



A MORAL CHOICE FOR THE UNITED STATES

The Human Rights Implications for the Gwich'in
of Drilling in the Arctic National Wildlife Refuge

Gwich'in Steering Committee
The Episcopal Church*

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Front cover photo: Daniel Tritt in Arctic Village, Alaska (Masako Cordray)
Contents page photo: Myra Thumma in Venetie, Alaska (Masako Cordray)
Banner photo, p. iii: Arctic National Wildlife Refuge coast (Subhankar Banerjee)
Banner photo, p. 4: Arctic Village cabins in winter (Brooke Tone Boswell)
Banner photo, p. 18: Caribou cows and calves in misty calving grounds (Subhankar Banerjee)
Conclusion photo, p. 23: Gwich'in elder Jonathon Solomon (Brooke Tone Boswell)
Banner photo, p. 24: Caribou walking on the Coastal Plain (Masako Cordray)
Back cover photo: Caribou on the Coastal Plain with Brooks Range as background (Ken Whitten)

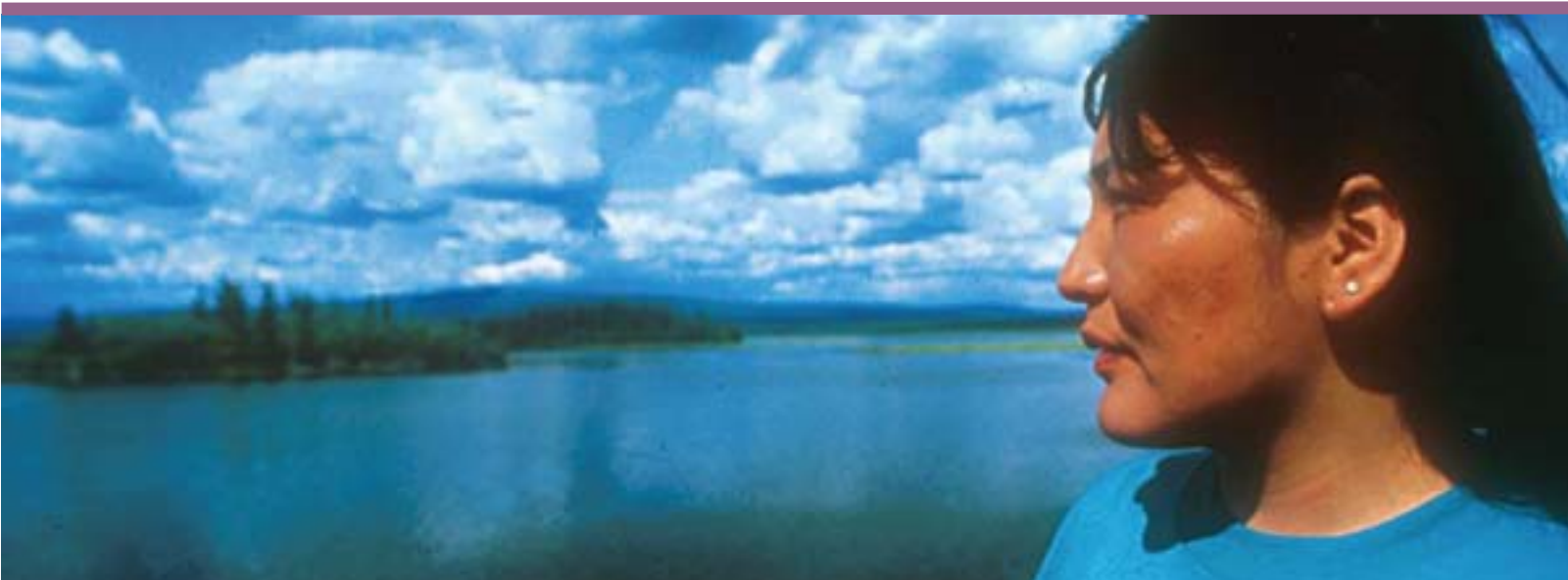
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*The Episcopal Church, USA has a deep and special relationship with the Gwich'in Nation of Northeast Alaska/Northwest Canada. More than 150 years ago Anglican and subsequently Episcopal missionaries traveled to Fort Yukon, Alaska, to establish a mission there. Today more than 90 percent of the Gwich'in are Episcopalian. They represent one of the few Native Anglican Nations in the world.

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EXECUTIVE SUMMARY

The US Congress is again considering opening the Coastal Plain of the Arctic National Wildlife Refuge to oil and gas drilling. The proposal threatens to violate the internationally recognized human rights to culture, subsistence, health, and religion of the Gwich'in people of northeastern Alaska and northwestern Canada. Since time immemorial, the Gwich'in have relied physically, culturally and spiritually on the Porcupine Caribou Herd that calves each spring on the Coastal Plain. The herd and its birthing and nursery grounds are so significant to the Gwich'in that they call the Coastal Plain *Izhik Gwats'an Gwandaii Goodlit*, "The Sacred Place Where All Life Begins."

For the Gwich'in, a long-term decline in the herd's population or a major change in its migration would be physically and culturally devastating. For thousands of years, the Gwich'in have relied on the caribou as their primary food source, and despite the inroads of modern civilization, that remains true today. The caribou are also deeply intertwined with Gwich'in culture—as Gwich'in leader Sarah James has said, "The Gwich'in are caribou people Our whole way of life as a people is tied to the Porcupine caribou. It is in our language, and our songs and stories." Further reductions in the size of the herd could make it difficult or impossible for the Gwich'in to continue the connection they have maintained with the caribou for millennia.

The Coastal Plain, and in particular the so-called "1002 area" that is the focus of the oil exploration and development proposal, is vital calving and post-calving habitat for the Porcupine Caribou Herd. The area offers nutritious vegetation during a vulnerable part of the caribou's life cycle, as well as protection from predators and shelter from harassing swarms of insects. Researchers have shown that caribou calf survival rates drop significantly when the herd is unable to calve on the Coastal Plain; indeed, the drop in calf

survival rates is enough to stop herd growth or, more importantly, to prevent the herd from recovering from the current 15-year decline in the herd's population.

Research has shown that oil drilling activity in critical caribou calving habitat, such as the Coastal Plain, displaces female caribou and calves, diminishing calf survival rates. For the Porcupine, displacement from the best calving grounds would be extremely damaging because there are no alternatives that provide the same essential protections, and the herd is already in a population decline. The stress of opening their prime calving and post-calving grounds to oil exploration and development—particularly when added to the current stress on the herd brought on by global climate change—will very likely lead to a long-term decline in the herd.

International law requires the United States to protect the fundamental human rights of Native groups like the Gwich'in to culture and religion, their own means of subsistence, and health. International human rights tribunals have ruled that governments are obligated to prevent environmental harm that would undermine these rights. For example, the United Nations' Human Rights Committee held that a government violated indigenous people's rights to culture and subsistence when it permitted oil and gas development that would destroy the people's traditional hunting and trapping areas.

Because of the impact of drilling on the Porcupine Caribou Herd, opening the Coastal Plain of the Arctic National Wildlife Refuge would deal a serious blow to the ability of the Gwich'in to continue their subsistence culture that is reliant on the Porcupine Caribou Herd. Loss of this culture would violate the internationally recognized human rights of the Gwich'in to their own means of subsistence, to culture, to health, and to religion.



THE [GWICH'IN] BELIEVE THAT A BIT OF HUMAN HEART IS IN EVERY CARIBOU, AND THAT A BIT OF CARIBOU IS IN EVERY PERSON. ANY THREAT TO THE ANIMAL IS A THREAT TO THE GWICH'IN. AS ONE GWICH'IN WOMAN EXPLAINS: "THE CARIBOU ARE OUR LIFE. WE MUST SAFEGUARD THEM FOREVER."

"IT IS OUR BELIEF THAT THE FUTURE OF THE GWICH'IN AND THE FUTURE OF THE CARIBOU ARE THE SAME."

I. INTRODUCTION

To drilling proponents, it is the "1002 area."¹ To the Gwich'in people, it is *Izhik Gwats'an Gwandaii Goodlit*, "The Sacred Place Where All Life Begins."² The Coastal Plain of the Arctic National Wildlife Refuge, in particular the 1002 area, plays a critical role in the continued physical and cultural survival of the Gwich'in, one of the northernmost indigenous peoples in North America. The connection between the Gwich'in and the Coastal Plain of the Arctic Refuge is the Porcupine Caribou Herd, which is the primary food source for the Gwich'in and the heart of their culture. The herd migrates hundreds of miles each year to give birth to the

next generation of caribou in "The Sacred Place Where All Life Begins"—possibly the only place on earth that can sustain the herd's calving activities. A proposal under consideration by the US Congress to open the 1002 area to oil exploration and development threatens both the caribou and the Gwich'in.

The Gwich'in live south of the Brooks Range where their villages are strategically located along the herd's migration paths,³ and they depend on the herd for their essential physical, cultural, social, economic and spiritual needs.⁴ As Gwich'in Darius Kassi explains,

The Coastal Plain is critical to successful calving and calf survival of the Porcupine River Caribou Herd. (Subhankar Banerjee)

I wouldn't be sitting here talking to you now if it wasn't for Porcupine Caribou. It's our life. It is what we've lived for and what all our life revolves around Eighty percent plus of our diet is caribou intake. It is important to our people. It is not only important for food. It is important for spiritual, cultural, emotional and physical reasons. It is our lifestyle—a lot of it rotates around the caribou I don't think there are any English words that can express how important, all consuming, the protection of this herd is.⁵



