may lead to federal 71 determinations that subsistence take must be limited to ensure species survival, while the underlying reason for the listing--climate change--will not be addressed.75 This concern is realistic, considering restrictions that Fish and Wildlife Service (FWS) implemented in 2009 for North Slope migratory bird subsistence take.196 While the 2009 regulations were designed to protect the Steller’s eider (a sea duck listed as a threatened species under the ESA77), North Slope hunters believe that FWS disregarded local knowledge regarding the actual population status.198 To the extent the population of Steller’s eiders had changed, hunters attributed the decline to climate change and other non-hunting factors.199 The regulations imposed hunting restrictions (such as hunting hours) on North Slope subsistence users without addressing issues that might have been more relevant to the conservation of Steller’s eiders.200

Neither the Endangered Species Act nor the Marine Mammal Protection Act accords tribes any role in the federal government’s determination of whether to limit their subsistence take.201 Tribes have relied on tribal consultation requirements in executive orders as a means to provide input.202

*72 But agencies differ in their conception as to when tribal consultation is actually required.203 When new migratory bird regulations were proposed for the North Slope in 2009, North Slope tribes argued that the regulations effectively limited their subsistence take and thus required formal tribal consultation. FWS asserted that formal consultation was not required because the regulations would be issued pursuant to the Migratory Bird Treaty Act--an act that affects Natives and non-Natives alike.204 In fact, the Migratory Bird Treaty Act exempts “indigenous inhabitants of the State of Alaska” but does not define the term.205 FWS’s regulations define “indigenous inhabitant” as “a permanent resident of a village within a subsistence harvest area, regardless of race.”206 The Marine Mammal Protection Act is the only state or federal act that clearly distinguishes between subsistence protections for Natives and non-Natives.

Distinctions between Natives and non-Natives are relevant because Native hunting traditions have developed over thousands of years and are an integral part of Native culture and society. Alaska Natives believe that subsistence laws (particularly those of the State of Alaska207) fail to recognize the significance of Native hunting traditions; and at times tradition and law conflict.208

One conflict arises from hunting restrictions based on calendar dates rather than seasonal change. For instance, laws regulating the traditional migratory bird hunt, which takes place mostly in the spring and summer, close the subsistence season on September 1. At that time, subsistence hunters are treated like sport hunters and are subject to specific 73 take limits.209 But subsistence hunting of migratory birds has traditionally continued past September 1 until the birds leave the North Slope.210

With climate change, it is possible that the window for hunting migratory birds may become inconsistent with the periods during which the subsistence season is legally open.211 In a hearing on the North Slope migratory bird regulations, one hunter indicated that she used to hunt for Brant from June to August. Now, variable weather conditions can delay Brant hunting until August.212 But by this time, the season for Brant hunting is closed per the regulations.213 And since the regulations limit hunting hours in August, there are fewer opportunities for hunting other birds.214 Another hunter testified that changing ice conditions limited his ability to hunt Brant during the open season.215

Faced with all of these restrictions on their ability to control subsistence, Alaska Natives have sought opportunities to co-manage resources with state and federal governments. The Alaska Eskimo Whaling Commission (AEWC) is one of the few entities that have been accorded a meaningful management role. With authority from five tribal governments216 and the federal government,217 AEWC governs bowhead whaling by 74 Eskimos in ten Arctic villages. Each year, it enters into a conflict avoidance agreement with oil and gas companies to ensure that offshore activity does not interfere with whaling.218

In 1994, an amendment to the Marine Mammals Protection Act provided for cooperative agreements between FWS and Alaska Native organizations to conserve marine mammals and provide for the co-management of subsistence use.219 FWS has entered into agreements with various Native entities, including the Eskimo Walrus Commission (EWC) (which represents 19 villages).220 But while FWS has cooperated with EWC in terms of funding, monitoring, and outreach,221 there has been no real transfer of authority to EWC. FWS continues to conduct its own law enforcement,222 and the two entities have separate goals
regarding walrus conservation.223

Tribes that take part in the Alaska Migratory Bird Co-management Council (AMBCC) struggle with a similar lack of power. AMBCC is a statewide management body consisting of FWS, the Alaska Department of Fish and Game, and Alaska tribes. There are three votes allocated to members: one to FWS, one to the state, and one to the collective group of tribes. AMBCC’s role is to “provide meaningful input in the development of recommendations on regulations for spring and summer harvest and conservation of migratory birds in Alaska.”224 But AMBCC’s recommendations are advisory only,225 and in 2008, AMBCC’s recommendation not to impose additional restrictions on North Slope migratory bird subsistence hunting was disregarded.226

As climate change contributes to animal population declines and impedes subsistence access and use, tribes will want to attain more authority over subsistence *75 management. If the government responds to population declines by simply placing more restrictions on subsistence take, neither climate change nor subsistence needs will be adequately addressed. Co-management regimes that utilize subsistence users’ traditional knowledge and experience (and accord tribes a meaningful management role) may be part of a larger strategy to respond to climate change.

**ii. Loss of Direct Control Over Land and Development Decisions**

Even if Alaska tribes lack control over subsistence management, having control over land use decisions may help tribes protect Alaska Natives’ subsistence interests in the face of climate change. As discussed below however, Alaska tribes have no direct control over the land on which many of their members live and hunt.

While Alaska tribes retain some of the inherent sovereign powers held by all tribes,227 they lack jurisdiction over activities on what were once their lands.228 *Alaska v. Native Village of Venetie Tribal Government* suggests that, aside from the few reservations that remain in Alaska,229 the only “Indian country” over which Alaska tribes may have some *76 jurisdiction consists of those native allotments230 and townsites231 that are still held in trust by the federal government.232

ANCSA provided for portions of the lands that tribes once controlled to be transferred to regional and village Native Corporations in fee simple.233 Native Corporation lands are not “Indian Country,”234 and are regulated in the same manner as almost any private land.235 Land is collectively owned by corporate officers and directors who are not necessarily tribal leaders.236 Tribal members’ control over the land is limited to voting their shares for corporate resolutions and supporting management who share their views.237

ANCSA required that regional Native Corporations be for-profit entities under the laws of Alaska,238 although these corporations may express other purposes in their Articles of Incorporation.239 Village Native Corporations were allowed to incorporate as nonprofit institutions,240 but all chose to operate for profit.241

*77* A number of law review articles discuss inconsistencies between indicators of corporate success (i.e., profits) and successful land stewardship.242 This discussion is relevant to Alaska Native Corporations that were handed money and land (much of it in remote places) and mandated to be self-sustaining.243 The primary source of income for most of the successful corporations has been the development of nonrenewable natural resources on their land.244 Even the most responsible development has impacted subsistence habitat in Alaska to some degree.245 Meanwhile, corporations that are not financially successful may be more focused on trying to avoid bankruptcy than on land management and subsistence protection.246

*78* Resource development and market competition247 have occasionally pitted corporations against each other and against tribes on questions of land management. In some cases, corporations favor development of natural resources on corporate land, while tribes oppose it. One example is that of NANA Corporation, which owns the land on which Tech Resources’ Red Dog Mine is located. The Corporation receives 25 percent of all profits from the mine’s operation.248 In 2009, Tech Resources settled with residents of Kivalina (one of the region’s villages) regarding claims that Red Dog Mine had contaminated Kivalina’s drinking water supplies.249 In February 2010, Kivalina and Point Hope tribal councils and environmental groups appealed the reissuance of Red Dog’s water discharge permits.250 The appeals have divided the community. At least nine organizations in the area have passed resolutions in support of new permits to allow Red Dog’s expansion, including the Northwest Arctic Borough, and tribal governments in Noorvik, Kiana, Kotzebue and Deering.251 Rosie Barr, NANA’s resources manager, said the appeal is “a direct threat to the social, cultural, environmental, and economic benefits our
shareholders receive from the mine."

Another example concerns the impending development of the outer continental shelf (OCS) adjacent to the North Slope, which is becoming more accessible as more sea ice melts. While Native Corporations have no OCS ownership interests, they are in a good position to offer services to offshore oil companies. ASRC Energy Services, Inc., a subsidiary of the Arctic Slope Regional Corporation (ASRC) has worked closely with Shell Offshore, Inc. to assist in obtaining necessary federal permits. The same subsidiary plans to conduct seismic testing in the Chukchi Sea. Olgoonik Corp., the Village Corporation for the Chukchi Sea coast village of Wainwright, and Ukpait Inupiat Corp. (UIC), the Village Corporation for Barrow, are partnering with Shell Offshore, Inc. to operate logistics bases in Wainwright and Barrow. Meanwhile, environmental and Alaska Native groups (including the Alaska Eskimo Whaling Commission, the Inupiat Community of the Arctic Slope and the Native Village of Point Hope) have brought law suits to block lease sales and drilling plans from proceeding. In December 2009, these groups asked the Ninth Circuit Court of Appeals to overturn a federally approved plan that would allow Shell Offshore, Inc. to drill in the Beaufort Sea in 2010.

