



Photo: Harry Pienso, King William, Va

Conserving a threatened icon in a changing landscape

Polar Bears in Manitoba

Whether on land, ice or in the sea, the powerful, intelligent and supremely adapted polar bear commands an awe-inspiring presence. The largest land carnivore on the planet, *Ursus maritimus* has long ignited human wonder and imagination through its ability to thrive amid the challenges of a remote, often unforgiving, and seemingly barren northern landscape.

They are a universal symbol of untamed, wild nature and perhaps nowhere on the planet is more strongly associated with these bears than northern Manitoba. Churchill is internationally renowned as “The Polar Bear Capital of the World!”

Though strongly dependent on sea ice habitat, their terrestrial habitat which hugs the Hudson Bay coast (see map), is also critical to their survival. The coastal, tundra and subarctic forest ecosystems they roam teems with life and abundance that sustains both the people and wildlife that thrive here.

Polar bears have been identified as a threatened species under Manitoba’s Endangered Species and Ecosystems Act since 2008.¹ The impacts of climate change on polar bear sea ice habitat poses the greatest threat to the species. However, as industry explores the potential of the area’s resources for developments, as tourism interest grows and as local communities work to plan for the future of northern lands, changes to important terrestrial habitat are inevitable. Striking a balance between conservation and development can help ensure the health of these lands for the polar bears that depend on them. ■



Terrestrial Polar Bear Range
Though on occasion bears will roam much further inland (one was spotted in Saskatchewan in 1999!) the terrestrial habitat they depend on is concentrated near the Hudson Bay coast.

Pregnant polar bears in western Hudson Bay (which hosts perhaps the largest polar bear denning area on earth) return to dens excavated in the sides of peat ridges (generally between 20 and 100km inland from Hudson Bay) where they give birth.² Every new cub in this population relies on this habitat to nurture its first months of life.

Hudson Bay Lowlands
One of the largest wetland systems on the planet, the Hudson Bay Lowlands store globally significant levels of carbon in peat-rich soils. As a result, the ecosystem (which stretches west to Quebec) is a powerful buffer against the impacts of climate change.

Caribou
As they move between their summer calving and winter grounds, thousands upon thousands of migratory forest-tundra caribou and central barren ground caribou are a prominent presence on the landscape and play a valuable role in the survival of people and wildlife in northern Manitoba.

Hydroelectric Development
Providing electricity for demand concentrated in the south of the province, the footprint of hydroelectric developments (existing and proposed) lies largely in the north. Dams and their transmission corridors invariably have impacts on the nearby and downstream environment which can include loss of fish and wildlife habitat, water contamination, increased levels of mercury, and changes in water chemistry. Significant flooding of the landscape has resulted from existing hydro developments.

Tourism
Though not the only attraction in the region, the unique opportunity to witness polar bears in their natural habitat gives northern Manitoba its world class tourism reputation. The industry is a major economic driver across this region (\$116,000,000 in tourist spending in 2014)³ and shows the potential for ecologically sensitive growth. Current tourism activity in polar bear habitat is concentrated around the town of Churchill and at tourist and outfitter lodges in the region.

Indigenous Land Use
Documented for millennia through oral history and traditional ways of knowing, Indigenous traditional use extends over the entirety of this landscape. European models of land use have resulted in numerous land classifications in the region that often don’t capture the extent of this history and knowledge. These include First Nation Reserves (shown on this map) Treaty Land Entitlement selections, resource management areas, registered trapline sections, community interest zones, special consultation areas, Inuit land claim areas and others.
For more information on land classification, contact the Lands Branch of Manitoba Sustainable Development, 204-945-6784.

- First Nation Reserve Locations**
- Shamattawa First Nation
 - York Factory First Nation
 - War Lake First Nation
 - Fox Lake Cree Nation
 - Tataskweyak Cree Nation

Mineral Exploration
Mineral prospectors have sought exploration licenses and staked mine claims in the region to determine the potential for industrial mineral resources extraction, an activity that can have significant impact on the landscape. Rock samples throughout the Hudson Bay Lowlands point to the possible presence of diamonds in the bedrock. Their presence has been confirmed in one location in northern Manitoba.⁵

Important Bird Areas
Though birdlife abounds across all polar bear habitat in Manitoba, four regions (covering over 3,200 km²)⁴ have been designated as Important Bird Areas (IBAs) for their global significance as places for birds to breed, feed, or rest during migration. Over 250 species of birds use this habitat,⁴ including sandhill crane, snow goose, Canada goose, ruddy turnstone, the threatened rusty blackbird and exceedingly rare Ross’ gull.