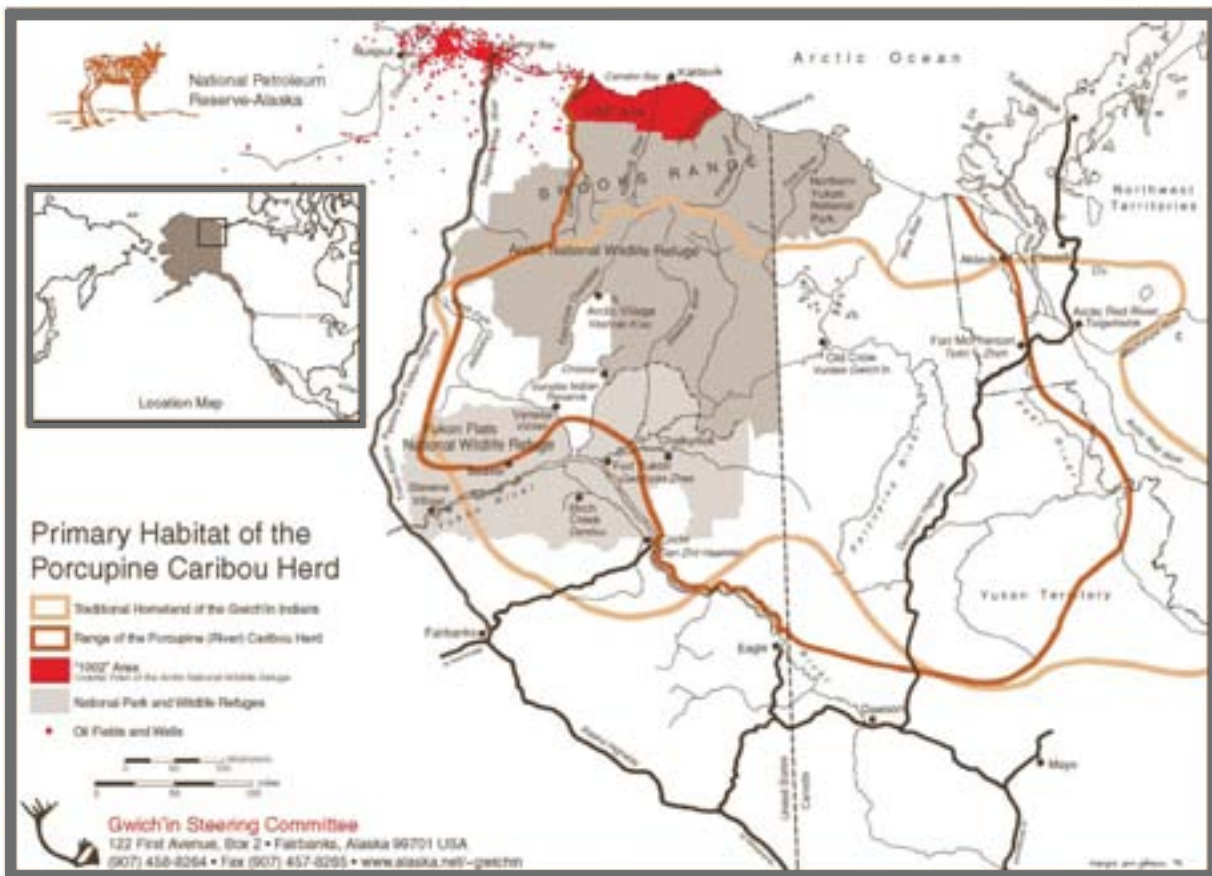
This report demonstrates that opening the Coastal Plain of the Arctic National Wildlife Refuge to oil drilling would severely harm the health of the beleaguered Porcupine Caribou Herd. According to one biologist, if the herd's numbers fall much further, "the Gwich'in may have to consider cutting down on the 4000 animals they usually hunt in a year."⁶ The harvest, so critical to Gwich'in physical and cultural survival, would cease to provide a reliable means of subsistence or to sustain the way of life that has defined the Gwich'in culture for millennia.

International law requires the United States to protect indigenous peoples' cultures, subsistence, and ways of life as fundamental aspects of human rights. Where these rights are dependent on maintaining a healthy environment, as they are for the Gwich'in, governments are obliged to protect the environment. The proposal being considered by the US Congress to open the 1002 area of the Coastal Plain to oil drilling would violate that



obligation, by putting the Porcupine Caribou Herd—and the Gwich'in nation that depends on it—at risk.

Gwich'in woman with her baby (Masako Cordray)



The proposal for oil exploration and development in the Arctic Refuge involves the 1002 area, which is prime calving and post-calving ground for the Porcupine Caribou Herd. (Gwich'in Steering Committee)



“The Gwich’in are caribou people Our whole way of life as a people is tied to the Porcupine caribou. It is in our language, and our songs and stories.”

Gwich'in youth perform the Caribou Skin Hut Dance at the 2005 Gwich'in Gathering in Fort Yukon. (Brooke Tone Boswell)

II. THE GWICH'IN RELY ON THE PORCUPINE CARIBOU HERD FOR THEIR CULTURAL AND PHYSICAL SURVIVAL

“The Gwich’in are caribou people Our whole way of life as a people is tied to the Porcupine caribou. It is in our language, and our songs and stories.”⁷

In mythic times, it is said among the Gwich'in, the people and the caribou lived together in harmony. Eventually, however, the people began to hunt the caribou. But the bonds between the hunter and the hunted only grew stronger. For thousands of years, the Gwich'in have depended on the animal not only for food, shelter, tools, and clothing but as a source of spirituality. The [Gwich'in] believe that a bit of human heart is in every caribou, and that a bit of caribou is in every person. Any threat to the animal is a threat to the Gwich'in. As one Gwich'in woman explains: “The Caribou are our life. We must safeguard them forever.”⁸

The Gwich'in continue to use ceremonial songs and dances to tell the creation story. “When the dance is fulfilled, it is in essence a spiritual walk between the two and the Gwich'in and caribou are one again.”⁹

The Gwich'in live in 15 villages in northeastern Alaska and northwestern Canada: in Alaska, these are Arctic Village, Venetie, Chalkyitsik, Stevens Village, Birch Creek, Circle, Beaver, Canyon, Eagle, and Fort Yukon; in Canada, they are Fort McPherson, Inuvik, Aklavik, Tsiigehtchic (Arctic Red River), and Old Crow.¹⁰ The Gwich'in presently number 7,000 to 9,000 people.¹¹ Western anthropological evidence suggests that the Gwich'in have occupied their ancestral lands and harvested caribou for more than 20,000 years; the Gwich'in believe it has been this way since time immemorial.¹²

The Porcupine Caribou Herd is the central food source for the Gwich'in people,¹³ providing much of the protein for people in these villages.¹⁴ Caribou is also the most nutritious food available to the Gwich'in.¹⁵ In the Prudhoe Bay area of Alaska's North Slope, where intensive oil development began in the 1970s, the reduction of traditional subsistence hunting due to disruption of food species led to an “increased incidence of cancer and diabetes and disruption of traditional social systems.”¹⁶ In the remote Gwich'in villages, caribou is also the most reliable long-term food source, because other wild sources are less dependable and groceries cost twice as much

as they do in the city.¹⁷ Caribou is an essential part of the Gwich'in diet.

In addition to food, the caribou have provided the Gwich'in with medicine, clothing, shelter, and various tools such as awls and skin scrapers.¹⁸

The caribou is also central to the culture and spirituality of the Gwich'in:

Reliance on traditional and customary use (now termed "subsistence") of the Porcupine Caribou Herd is a matter of survival. Beyond the importance of our basic needs, the caribou is central to our traditional spirituality. Our songs and dances tell of the relationship that we have to the caribou. The caribou is a part of us.¹⁹

When the herd nears a village on its annual migration to the Coastal Plain, the entire Gwich'in community prepares to harvest food for the year. During the harvest, the Gwich'in use their vast store of traditional knowledge and take the opportunity to pass on that knowledge along with Gwich'in cultural values to the younger generation:

This is the time when the life lessons are taught to the younger generation of the Gwich'in people. The women and grandmothers teach the younger women and girls very important traditional skills. The girls are taught the proper names of the animal parts and proper methods of taking care of the meat. They also learn the techniques of tanning the hides for clothing, what part of the animal is used for certain tools, such as needles, hooks, tanning tools and sinew. The elder women tell the younger ones of the family lineage and ties It is an important time of learning the functions of the tribe.

The men and grandfathers teach the ... hunting skills needed: the methods of stalking and taking the animal, the value of sharing what is taken, the

names and memory of the hunting lands and lessons of timing. The young are taught to handle the kill with great care and respect, and to give proper thanks to the Creator for the gift. This teaches the young men of their responsibility to the tribe as a provider.²⁰

The connection between the Gwich'in and the caribou continues today, as the Porcupine Caribou Herd continues to provide the Gwich'in with basic necessities:

Today, Gwich'in community members continue to rely on the caribou to meet both their subsistence and spiritual needs. The hunting and distribution of caribou meat also enhances their social interaction and cultural expression Caribou skins are used for winter boots,

James Gilbert with his granddaughter in Arctic Village. (Robert Gildart)



The young are taught to handle the kill with great care and respect, and to give proper thanks to the Creator for the gift. This teaches the young men of their responsibility to the tribe as a provider.

slippers, purses, bags, and other items of Native dress. Bones continue to be used as tools. Songs, stories, and dances, old and new, reverberate around the caribou further strengthening Gwich'in cultural life.

The historical respect for the [caribou] reflected in stories and legends included the importance of using all parts of the animal (avoiding waste), cooperation, and sharing. This traditional caribou management belief system has continued into the present by legislating modern game management practices among themselves and through the establishment of an International Porcupine Caribou Commission.²¹

The significance of the Porcupine Caribou Herd to the Gwich'in people of Alaska and Canada is memorialized in an international Agreement on the Conservation of the Porcupine Caribou Herd (Porcupine Caribou Agreement).²² The agreement acknowledges that “generations [of] certain people” rely on the Porcupine Caribou Herd “to meet their nutritional, cultural and other essential needs and will continue to do so in the future.”²³ It also recognizes the importance of Porcupine Caribou Herd habitat, aims to protect subsistence uses of the herd, and “enables users of Porcupine Caribou to participate in the international co-ordination of the conservation of the Porcupine Caribou Herd and its habitat.”²⁴ For these reasons, the governments of the United States and Canada agreed that “the Porcupine Caribou Herd, including such areas as calving,

Young hunters look for caribou. (Roy Corral)



post-calving, migration, wintering and insect relief habitat ... should be conserved according to ecological principles and that actions for the conservation of the Porcupine Caribou Herd that result in the long-term detriment of other indigenous species of wild fauna and flora should be avoided.”²⁵ The two nations also agreed that they “will take appropriate action to conserve the Porcupine Caribou Herd and its habitat.”²⁶

The Gwich’in have taken numerous steps to protect the caribou. They were actively engaged in the negotiations of a Porcupine Caribou Management Agreement among Canadian federal and provincial governments and tribal councils.²⁷ In 1988, leaders from all the Gwich’in villages gathered and reached an agreement in their traditional way to protect the birthplace and nursery grounds of the caribou by fighting attempts to open the Coastal Plain to drilling.²⁸

The Gwich’in people’s thorough knowledge of the herd makes them highly sensitive to changes in herd biology, as demonstrated by the fact that the Gwich’in of Old Crow, Canada, called off their caribou hunt in 2000.²⁹ During that year, deep and long-lasting snow prevented the Porcupine Caribou Herd cows from reaching the Coastal Plain in time to deliver their calves, and Gwich’in people in Old Crow “reported that calves a few days old were forced to swim the mighty Porcupine River. Appalled, the Gwich’in called off hunting for the season.”³⁰

In the words of Gwich’in elder Jonathon Solomon of Fort Yukon, Alaska, “It is our belief that the future of the Gwich’in and the future of the Caribou are the same.”³¹ Harm to the Porcupine Caribou Herd is harm to the Gwich’in culture and millennia-old way of life.

