



Intact Habitat Landscapes and Woodland Caribou on the Island of Newfoundland

A bulletin produced by the Canadian Boreal Initiative

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CBI wishes to thank Peter Lee and Ryan Cheng at Global Forest Watch Canada for the mapping work in this report.

The Canadian Boreal Initiative (CBI) brings together diverse partners to create new solutions for boreal conservation and sustainable development. It acts as a catalyst for on-the-ground efforts across the Boreal Forest region by governments, industry, Aboriginal communities, conservation groups, major retailers, financial institutions and scientists.

Suggested citation: Wells, J., J. Jacobs, I. Goudie and J. Feldgajer. 2011. Intact Habitat Landscapes and Woodland Caribou on the Island of Newfoundland. Canadian Boreal Initiative, Ottawa, Canada.

EXECUTIVE SUMMARY

Woodland caribou in Newfoundland have recently experienced a steep and rapid decline. While predation on caribou calves is a key reason for this decline, **habitat alteration from human land use and activities can result in functional habitat loss** – a decline in caribou occupancy well beyond the immediate footprint of the disturbance. Disturbed areas also allow predators easier access to caribou herds.

Newfoundland's caribou occupy large, intact landscapes within which there are core areas important for calving and wintering. However, our analyses show that the current levels of habitat protection for Newfoundland caribou are inadequate. In most Caribou Management Areas, less than 3% of caribou habitat is within protected areas.

In Newfoundland there are remarkable conservation opportunities to increase habitat protection for caribou.

Large intact landscapes provide caribou with greater capacity to avoid predators. Unlike in some jurisdictions, in Newfoundland there are remarkable conservation opportunities to increase habitat protection for caribou.

To conserve caribou and facilitate more effective forest management planning, the Island of Newfoundland should adopt a landscape-level approach that seeks to maintain large intact landscapes across areas inhabited by caribou. This approach can be incorporated into the upcoming 2013 Sustainable Forest Management Strategy

for Newfoundland and Labrador. Until an effective approach to managing large intact landscapes is developed, the Newfoundland and Labrador Department of Natural Resources should adopt a temporary deferral on new commercial harvesting and road building within intact forest landscapes occupied by caribou.

KEY RECOMMENDATIONS

Because of the currently inadequate levels of habitat protection for caribou and the species requirements for large intact habitat blocks that are interconnected in such a way as to allow seasonal movements, the government of Newfoundland and Labrador should adopt a landscape-level approach to caribou management that

seeks to maintain large intact habitat landscapes across the Island of Newfoundland, and incorporate this approach into the next iteration of the Sustainable Forest Management Strategy for Newfoundland and Labrador due in 2013.

Given these factors, we recommend:

- ➔ **The government of Newfoundland and Labrador adopt a landscape-level approach to caribou management** that seeks to maintain large intact habitat landscapes across the Island of Newfoundland;
- ➔ **The government of Newfoundland and Labrador apply a temporary deferral on all new forest harvesting and road building within intact habitat landscapes that support caribou** until the completion of the 5 year Caribou Strategy, the 2013 Sustainable Forest Management Strategy and the conclusion of the Adaptive Management Research Project.
- ➔ **The government of Newfoundland and Labrador implement the Natural Areas System Plan** and prioritize protecting candidate areas that overlap with caribou occupancy areas.

WHAT IS THE STATE OF WOODLAND CARIBOU ON THE ISLAND OF NEWFOUNDLAND?

Woodland caribou on the Island of Newfoundland (Newfoundland Population) are a special form of caribou, distinct in form and habits. Most, but not all, herds on the island are migratory like some of their tundra counterparts, but over much smaller

Woodland caribou have been part of social, cultural and economic life in Newfoundland and Labrador for thousands of years.

landscape scales, and they congregate in certain areas for calving and wintering. A few herds are sedentary like woodland caribou that occupy the boreal forest elsewhere in Canada (Bergerud 1969).

In 2002, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the status of woodland caribou across the country; the mainland Boreal population was listed as Threatened under the provincial *Endangered Species Act* and the federal *Species at Risk*

Act. At the time of assessment, the Newfoundland Island population was estimated at 85,000 individuals, more than double the entire Boreal population in Canada, and was not considered at-risk (COSEWIC 2002). However, since the late 1990s when the Newfoundland caribou population peaked at 96,000, caribou numbers have experienced a severe and rapid decline. The total population is now estimated to be 32,000 (DEC 2009).