That said, there are examples of Native Corporations acting to protect the subsistence values of tribes. For example, in December 2009, the Bristol Bay Native Corp. (a Regional Corporation) voted to oppose the Pebble Mine (located in the Bristol Bay region) due to concern about its impact on fish runs.

Some Village Corporations (including UIC) have entered into Memoranda of Understanding with tribes regarding the use of the land. The agreement between UIC and the Native Village of Barrow recognizes that, “UIC and NVB have a mutual interest in assuring that hunting and fishing are managed on UIC’s lands for the mutual benefit of UIC, other ANCSA shareholders and NVB’s members so long as most of them are the same people.” The agreement gives NVB limited jurisdiction over UIC’s land for the purpose of implementing the agreement. It sets forth hunting and fishing policies and requires non-ANCSA shareholders to obtain permits to hunt and fish on UIC land. UIC also cooperated with the Native Village of Barrow and the North Slope Borough to enter a Memorandum of Agreement with FWS regarding FWS’s implementation of its 2009 North Slope migratory bird hunting regulations.

iii. The Evolution of a Corporate Identity

When ANCSA was enacted, stock in regional Native Corporations was issued to each member of the indigenous population of Alaska. As of yet, no corporations have amended their articles of incorporation to allow stock to be transferred to non-Natives. Despite this, the corporations have nevertheless grown and evolved in ways that have separated them from the more subsistence-oriented tribes (and the people that are most likely to be negatively impacted by climate change).

Many corporations have created subsidiaries expressly for development purposes, adding another layer between tribal members and control of corporate activities. Unlike their parent companies, these development-oriented subsidiaries generally do not provide for the protection of culture and wellbeing in their articles of incorporation.

Only a fraction of regional Native Corporation employees are shareholders, though this figure is higher for NANA and ASRC. In subsidiaries of Native Corporations located outside of Alaska, there are very few Alaska Native employees.

ASRC, along with NANA and Sealaska, amended their articles of incorporation in 1991 to allow descendents of original shareholders to become new shareholders. These new shareholders may grow up in urban areas (or outside of Alaska) and have limited subsistence experience and little identification with the lands once held by their tribes.

Previously, ASRC and UIC were headquartered on the North Slope, where their lands are located. ASRC, UIC and many of their subsidiaries now have their principal offices in Anchorage. This has put more than 700 miles between North Slope subsistence users and corporate decision-makers. Also, the impacts of climate on subsistence are far less visible in urban Anchorage than on the North Slope.

When ASRC was formed, all of the senior managers were whaling captains with direct involvement in subsistence whaling. This is no longer the case. The offshore oil and gas activity ASRC and its subsidiaries now support is opposed by whaling captains, as evidenced by AEWC’s lawsuit against federal approvals of this activity. Thus, there is a split between those with traditional subsistence whaling values and corporate management.
F. Protecting Tribes’ Subsistence Interests—What is the Way Forward?

Outside of federal grants, Alaska tribes have very few sources of funding. Most cannot afford to hire lobbyists to fight against the current legal scheme or address climate change. Although various entities have acted on behalf of tribes, none has interests that are completely aligned with those of the tribes.

i. The Inuit Circumpolar Conference

The Inuit Circumpolar Conference (ICC) was founded in 1977 by Eben Hopson of Barrow, Alaska (the first North Slope Borough mayor) to represent the Inuit of Alaska, Canada, Greenland, and Russia. In 2005, ICC Chairperson, Sheila Watt-Cloutier (a resident of Iqaluit, Nunavut, Canada), filed a petition to the Inter-American Commission on Human Rights, alleging that the United States violated international law by contributing to global warming. Alaska Native individuals from Barrow, Shishmaref, and Savoonga signed onto the petition. Although the Commission decided against hearing the petition, it invited Watt-Cloutier to testify at a hearing on climate change and human rights in March 2007.

In 2009, Jimmy Stotts, a resident of Anchorage, Alaska (originally from Barrow) became the ICC chairperson. At the December 2009 Copenhagen summit on climate change, Stotts said that that Inuit-owned oil, gas and mining projects should be exempted from any new global agreement on climate change. According to Aqqaluk Lynge, the ICC vice-chair for Greenland, Stotts’s statement does not represent the official ICC position. But Stott’s statement reflects the reality that the issues of climate change, subsistence protection, oil and gas development, and the well-being of Alaska Natives have become thickly tangled in Alaska.

ii. The Role of Government

The Alaska Eskimo Whaling Commission (AEWC), discussed above as a rare case of post-ANCSA tribal subsistence management, is funded by a non-Native group, the North Slope Borough. The Borough, in turn, is funded by oil and gas development. Formed by Inupiat Eskimo leaders to represent Inupiat interests in light of the 1968 discovery of oil at Prudhoe Bay, the Borough has been able to contribute to a number of efforts to promote subsistence interests.

But the Borough is a political subdivision of the State of Alaska, subject to state and federal laws and the vote of its inhabitants. Particularly in Barrow (the Borough seat), the ratio of non-Natives to Inupiat is now far greater than it was before the Borough’s formation. The Borough represents a wide variety of interests aside from subsistence protection, including those related to economic development.

While the Borough joined tribes and environmental groups in a 2007 lawsuit challenging the decision of the Minerals Management Service (MMS) not to prepare a supplemental environmental impact statement for a proposed offshore oil and gas lease sale, it did not join in a later suit for review of a MMS order approving a five-year program to expand offshore oil and gas leasing areas. If federal law is changed to allow Alaska and its political subdivisions to share revenue from offshore drilling, the Borough’s interests in economic viability may outweigh its opposition to offshore activity.

The Borough has joined with ASRC in opposing polar bear critical habitat designations on grounds that they would impede economic development. The Borough’s joint letter with ASRC argues that Inupiat culture is more than just continuing subsistence hunting—it is now built on economic enterprises. As such, “[t]he existence of native culture and villages cannot now be severed from the economic solutions established in ANCSA.”

Like the Borough and some of the more successful Native Corporations, the State of Alaska is heavily dependent on oil and gas revenue. The State is unlikely to take an active role in working with tribes to mitigate the impacts of climate change on subsistence if this means curtailing oil and gas development.

In 2007, then-Governor Sarah Palin created a Climate Change Sub-Cabinet to develop “appropriate measures and policies to prepare communities in Alaska for the anticipated impacts from climate change” based on “the state’s knowledge of the actual and foreseeable effects of climate warming in Alaska.” But the measures and policies only pertain to emergency
preparedness, shoreline protection, and technical assistance and small grants to communities. They do not address the underlying causes of climate change or impacts on subsistence.

In August 2008, Palin filed suit to reverse the polar bear listing on the basis that models projecting future declines in sea ice were flawed. The State legislature appropriated money for the lawsuit and an additional $2 million for a conference and a public relations campaign to debunk the federal government’s scientific research on global warming. Legislative leaders stated that the polar bear listing would have troubling effects on Arctic oil development and the state’s economic future. In March 2010, the State moved to intervene in a lawsuit over the Environmental Protection Agency’s (EPA) decision to regulate greenhouse gas emissions. In short, while the State has acknowledged the existence of climate change, it seems unlikely to take a lead role in addressing its underlying causes.

**iii. The Role of Environmental Groups**

Alaska tribes have sometimes found allies in environmental groups opposed to oil and gas activity. In 2008, the Native Village of Kivalina joined with other tribes and environmental groups to file a lawsuit in the Northern District of California against oil, power and coal companies for their contribution to the damage wrought by climate change. The complaint sought the costs of relocating the village (which could range from $100 million to $400 million). The case was dismissed, and is currently on appeal to the Ninth Circuit Court of Appeals.

While environmental groups working in Alaska generally support subsistence, the alliance may be tested as Arctic warming increases and more species are listed as “threatened” under the Endangered Species Act or “depleted” under the Marine Mammals Protection Act. The listing of the polar bear as a threatened species, prompted by a 2005 Center for Biological Diversity lawsuit, was one of the first listings based on climate change. The Center for Biological Diversity has identified 350 species at risk from climate change and has petitioned FWS to list and designate critical habitat for ringed, bearded, and spotted seals. This has troubled Iñupiat tribe members who rely on these animals as subsistence resources.

Environmental groups could encourage federal and state agencies to enter into more meaningful co-management regimes with Alaska tribes. Such a move may build trust between environmentalists and tribes and, if successful, decrease the likelihood of restrictions on subsistence take based on government determinations that restrictions are necessary to stabilize declining populations of listed species.

**iv. Roles for Native Corporations?**

North Slope hunters, interviewed in 2007 regarding impacts on subsistence from development and climate change, suggest that more renewable energy sources should be used. While these sources can still impact wildlife and habitat, the impacts are localized and relatively mitigatable (unlike greenhouse gas emissions).