III. OIL DEVELOPMENT IN THE COASTAL PLAIN WOULD SEVERELY HARM THE PORCUPINE CARIBOU HERD

The 1002 area targeted for oil exploration and development is irreplaceable calving and post-calving habitat for the Porcupine Caribou Herd. Drilling in the area would leave the herd without adequate habitat, almost certainly leading to the long-term decline of the herd.



A. The calving grounds and insect relief areas in the Coastal Plain are critical to the Porcupine Caribou Herd

A majestic caribou bull surveys his surroundings. (USFWS)

The Porcupine Caribou Herd is named for the Porcupine River, which the herd crosses in spring and fall during its annual migration. The herd is one of four barren-ground caribou herds in America’s Arctic. The herds are distinguished from one another by their spring calving grounds, and the Porcupine herd’s calving ground is the “Sacred Place Where Life Begins,” also known as the “1002 area” or, more broadly, the “Coastal Plain.”³² The herd currently numbers around 120,000 animals, but those numbers have been in decline since 1989, when the herd numbered nearly 180,000 animals.³³

Of the four arctic barren-ground caribou herds, the Porcupine herd has the lowest capacity for growth.³⁴ According to a study by the US Geological Survey, this low capacity for growth indicates that “the Porcupine Caribou Herd has less capacity to accommodate anthropogenic, biological, and abiotic stresses than other Alaskan barren-ground herds.”³⁵ For example, if everything else remained the same, an approximate 4.6% reduction in calf survival would be enough to prevent Porcupine Caribou Herd growth



Pregnant caribou rely on specific nutrients in cotton grass, shown here as ground cover, for nursing new born calves on the Coastal Plain. (Subhankar Banerjee)

under the best conditions observed to date or to prevent recovery from the current decline.³⁶ Other barren-ground herds could continue to grow despite a similar reduction in calf survival.

The Porcupine Caribou Herd likely selects the 1002 area as its calving grounds because the area provides an optimal combination of availability of high quality forage and insect relief areas,³⁷ early snowmelt, and less dense predator population.³⁸ The Coastal Plain is “the most biologically productive part of the Arctic Refuge for wildlife and is the center of wildlife activity.”³⁹ The high quality forage available on the Coastal Plain is crucial to the reproductive health of the herd.⁴⁰ When they arrive at the Coastal Plain calving grounds in spring, the female caribou have used up nearly all of their body fat reserves.⁴¹ Their nutritional needs, however, are highest during the weeks during and immediately after calving, and the high quality forage available on the Coastal Plain is thus essential during this time.⁴²

In a 1993 report, the International Porcupine Caribou Board identified habitats critical to the Porcupine Caribou Herd based on their relationship with critical periods in the herd’s life cycle.⁴³ The report ranked the calving period as the most important and vulnerable in the herd’s life cycle, and identified the 1002 area as embracing the “majority of the primary concentration area” of the herd during this period.⁴⁴

The report identified the time period immediately after calving as another critical period for the herd because of the high energy demands of lactating females, and thus the need for highly nutritious forage, and again identified the 1002 area as the most important place for the herd to be during this time.⁴⁵ The caribou cows rely upon the Coastal Plain vegetation to store fat and protein for the next winter and spring, during which these resources will nourish first a new fetus and then the calf.⁴⁶ Only well-fed cows can ensure that calves survive and are fertile enough to conceive the next generation.⁴⁷ “The size of the calf in autumn is directly related to its size at birth and to the mother’s size at the end of June. This means that if the cows are in poor condition when they provide milk to the calves in June, there is little opportunity for the calves to compensate.”⁴⁸ The high quality forage available on the Coastal Plain is therefore absolutely critical to the long-term health of the herd.

As the International Porcupine Caribou Board report demonstrates, it is the 1002 area specifically, not just the Coastal Plain in general, that is critical to calf survival and thus the long-term health of the herd. On the Coastal Plain, the female caribou tend to calve together in “concentrated calving areas,” and

The Porcupine Caribou Herd is the central food source for the Gwich’in people, providing much of the protein for people in these villages.

these occur mostly in the 1002 area.⁴⁹ These concentration areas have been “deemed to be the most important calving areas because (1) they support most of the parturient females [those that are pregnant or accompanied by very young calves⁵⁰] and their calves, and (2) they are the areas having the highest caribou densities.”⁵¹ Studies have shown a significantly higher rate of survival for calves born in concentrated calving areas than for those born in areas never used as a concentrated area, likely due to the nutritious forage and low predation risk.⁵² Researchers believe that “this strong link between food for cows and calf survival is the reason that calving cows concentrate annually in the region of most rapid plant growth” and why it is so important to the continued productivity of the herd that calving cows be able to freely select the best calving grounds for the year.⁵³ Much of this important Porcupine caribou land lies within the 1002 area that is targeted for drilling. According to the International Porcupine Caribou Board, areas of concentrated calving use occupy virtually the entire 1002 area.⁵⁴ As shown below in Part III.B, oil development would likely displace

caribou calving away from these critical areas. The importance of the 1002 area is underscored by the poor calf survival rate in the years the herd has been unable to calve there. In 2000 and 2001 the Porcupine Caribou Herd females were unable to reach the calving grounds due to unusually late springs.⁵⁵ This resulted in a much reduced calf survival rate for those years: only about 60% of calves survived, compared with a typical survival rate of 75%.⁵⁶ Even with unrestricted access to the best habitat for calving, an average of 25% of the newborn calves die in their first month of life.⁵⁷ Fifty-two percent of this mortality is attributed to birth defects and poor nutrition, while 48% is due to predation.⁵⁸ If calving were to shift away from the Coastal Plain and into the foothills and mountains to the south, the baseline mortality would likely increase not only because of reduced access to the best forage, but also because of higher predator concentrations outside of the calving grounds.⁵⁹

The 1002 area is critical not only to females and their calves, but to the entire Porcupine Caribou Herd. The area is predictably used by nearly the entire herd during the

The migration of the Porcupine Caribou Herd is one of the largest and most impressive animal migrations in North America, covering hundreds of miles each year. (Subhankar Banerjee)





It is the 1002 area specifically ... that is critical to calf survival and thus the long-term health of the herd.

The Coastal Plain provides critical grazing habitat for the Porcupine herd. (Ken Whitten)

postcalving season, even in years where a lower percentage of the herd calves on the Coastal Plain.⁶⁰ One reason for this is that the Coastal Plain provides important insect relief habitat to the herd in the post-calving period, before the herd moves inland during the fall rut. Caribou must be able to obtain relief from insects: “Insects substantially affect energy balance by reducing food intake and by increasing energy expenditure.”⁶¹ When the animals are being harassed by insects they will run erratically or stand head down to avoid larval infestation, at the expense of foraging opportunity.⁶² “Access to insect-relief habitat and forage during this period may be critical to herd productivity.”⁶³

The Coastal Plain provides the herd with cooler, windier areas along the coast where harassment is less severe.

Once the year’s calving and post-calving period is over, the Porcupine Caribou Herd eventually leaves for its winter range in eastern Alaska and the Yukon Territory.⁶⁴ This migration covers a linear distance of up to 400 miles, although the actual number of miles traveled each year by an individual animal may be closer to 3,000.⁶⁵

The US Fish and Wildlife Service aptly summed up the situation when it stated, in response to the question whether the calving grounds are essential to the survival of the herd:

Yes. Each spring, pregnant female caribou begin long migrations towards their traditional calving grounds. Their instinct to reach these areas is very strong, and enables them to travel through deep snow and storms, and to cross rivers flooding with icebergs to

The Coastal Plain is used by the Porcupine Caribou Herd almost exclusively during calving and postcalving, and disturbance of this important portion of the caribou's life cycle would have broad ramifications.

reach the calving grounds at just the right time. ... In summary, it is the special conditions of the calving grounds which improve the survival of calves and ultimately the entire herd.⁶⁶

B. Oil and gas drilling would inevitably interfere with the Porcupine Caribou Herd's use of their calving grounds and insect relief areas.

Biologists who have studied the effects of oil development on caribou agree that these activities displace animals away from development areas.⁶⁷ Indeed, “[a]voidance of petroleum development infrastructure by parturient caribou during the first few weeks of the lives of calves is the most consistently observed behavioral response of caribou to development.”⁶⁸ Reactions to disturbance will vary with animal characteristics, but cows with newborn calves are the most sensitive.⁶⁹ This is important because the Coastal Plain is used by the Porcupine Caribou Herd almost exclusively during calving and postcalving, and disturbance of this important portion of the caribou's life cycle would have broad ramifications.⁷⁰ “Disturbance to cow-calf groups on the calving grounds could interfere with bond formation and [could] increase calf mortality.”⁷¹

Most of these studies have focused on the Central Arctic Caribou Herd, which occupies the Prudhoe Bay area of Alaska's North Slope, where intensive oil development began in the 1970s.⁷² Studies have found that oil development on Alaska's North Slope disturbed Central Arctic herd calving. For instance, construction of the Trans-Alaska Pipeline substantially reduced use of the pipeline corridor by caribou cows and calves.⁷³ As to calving, only a portion of the

calving grounds used by the Central Arctic herd was affected by the Prudhoe Bay development, and the initial Prudhoe Bay development area was apparently never a concentrated or highly preferred calving area like the 1002 area.⁷⁴ Nevertheless, the little calving that had been occurring in the development area ended after significant development began.⁷⁵

More recently, caribou have responded to expanded development within several oil fields by shifting their concentrated calving almost entirely away from the development areas, largely abandoning even isolated undisturbed areas within the larger development region.⁷⁶ As scientists found in a 1998 study, “the extent of avoidance greatly exceeds the physical ‘footprint’ of an oil-field complex.”⁷⁷

Over 125 species of birds from six continents and all fifty states migrate to the Coastal Plain for nesting, molting, feeding and rearing their young. The highly threatened buff-breasted sandpiper that migrates from South America is shown here in a courtship display. (Subhankar Banerjee)



After 1987, the Central Arctic herd showed a slowed growth rate when compared to the Teshekpuk Lake Herd, the most ecologically comparable herd in Alaska.⁷⁸ Biologists believe the reduction in growth resulted from the shift of the Central Arctic herd away from the oilfield, which began at the same time.⁷⁹ A slowdown in growth is to be expected given that the parturition rates of female caribou “in regular contact with oil-field infrastructure ... were lower than those of undisturbed females.”⁸⁰

In addition, caribou in the Central Arctic herd were often “deflected” by infrastructure, and occasionally went significant distances out of their way to avoid it. “Deflections of up to 20 miles, during which caribou ran or trotted, have been observed in the central Arctic.”⁸¹ The effect is exacerbated when groups of caribou are large, and when the caribou are being harassed by insects, especially mosquitoes. “Large mosquito-harassed groups had particular difficulty negotiating road-pipeline corridors.”⁸²

The effects of oil-field development accumulate with effects of insect harassment by impairing movements between coastal and inland habitats. Possible consequences of these disturbances include reduced nutrient

The majestic Brooks Range towers over the quiet serenity of the Coastal Plain. (Pamela A. Miller)

The Porcupine herd “may be particularly sensitive to development within the 1002 portion of the calving ground.”

acquisition and retention throughout the calving and midsummer periods, poorer condition in autumn, and a lowered probability of producing a calf in the following spring.⁸³

Thus, the studies showed impacts of oil development to Central Arctic herd from displacement away from calving areas, reduced parturition rates, and impaired movement between habitats, all of which led to reduced herd health and reproduction rates.