CARIBOU ARE PART OF NEWFOUNDLAND'S NATURAL HERITAGE

Woodland caribou have been part of social, cultural, and economic life in Newfoundland and Labrador for thousands of years. The Beothuk and the Mi'kmaq, the first peoples of Newfoundland, hunted caribou for food and clothing. In fact, the word "caribou" is thought to derive from the Mi'kmaq word "xalibu", which means "the one who paws" (DEC 2009). **To this day, caribou are still an important food for Newfoundland's Aboriginal people and the long-time settler communities.**

Since the late 1990s, caribou population numbers have experienced a severe and rapid decline, primarily as a result of habitat loss.

Caribou also continue to bolster the economy through the outfitting industry, as Newfoundland is one of few provinces with a managed sport hunt.

Woodland caribou were thought to have been relatively abundant on the island in the early twentieth century. During this time, huge numbers of caribou appeared to migrate from the Northern Peninsula to southern parts of the island. Early observations along migration corridors estimated numbers as high as 150,000 (Dugmore 1913) to 200,000 (Millais 1907). Later reviews suggested that these

numbers may have been overestimates, with no more than 40,000 animals through 1900-1910, based on recorded observations and the extent of winter range (Bergerud 1969). The true historical numbers will never be known with certainty; however, given that caribou numbers approached 100,000 in the late 1990s, it is conceivable that earlier historical estimates may have been accurate.

Between 1915 and 1930, Newfoundland caribou herds declined rapidly (DEC 2009).

After the Newfoundland Railway was constructed across the island in the late 1800s, the railroad intersected the fall migration and allowed easy access to thousands of animals at aptly named places like Slaughter Point. This resulted in substantial overhunting (Wilkerson 2010), and by 1925 all the large herds had disappeared and hunting was closed. No more than 1000-2000 animals were left on the entire island at this time (Bergerud 1969).

Caribou numbers remained low for the next half century. A census completed in 1957-58 estimated 6,500 animals (Bergerud 1969). The population didn't increase dramatically until the mid-1980s, when caribou numbered 23,000-44,000 (Williams and Heard 1986), reaching a peak of 96,000 animals by the late 1990s. However, after the late 1990s, caribou numbers declined again and **current estimates put the total population at 32,000 individuals (DEC 2009), a decline of 66% in a decade.**

WHAT PUTS THEM AT RISK?

Across Canada's Boreal forest, the most significant threat to woodland caribou is habitat alteration as a result of human land use. This habitat loss occurs by conversion to other land uses (such as development of industrial sites); degradation which includes timber harvesting; and fragmentation from roads, transmission lines and

other linear disturbances. **These developments can reduce the suitability of adjacent habitat, increase rates of predation, increase access to the land for hunting, and present barriers to caribou movement.**

The most significant threat to woodland caribou is habitat alteration as a result of human land use.

Across most of their range, human-caused habitat alteration creates an imbalance in predator-prey relationships resulting in high rates of predation by facilitating travel for predators as well as providing

favourable conditions for other prey species (most notably moose) and, in turn, predator numbers (EC 2011). In Newfoundland, black bears and lynx are important predators of caribou, along with the recently arrived coyote. **Habitat alteration also allows greater access by predators by providing them with easier travel corridors as they search for prey.** These factors have resulted in a decrease in rates of caribou calf

survival and recruitment. The cumulative effects of mounting land-use pressures are only expected to increase as Newfoundland's interior resources come under increased industrial development (Soulliere et al. 2010).

Mapping of protected areas shows that current levels of habitat protection for Newfoundland caribou are inadequate. Within most Caribou Management Areas, the proportion of area that is protected is less than 3% and most are below 1% (Fig. 1).

Land-use pressures are expected to increase in Newfoundland with industrial development.

This includes Caribou Management Areas with significant caribou herds like those of the La Poile, Northern Peninsula, and St. Anthony Caribou Management Areas.