Although Alaska is the second-largest oil producing state in the country, it is already generating 24 percent of its electricity from renewable sources. There is potential for much more development of wind and tidal energy. Native Corporations are in a good position to take advantage of alternative energy development opportunities on their land. As of March 2010, Native Corporations have no large scale renewable energy developments in production. But a number of corporations, particularly Cook Inlet Region, Inc., have taken steps in this direction. The Department of Energy has funded renewable energy feasibility studies by the Bristol Bay Native Corporation, the Kenaitze Indian tribe, the Native Village of Venetie, the Sealaska Native Corporation, and the Yukon-Kuskokwim Health Corporation. NANA Regional Corporation is collecting wind data and identifying potential geothermal sites in its region to assess the feasibility of wind and geothermal energy. Sealaska Corporation is in the process of converting its corporate headquarters in Juneau to a wood-pellet-fired boiler system. Bering Straits Native Corporation has partnered with a village corporation to develop commercial renewable energy.

Projects such as these are necessary to reduce or eliminate greenhouse gas emissions. At the same time, the direct impacts of these projects on climate change are imperceptible. Even if humans could eliminate all greenhouse gas emissions
immediately, overall temperatures would likely continue to increase for some time, and subsistence would continue to be impacted. A more direct measure would be for more Native Corporations (including subsidiaries) to enter into memoranda of agreement with tribal leaders regarding land use. While such memoranda could not alter Alaska corporate law, they could provide for consultation with tribal governments on decisions that impact subsistence habitat and natural resource development.

Another approach may be for Native Corporations to set aside areas of their land that are important for habitat (i.e., breeding and feeding areas) and subsistence use. While this could also be accomplished through municipal zoning, corporate action could be quicker and provide for more flexibility. Flexibility may be important as environmental conditions change and areas of importance shift. Under this approach, corporations may continue to maintain full control over the land.

Native Corporations could also consider granting important habitat and subsistence areas to tribes in the form of a trust. A 1988 amendment to ANCSA allows a corporation to convey surface land and other assets to a settlement trust “to promote the health, education, and welfare of its beneficiaries and preserve the heritage and culture of Natives.” A settlement trust cannot operate as a business, alienate land, or convey timber resources (except to prevent fires and the spread of disease). As of 2008, about twenty-five settlement trusts had been established by Alaska Native corporations. But thus far, none have been enacted to protect land for subsistence or habitat purposes. The closest approximation is Haida Corporation’s settlement trust to hold cutover timberland in anticipation of the harvest of the second growth. Most of the settlement trusts currently in existence simply provide cash distributions to the beneficiaries on a pro rata basis.

CONCLUSION

Climate change affects wildlife-dependent tribes more than it does the larger American society. Alaska tribes are particularly impacted by climate change because of their location in a biozone that is extremely sensitive to warming and because the current legal system deprives them of direct control over their land and natural resources. While Alaska tribes have benefitted from the assistance of government entities, environmental groups, and Native Corporations, none of these completely shares the tribes’ interest in subsistence protection or faces the same kind of threat to its well-being from climate change.

Native Corporations could empower tribes by entering into arrangements that allow tribal leaders to have greater roles in land and natural resource management. While Native Corporations cannot stop climate change simply by pursuing alternative energy sources instead of developing oil and gas reserves, they can send a message that they are concerned about climate change. Native Corporations can act as leaders in what may be an inevitable shift to renewable energy.

TABULAR OR GRAPHIC MATERIAL SET FORTH AT THIS POINT IS NOT DISPLAYABLE

Footnotes

a1 Ms. Barrett Ristroph has worked as a North Slope Borough Assistant Attorney in Barrow, Alaska since November 2007. This article was not written on behalf of the North Slope Borough, and the views expressed are not necessarily those of the North Slope Borough. The author would like to thank Johnny Aiken for his review of the article and Mickey Reed for creating the map that accompanies this article.

1 Attempting to convey the magnitude of climate change and its effects on Alaska tribes in a single law review article takes a bit of hubris, especially when the author is a non-Native, non-hunting vegetarian. But here is a start.

See James A. Fall, et al., Walrus Hunting at Togiak, Bristol Bay, Southwest Alaska, ALASKA DEP’T OF FISH & GAME, DIV. OF SUBSISTENCE, WALRUS HUNTING AT TOGIAK BRISTOL BAY, SOUTHWEST ALASKA 24, (1991), available at http://www.subsistence.adfg.state.ak.us/TechPap/tp212.pdf (providing the example of subsistence use of a beached walrus carcass, where botulism is a concern). A subsistence user’s only mechanism of testing the freshness of the walrus is to slit the hide with a knife. Id. If oozing occurs, it means that the animal has deteriorated to a condition called “qallatek” and cannot be used. Id.


See infra Parts III (Direct Impacts on Subsistence) and IV (Indirect Impacts on Subsistence).

See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT (2007), available at http://www.ipcc.ch/publications_and_data/ar4/syr/en/main.html; Richard A. Feely, Ocean Acidification, (Jan. 29, 2010) (on file with the author) (the atmospheric concentration of carbon dioxide is now higher than that experienced on Earth for at least the last 800,000 years, and is expected to continue to rise).


See id. at 65.


See Huntington & Fox, supra note 8, at 63 (noting that some communities, such as those in Greenland that fish for cod, may see benefits from climate change if fish stocks increase).

ALASKA STAT. § 16.05.940 (2009).

See URS CORP., NORTH SLOPE BOROUGH COMPREHENSIVE BACKGROUND REPORT, 3-73 (2005), available at http://www.north-slope.org/information/comp_plan/BackgroundReport06.pdf [hereinafter NSB COMPREHENSIVE PLAN] (citing the twelve Iñupiat values, including “HUNTING TRADITIONS--Reverence for the land, sea and animals is the foundation of our hunting traditions”); NATIVE VILLAGE OF PORT LIONS, http://portlions.net/ (last visited Oct. 31, 2010) (values include “protected subsistence”); ALASKA COASTAL MGMT. PROGRAM, NORTH SLOPE BOROUGH COASTAL MANAGEMENT PLAN 74 (2007), available at http://alaskacoast.state.ak.us/District/FinalFinalPlans/NorthSlope/NSB_Chap_7_ResourceInventoryAnalysis.pdf [hereinafter NSB ACMP PLAN] (quoting subsistence hunters in Kaktovik, Alaska: “In fact, the more we look at it, think about it, the more insult we feel by its application to our lives. We are not peasants. We do not subsist; we thrive here, live our lives with great relish.”).


17 See JAMES S. MAGDANZ ET AL., ALASKA DEP’T OF FISH AND GAME, DIVISION OF SUBSISTENCE, THE PRODUCTION AND DISTRIBUTION OF WILD FOOD IN WALES AND DEERING, ALASKA 58 (2002), available at http://www.subsistence.adfg.state.ak.us/techpap/tp259.pdf (in a study on the production and distribution of wild food in the Iñupiat villages of Wales and Deering, researchers found that about 30% of the households accounted for 70% or more of the harvest, by weight). See also NSB ACMP PLAN, supra note 14, at 75-76.


19 See THOMAS R. BERGER, VILLAGE JOURNEY: THE REPORT OF THE ALEUTIAN ISLANDS ESKIMO COMMISSION 58 (Hill & Wang) (1985) (there is no cash cutoff point at which Alaska Native individuals or households stop harvesting fish and game).

20 Alaska is divided into “boroughs” instead of counties, and The North Slope Borough, covering 89,000 square miles of the Arctic, is the largest borough and the largest municipality in the United States. NSB COMPREHENSIVE PLAN, supra note 14, at 3-75.

21 Although the median household income in Alaska is high compared to other states, there is a great income disparity between rural and urban communities. See Neal Fried and Brigitta Windisch-Cole, *Alaska: An Interesting Income Picture*, ALASKA ECON. TRENDS (Nov. 2005), available at http://www.labor.state.ak.us/research/trends/nov05inc.pdf. When the cost-of-living is considered, these disparities grow even larger. Id. North Slope Borough household incomes are relatively high compared to other rural areas, due to revenue generated from oil and gas production. This revenue allows the areas’s Native Regional Corporation (Arctic Slope Regional Corporation) to issue substantial dividends to its Native shareholders. It also creates a large tax base for the Borough, which is able to employ a large number of local residents. North Slope Impacts, ALASKA OIL & GAS ASS’N, http://www.aoga.org/facts-and-figures/north-slope (last visited Aug. 18, 2010) (North Slope Borough has 810 employees).

22 North Slope Impacts, supra note 21. The percentage of subsistence sources changes depending on whether a household is Native or non-Native. In Barrow, over ninety-one percent of the Iñupiat households that were interviewed participate in the local subsistence economy, while approximately two-thirds of non-Iñupiat households did not use wild resources obtained from hunting, fishing, or gathering. Id.; URS CORP., BARROW VILLAGE PROFILE 4.3-6 (2005), available at http://www.north-slope.org/information/comp_plan/BarrowVillageProfile06.pdf. See also Aaron Wernham, Iñupiat Health and Proposed Alaskan Oil Development: Results of the First Integrated Health Impact Assessment/Environmental Impact Statement for Proposed Oil Development on Alaska’s North Slope, 4 ECOHEALTH 500, 506 (2007) (North Slope villages harvest between 300 and 800 pounds of subsistence foods per capita annually, among the highest harvest figures in Alaska; the consumption of subsistence foods has been estimated to provide roughly 50% of caloric needs).