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Photo: Ron Thiesen

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Habitats for critical life stages

The largest land carnivore on earth, polar bears are supremely adapted to life on the Hudson Bay coast and have depended on the region for thousands of years. Roughly 1000 individuals make up the Western Hudson Bay polar bear subpopulation⁶ that migrates annually between the sea ice, where they hunt and mate, and terrestrial habitats where they fast, rest and give birth.

Their dependence on sea ice is well known. When Hudson Bay freezes over in late fall, the bears fan out over the seasonal habitat to hunt. Preying primarily on ringed and bearded seals, bears gorge on the calorie-dense blubber and often discard the rest for scavengers. This enables the bears to accumulate a layer of insulating fat that can be 4 inches thick.⁷

Lasting until the sea ice melts, their hunting period is critical. The fat that they are able to store at this time will fuel them through the summer season when their main prey are not accessible.

Ice breakup forces the bears to shore in early to mid summer. Though many stick close to the coast, females with cubs may head slightly inland to avoid confrontations with male bears while pregnant bears head toward denning areas. With the exception of occasional opportunistic meals, polar bears go without food during this time and survive off the fat accumulated over winter.⁸ Minimally active

during these months, they rely on habitats where they can rest, undisturbed by conflict, to conserve their energy while waiting for the ice to form again.

As winter approaches, most bears concentrate on the coast and many move north to greet the forming ice and break their four month fasting period. At the same time, pregnant females are preparing to enter their maternity dens (sometimes upwards of 100 km inland), where they will birth their cubs.² This is one of the largest polar bear maternity denning areas on the planet. Unlike polar bears over most of the arctic who den in snow, Western Hudson Bay mothers typically dig dens in banks and ridges of the vast peatlands that make up the Manitoba portion of the Hudson Bay Lowlands. Previously excavated dens may be reused in subsequent years. One to three cubs (usually two), are born in the den over winter and the family emerges between February and March to begin their journey to the sea ice. By then, the new mothers have endured an eight month fasting period during pregnancy and while nursing their cubs. This is possible only if she has stored enough fat in the previous winter and spring. The female and her cubs must make the most of their time before sea ice breakup in order to restore her depleted reserves and to boost her cubs' chances of surviving their first year of life. ■

Mother and cub in summer.
Photo: Ron Thiessen



An earthen den may be extended into overlying snow once it accumulates at the den site.

Photo: © Ian Stirling

Confronting emerging challenges

Western Hudson Bay polar bears have evolved specific and unique habitat requirements and the relative stability of those terrestrial and sea ice habitats is crucial to their survival. Threats to these habitats, current and anticipated, pose the greatest risks to the species in Manitoba.

Climate change

An overarching threat to sea ice habitat, climate change and its projected progression is anticipated to greatly reduce polar bear access to hunting grounds while increasing their on-land fasting period. Loss of ice and reduced snow cover also has negative impacts on polar bear prey populations as seals rely on this environment to rear their pups.¹⁴

Reductions in sea ice has been associated with reductions in bear body condition, birth rate and population numbers.⁹ Though other potential prey exists on land, there is minimal evidence to indicate that the nutritional content available is an adequate replacement for seal.

On land, climate change may cause a reduction of insulating snow cover in denning areas and increase in den collapse due to winter rains and melting permafrost.

With further sea ice declines predicted, addressing global climate change is a critical piece of the solution to securing polar bear survival... but it's not the whole story for the Hudson Bay bears.

Increasing human activity
Alongside the awe-inspiring cacophony of wildlife that animates these lands, people have also been present here for thousands of years.

Technology and time have simplified human access to this region from the south and from the sea, introducing new people and pressures that continue to grow.

Industrial scale mineral and hydroelectric development and their associated road networks carry inherent risks to the lands and wildlife with which they overlap. If operations are expanded without foresight, tourism can also have negative impacts on the natural environment.

Careful planning and consideration are needed to ensure the threats to bear denning and staging habitat from future developments are minimized.

Ensuring the continued health and suitability of these important terrestrial habitats is critical to polar bear conservation. ■



An essential, high calorie prey, seals are also dependent on winter sea ice to rear their young. Photo: © Ian Stirling



Photo: Christian Amico



Photo: Jim Fowler



Photo: Jim Fowler



Photo: Didrik Johnck



Photo: Josh Pearlman

Collateral benefits of healthy polar bear habitat

Ensuring polar bears have healthy terrestrial habitats to den, migrate and wait for winter will yield additional benefits for the other species that use this habitat...including humans.