These studies are useful in identifying the potential impacts of oil development on the Porcupine Caribou Herd; there are, however, important differences between the two herds that may exacerbate the effects of drilling on the Porcupine herd. In particular, scientists have concluded that for a number of reasons the Porcupine herd “may be particularly sensitive to development within the 1002 portion of the calving ground.”⁸⁴ First, the herd is especially sensitive because of its already low productivity.⁸⁵ Second, the shift of concentrated calving areas away from development that would inevitably occur would remove calving from the best calving habitat that affords the best calf survival rate.⁸⁶ This was not true for the Central Arctic herd, for which the oil development area around Prudhoe Bay was not a crucial calving area.⁸⁷

Third, there is a “lack of high-quality alternate calving habitat” for the Porcupine Caribou Herd.⁸⁸ The herd has typically used calving areas in Canada and away from the Alaska Coastal Plain only when the Arctic Refuge Coastal Plain, including the 1002 area, was unavailable due to late snowmelt.⁸⁹ Forage quality on the Canadian portions of the calving





Caribou cross a river during their annual migration. (Amy Gulick)

ground is substantially lower than on the Arctic Refuge Coastal Plain and 1002 portions of the calving ground, and calf survival was correspondingly lower in these years.⁹⁰ Finally, there is a strong link between free movement of females and calf survival.⁹¹ This relationship is based on both access to the highest quality foraging habitats and decreased exposure to predation during calving.⁹² If calving grounds are displaced due to development, June calf survival for the Porcupine Caribou Herd will decline, and the effect will increase with displacement distance.⁹³

Biologists have used modeling as well as observations derived from the Central Arctic herd studies to predict the likely effects on the Porcupine Caribou Herd of oil development in the 1002 area. A 1987 Interior Department study based on assumptions derived from Central Arctic herd studies estimated that full development of the 1002 area would result in similar disturbance in approximately 37 percent of the total concentrated calving areas within the 1002 area,⁹⁴ although this prediction is likely to underestimate the extent and scope of impacts.⁹⁵ More recently, the US Geological Survey developed a model, also based on lessons derived from the Central Arctic herd studies, to predict the effects of 1002 area development on the Porcupine herd. Using conservative assumptions, the US Geological

Survey predicted that full development of the 1002 area would likely result in complete displacement of concentrated calving away from the 1002 area, with a resulting 8.2% increase in calf mortality:⁹⁶

The simulations indicated that a substantial reduction in calf survival during June would be expected under full development of the 1002 Area. Eighty-two percent of observed calving distributions would have been displaced and the average distance of these displacements would have been 63 km (range 16-99 km). This would have yielded a net average effective displacement of 52 km and an expected mean reduction in calf survival of 8.2%⁹⁷

An 8.2% reduction in calf survival is well above the estimated 4.6% growth rate decline sufficient to halt growth of the herd and/or prevent recovery from the current population decline.⁹⁸

In addition to reducing the survival of calves, the Interior Department has concluded that development of the 1002 area may generally limit the herd's ability to move freely, which would reduce access to important insect-relief, forage, and predator-avoidance habitats.⁹⁹

Several investigators have described inhibited passage of caribou through developed areas due to linear oil-development facilities and associated activities. This is of concern in the 1002 area because the probable main pipeline/haul road route would bisect the area, rather than run parallel to caribou movements as it does in the Prudhoe Bay development.¹⁰⁰

The largest groups of caribou within the Central Arctic herd are considerably smaller than the post-calving aggregations of the Porcupine Caribou Herd, which can number up to 80,000.¹⁰¹ As the Interior Department concluded, “If the larger [Porcupine Caribou Herd] groups react negatively, as [some researchers] suggest, there could be significant exclusion of [the herd] from coastal areas.”¹⁰²

Decreased access to insect relief habitat because of inhibited movement is of particular concern. “If caribou are delayed or prevented from free access to insect-relief habitat, the result may be deterioration in body condition with consequences of decreased growth, increased winter mortality, and lowered herd productivity. ... Postcalving aggregations could be inhibited from moving between inland feeding areas and coastal or mountainous insect-relief habitats within and

to the south of the 1002 area as a result of development.”¹⁰³ Although some studies have shown that caribou will seek out roads and drilling pads for relief from flies, this will not likely aid the Porcupine Caribou Herd because the caribou have usually left the 1002 area before fly season.¹⁰⁴ “The primary source of insect harassment for the [Porcupine Caribou Herd] while on the 1002 area is generally the swarms of mosquitoes early in the summer season. Large groups of mosquito-harassed caribou do not readily pass beneath elevated pipelines.”¹⁰⁵ If caribou movement is inhibited by roads or pipeline development, the herd’s use of 52 percent of estimated insect-relief habitats, including as much as 80 percent of the coastal habitat, could be reduced.¹⁰⁶

Thus, scientific studies over the past two decades show the potential for a serious long-term problem for the Porcupine Caribou Herd if the 1002 area is developed. First, all studies agree that development displaces caribou cows from their preferred calving areas.¹⁰⁷ Second, this displacement leads to decreased calf survival.¹⁰⁸ Finally, those Central Arctic herd females that were in regular contact with oil field infrastructure had lower reproduction rates.¹⁰⁹ This information led to a predicted 8.2% decline in the growth rate of the Porcupine herd if full development of the 1002 area occurs.¹¹⁰ This predicted decline is almost

At present, Prudhoe Bay oil fields span across 1,000 square miles of Alaska’s North Slope, with 500 miles of roads and pipelines, 200 exploration and production drill pads, 4800 exploratory and production wells, 36 gravel mines, 2 airports and numerous other forms of industrial infrastructure.
(Pamela A. Miller)



double the rate at which the population of the herd would inevitably begin to decline. Because the Porcupine herd has a low capacity for growth to begin with, and has been experiencing a population decline for the past 15 years, the addition of oil development in the best calving habitat could prevent a reversal of this population decline, leading to a long-term substantial reduction in the size of the herd.

Finally, it is important to consider that the Arctic Climate Impact Assessment has recently concluded that climate change is already placing additional stresses on the Porcupine Caribou Herd, and that “[t]he Porcupine Caribou Herd appears to be more sensitive to the effects of climate change than other large herds.”¹¹¹ Warmer weather, earlier snowmelt, earlier break-up of river ice, and changes in the freeze-thaw cycles have already affected the health of the animals and the pattern of their annual movements.¹¹² As Gwich’in Steven Mills from Old Crow commented, “If I were a caribou, I’d be pretty confused right now.”¹¹³ The increased stress on the herd from climate change makes the herd even more vulnerable to new disruptions like oil and gas development in the herd’s primary calving and post-calving habitat.

As early as 1987, the US Department of the Interior concluded that “[m]ajor effects on the [Porcupine Caribou Herd] could result if the entire 1002 area were leased,” even with a complete and effective set of mitigation measures in place.¹¹⁴ “If this major effect occurred, it would manifest itself as a widespread, long-term change in habitat availability or quality which would likely modify natural abundance or distribution of the [Porcupine Caribou Herd] in the 1002 area ...”¹¹⁵ This early warning assumes heightened significance given the persistent population decline in the herd over the last 15 years.¹¹⁶

Opening the Coastal Plain of the Arctic National Wildlife Refuge to oil drilling would very likely lead to a long-term decline in the Porcupine Caribou Herd. The already declining herd would experience lower calf survival rates, leading to a steeper drop in the herd’s population and ultimately a smaller herd with a smaller range. “A change in distribution of the herd, shifting generally to



Opening the Coastal Plain of the Arctic National Wildlife Refuge to oil drilling would very likely lead to a long-term decline in the Porcupine Caribou Herd.

the east for example, could result in up to a 100% loss of the animals to subsistence hunters in Arctic Village and Venetie.”¹¹⁷ Such a change in herd distribution or migration patterns could be devastating to the Gwich’in villages that are now strategically located along the herd’s migration corridor. Additionally, with the declining population of the herd, the Gwich’in could be forced to curtail their critical harvest and cultural activities involving the herd. According to one biologist, if the herd’s numbers fall much further, “the Gwich’in may have to consider cutting down on the 4000 animals they usually hunt in a year.”¹¹⁸ The harvest, so central and critical to the Gwich’in physical and cultural survival, would cease to provide a reliable means of subsistence or to sustain the way of life that has defined the Gwich’in culture for millennia.

Newly-born caribou calves greatly depend on their mothers for survival. (USFWS)

IV. THE INEVITABLE DECLINE IN THE PORCUPINE CARIBOU HERD THAT WOULD RESULT FROM OIL AND GAS EXPLOITATION IN THE COASTAL PLAIN OF THE ARCTIC NATIONAL WILDLIFE REFUGE WOULD VIOLATE THE HUMAN RIGHTS OF THE GWICH'IN.

“[P]rotection for indigenous populations constitutes a sacred commitment of [nations].”¹¹⁹ This is a norm of customary international law, recognized and shared by the international community as a whole.¹²⁰ Indigenous peoples’ human rights are often inseparable from their environment. “Indeed, it can be said that all environmental degradation has a direct impact on the human rights of the indigenous peoples dependent on that environment.”¹²¹

The Porcupine Caribou Herd is the most critical of the Gwich'in community resources, feeding their social, cultural, and physical needs. The Porcupine herd is the central figure in the Gwich'in religion, culture, spirituality, and oral history, as well as their primary source of food. The herd plays a central role in the Gwich'in creation story. Indeed, the Gwich'in believe that the caribou's heart is part human, and that the Gwich'in heart is part caribou. The herd is the single most critical natural resource to the cultural and physical survival of the Gwich'in.