23 NSB COMPREHENSIVE PLAN, supra note 14, at 3-61 (North Slope Borough is home to a “predominantly Iñupiat Eskimo population”; these Alaska Natives, a subset of the circumpolar Inuit, are known as both “Iñupiat” and “Eskimo”).

24 See Thériault, supra note 15, at 50; MILTON M.R. FREEMAN ET AL., INUIT, WHALING AND SUSTAINABILITY 36 (1998) (the Iñupiat generally believe that there are nutritional benefits to bowhead whale meat that cannot be acquired from other food sources); Telephone interview with Barrow subsistence hunter in Barrow, Alaska (Mar. 20, 2010).

See Allen J. Parkinson et al., *Potential Impact of Climate Change on Infectious Disease in the Arctic*, 64 *Int’l J. Circumpolar Health* 478, 479 (2005).


Id.


See *id*.


Permafrost, NATURAL RES. CAN., http://cgc.rncan.gc.ca/permafrost/whatism_e.php (last updated Dec. 21, 2007) (“Permafrost is defined on the basis of temperature, as soil or rock that remains below 0°C throughout the year, and forms when the ground cools sufficiently in winter to produce a frozen layer that persists throughout the following summer.”).


overall temperatures have increased, permafrost temperatures on the North Slope were relatively stable from 2000 to 2008).

40 Jeff Richardson, *Permafrost’s Future in Alaska Looks Poor, but the Forecast Isn’t All Bad*, FAIRBANKS DAILY NEWS MINER (Nov. 6, 2009), http://newsminer.com/pages/full_story/push?articlePermafrost%E2%80%99s+future+in+Alaska+looks+poor+but+the+forecast+isn%E2%CC80%99t+all+bad&instance=home_lead_story.


43 Id.

44 Id.


46 See Sherwonit, supra note 42.

47 See Sherwonit, supra, note 42 (discussing impact of fires on lichens, which comprise most of the caribou diet).


49 Id.

50 The Beaufort and Chukchi Seas lie between the North Slope and the Arctic Ocean.

51 See Alaska Copenhagen Presentation, supra note 27 (comparing data from the 2000s with data from the 1970s).


53 See Bluemink, supra note 52.

54 Id.

See Weise, supra note 45.


GAO Report, supra note 59.

Id. at 2-3.

Id. at 4.

Id. at 37.

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, supra note 6, at 5.2 (Risks to unique and threatened systems); see also U.S. ARMY CORPS OF ENG’RS. ALASKA DIST., BARROW, ALASKA: COASTAL STORM DAMAGE REDUCTION DRAFT INTERIM FEASIBILITY REPORT, §§ 2.2.3.1, 5.1 (2008) (predicting the need to move or condemn 31 structures over the next 50 years due to the “very real threat of flooding and erosion”).


See Weise, supra note 45.


See id.

See Weise, supra note 45.

See Sherwonit, supra note 42; see also Jeffrey G. Miller, Remediing Our Fragmented Governmental Structures to Deal with Our Nation-on-Edge Problems, 38 ENVT. L. REP. NEWS & ANALYSIS 10,187, 10,188 (Mar. 2008) (in summer 2004, forest fires in northern Alaska burned an area as large as the state of Connecticut).
See Sherwonit, supra note 42.


Salt water intrusion is the mixing of saltwater with freshwater, occurring in either surface-water or groundwater bodies. Glossary of Statistical Terms, ORG. FOR ECON. CO-OPERATION & DEV., http://stats.oecd.org/glossary/detail.asp?ID=2371 (last updated Nov. 22, 2001)


See Furth, supra note 73, at 256; Warren supra note 28, at 491.

POINT HOPE REPORT, supra note 59, at 2.

Id.

See Jules M. Blais et al., Melting Glaciers: A Major Source of Persistent Organochlorides to Subalpine Bow Lake in Banff National Park, Canada, 30 AMBIO 410, 410-15 (Nov. 2001) (study showed that melting glaciers supply 50 to 97% of the organochlorine inputs to a subalpine lake in Alberta, Canada, while contributing 73% of input water); Lori Verbrugge, PowerPoint presentation, Traditional Foods in Alaska: Potential Threats from Contaminants and Climate Change (Feb. 2010), available at http://www.climatechange.alaska.gov/docs/afe10/3_Verbrugge.pdf.

See North Slope Borough’s Comments to the U.S. Army Corps of Engineers on the Proposed Amendment to the Record of Decision for Site LF007, Point Lonely (Jan. 22, 2009) (on file with the author); see generally David Carpenter et al., Polychlorinated Biphenyls in Serum of the Siberian Yupik People from St. Lawrence Island, Alaska, 64 INT. J. CIRCUMPOLAR HEALTH 322 (2005), available at http://jich.fi/download.php?abstract_id=172&file_nro=1; see Comments from Edward S. Itta, Mayor of North Slope Borough, to the U.S. Army Corps of Engineers on Environmental Assessment and FONSI for HTRW Removal Action, Kugra Former Radar Station Landfill, ER 09-03 (Mar. 5, 2009) (on file with the author). Distant Early Warning radar stations were installed throughout Alaska and Canada during the Cold War era to detect and guard against Soviet strikes. Many are now considered contaminated sites. See Contaminated Sites Program, ALASKA DEP’T OF ENVTL. CONSERVATION, http://www.dec.state.ak.us/spar/csp/dod_sites.htm (last visited Sep. 21, 2010).


POINT HOPE REPORT, supra note 59, at 14.

See GAO Report, supra note 59 (“Alaska has significant [environmental] data gaps,” in part due to “a lack of monitoring equipment in remote locations.”); See NSB ACMP PLAN, supra note 14, at 66, 147, 151; NSB COMPREHENSIVE PLAN, supra
See AMSA 2009 Report, supra note 52, at 16, 26 (“[T]he Arctic Ocean is the least sampled of the world’s oceans, and many areas remain where few, if any, soundings have been recorded.”).

See Ctr. for Biological Diversity v. U.S. Dep’t of Interior, 563 F.3d 466, 480 (D.C. Cir. 2009) (regarding the Department of Interior’s admission of gaps in the baseline research for the Chukchi, Bering, and Beaufort Seas); Alaska Wilderness League v. Kempthorne, 548 F.3d 815, 831-832 (9th Cir. 2008) (the Minerals Management Service “notes the gaps in its data [on the impacts of development activity on fish] and the potential for serious consequences”).

See generally Beaufort Sea Areawide Oil and Gas Lease Sale: Final Finding of the Director, Alaska Dep’t of Natural Res. (2009), http://www.dog.dnr.alaska.gov/oil/products/publications/beaufortsea/bsaw2009_final_finding.html (demonstrating a lack of understanding of North Slope wildlife: 4-17 (“Biology of common eiders is poorly understood.”); 4-21 (“[Steller’s eider] subpopulations are poorly understood.”); 4-22 (“Biology of king eiders is poorly understood.”); 4-26 (“Caribou populations appear to be cyclic, although the mechanisms, timing, and population size fluctuations are not well understood.”) 4-36 (“Density of ringed seals varies greatly depending on area and season and changes in seasonal distribution appear to be correlated with changes in sea ice characteristics but are poorly understood.”); 4-37 (“Behavior of ringed seals is poorly understood.”) 8-28 (“Response is variable, even to a particular noise source, and the reasons for this variability are not fully understood.”)).

See Stephen R. Braund, Impacts and Benefits of Oil and Gas Development to Barrow, Nuiqsut, Wainwright, and Atqasuk Harvesters 118-19, 124 (2009) (on file with the author) (expressing need for baseline studies of wildlife and the human population to gauge cumulative impacts of oil and gas development).

See 40 C.F.R § 81.302 (2009) (showing that air quality in many areas of Alaska has yet to be classified under the National Ambient Air Quality Standards).


See IACHR Petition, supra note 81, at 67 (nothing that in Barrow, Alaska, residents are more frequently catching a species of fish not traditionally found in the area); Huntington & Fox, supra note 8, at 77 (Aleutian Islands residents have observed non-indigenous warmwater fish species coming farther north than ever before); Karen Brewster & Craig George, Itupiat Knowledge of Selected Subsistence Fish Near Barrow, Alaska, 2008, at 63 (new species of fish in Barrow; spawning of white fish less predictable); Braund, supra note 87, at 141.

The term “Brant” refers to several species of goose used as subsistence food by some Alaska Natives.


See id. C.f. Mark L. Mallory, et al., Sources of Breeding Season Mortality in Canadian Arctic Seabirds, 62 ARCTIC 333-41 (2009) (warmer temperatures are bringing more storm events, including incidents of heavy fog, rain, freezing rain, wet snow and stronger winds, that contribute to mortality rates for Arctic birds).