Mapping of overlaps of protected areas with areas of importance for caribou – as determined from recent analyses by the Department of Environment and Conservation (NLDEC) of movements of radio-tagged caribou north of the Burin and Avalon Peninsulas – also demonstrates the current inadequacy of protected

areas for Newfoundland caribou. Although very little of the identified core areas are protected (6.7% of core areas and 8.4% of buffer areas fall within protected areas), of the total core area protected, most of it (72%) is within Gros Morne National Park (Fig. 2). Even considering the 2007 Department of Environmental Conservation mapping of caribou core areas, it is clear that habitat protections are inadequate. Only seven of 39 mapped core areas are fully protected (Fig. 3).

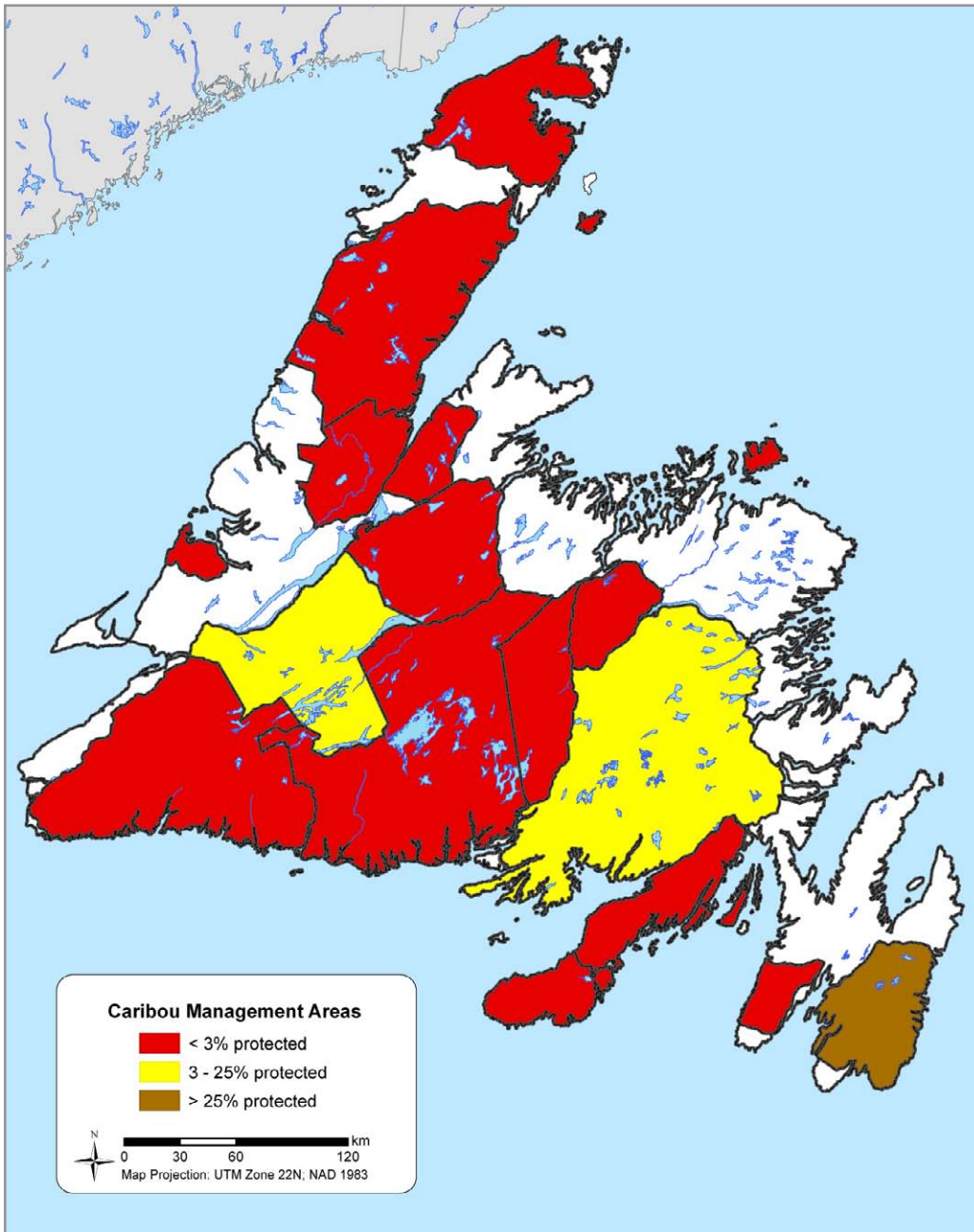


FIGURE 1

Proportion of protected lands within Caribou Management Areas. Only a single Caribou Management Area (in brown) has habitat protection near recommended levels while two others (yellow) have significant but below-recommended levels. Most Caribou Management Areas have very little habitat under protection (red).