Although the Gwich'in do not occupy the Coastal Plain as a living area, its protection is nonetheless essential to Gwich'in human rights. The Gwich'in refer to the Coastal Plain as “The Sacred Place Where All Life Begins” because of its critical role in the life cycle of the caribou. Much like churches and synagogues, which have a cultural and spiritual significance separate from use and occupation, the Coastal Plain holds a sacred and symbolic place in Gwich'in religion and culture.

The rights of the Gwich'in to culture, subsistence, health, and religion are intertwined with the Porcupine herd and the Coastal Plain. Protecting the human rights of the Gwich'in thus requires protecting the Porcupine Caribou Herd and the Coastal Plain of the Arctic National Wildlife Refuge.

A. The Right of the Gwich'in to Culture

The International Covenant on Civil and Political Rights provides that ethnic minorities “shall not be denied the right ... to enjoy their own culture.”¹²² The Charter of the Organization of American States obligates the government of each nation in the Americas “to preserve and enrich the cultural heritage of the American peoples.”¹²³ In fact, nearly every international human rights agreement requires the protection of cultural rights.¹²⁴

International courts and tribunals have long recognized that environmental degradation caused by a State's action or inaction can violate the human right to the benefits of culture, especially in the context of indigenous cultures.¹²⁵ “[T]he close ties of indigenous people with the land must be recognized and understood as the

Young girls in the town of Venetie, Alaska. (Masako Cordray)



fundamental basis of their cultures, their spiritual life, their integrity, and their economic survival.”¹²⁶ For example, the Inter-American Commission on Human Rights noted that where the granting of mining concessions on indigenous lands would have “negative consequences for [the indigenous peoples’] culture,” such concessions violated the peoples’ rights,¹²⁷ as well as the nation’s obligations under the Organization of American States Charter.¹²⁸ As the Commission has stated, “the use and enjoyment of the land and its resources are integral components of the physical and cultural survival of the indigenous communities.”¹²⁹ Moreover, the “subsistence economy and traditional activities ... such as hunting, fishing, trapping and gathering, shall be recognised as important factors in the maintenance of [indigenous] cultures.”¹³⁰

The UN Human Rights Committee has likewise recognized that degradation of natural resources may violate indigenous peoples’ right to culture:

[C]ulture manifests itself in many forms, including a particular way of life associated with the use of land resources, especially in the case of indigenous peoples. That right may include such traditional activities as fishing or hunting and the right to live in reserves protected by law. The enjoyment of those rights may require positive legal measures of protection and measures to ensure the effective participation of members of minority communities in decisions which affect them The protection of these rights is directed towards ensuring the survival and continued development of the cultural, religious and social identity of the minorities concerned, thus enriching the fabric of society as a whole.

[O]ne or other aspect of the right ... to enjoy a particular culture may consist [of] a way of life which is closely associated with territory and use of its resources. This may particularly be true of members of indigenous communities constituting a minority.¹³¹



“[T]he close ties of indigenous people with the land must be recognized and understood as the **fundamental basis** of their cultures, their spiritual life, their integrity, and their economic survival.”

Applying these principles, the Committee has held that oil and gas exploitation in Canada that exacerbated threats to the way of life and culture of the Lubicon Band deprived the Band of their means of subsistence and their right to self-determination, and violated the Band’s right to culture.¹³²

Arctic Village children tanning a caribou skin. (Brooke Tone Boswell)

The inevitable decline in the Porcupine Caribou Herd that would result from oil and gas drilling in the Arctic National Wildlife Refuge

Earnest Erick, Evon Peters, and Don Stevens in the Gwich'in Drum Sing Dance for the Arctic Refuge vigil in 2005, Washington, DC. (Brooke Tone Boswell)



would prevent the Gwich'in from engaging in such cultural and spiritual practices as hunting, resource use, educating youth about their religion and resource use, and using traditional knowledge. Because the spiritual connection with the herd is so central to the Gwich'in culture, damage to the herd would endanger the very identity of the Gwich'in as a people.

The migration time, when the herd passes through the Gwich'in villages, is an important time in Gwich'in culture, not only for harvesting food for the year, but for passing on knowledge to the younger generations: "This is the time when the life lessons are taught to the younger generation of the Gwich'in people."¹³³ Hunting skills, food preparation techniques, clothing- and tool-making, as well as knowledge about family lineages and lessons about respect for the animals are all passed down during this time.¹³⁴ Without the annual hunt, these opportunities would be lost. The US Government has a clear obligation to respect, protect, and foster the Gwich'in culture. Opening the "Sacred Place Where All Life Begins" to oil drilling would violate that

obligation and the fundamental right of the Gwich'in to culture.

B. The Right of the Gwich'in to Their Own Means of Subsistence

The International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights each provide that "[i]n no case may a people be deprived of its own means of subsistence."¹³⁵ In the context of indigenous peoples, the right of a people to its own means of subsistence has gained the status of a general principal of international law and a customary human right.¹³⁶

The right to culture may also require protecting a people's means of subsistence.¹³⁷ In the Lubicon Lake case, the UN Human Rights Committee stated that the granting of oil and gas concessions that were destroying the Band's traditional hunting and trapping areas violated the right to culture because they "threaten[ed] the [subsistence] way of life of the Lubicon Lake Band."¹³⁸

The US Government has an international obligation to recognize and protect the subsistence uses of the Porcupine Caribou Herd by the Gwich'in. Oil drilling in the Coastal Plain of the Arctic National Wildlife Refuge would breach this duty.

Gwich'in villages are isolated and people rely on wild game for their nutritional needs and to maintain their health.¹³⁹ The inevitable decline in the Porcupine Caribou Herd that would result from oil and gas drilling on the Coastal Plain of the Arctic National Wildlife Refuge would prevent the Gwich'in from satisfying their subsistence needs by harvesting from the herd, thus violating their right to their own means of subsistence.

The US Government has an international obligation to recognize and protect the subsistence uses of the Porcupine Caribou Herd by the Gwich'in. Oil drilling in the Coastal Plain of the Arctic National Wildlife Refuge would breach this duty.

C. The Right of the Gwich'in to Health

Under international law, “[e]very person has the right to the preservation of his health.”¹⁴⁰ The Constitution of the World Health Organization recognizes that “[t]he enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being.”¹⁴¹

“The right to health is an inclusive right, containing freedoms ... and entitlements, such as the rights to adequate nutrition.”¹⁴² The UN Committee on Economic and Social Rights explained that the right to “the highest attainable standard of physical and mental health”

is not confined to the right to health care. On the contrary, ... the right to health embraces a wide range of socio-economic factors ... and extends to the underlying determinants of health, such as food and nutrition, ... and a healthy environment.¹⁴³

International law recognizes the close relationship between environmental harm and the right to health, especially in the context of indigenous peoples.¹⁴⁴ UN Special Rapporteur Fatma Zohra Ksentini identified the right to health as a fundamental right and analyzed the effects of the environment on that right.¹⁴⁵ She found that, under customary international law, “everyone has a right to the highest attainable standard of health.”¹⁴⁶ The UN Special Rapporteur on the right to health, Paul Hunt, also noted that the right to health gives rise to an obligation on the part of a State to ensure that environmental degradation does not endanger human health.¹⁴⁷

In *Yanomami Indians v. Brazil*, the Inter-American Commission on Human Rights recognized that harm to people resulting from environmental degradation violated the right to

Caribou meat is a staple of the traditional Gwich'in diet. (Carol Hoover)



The inevitable damage to the Porcupine herd that would result from oil drilling in the Coastal Plain of the Arctic National Wildlife Refuge would damage the ability of the Gwich'in to practice and manifest their religion, violating their right to religion.

health in Article XI of the American Declaration on Human Rights.¹⁴⁸ The Brazilian government's failure to prevent environmental degradation stemming from road construction and subsequent development of Yanomami indigenous lands caused an influx of pollutants and resulted in widespread disease and death. The Inter-American Commission found that "by reason of the failure of the Government of Brazil to take timely and effective measures [on] behalf of the Yanomami Indians, a situation has been produced that has resulted in the violation, injury to them, of the ... right to the preservation of health and to well-being."¹⁴⁹ In another case, the Commission noted that the right to health and well-being in the context of indigenous people's rights was so dependent on the integrity and condition of indigenous land that "broad violations" of indigenous property rights necessarily impacted the health and well-being of the indigenous people.¹⁵⁰

The Raven Dance invokes the centuries-old relationship between Gwich'in, raven and caribou. Hunters are taught to always leave behind the parts of the caribou that they cannot use, so as to share with other creatures, and to keep the earth clean. (Subhankar Banerjee)

Because the Gwich'in rely so heavily on the Porcupine herd for their nutritional needs, decline in the herd would result in a shortage of subsistence food. Store-bought food is very expensive in remote villages and is not nearly as nutritious as traditional foods. In other parts of Alaska, reduced consumption of traditional foods and higher consumption of nonsubsistence food, such as shortening, lard, butter, and bacon, have increased the rates of cancer and diabetes, and have disrupted traditional social systems.¹⁵¹ Thus, even if caribou could be replaced with other sources, the effect would be detrimental to the health of the Gwich'in.

Opening the Coastal Plain of the Arctic National Wildlife Refuge to oil drilling would violate the US Government's duty not to degrade the environment to the point that the health of a people is threatened. The proposed drilling in the Sacred Place Where All Life Begins would violate the right of the Gwich'in to health.

D. The Right of the Gwich'in to Practice Their Religion

The International Covenant on Civil and Political Rights guarantees "the right to freedom of thought, conscience and religion. This right shall include freedom [of everyone] to have or to adopt a religion or belief of his choice, and freedom, either individually or in community with others and in public or private, to manifest his religion or belief in worship, observance, practice and teaching."¹⁵² Every other major international human rights agreement also guarantees this right.¹⁵³ Interpretations of these agreements as they apply to indigenous peoples emphasize the importance of protecting sacred sites and spiritual symbols, practices and ceremonies.¹⁵⁴



The Inter-American Commission on Human Rights has recognized that the right to religion cannot be adequately protected unless traditional land and sacred sites are likewise protected.¹⁵⁵ The UN Human Rights Committee has noted that the right to religion is “closely associated with territory and use of its resources” and that “[t]his may particularly be true of members of indigenous communities.”¹⁵⁶

The Porcupine herd is one of the most potent and critical spiritual symbols in the Gwich'in religion. The herd is part of the Gwich'in creation story. Ceremonial dances and songs continue to highlight the spiritual connection between the Gwich'in and the herd. The inevitable damage to the Porcupine herd that would result from oil drilling in the Coastal Plain of the Arctic National Wildlife Refuge would damage the ability of the Gwich'in to practice and manifest their religion, violating their right to religion.