Sherwonit, *supra* note 42.


Yupik Eskimos live on the western and northwestern Alaska coast, St. Lawrence Island, and in Eastern Siberia.


See Joling, *supra* note 97.

*See id.*

*See id.*


Braund, *supra* note 87, at 32 (noting longer distances required to reach subsistence resources, although this may be related to impacts associated with increased oil and gas activity). *C.f. Regional Paper, supra* note 99 (Yupik Eskimos must travel longer distances to reach walruses).

Nuttall, *supra* note 10, at 656.

*See id.* at 660.

*See IACHR Petition, supra* note 81, at 43-44.

This was the case on the North Slope in 2007. See Letter from Johnny Aiken to Dick Mylius, *supra* note 65. *See, e.g.*, Braund, *supra* note 87, at 137 (an Atqasuk hunter interviewed in 2007 reported having had difficulty since 2002 in traveling by boat to his cabin on Mead River).
See Huntington & Fox, supra note 8, at 68; Jacqueline P. Hand, Global Climate Change: A Serious Threat to Native American Lands and Culture, 38 ENVTL. L. REP. NEWS & ANALYSIS 10329, 10331 (May 2008). See Braund, supra note 87, at 143.

See IACHR Petition, supra note 81, at 40.

Id. at 39-41; Braund, supra note 87, at 142. See also POINT HOPE REPORT, supra note 59, at 2 (“In the spring of 2008, shore-fast ice broke free in the spring of 2008, casting Point Hope whaling crews and camps adrift, and requiring a helicopter rescue from Barrow.”).

Once a whale is killed, its body heat causes it to cook if it is not timely butchered. In spring 2009, one whale caught near Barrow that could not be pulled up onto the ice and could not be butchered properly went bad, and few parts were salvaged. (Based on the author’s personal knowledge.). See also POINT HOPE REPORT, supra note 59 (“The single bowhead harvested in Point Hope this spring had to be butchered in the water, a less efficient process.”).


Also, open water will allow a project to lay underwater cable between Tokyo and London by way of the Northwest Passage to go forward. See Dan Joling, Global Warming Opens Up Arctic for Undersea Cable, supra note 89.

See Reiss, supra note 41.


See Reiss, supra note 41.

See AMSA 2009 Report, supra note 52, at 136 (“The migration corridors used by marine mammals and birds correspond broadly with the main shipping routes into and out of the Arctic.”).

Id. at 146, 149, 150-51.

Id. at 136, 138, 141.

Id. at 145.

Western Washington University) (reporting that whales were nearly excluded from an area within 20 km of a drilling rig); Letter from Daniel W. Forster, North Slope Borough Director, to Nina Brudie, Alaska Dep’t of Natural Resources, on Consistency with ACMP Enforceable Policies Shell Offshore, Inc. 2010 Outer Continental Shelf Lease Exploration Plan, Camden Bay Alaska (Nov. 9, 2009) (stating that whales deflect away from smells created by people); Marla M. Holt, Paper presented at the 17th Annual Endangered Species Act Seminar, Seattle, Wash.: Marine Mammal Ecology (Jan. 29, 2010) (on file with the author).

125 AMSA 2009 Report, supra note 52, at 134.

126 Id. at 145.

127 Id. at 142 (black carbon settles on ice and snow, increasing solar absorption and temperature of ice and snow).


129 See generally Braund, supra note 87.

130 Id. at 145.

131 Id.

132 Id.


135 See IACHR Petition, supra note 81, at 50; Reiss, supra note 41; POINT HOPE REPORT, supra note 59, at 2, 20-21 (reporting that in Point Hope, ice cellars are thawing as well as being washed in due to ocean erosion, “and there are currently no community alternatives for storage of whale meat and blubber.”).

136 POINT HOPE REPORT, supra note 59, at 26.

See Wernham, supra note 22, at 507.

See NSB ACMP PLAN, supra note 14, at 75; POINT HOPE REPORT, supra note 59, at 10-13; Wernham, supra note 22, at 503 (subsistence lifestyles and diets protect against diabetes).

Letter from Daniel W. Forster, North Slope Borough Director, to Cheryl Rosa, biologist, Barrow, Alaska (Jan. 15, 2009) (perceived contamination impacts food security); Letter from Daniel W. Forster, North Slope Borough Director, to Alaska Dep’t of Natural Resources on ACMP Consistency of Shell Offshore, Inc. 2010 Outer Continental Shelf Lease Exploration Plan, Chukchi Sea (Air Quality Concerns) (Feb. 10, 2010) (on file with the author), at 5 (stating that animals may take up toxins directly or through the food chain, thereby affecting their suitability (or perceived suitability) for consumption).

See Rome Declaration on World Food Security and World Food Summit Plan of Action, WORLD FOOD SUMMIT (1996), available at http://www.fao.org/docrep/003/w3613e/w3613e00.htm (“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”).

See Wernham, supra note 22, at 506 (providing example of community that could not harvest whale for two seasons in a row and experienced an increase in domestic violence and drug and alcohol abuse); Verbrugge, supra note 79 (referring to social, economic and health consequences from the breakdown of subsistence).

See Verbrugge, supra note 79 (discussing the impact of increased temperatures on bioaccumulation in the food chain).

See Regional Paper, supra note 99; Huntington & Fox, supra note 8, at 64-66.

See Nuttall, supra note 10, at 668.

See Hand, supra note 110, at 10,332; Huntington & Fox, supra note 8, at 64. In some cases, “Western” science is only now catching up to traditional knowledge. See Huntington & Fox, supra note 8, at 66; NSB ACMP PLAN, supra note 14, at 65 (referring to Iñupiaq indigenous knowledge of the habits of the bowhead whale).

See IACHR Petition, supra note 81, at 39-40, 67. See also Reiss, supra note 41 (stating that some elders report that conditions have changed so much that they have begun to doubt their ice knowledge).

See IACHR Petition, supra note 81, at 59.

Id. at 3; Nuttall, supra note 10, at 670.

See IACHR Petition, supra note 81, at 59.

Nuttall, supra note 10, at 664.

harvest and sale of Alaska’s Porcupine Herd, but allowing commercial sales of some Canadian herds).

See Nuttall, supra note 10, at 664.


Laws governing subsistence generally prohibit the commercial sale of subsistence meat. See G.W. Wenzel, Warming the Arctic: Environmentalism and Canadian Inuit, in HUMAN ECOLOGY AND CLIMATE CHANGE: PEOPLE AND RESOURCES IN THE FAR NORTH (D.L. Peterson & D.R. Johnson eds., 1995) (describing the expansion of the predecessors to today’s Inuit from western Alaska eastward to Greenland during the “Neo-Atlantic Optimum” (ca. A.D. 1000), when the Canadian Arctic passed through a warming period).


Pat Forgey, Natives Losing Political Influence, JUNEAU EMPIRE (Mar. 24, 2010), http://juneauempire.com/stories/032410/sta_595649976.shtml (discussing how there are now more Alaska Natives in Anchorage than in any other location).

GAO Report, supra note 59, at 3-5 (reporting that the villages of Kivalina, Koyukuk, Newtok, and Shishmaref are planning to relocate inland, but that many other Alaska villages needing to relocate will be ineligible for assistance).

See discussion of State of Alaska laws on subsistence, infra Part V(A). There is no priority for subsistence hunting over other types of hunting on non-federal lands in and near urban areas. ALASKA STAT. § 16.05.258(c) (2009).

Forgey, supra note 157 (discussing that, since statehood, there has been a shift of legislators from rural Alaska to the cities, based on the decennial census).

Huntington & Fox, supra note 8, at 92; IACHR Petition, supra note 81, at 48 (informing that Barrow hunters are spending less time hunting and therefore have fewer opportunities to learn hunting skills).

See Worcester v. Georgia, 31 U.S. 515, 582 (1832) (M’Lean, J., concurring) (“[T]he language used in treaties with the Indians should never be construed to their prejudice ... [.]” and “[h]ow the words of the treaty were understood by this unlettered people, rather than their critical meaning, should form the rule of construction”); Choctaw Nation v. United States, 318 U.S. 423, 431-32 (1943) (stating that Indian treaties are to be construed liberally in favor Indians); McClanahan v. State Tax Comm’n of Ariz., 411 U.S. 164, 174 (1973) (asserting that ambiguous expressions in Indian treaties must be resolved in favor of Indians); Choctaw Nation v. Oklahoma, 397 U.S. 620, 631 (1970) (stating that treaties must be construed as Indians would have understood them).


United States v. Winans, 198 U. S. 371 (1905); United States v. Washington, 157 F.3d 630 (9th Cir. 1998) (affirming the right of tribes to take shell fish from private tidelands and pass over uplands when necessary to reach the tidelands); Muckleshoot Indian Tribe v. Hall, 698 F. Supp. 1504, 1510-11 (W.D. Wash. 1989).
Settler v. Lameer, 507 F.2d 231, 237-39 (9th Cir. 1974).