Biodiversity

As a transitional region between marine, tundra, and northern boreal forest ecosystems, northern Manitoba is a hotbed of biodiversity associated with each of these habitats. Mammals abound, including (but not limited to) wolves, black bear, arctic fox, wolverine, beluga, moose and herds of both barren ground and migratory woodland caribou. In summer, over 250 species of birds can be seen passing through or settling in to nest,⁴ taking over shorelines and wetlands in unimaginable numbers. Other rare or increasingly threatened species overlap with polar bears, including the rusty blackbird, Ross' gull, red-necked phalarope, collared lemming and Arctic sweetgrass.

Climate assets

The majority of polar bear habitat in Manitoba is within the western extent of the Hudson Bay Lowlands (HBL). It's one of earth's largest peatlands, and among the most carbon dense terrestrial ecosystems on the planet! The ability of peatlands to absorb atmospheric carbon makes them a globally significant buffer against climate change. Though it covers only 6% of the boreal in Canada, HBL is estimated to store 33% of boreal carbon in Canada.¹⁰ Maintaining this system intact will help ensure the carbon it contains is not released into the atmosphere, which would accelerate global climate change, the very thing threatening polar bear sea ice habitat. As Manitoba works to address climate change, it's essential that the values of the carbon reserves in this and other carbon-rich regions of the province are considered.

The Hudson Bay Lowlands are a mosaic of lakes and wetlands that store large amounts of carbon.



Photo: Didrik Johnck

Healthy landscapes support people and wildlife with plentiful resources.
Photo: Josh Pearlman



Traditional use

Both First Nations and Inuit people have lived in this region for thousands of years. Hunting, trapping, fishing and other traditional uses of the landscape have and continue to provide food, water, medicine, clothing and shelter that enable human survival in the north. In addition, the use of and relationship to the land forms the foundation for traditional cultural practices that support individual and community well-being. These practices are as vital today as ever to maintaining the threads of cultural continuity and traditional knowledge and carry invaluable community benefits both socially and economically.

Though Inherent and Treaty rights are meant to protect Indigenous use of the landscape, areas without designated protection are largely open to development that could restrict the ability to exercise those rights.

Northern economy

Ecologically responsible tourism and outfitting is completely reliant on the natural assets that draw people from across the globe: healthy, wild nature and unique wildlife experiences – with polar bears as the undeniable star attraction. It also pours millions of dollars into the northern Manitoba economy. When designed to minimize impacts on the landscape and wildlife and developed with leadership of northern communities, sustainably managed tourism is a long-term economic asset with a huge stake in continued polar bear survival. ■



Current tourism activity is concentrated around the town of Churchill and tourist lodges in the region.
Photo: Didrik Johnck

Protecting terrestrial habitat

There is great opportunity to protect land-based habitat and provide for the terrestrial life stages of the Western Hudson Bay bears into the future while realizing a suite of collateral benefits to people and other wildlife.

Currently, portions of polar bear

habitat are protected within Wapusk National Park and the Kaskamatagan and Kaskamatagan Sipi Wildlife Management Areas. To protect additional habitat including important unprotected denning areas, the Manitoba government is proposing to establish a provincial park within a 29,000 km² area that partially overlaps the current wildlife management areas.

If established with the support of local communities through extensive, transparent consultation, a provincial park may be a means to protect polar bear habitat from degradation by future industrial activity and overuse, but by no means is it the only opportunity.

Indigenous land use planning offers another approach to protect valuable polar bear habitats. Locally led and based on traditional use of the landscape and on science, the land use planning process sees Indigenous communities determining what activities are permitted across their traditional lands and where specifically those activities can take place. With successful examples completed by a handful of communities in eastern Manitoba, the plans affirm Indigenous rights to the landscape while creating much-needed certainty for communities, for industry with interest in the region, and for the environment and wildlife that rely on it. ■

What can you do?

Help secure a healthy future for polar bears in Manitoba by contacting your Premier and Minister of Sustainable Development. Here's what we suggest!

Dear Premier of Manitoba and Minister of Sustainable Development,

I am writing to ensure you take action toward the protection of polar bears and their terrestrial habitats in Manitoba. I request that you work with local communities to cooperatively advance opportunities for the protection of terrestrial polar bear habitat through Indigenous land use planning, the proposed polar bear provincial park, and other forms of protected areas.

Click here to send your message using our simple online template!

Important areas of polar bear habitat, including some denning areas, are presently not protected.