The “Sacred Place Where All Life Begins” is a sacred site. As the birthplace of the greatest Gwich'in spiritual symbol, the Coastal Plain is important for the herd, but it has independent spiritual significance as well. The Coastal Plain thus plays a central role in the spiritual life of the Gwich'in. Harm to the Porcupine Caribou Herd through oil drilling would violate the right of the Gwich'in to practice their religion.

V. CONCLUSION

The Porcupine Caribou Herd is the central feature in the Gwich'in way of life. The birthing ground of the herd, the “Sacred Place Where All Life Begins,” is likewise a sacred site to the Gwich'in, both for the sustenance it gives the herd and for its independent religious significance to the Gwich'in. Oil drilling in the Coastal Plain of the Arctic National Wildlife Refuge would unavoidably damage both the plain and the herd, violating the fundamental human rights of the Gwich'in to culture, subsistence, health, and religion. “It would be comparable to the historically genocidal acts that brought the Plains buffalo to the brink of extinction, and violated the very heart of the Plains Tribes' ancestral way of life.”¹⁵⁷



In the words of Gwich'in elder Jonathon Solomon, “It is our belief that the future of the Gwich'in and the future of the Caribou are the same.” Harm to the Porcupine Caribou Herd is harm to the Gwich'in culture and way of life.



NOTES

1. The "1002 area," named for the section of the Alaska National Interest Lands Conservation Act (ANILCA) that called for a continuing inventory of its resources, see 16 U.S.C. § 3142, is that part of the Arctic National Wildlife Refuge Coastal Plain that lies between the Canning River to the west and the Aichilik River to the east. USGS Geological Survey, *Arctic Refuge Coastal Plain, Terrestrial Wildlife Research Summaries*, USGS/BRD/BSR-2002-0001 at 2 (Mar. 2002) (hereinafter *USGS Report*).
2. See Gwich'in Steering Committee website at <http://www.gwichinsteeringcommittee.org/index.html> (last visited Sept. 7, 2005).
3. See Figure 1 page 5, indicating the substantial overlap between the Traditional Homeland of the Gwich'in Indians and the range of the Porcupine caribou herd, available at <http://www.gwichin.org/map-pch.pdf> (last visited Sept. 8, 2005); Fred Pearce, *Sink or Swim*, in *New Scientist* at 16 (Aug. 5, 2000) (hereinafter *New Scientist*) (Gwich'in villages all lie along the Porcupine Caribou Herd migration route).
4. Arctic National Wildlife Refuge, Alaska: Hearings Before the Committee on Energy & Natural Resources of the United States Senate, 100th Cong. at 313 (1987) (Tanana Chiefs Conference, Inc., Resolution No. 87-65) (noting that Arctic Village, Venetie, and Old Crow "are extremely dependent upon the population and distribution of the Porcupine Caribou herd as a matter of economics, nutrition, and cultural heritage[.]").
5. Darius Kassi, quoted in Erin Sherry and Vuntut Gwich'in First Nation, *The Land Still Speaks: Gwich'in Words About Life in Dempster County* at 180 (1999) (hereinafter *The Land Still Speaks*).
6. *New Scientist* at 16 (quoting Don Russell, a Canadian biologist with the International Porcupine Caribou Management Board).
7. Arctic Coastal Plain Leasing: Hearing Before the Committee on Resources of the House of Representatives, 104th Cong. at 185 (1995) (Statement of Sarah James of Arctic Village, Alaska).
8. The Editors of Time-Life Books, *Hunters of the Northern Forest* at 162 (Time-Life Books 1995).
9. Written Statement Submitted by the International Indian Treaty Council to the UN Commission on Human Rights at ¶ 8–10 (1999), available at <http://www.unhchr.ch/Huridocda/Huridoca.nsf/TestFrame/cb3fb9823f87142780256740003a3f45?Opendocument> (last visited Sept. 26, 2005) (hereinafter "IITC Statement").
10. Arctic Coastal Plain Leasing: Hearing Before the Committee on Resources of the House of Representatives, 104th Cong. at 59 (1995) (Statement of Sarah James); <http://www.alaska.net/~gwichin/culture1.html> (last visited Sept. 7, 2005).
11. See Gwich'in Steering Committee website at <http://www.alaska.net/~gwichin/culture1.html> (last visited Sept. 7, 2005); Gwich'in Council International website at <http://www.gwichin.org/gwichin.html> (last visited Sept. 7, 2005).
12. See *Hunters of the Northern Forest* at 30; Gwich'in Council International website at <http://www.gwichin.org/gwichin.html> (last visited Sept. 7, 2005).
13. TCC Resolution, *supra* note 4; M. Lynne Corn, *Arctic National Wildlife Refuge: Background and Issues* at 87 (Congressional Research Service Report for Congress, May 15, 2003) (hereinafter *2003 CRS Report*) ("Caribou is the main food source for Arctic Village, Venetie, and other Gwich'in villages.").
14. Sarah James Statement, *supra* note 7, at 185.
15. Arctic National Wildlife Refuge, Alaska: Hearings Before the Committee on Energy & Natural Resources of the United States Senate, 100th Cong. at 295 (1987) (Statement of Sarah James, Arctic Village, Alaska, discussing study that found caribou has highest nutritional value of foods consumed in each village).
16. National Academy of Sciences, *Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope* at 139 (2003) available at <http://www.nap.edu/books/0309087376/html> (last visited Aug. 18, 2005) (hereinafter *National Academy of Sciences*) ("Higher consumption of nonsubsistence food, such as shortening, lard, butter, and bacon, and reduced consumption of traditional foods ... have increased the incidence of diabetes.").
17. Arctic National Wildlife Refuge, Alaska: Hearings Before the Committee on Energy & Natural Resources of the United States Senate, 100th Cong. at 286 (1987) (Statement of Lincoln Tritt, Chief, Arctic Village, Alaska).
18. *The Land Still Speaks* at 222-230 (describing various uses of caribou).
19. Gwich'in Steering Committee website at <http://www.alaska.net/~gwichin/index2.html> (last visited Aug. 18, 2005).
20. IITC Statement at ¶ 8–10.
21. *The Arctic National Wildlife Refuge: A Special Report/ The People in and around the Arctic Refuge/The Gwich'in of Alaska and Canada*, at <http://arcticcircle.uconn.edu/ANWR/anwrgwichin.html> (last visited Sept. 8, 2005).
22. Agreement on the Conservation of the Porcupine Caribou Herd, July 17, 1987, U.S.-Can., T.I.A.S. No. 11259, art. 4.
23. *Id.* at 1.
24. *Id.*
25. *Id.*, preamble.
26. *Id.*, art. 3(a).
27. See Darius Kassi Statement, in *The Land Still Speaks* at 180 ("We spend an enormous amount of our energy negotiating international agreements like the Porcupine Caribou Management Agreement, protecting our land so the caribou can have some place to go.").
28. Sarah James, *We Are the Ones Who Have Everything to Lose, in Arctic Refuge: A Circle of Testimony* at 4 (compiled by Hank Lentfer and Carolyn Service 2001).
29. *New Scientist* at 16.
30. *Id.*
31. Jonathon Solomon, Chairman, Gwich'in Steering Committee, in *Protect the Sacred Place Where Life Begins: Iizhik Gwats'an Gwandaii Goodlit* (Gwich'in Steering Committee).
32. *Arctic National Wildlife Refuge, Alaska, Coastal Plain Resource Assessment: Report and Recommendation to the Congress of the United States and Final Legislative Environmental Impact Statement*, United States Department of the Interior, Apr. 1987 at 24 (hereinafter *FLEIS*) ("caribou have calved on the 1002 area every year for which detailed records have been kept (1972-86)"); see also *supra* note 1 (explaining distinction between 1002 area and Coastal Plain).
33. *USGS Report* at 13.
34. The maximum long-term growth rate for the Porcupine Caribou Herd was 4.9% during the 1970s and 1980s, *USGS Report* at 14, compared with maximum growth rates of 10.8% for the Central Arctic herd, 13% for the Teshekpuk Lake herd, and 9.5% for the Western Arctic herd, *id.* at 34. Since 1989, the Porcupine Caribou Herd has been in decline. *Id.* at 13.
35. *Id.* at 34.
36. *Id.* (citing Walsh *et al.*, *Evaluating growth of the Porcupine caribou herd using a stochastic model*, 59 *Journal of Wildlife Management* 262–72 (1995)).
37. As explained in more detail below, the ability to gain relief from insects is crucial to caribou survival.
38. *USGS Report* at 24–25; International Porcupine Caribou Board, *Sensitive Habitats of the Porcupine Caribou Herd* at 14 (January 1993) (hereinafter *International Board Report*).
39. *FLEIS* at 46.
40. *National Academy of Sciences* at 107.
41. *Id.* at 108.
42. *Id.*
43. *International Board Report* at 3.
44. *Id.* at 14-15.
45. *Id.* at 17-18.
46. *National Academy of Sciences* at 108.
47. *Id.*
48. D.E. Russell & P. McNeil, *Summer Ecology of the Porcupine Caribou Herd*, Porcupine Caribou Management Board at 6 (2nd ed. 2005) (hereinafter *Summer Ecology*).
49. *FLEIS* at 24; *International Board Report* at 14 (map).
50. *USGS Report* at 11.