Washington v. Wash. State Commercial Passenger Fishing Vessel Ass’n, 443 U.S. 658, 682-83 (1979); United States v. Washington, 384 F. Supp. 312, 342 (W.D. Wash. 1974), aff’d, 520 F.2d 676 (9th Cir. 1975); Cheyenne-Arapaho Tribes v. Oklahoma, 618 F.2d 665, 668 (10th Cir. 1980) (affirming that state hunting and fishing laws do not apply on trust lands located within a disestablished reservation because “lands held in trust by the United States for the Tribes are Indian Country”).

Kittitas Reclamation Dist. v. Sunnyside Valley Irrigation Dist., 763 F.2d 1032 (9th Cir. 1985) (requiring the release of water in a stream from an irrigation facility in order to protect salmon); United States v. Adair, 723 F.2d 1394 (9th Cir. 1983) (affirming the right to sufficient water to protect fishing); Confederated Tribes of the Umatilla Indian Reservation v. Alexander, 440 F. Supp. 553 (D. Or. 1977) (enjoining the United States from constructing a dam that would destroy a traditional Indian fishing site).


See 43 U.S.C. § 1603(b) (2006) (“All aboriginal titles, if any, and claims of aboriginal title in Alaska based on use and occupancy, including submerged land underneath all water areas, both inland and offshore, and including any aboriginal hunting or fishing rights that may exist, are hereby extinguished.”).

Iñupiat Cmty. of the Arctic Slope v. U.S., 746 F.2d 570 (9th Cir. 1984) (per curiam).

Id. at 571.

154 F.3d 1090 (9th Cir. 1998), cert denied, 527 U.S. 1003 (1999).

Native Vill. of Eyak v. Trawler Diane Marie, Inc., 154 F.3d 1090, 1096 (9th Cir. 1998).

See County of Yakima v. Confederated Tribes & Bands of the Yakama Indian Nation, 502 U.S. 251, 269 (1992) (“When we are faced with ... two possible constructions, our choice between them must be dictated by a principle deeply rooted in this Court’s Indian jurisprudence: ‘[S]tatutes are to be construed liberally in favor of the Indians, with ambiguous provisions interpreted to their benefit.’”) (quoting Montana v. Blackfeet Tribe, 471 U.S. 759, 766 (1985)); United States v. Berrigan, 2 Alaska 442 (D. Alaska 1905) (referring to the trust protection between the federal government and Alaska Natives); Alaska Pac. Fisheries v. United States, 248 U.S. 78, 89 (1918) (“[S]tatutes passed for the benefit of dependent Indian tribes or communities are to be liberally construed, doubtful expressions being resolved in favor of the Indians”).

See United States v. Atl. Richfield Co., 612 F.2d 1132, 1139 (9th Cir. 1980) (finding that Congress’s clear intent through ANCSA to extinguish all claims and litigation takes precedence over generalized rules of construction; noting that the rule of construction to avoid taking advantage of the disadvantaged was diminished because the Iñupiat were represented by competent counsel); Nenana Fuel Co., Inc. v. Native Village of Venetie, 834 P.2d 1229 (Alaska 1992); North Slope Borough v. Andrus, 642 F.2d 589, 612n.151, (D.C. Cir. 1980) citing Cape Fox Corp. v. U.S., 456 F.Supp. 784, 799 (D. Alaska 1978). See also Alaska v. Native Village of Venetie Tribal Government, 522 U.S. 520, 521-22 (1998) (extinguishing most of Alaska’s Indian country and failing to address Indian canons, despite their importance to the decision in the court below, see 101 F.3d 1286, 1294-95 (9th Cir. 1996)); David M. Blurton, Canons of Construction, Stare Decisis and Dependent Indian Communities: A Test of Judicial Integrity, 16 ALASKA L. REV. 37 (June 1999).
Id. at 1238 referring to H.R. Rep. No. 746, 92d Cong., 1st Sess. 40, reprinted in 1971 U.S.C.C.A.N. 2192, 2253 (Congress intended that “lands granted to Natives under this Act are not to be considered ‘Indian reservation’ lands for purposes other than those specified in this Act. The lands granted by this Act are not ‘in trust’ and the Native villages are not Indian ‘reservations.’”).


Id. at § 3114. ANILCA does not apply to marine mammals or migratory birds. See id. at § 3115(4) (1998).

Id. at §§ 3111, 3114.

See discussion on Native Corporations, infra Part V(B). Although ANILCA at Section 3111 (Findings) of Title VIII (Subsistence) declares that “the continuation of the opportunity for subsistence uses ... on the public lands and by Alaska Natives on Native lands is essential to Native physical, economic, traditional, and cultural existence,” Section 3114 grants the subsistence preference only on “public lands” (not “Native lands,” which Section 3102(11) defines as land owned or selected by a Native Corporation). 16 U.S.C. §§ 3102(11), 3111, 3114 (2006).

Id. at § 3114.

See McDowell v. State, 785 P.2d 1, 10-11 (Alaska 1989). See also Thériault, supra note 15, for a more detailed explanation of the State’s role in subsistence management.

See ALASKA STAT. § 16.05.258 (1986).

See id. Article VIII of the Alaska Constitution precludes awarding preferences to a particular group of Alaskans. See ALASKA CONST. ART. VIII, § 3 (reserving naturally occurring fish, wildlife, and waters to the people for common use); id. at § 15 (prohibiting the creation of exclusive rights or access privileges to fisheries); id. at § 17 (governing the use or disposal of natural resources apply equally to all similarly situated persons); McDowell v. State, 785 P.2d 1, 10-11 (Alaska 1989). ALASKA STAT. § 16.05.258(b)(4) does distinguish among users in times of scarcity, using the same criteria established in ANILCA.

See ALASKA STAT. § 16.05.258(c); 5 ALASKA ADMIN. CODE 99.015 (2009) (establishing nonsubsistence areas).

See 16 U.S.C. § 1539(e) (2006) (exempting “(A) any Indian, Aleut, or Eskimo who is an Alaskan Native who resides in Alaska; or (B) any non-native permanent resident of an Alaskan native village; if such taking is primarily for subsistence purposes”); 16 U.S.C. § 1371(b) (2006) (exempting “any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean”).

16 U.S.C. § 712 (2006) (permitting “indigenous inhabitants of the State of Alaska” to take birds “for their own nutritional and
other essential needs, as determined by the Secretary of the Interior.”).


198 See NSB’s 2009 Comments to FWS, supra note 3, at 4.

199 Id.

200 C.f. Campbell, supra note 92 (decline in Pacific Brant population linked to changes in food resources rather than hunting).

201 Section 7 of the Endangered Species Act requires consultation between FWS or the National Marine Fisheries Service, as appropriate, and agencies authorizing, funding, or carrying out activities that may affect listed species, but it does not provide for consultation with potentially affected tribes. 16 U.S.C § 1536(a)(2) (2006).

202 See NSB’s 2009 Comments to FWS, supra note 3, at 10. Executive Order 13,175, Consultation and Coordination with Indian Tribal Governments, 65 Fed. Reg. 67,249 (Nov. 9, 2000), superseding Executive Order No. 13084, at 3(c), requires FWS and NMFS to consult with tribes when “undertaking to formulate and implement policies that have tribal implications.” DEPARTMENTS OF THE INTERIOR & COMMERCE, SECRETARIAL ORDER 3206, AMERICAN INDIAN TRIBAL RIGHTS, FEDERAL TRIBAL TRUST RESPONSIBILITIES, AND THE ENDANGERED SPECIES ACT (1999), explains the responsibilities of the Departments of the Interior and Commerce when actions taken pursuant to the Endangered Species Act may affect the exercise of American Indian tribal rights. DEPARTMENT OF THE INTERIOR, SECRETARIAL ORDER 3225, ENDANGERED SPECIES ACT AND SUBSISTENCE USES IN ALASKA, clarifies the application of Secretarial Order No. 3206 to Alaska, and requires consultation as soon as any conservation concern arises regarding a species that is listed as endangered or threatened under the Endangered Species Act and also used for subsistence.
Understaffing of tribal government offices has resulted in some tribes being unable to take advantage of consultation even when it is offered.

Email from Larry Bell, Assistant Reg’l Dir., FWS to Barrett Ristroph, North Slope Borough (Feb. 2, 2009), citing Letter from David Verly, Acting Assistant Sec’y of the Interior, to Joe A. Garcia, President, Nat’l Cong. of Am. Indians (Sep. 14, 2007) (on file with the author).


While federal law provides for one hunter to transfer his hunting rights to another in some situations (see, e.g., 50 C.F.R. § 100.10(d)(5)(ii), § 100.25(a)), state law does not. This conflicts with subsistence communities’ view of subsistence as a community right linked to local group enforcement and web of rights and duties as tribal members. See Conn, supra note 16.