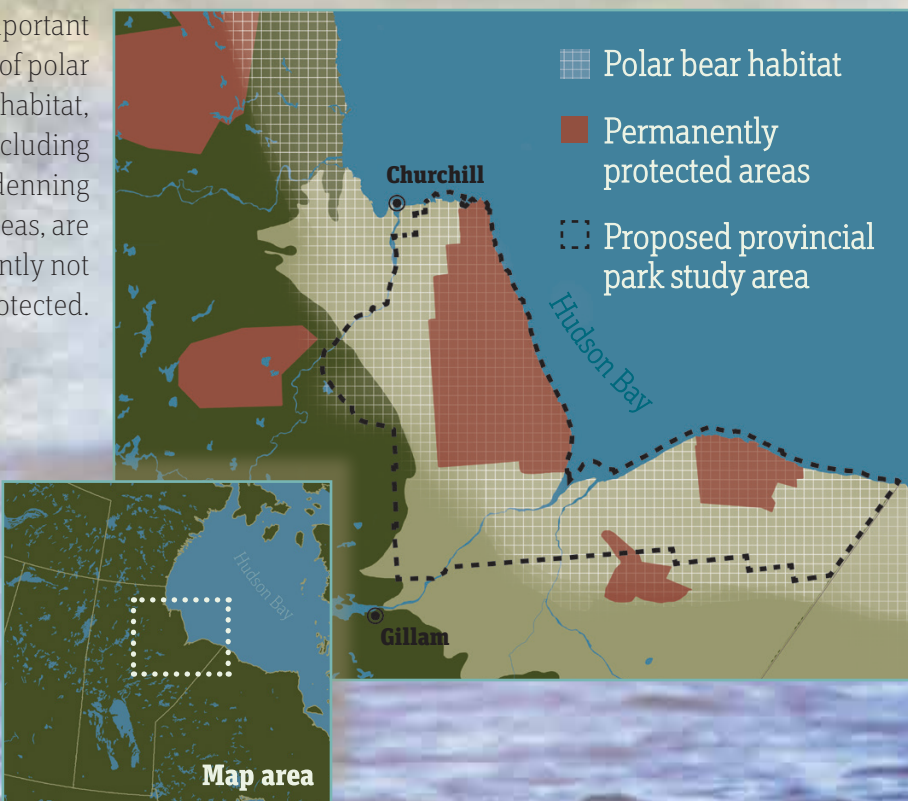




Photo: © Daniel J. Cox/NaturalExposures.com

Bear Facts

During their period of fasting and nursing cubs in their dens, female polar bears can lose as much as 50% of their body weight.¹³

Cubs are just 1 to 2 lbs at birth but grow quickly on their mother's milk which is roughly 30-40% fat in spring.⁷

Polar bears produce their first cubs around 4 to 6 years old.¹¹

Temperatures in a maternity den have been reported as much as 30°C warmer than the outside temperature.¹¹

Polar bears can run up to 40 km/hr for short durations and will swim at about 6 km/hour. Their white fur is hollow which helps insulate from the cold.¹⁸

Polar bears are the most carnivorous of all bear species due in part to the relative scarcity of plant matter in their arctic habitat.

Huge feet make bears great swimmers. Sharp claws and tiny projections on the soles of their feet give traction on the ice. Thick fur between the pads of their feet help insulate from the ice underfoot.

Many bears make summer landfall in Manitoba because prevailing winds on Hudson Bay blow the sea ice south.

Their acute sense of smell allows polar bears to track down seals hidden in snow dens.

The largest land carnivore on the planet, adult males can weigh between 350 and 650 kg (about 770 to 1400 lbs) and reach over ten feet tall when standing on its hind legs. Adult females are about 50% smaller, though when pregnant can weigh close to 450 kg (1000 lbs).¹¹

Though uncommon, hybridization between wild polar bears and grizzly bears was confirmed in an area of the Northwest Territories where their ranges overlap.¹⁵ Suspected hybrid bears have been reported in other areas including 260 km north of Churchill in 2016.

Polar bears typically survive 15 to 18 years in their natural habitat¹² though the oldest wild polar bear on record was 32 years old.¹¹

Photo: Harry Pheasant, King William, Va

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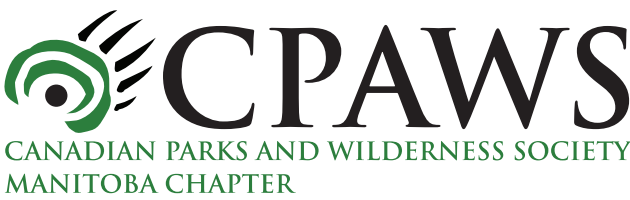
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