51. *FLEIS* at 24.
52. Calf survival is 83.8% for those born in concentrated areas versus 73.9% for those born in never-before-used areas (based on data from 1983-1994). *USGS Report* at 32-33.
53. *Summer Ecology* at 10.
54. *International Board Report* at 14.
55. *USGS Report* at 17.
56. *Summer Ecology* at 8.
57. *Id.* at 7; see also *International Board Report* at 14 (50% of first year mortality occurs within the first month).
58. *Summer Ecology* at 7.
59. *Id.* (higher predator concentrations).
60. *FLEIS* at 25.
61. *National Academy of Sciences* at 107.
62. *Id.*
63. *FLEIS* at 25.
64. *International Board Report* at 21.
65. US Fish and Wildlife Service Alaska website at <http://arctic.fws.gov/carcon.htm> (last visited Aug. 17, 2005).
66. *Id.*
67. *FLEIS* at 119.
68. *USGS Report* at 34.
69. *FLEIS* at 119.
70. See generally *International Board Report* at 14-19 (use of Coastal Plain during calving and post-calving).
71. *FLEIS* at 119.
72. *National Academy of Sciences* at 106 (location of CAH).
73. Raymond D. Cameron et al., *Caribou Distribution and Group Composition Associated with Construction of the Trans-Alaska Pipeline, Canadian Field-Naturalist* 93(2): 155-162, at 161 (1979).
74. *FLEIS* at 121.
75. *Id.* Despite the shift in calving locations, the overall population of the CAH nevertheless increased between 1978 and 1985. *Id.* Some researchers contend that this lack of reduction in productivity or consequent population decline is because “(1) suitable alternative high-quality habitat appears available; (2) the CAH has been displaced from only a part of its calving grounds to areas already used for calving; and (3) overall density of CAH caribou on their calving grounds (even after displacement) is much lower than the density of other Alaskan Arctic caribou herds.” *Id.* These ameliorating factors are all absent for the Porcupine Caribou Herd. See *USGS Report* at 30.
76. *USGS Report* at 29-30.
77. C. Nellemann & R.D. Cameron, *Cumulative impacts of an evolving oil-field complex on the distribution of calving caribou*, *Can. J. Zool.* 76: 1425-1430, at 1429 (1998).
78. *USGS Report* at 29-30.
79. *Id.* at 30.
80. *National Academy of Sciences* at 116.
81. *FLEIS* at 122.
82. *National Academy of Sciences* at 110 (citations omitted).
83. *Id.* at 116.
84. *USGS Report* at 34.
85. *Id.* at 13-14.
86. *Id.* at 34.
87. *FLEIS* at 121.
88. *USGS Report* at 34.
89. *Id.*
90. *Id.*
91. *Id.*
92. *Id.*
93. *Id.*
94. *Id.* at 120.
95. According to the Interior Department, “It is important to note that the Milne Point field [the subject of one of the CAH studies from which the *FLEIS* derived its predictions] is the smallest development on the North Slope.... Under full leasing, most roads in the 1002 area would be expected to have much greater traffic.... Thus, predicted results in the 1002 area, using the Milne Point study as a basis, are likely to be conservative.” *Id.*
96. *USGS Report* at 30-31.
97. *Id.* at 31.
98. See discussion of 4.6% growth rate decline, *supra* n. 36 and accompanying text.
99. *FLEIS* at 122.
100. *Id.* (internal citations omitted).
101. *Id.*
102. *Id.*
103. *Id.*
104. *Id.*
105. *Id.* (internal citations omitted).
106. *Id.* at 123.
107. *FLEIS* at 119.
108. *USGS Report* at 30-31.
109. *National Academy of Sciences* at 116.
110. *USGS Report* at 31.
111. *Arctic Climate Impact Assessment, Impacts of a Warming Arctic* at 71 (2004).
112. *Id.* at 72; see also *New Scientist*, *supra* note 3 at 16 (statement by Arctic Village elder Trimble Gilbert that the caribou migration has changed and the herd no longer crosses the Porcupine River at the village).
113. *Id.* (quoting Stephen Mills, Old Crow, Canada).
114. *FLEIS* at 123.
115. *Id.*
116. See *USGS Report* at 13 (noting population decline).
117. Arctic National Wildlife Refuge, Alaska: Hearings Before the Committee on Energy & Natural Resources of the United States Senate, 100th Cong. 309 (1987) (Statement of the Tanana Chiefs Conference, Inc., on Further Exploration and Oil Development in the 1002 Area of the Arctic National Wildlife Refuge).
118. *New Scientist*, at 16 (quoting Don Russell, a Canadian biologist with the International Porcupine Caribou Management Board).
119. Resolution of the IACHR on the Problem of Special Protection for Indigenous Populations, Inter-Am. C.H.R., OEA/Ser.L/V/II.29, doc. 38, rev. (1972), quoted *The Human Rights Situation of the Indigenous People in the Americas*, 1, n.1, OEA/Ser.L/V/II.108 Doc. 62 (October, 2000), available at <http://www.cidh.org/indigenas/toc.htm> (“In that resolution the Commission called on the member states ‘to implement the recommendations made by the Inter-American and Indianist Conferences... and, in particular, the provisions contained in Article 39 of the Inter-American Charter of Social Guarantees.’”); see also Report on the Situation of Human Rights of a Segment of the Nicaraguan Population of Miskito Origin (“Miskito Report”) 76, Inter-Am. C.H.R., OEA/Ser.L/V/II.62, doc. 10, rev. 3 (1983) at p. 81 § 2-B-15.
120. Case of Mary and Carrie Dann (“Dann”) Report No. 75/02, Case 11.140 (United States), Annual Report of the IACHR 2002 (2002) at ¶ 127, available at <http://cidh.org/annualrep/2002eng/USA.11140.htm> (last visited September 7, 2005) (“In acknowledging and giving effect to particular protections in the context of human rights of indigenous populations, the Commission has proceeded in tandem with developments in international human rights law more broadly.”); Report on the Human Rights Situation in Ecuador (“Ecuador Report”), OEA/Ser.L/V/II.96, Ch. 10, available at <http://cidh.org/countryrep/ecuador-eng/index%20-%20ecuador.htm> (last visited September 7, 2005) (“Within international law generally, and inter-American law specifically, special protections for indigenous peoples may be required for them to exercise their rights fully and equally with the rest of the population. Additionally, special protections for indigenous peoples may be required to ensure their physical and cultural survival – a right protected in a range of international instruments and conventions.”); Case of The Mayagna (Sumo) Awas Tingni Community v. Nicaragua. Judgment of August 31, 2001 (“Awas Tingni”) Inter-Am. Ct. H.R., (Ser. C) No. 79 (2001) at ¶ 151 available at http://www.corteidh.or.cr/seriecpdf_ing/seriec_79_ing.pdf (last visited September 7, 2005) (interpreting the American Convention’s protection of “property” to mean protection of property rights as understood by the indigenous community involved: “As a result of customary practices, possession of the land should suffice for indigenous communities lacking real title to property of the land to obtain official recognition of that property.”); Case of Maya Indigenous Communities of the Toledo District and Belize (“Belize Maya”), Case 12.053, Inter-Am. Com. H.R. Report 40/04 (2004) at ¶ 94, available at <http://www.cidh.org/annualrep/2004eng/Belize.12053eng.htm> (last visited Sept. 7, 2005) (giving “due regard to the particular principles of international human rights law governing the individual and collective interests of indigenous peoples”); Yanomami Indians v. Brazil, Case 7615 (Brazil), Inter-Am. C.H.R. ¶ 7, 9, OEA/Ser.L/V/II.66 doc. 10 rev. 1 (1985), available at <http://www.cidh.org/annualrep/84.85eng/Brazil7615.htm> (last visited September 7, 2005) (“International law in its present state...recognizes the right of ethnic groups to special protection...for all those characteristics necessary for the preservation of their cultural identity.... [T]he Organization of American States has established, as an action of priority for the member states, the preservation and strengthening of the cultural heritage of these ethnic groups and the struggle against the discrimination that invalidates their members’ potential as human beings through the destruction of their cultural identity and individuality as indigenous peoples.”).
121. Ksentini, Fatma Zohra, *Review of Further Developments in Fields*

with which the Sub-Commission has been Concerned: Human Rights and the Environment: Progress Report, U.N. C.H.R., Sub-Commission on Prevention of Discrimination and Protection of Minorities, 44th Sess., Agenda Item 4, at ¶ 27, para. 94, U.N. Doc. E/CN.4/Sub.2/1992/7 (1992) at 27. The right to a healthy environment is also a customary international right outside the context of indigenous peoples. See Ecuador Report, *supra* note 120, at 88-92; International Covenant on Economic, Social and Cultural Rights (ICESCR), Dec. 16, 1966, I.L.M. 360, 365, 993 U.N.T.S. 3, art. 12(2) (signed by United States on Oct. 5, 1977); Convention on the Rights of the Child, Nov. 20, 1989, art. 6, 28 I.L.M. 1448, 1577 U.N.T.S. 3, art. 29(e) (signed by United States on Feb. 16, 1995); Additional Protocol to the American Convention on Human Rights in the Area of Economic Social and Cultural Rights (Protocol of San Salvador), Nov. 14, 1988, art. 11, O.A.S.T.S. No. 69, 28 I.L.M. 156; African Charter on Human and Peoples' Rights, at 63 (“[a]ll peoples shall have the right to a generally satisfactory environment favorable to their development.”); African Charter on the Rights and Welfare of the Child, entered into force Nov. 29, 1999, art. 14(2)(c), OAU Doc. CAB/LEG/24.9/49, art. 14 § 1(c) (“to ensure the provision of ... safe drinking water.”); Charter of Fundamental Rights of the European Union, Sept. 28, 2000, 2000 O.J. (C 364), art. 37 (“A high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development.”); Convention on Biological Diversity, entered into force Dec. 29, 1993, preamble, 31 I.L.M. 818, 1760 U.N.T.S. 79; North American Agreement on Environmental Cooperation, Sept. 14, 1993, Preamble cl. 8, 32 I.L.M. 1482 (1993); Rio Declaration on Environment and Development, U.N. ESCOR, principles 1, 14, U.N. Doc. A/CONF.151/26 (Vol. I) (1992) (“Rio Declaration”) (“Human beings ... are entitled to a healthy and productive life in harmony with nature.”; recognizing the importance of controlling “any activities and substances that cause severe environmental degradation.”); U.N. General Assembly Resolution 45/94, U.N. GAOR, 45th Sess., U.N. Doc. A/45/749 (1990) (“[A]ll individuals are entitled to live in an environment adequate for their health and well-being.”); U.N. General Assembly Resolution 55/107, U.N. GAOR, 55th Sess., 3(k), U.N. Doc. A/Res/55/107 (2000) (“affirming that a democratic and equitable international order requires, inter alia, the realization of ... the entitlement of every person and all peoples to a healthy environment”); U.N. Commission on Human Rights Resolution 2000/62, U.N. ESCOR, 56th Sess., ¶ 3(k), U.N. Doc. E/CN.4/RES/2000/62 (2000) (“a democratic and equitable international order requires, inter alia, the realization of ... [t]he right to a healthy environment for everyone.”).

122. International Covenant on Civil and Political Rights (ICCPR), art. 27, Dec. 16, 1966, 6 I.L.M. 368, 999 U.N.T.S. 171, 174 (ratified by United States, June 8, 1992).

123. Charter of the Organization of American States, arts. 2(f), 3(m), 30, 48, available at <http://cidh.org/Basicos/charter.htm> (last visited September 7, 2005) (Member States are “individually and jointly bound to preserve and enrich the cultural heritage of the American peoples”).