See Thériault, supra note 15; NSB’s 2009 Comments to FWS, supra note 3, at 1 (describing the prohibition on picking up and using dead Steller’s eiders as in conflict with the traditional custom of avoiding food waste); North Slope Borough Fish and Game Management Committee Resolution 2009-02, A Resolution Reaffirming Opposition to a Requirement for Duck Stamps, Licenses and Permits for Spring and Summer Subsistence Migratory Bird Hunting and Egg Gathering (Aug. 21, 2009) (on file with the author) (objecting to requirements to purchase licenses and duck stamps to continue an activity that Alaska Natives have undertaken for millennia).


See id.; Personal correspondence with Barrow subsistence hunter, Barrow, Alaska (Mar. 24, 2010) (migratory birds remain on the North Slope after September 1, sometimes until mid- to late-October).

Phone interview with Barrow subsistence hunters, Barrow, Alaska (Mar. 24, 2010) (if birds arrive on the North Slope earlier than usual, then they will leave earlier; if they arrive later, they leave later; it is not clear what will happen with climate change).


See id.

See id.

See id.

See Concurrent Resolution of the Native Villages of Gambell, Kivalina, Savoonga, Wales, and the Iñupiat Community of the Arctic Slope (ICAS) (Mar. 20, 1978); ICAS Resolution 14, Delegation of Authority to AEWC on Whaling Matters (Feb. 15, 1978). ICAS is a federally recognized tribe and a tribal government that acts on behalf of eight North Slope villages. See Joint Comments of Alaska Eskimo Whaling Commission, Iñupiat Community of the Arctic Slope, and North Slope Borough to Environmental Protection Agency re Shell Gulf of Mexico/Shell Offshore Inc.’s Application for a Beaufort Sea Clean Air Act Permit (Mar. 22, 2010) (on file with the author); Alaska Region Overview, U.S. DEP’T OF INTERIOR, INDIAN AFFAIRS, http://
AEWC has a cooperative agreement with the National Ocean and Atmospheric Administration “to protect the bowhead whale and the Eskimo culture, to promote scientific investigation of the bowhead whale, and to effectuate the other purposes of the Marine Mammal Protection Act, the Whaling Convention Act, and the Endangered Species Act as these acts relate to aboriginal subsistence whaling.” Cooperative Agreement between the National Ocean and Atmospheric Administration and the Alaska Eskimo Whaling Commission, as amended 2008 (on file with the author).

See, e.g., 2009 Open Water Season Programmatic Conflict Avoidance Agreement (on file with the author).


See Robards & Joly, supra note 221, at 223 (comparing EWC’s enforcement authority with that of AEWC’s).


See NSB’s 2010 Comments to FWS, supra note 212.


See Alaska v. Native Village of Venetie Tribal Gov’t, 522 U.S. 520, 527 n.2 (1998) (“Other Indian country [besides the Metlakatla Reservation] exists in Alaska post-ANCSA only if the land in question meets the requirements of a ‘dependant Indian community’ under our interpretation of § [18 U.S.C.] 1151(b), or constitutes allotments under 1151(c).”); Case and Voluck, supra note 185, at 400.


In some cases Native Corporation land is not subject to property tax. See 43 U.S.C. § 1620 (West 2010).

See ALASKA NATIVE OIL AND GAS WORKING GROUP, OIL AND THE ALASKA CLAIMS SETTLEMENT ACT, available at http://www.treatycouncil.org/Alaska%20Native%20Working%20Group%20Documents/PDFs/One%20of%20Three%20Brochures%20for%20Governing%20Native%20Corporations%20in%20Alaska%20%28April%202000%29.pdf (“ANCSA has successfully removed tribal people from control over their ancestral lands and destiny. Because our lands are run by corporate Indians and not our traditional leaders, we have lost our way and our wisdom. As long as ‘profit at all cost’ is the motto of these corporate entities, Alaska Natives are left to defend themselves—-including their distinct culture—-from corporate raiders, government and greed.”). See also Smiddy, supra note 15, at 836 (the Natives’ legal relationship to the land is at best once removed and operated through the corporate entity); Eric C. Chaffee, Business Organizations and Tribal Self-Determination: A Critical Reexamination of the Alaska Native Claims Settlement Act, 25 ALASKA L. REV. 107, 120-21 (2008).

See Chaffee, supra note 236, at 126-27, 129.

See 43 U.S.C.A. § 1606(d) (West 2010).

Arctic Slope Regional Corporation, which covers the North Slope region, includes as its purposes: “[T]o engage in all activities, whether economic, cultural, social or charitable to, protect and preserve the well-being of the Natives enrolled in the Arctic Slope Region ....” Arctic Slope Regional Corp., Restated Certificate of Incorporation, at Art. III(3) (Filmed Mar. 9, 1990 with the State of Alaska Department of Commerce), available at https://myalaska.state.ak.us/business/soskb/Filings.asp?240260#. Ukpeagvik Iñupiat Corporation (the Barrow village corporation) has similar language in its list of purposes: “To engage in all activities, whether economic, cultural, social, or charitable, to protect and preserve the well-being of the Natives residents of the Native village of Barrow, and to engage in and conduct any and all lawful activity necessary or convenient in furtherance thereof.” Ukpeagvik Iñupiat Corporation, Amended and Restated Articles of Incorporation at Art. III(3) (Filed May 1, 2006 with the State of Alaska Department of Commerce), https://myalaska.state.ak.us/business/Imaging/20610011.pdf. See also AHTNA, Inc., Articles of Incorporation of AHTNA, Inc. Art. III(C) (Filed June 23, 1972 with the State of Alaska Dept’t of Commerce) (describing the company’s purpose as “[t]o promote the economic, social, cultural and personal well-being of all Natives” in the region), available at https://myalaska.state.ak.us/business/Imaging/20552946.pdf.


See Chaffee, supra note 236, at 133; Benedict Kingsbury, First Amendment Liberalism as Global Legal Architecture: Ascriptive Groups and the Problems of the Liberal NGO Model of International Civil Society, 3 CHI. J. INT’L L. 183, 190 (2002) (discussing the tensions created when aboriginal groups adopt or are forced to reorganize as corporations); Smiddy, supra note 15, at 836; BERGER, supra note 19, at 42 (“[C]orporate executives in the urban centers may be estranged from their shareholders in the villages.”); Monroe E. Price, A Moment in History: The Alaska Native Claims Settlement Act, 8 UCLA-ALASKA L. REV., 89, 95 (1979) (“The corporate executives will be those who are willing to forego subsistence activities, to place a higher priority on board meetings than on salmon fishing, and to spend time talking to lawyers and financiers and bankers rather than the people of the villages.”).

See 43 U.S.C. § 1601(b) (“[T]he settlement should be accomplished rapidly ... without establishing any permanent racially defined institutions, rights, privileges, or obligations, without creating a reservation system or lengthy wardship or trusteeship, and without adding to the categories of property and institutions enjoying special tax privileges or to the legislation establishing special relationships between the United States Government and the State of Alaska”).


See Chaffee, supra note 236, at 142-43 (describing the burden of complying with corporate laws, namely that, “Lawyers and corporate consultants have been major beneficiaries of an Act that was supposed to help Alaska Natives”); Jack F. Williams, Integrating American Indian Law into the Commercial Law and Bankruptcy Curriculum, 37 TUL. L. REV. 557, 567 (2001) (reporting that some Alaska Native corporations have experienced “severe financial difficulty” and have had to seek protection by declaring bankruptcy); Colt, supra note 244, at 160, 172, 173 (noting that regional corporations lost more than $380 million in direct business operations from 1973 through 1993, although Cook Inlet and Arctic Slope (both of which profited from oil development) were exceptions; many corporations then began to improve, and between 1992 and 1998 regional corporations collectively earned $710 million).

See Colt, supra note 244, at 164 (“In this ‘resource-limited’ world, the only ways for a Native group to prosper are either to discover and develop new resource extraction projects on their own lands or to usurp profits from existing markets by stealing market share from some other firm.”).


Id.


Id.

Id.


See Ctr. for Biological Diversity v. U.S. Dep’t of Interior, 563 F.3d 466, 480 (D.C. Cir. 2009) (vacating the Minerals Management Service’s (MMS) 2002-2007 leasing program for the Alaska OCS); Alaska Wilderness League v. Kempthorne, 548 F.3d 815, 831-832 (9th Cir. 2008) (in approving the exploration plan for Shell Offshore, Inc., MMS failed to address subsistence impacts, such that a supplemental environmental impact statement would have to be prepared). See also Joint Comments of Alaska Eskimo Whaling Commission, Iñupiat Community of the Arctic Slope, and North Slope Borough to Environmental Protection Agency (Oct. 20, 2009) (on file with author).


See Chenega Corp. v. Exxon Corp., 991 P.2d 769 (Alaska 1999) (native corporations have sought redress for Alaska Natives for natural resource damages caused by the Exxon-Valdez oil spill).


Id. at 2.

Id.

Id.

See 43 U.S.C. § 1602(b) (2006) (“‘Native’ means a citizen of the United States who is a person of one-fourth degree or more Alaska Indian ... Eskimo, or Aleut blood, or combination thereof ....”).


See Colt, supra note 244, at 161.

See New Information about Contracting Preferences for Alaska Native Corporations (Part II), supra note 267, at 9 (between 2000 and 2008, approximately 40% of all Native Corporation contract dollars was awarded to subsidiary companies located outside of Alaska; subsidiaries of the Chenega Corporation are located in Nevada, Virginia, South Dakota, and Florida; Alutiiq, a subsidiary of the Afognak Native Corporation, maintains offices in Virginia, Washington, DC, South Carolina, Alabama, California, Texas, Colorado, and Hawaii); Palmer, The Alaskan Edge, supra note 267 (Sealaska executive quoted as saying he wants to hire more Alaska Natives, but they aren’t always willing to move to the Lower 48, where Sealaska has many of its operations.).

See Colt, supra note 244, at 170.


See Colt, supra note 244, at 175.


Unlike their Lower 48 counterparts, Alaska tribes cannot set up casinos on Indian land. See Letter from Robert T. Anderson, Assoc. Solicitor, U.S. Dep’t of Interior Div. of Indian Affairs, to Michael K. Cox, General Counsel, National Indian Gaming Comm’n. (May 17, 1995), available at http://www.nigc.gov/LinkClick.aspx?link=NIGC+Uploads%2Findianlands%2F32_nativevillageofeklutna.pdf&tabid=120&mid=957 (stating that a restricted allotment held by a member of the Native Village of Eklutna is not “Indian land” under the Indian Gaming Regulatory Act, such that the tribe could not conduct Class II and III gaming there).
They can, however, issue resolutions urging the federal government to enact legislation to reduce carbon dioxide emissions. Eighty-four Alaska Native tribes have done so. See Tribal Resolutions on Global Warming From Alaska Native Tribes and Villages, NATIVE AM. RIGHTS FUND, http://narf.org/nill/triballaw/climate (last visited Oct. 25, 2010). At the time of this writing, no such legislation has been enacted into law. See H.R.2454, 111th Cong. (2009) (as passed by House, Jun. 26, 2009) (creating clean energy jobs, achieving energy independence, reducing global warming pollution and transitioning to a clean energy economy); S.1733, 111th Cong. (2009) (introduced in Senate Sep. 20, 3009) (creating clean energy jobs, promoting energy independence, reducing global warming pollution, and transitioning to a clean energy economy).


IACHR Petition, supra note 81, at 1, 5-7, 12.

Id. at 10-12.


See ICC, supra note 277.


See id.

See North Slope Borough, ALASKA STAT. § 2.36.180 (2010) (waiving competitive bidding and authorizing the mayor to approve a change order to NSB Standard Agreement No. 2010-081 with the Alaska Eskimo Whaling Commission and stating amounts budgeted for AEWC).

NSB COMPREHENSIVE PLAN, supra note 14, at 3-76 (the oil and gas industry provides approximately ninety-seven percent of the Borough’s property taxes, which comprise nearly seventy percent of the Borough’s budget).

See Edward S. Itta, From The Mayor, NORTH SLOPE BOROUGH, http://www.northslope.org (last visited Oct. 22, 2010) (“The people of the Arctic have survived in one of the world’s harshest climates through our ability to adapt. We adapted to the discovery of oil in our traditional homeland by forming the North Slope Borough.”).

See, e.g., Victoria Barber, Coping with Extremes at the Top of the World, THE ARCTIC SOUNDER (Dec. 28, 2009), http://www.thearcticsounder.com/article/0953coping_with_extremes_at_the_top_of_the_world. (after North Slope residents were charged with violating state game laws for wasting caribou that they believed unfit to eat, the North Slope Borough contributed $56,000 to the residents’ defense). The Borough has submitted joint comments with AEWC and the Inupiat Community of the Arctic Slope. See Alaska Eskimo Whaling Commission, Inupiat Community of the Arctic Slope, and North Slope Borough Comments re Shell Gulf of Mexico and Shell Offshore Inc.’s Application for an OCS PSD Permit Under the Clean Air Act for its Chukchi Sea Operations, EPA (Oct. 20, 2009), available at http://www.epa.gov/region10/pdf/permits/shell/chukchi_aewc_icas_nsb_combined_102009.pdf.
In 1970, two years before the Borough incorporated, the North Slope was home to 2796 Iñupiat and 376 non-Iñupiat. Ten years later, the Iñupiat population had increased by fifteen percent while the non-Native population more than doubled. Non-native growth has slowed as oil production has declined. John Kruse, *The Alaska North Slope Iñupiat and Resource Development: Why the Apparent Success?*, INST. OF SOC. & ECON. RES. at 1, 16 (July 1991), http://www.iser.uaa.alaska.edu/Publications/InupiatSuccess.pdf.

See Alaska Wilderness League v. Kempthorne, 548 F.3d 815, 831-32 (9th Cir. 2008).

See Ctr. for Biological Diversity v. U.S. Dep’t of Interior, 563 F.3d 466, 480 (D.C. Cir. 2009).


See Joint comments submitted by Arctic Slope Regional Corporation and North Slope Borough to the U.S. Fish and Wildlife Service on the proposed designation of critical habitat for polar bears (Dec. 28, 2009), http://www.regulations.gov/search/Regs/home.html#docketDetail?R=0900006480a726b5.

Id. at 17.

Id. at 18.


See Alaska Copenhagen Presentation, supra note 27.


See Kizzia, supra note 300.


Native Village of Kivalina, 663 F. Supp. 2d at 882 (disagreeing with Connecticut v. Am. Elec. Power Co., Inc., 582 F.3d 309 (2d Cir. 2009) and allowing a cause of action for public nuisance to go forward), appeal docketed, No. 09-17490 (9th Cir. Nov. 6, 2010). Just two weeks after the Kivalina decision, the Fifth Circuit issued a decision that, like the Connecticut decision, recognized a cause of action for public nuisance in relation to climate change. Comer v. Murphy Oil USA, 585 F.3d 855, 879-80 (5th Cir. 2009), appeal dismissed, Comer v. Murphy Oil USA, 607 F.3d 1049, 1055 (5th Cir. 2010) (en banc).


See Email from George Edwardson, President, Inupiat Community of the Arctic Slope, to Rebecca Noblin, Center for Biological Diversity (June 5, 2009) (on file with author) (“We as the Inupiat people were never asked what we thought of this action.”); Interview with Noah Ashley, Biologist (May 28, 2008) (a sizable group of hunters in the North Slope villages still actively harvest polar bears for handicrafts, clothing, and food).

See Braund, supra note 87, at 144.

See Linda R. Larson, Presentation at 17th Annual ESA Conference: ESA and Alternative Energy Projects (Jan. 28, 2010) (on file with the author) (wind power plants can result in visual impacts, noise pollution, and wildlife impacts; tidal and wave energy projects have potential adverse impacts on marine ecosystems, fishery resources, and mammals; hydropower can have impacts on endangered aquatic species).

See id. (carbon dioxide emission controls are not available by any known energy technology, while renewable energy can avoid or reduce these carbon dioxide emissions, as well as reduce water consumption, thermal pollution, waste, noise, and adverse land-use impacts).


Sandra Begay-Campbell, Principal Member of the Technical Staff, U.S. Dep’t of Energy, Presentation at the Arizona Governor’s Tribal Energy Meeting: Tribal Renewable Energy Opportunities, Aug. 5, 2005, (slideshow available at http://www.azcommerce.com/doclib/energy/energytribalmeeting_8.5.05_s.begay-campbell_2.pdf.).


See David Archer, Fate of Fossil Fuel CO₂ in Geologic Time, 110 J. GEOPHYSICAL RES. C09S05, 1 (2005) http://geosci.uchicago.edu/~archer/reprints/archer.2005.fate_co2.pdf (considering the lifecycle of carbon dioxide); Susan Solomon et al., Irreversible Climate Change Due to Carbon Dioxide Emissions, 106 PROC. NAT’L ACAD. SCIENCE, no. 6, 2009 at 1704, http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2632717/pdf/zpq1704.pdf (climate change that takes place due to increases in carbon dioxide concentration is largely irreversible for 1,000 years after emissions stop).


See id.


See Alaska Native Resources, TLINGIT & HAIDA TECHNICAL ASSISTANCE, http://alaskatribalbiz.org/old_site/AkNativeResLinkPage.htm (last visited Oct. 27, 2010); HAIDA CORP.,

327 About the TNC Distribution Trust, supra note 325, at 36.

328 For further discussion of likely impacts of climate change on tribes across the United States, see Daniel Cordalis & Dean B. Suagee, The Effects of Climate Change on American Indian and Alaska Native Tribes, 22 NAT. RESOURCES & ENV’T 45 (Winter 2008). See also Hand, supra note 110.

1 AZJELP 47