124. See, e.g., Universal Declaration of Human Rights, art. 27, G.A. Res. 217A (III), U.N. GAOR, 3rd Sess., U.N. Doc. A/810 (1948) (“Everyone has the right freely to participate in the cultural life of the community....”); ICESCR, *supra* note 121, art. 12 (“The States Parties ... recognize the right of everyone ... [t]o take part in cultural life....”); American Declaration of the Rights and Duties of Man (“American Declaration”) art. 13, Organization of American States (O.A.S.) Res. XXX (1948), reprinted in Basic Documents Pertaining to Human Rights in the Inter-American System, OEA/Ser.L/V/1.4 rev.8 (May 2001), available at <http://cidh.org/Basicos/basic2.htm> (last visited September 7, 2005) (“Every person has the right to take part in the cultural life of the community....”); American Convention on Human Rights, Nov. 22, 1969, art. 16, 9 I.L.M. 673, 676, 1144 U.N.T.S. 123, reprinted in Basic Documents Pertaining to Human Rights in the Inter-American System, OEA/Ser.L/V/1.4 rev.8 (May 2001), available at <http://cidh.org/Basicos/basic3.htm> (last visited September 7, 2005) (“Everyone has the right to associate freely for ideological, religious, political, economic, labor, social, cultural, sports, or other purposes.”).

125. See, e.g., Belize Maya *supra* note 120 at ¶ 120 (“It has been the Commission’s longstanding view that the protection of the culture of indigenous peoples encompasses the preservation of the aspects linked to productive organization, which includes, among other things, the issue of ancestral and communal lands” (quotation omitted)).

126. Awasth, *supra* note 120 at ¶ 149; see also Hunter, Salzman & Zaelke, *International Environmental Law and Policy* (2d ed. 2001), at 1310; see also Ecuador Report, *supra* note 120, at ch. 9 (“Certain indigenous peoples maintain special ties with their traditional lands, and a close dependence upon the natural resources provided therein—respect for which is essential to their physical and cultural survival.”).

127. Yanomami, *supra* note 120 at 5-6.

128. *Id.* See also Miskito Report, *supra* note 119 at ¶ II.B.15 (“[S]pecial legal protection is recognized for the use of ... all those aspects related to the preservation of their cultural identity. To this should be added the aspects linked to productive organization, which includes, among other things, the issue of the ancestral and communal lands. Non-observance of those rights and cultural values leads to a forced assimilation with results that can be disastrous.”).

129. Belize Maya, *supra* note 120 at ¶ 154-156.

130. Convention concerning Indigenous and Tribal Peoples in Independent Countries (“ILO Convention No. 169”), art. 23.1 (June 27, 1989), 72 ILO Official Bull. 59, reprinted in 28 I.L.M. 1382, available at <http://www.unhcr.ch/html/menu3/b/62.htm> (last visited September 7, 2005); see also Dann, *supra* note 120 at ¶ 131 (noting the importance of interpreting the American Declaration in a manner that “safeguard[s] the integrity, livelihood and culture of indigenous peoples through the effective protection of their individual and collective human rights,” because doing so respects “the very purposes underlying the Declaration”).

131. General Comment No. 23: The rights of minorities, United Nations H.R.C., 50th Session, ¶ 7, 9, U.N. Doc. CCPR/C/21/Rev.1/Add.5 (1994), available at [http://www.unhcr.ch/tbs/doc.nsf/\(Symbol\)/fb7fb12c2fb8bb21c12563ed004df111?OpenDocument](http://www.unhcr.ch/tbs/doc.nsf/(Symbol)/fb7fb12c2fb8bb21c12563ed004df111?OpenDocument) (last visited Sept. 7, 2005).

132. *Id.* at ¶ 33.

133. IITC Statement, *supra* note 9, at ¶ 8-10.

134. *Id.*

135. ICCPR, *supra* note 122, at art. 1(2); ICESCR, *supra* note 121 at art. 1; see also Draft Declaration on the Rights of Indigenous People, (“Draft U.N. Declaration”) U.N. C.H.R., Sub-Commission on Prevention of Discrimination and Protection of Minorities, 45th Sess., U.N. Doc. E/CN.4/SUB.2/RES/1994/45 (1994), available at [http://www.unhcr.ch/huridocda/huridoca.nsf/\(Symbol\)/E.CN.4.SUB.2.RES.1994.45.En?OpenDocument](http://www.unhcr.ch/huridocda/huridoca.nsf/(Symbol)/E.CN.4.SUB.2.RES.1994.45.En?OpenDocument) (last visited September 7, 2005); Proposed American Declaration on the Rights of Indigenous Peoples (“Proposed American Declaration”) art. 18.4, OEA/Ser.L/V/II.110 Doc. 22, (Mar. 1 2001) available at <http://www.cidh.org/indigenas/indigenas.en.01/index.htm> (last visited September 7, 2005). The Inter-American Commission has specifically noted that many of the provisions of the Proposed Declaration, “including aspects of Article [18], reflect general international legal principles developing out of and applicable inside and outside of the inter-American system and to this extent are properly considered in interpreting and applying the provisions of the American Declaration in the context of indigenous peoples.” Dann, *supra* note 120 at ¶ 129.

136. See ILO Convention 169, *supra* note 130, art. 14.1 (protecting the right of indigenous peoples to their own means of subsistence and their right of access to lands they do not own, but “to which they have traditionally had access for their subsistence and traditional activities”); Proposed American Declaration, *supra* note 135, art. 28 (guaranteeing indigenous peoples the “right to an effective legal framework for the protection of their rights ... with respect to traditional uses of their lands, interests in lands, and resources, such as subsistence”).

137. ILO Convention 169, *supra* note 130, at art. 23.1 (the “subsistence economy and traditional activities ... such as hunting, fishing, trapping and gathering, shall be recognised as important factors in the maintenance of their cultures and in their economic self-reliance and development”).

138. Bernard Ominayak and the Lubicon Lake Band v. Canada, U.N. HRC, 45th Sess., Supp. No. 40, at ¶ 33, U.N. Doc. CCPR/C/38/D/167/1984 139.

139. See IITC Statement, *supra* note 9, at ¶ 12.

140. American Declaration, *supra* note 124, at art. XI. See also Protocol of San Salvador, *supra* note 121, at art. 14 (interpreting the right to health as ensuring “the enjoyment of the highest level of physical, mental and social well-being”); Universal Declaration of Human Rights, *supra* note 124, at art. 25(1) (guaranteeing each person’s right to “a standard of living adequate for the health and well-being of himself and his family”); ICESCR, *supra* note 121, at art. 12 (recognizing “the right of everyone to the enjoyment of the highest attainable standard of physical and mental health”); African Charter on Human and Peoples’ Rights, *supra* note 121, at art. 16 (“Every individual shall have the right to enjoy the best attainable state of physical and mental health.”).

141. Constitution of the World Health Organization, July 22, 1946, 14 U.N.T.S. 185, 186 (signed by United States July 22, 1946).

142. Hunt, Paul, *Right of Everyone to the Highest Standard of Physical and Mental Health: Addendum, Mission to Peru* (“Peru Report”), ¶ 6, U.N. Doc. E/CN.4/2005/51/Add.3 (2005).

143. U.N. Committee on Economic, Social and Cultural Rights, Substantive Issues Arising in the Implementation of the International

Covenant on Economic, Social and Cultural Rights, CESCR General Comment 14, 22nd Sess., at ¶ 4, U.N. Doc. E/C.12/2000/4 (2000). The Committee further states that victims of a violation of the right to health should have access to remedies at the both national and international levels and should be entitled to adequate reparation. *Id.* at ¶ 59.

144. *See, e.g.,* Stockholm Convention on Persistent Organic Pollutants, available at http://www.pops.int/documents/convtext/convtext_en.pdf (last visited September 7, 2005) (seeking “to protect human health and the environment.”); World Health Organization Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, art. 1, U. N. Doc MP.WAT/AC.1/1999/1 (1999), available at <http://www.euro.who.int/Document/Peh-ehp/ProtocolWater.pdf> (aiming “to promote at all appropriate levels, nationally as well as in transboundary and international contexts, the protection of human health and well-being, both individual and collective”); Rio Declaration, *supra* note 121, princ. 145 (recognizing importance of controlling “any activities and substances that ... are found to be harmful to human health”).

145. Drawing from various international human rights documents and national constitutions, the Special Rapporteur found that, under customary international law, “everyone has a right to the highest attainable standard of health.” Ksentini Final Report, *supra* note 121, at ¶ 176-187.

146. *Id.* at ¶ 176

147. Peru Report, *supra* note 142 at ¶ 54.

148. Yanomami, *supra*, note 120 at 8.

149. *Id.*

150. Belize Maya, *supra* note 120 at ¶ 156.

151. *National Academy of Sciences*, *supra* note 16 at 139.

152. ICCPR, *supra* note 122, art. 18.

153. *See, e.g.,* American Declaration, *supra*, note 124, art. 3 (“Every person has the right freely to profess a religious faith, and to manifest and practice it both in public and in private.”); American Convention, *supra* note 124, art. 12 (protecting “the right to freedom of conscience and of religion”); International Convention on the Elimination of All Forms of Racial Discrimination, Article 5(d)(vii)(ix) (guaranteeing “the right of everyone freedom of thought, conscience and religion”).

154. *See, e.g.,* Proposed American Declaration *supra*, note 135, at art. 10.3 (“[S]tates shall adopt effective measures to ensure that [indigenous peoples’] sacred sites ... are preserved, respected and protected... [and] shall encourage respect by all people for the integrity of indigenous spiritual symbols, practices, sacred ceremonies, expressions and protocols.”); Draft UN Declaration, *supra* note 135, art. 13 (protecting rights “to manifest, practice, develop and teach their spiritual and religious traditions, customs and ceremonies... to the use and control of ceremonial objects; and the right to the repatriation of human remains” and requiring states to “take effective measures... to ensure that indigenous sacred places... be preserved, respected and protected”).

155. The violation of the Maya’s right to religion was therefore “subsumed within the broad violations of [the right to property].” Belize Maya, *supra* note 120, at ¶ 155.

156. General Comment No. 23: The rights of minorities (Art. 27): 08/04/94. CCPR/C/21/Rev.1/Add.5 3.2, available at <http://www.unhchr.ch/tbs/doc.nsf/0/fb7fb12c2fb8bb21c12563ed004df11?Opendocument> (last visited September 7, 2005).

157. Written Statement Submitted by the International Indian Treaty Council, a Non-Governmental Organization in Special Consultative Status, United Nations Commission on Human Rights, E/CN.4/2003/NGO/106 (Mar. 12, 2003) available at <http://www.unhchr.ch/huridocda/huridoca.nsf/2848af408d01ec0ac1256609004e770b/8b49cfcf8c17656ac1256d020031bafb?OpenDocument>.



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