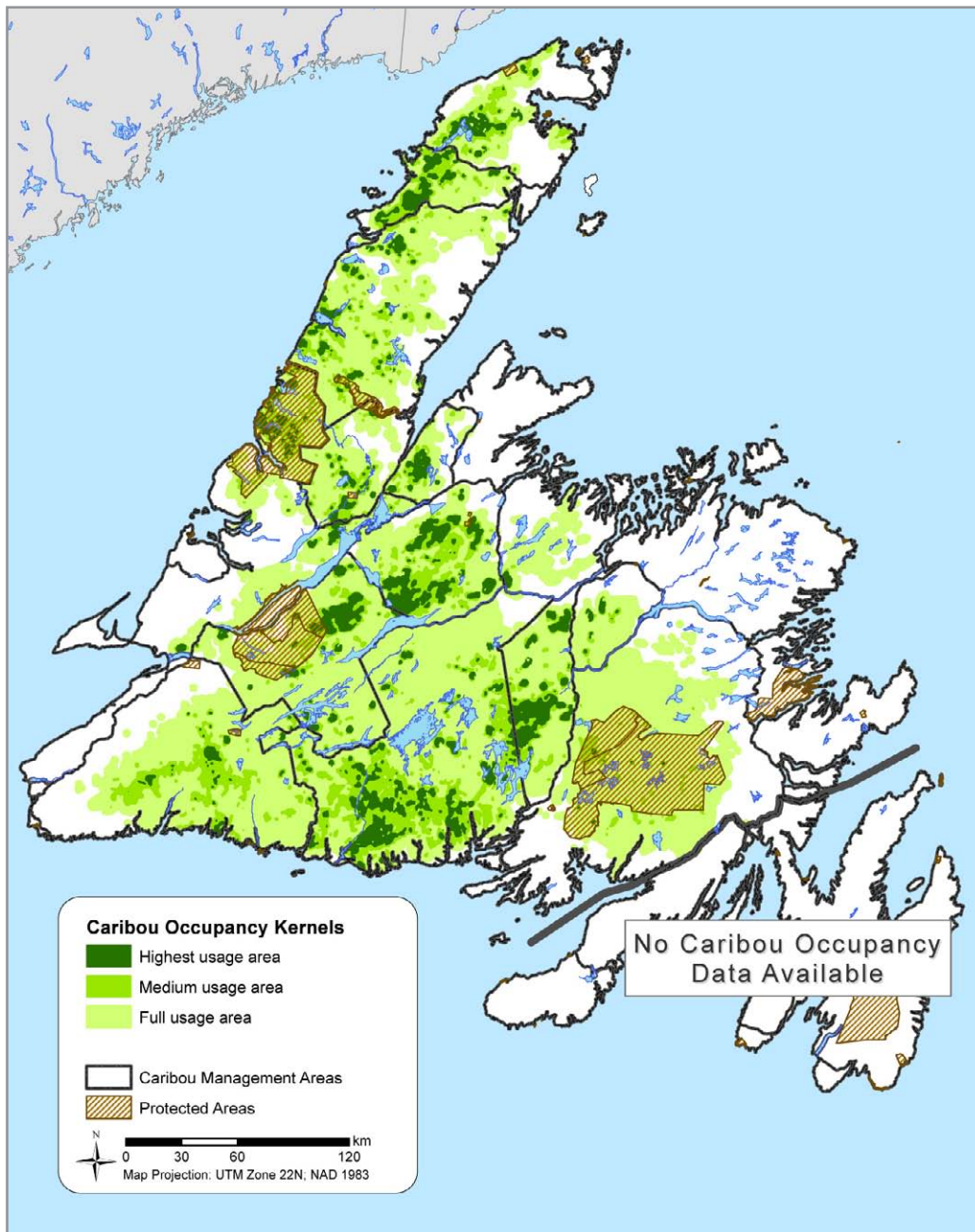


FIGURE 2

Areas of highest caribou use as determined by recent satellite and radio tracking of caribou in comparison to existing protected areas. Note that no data were available for caribou on Burin and Avalon Peninsulas.

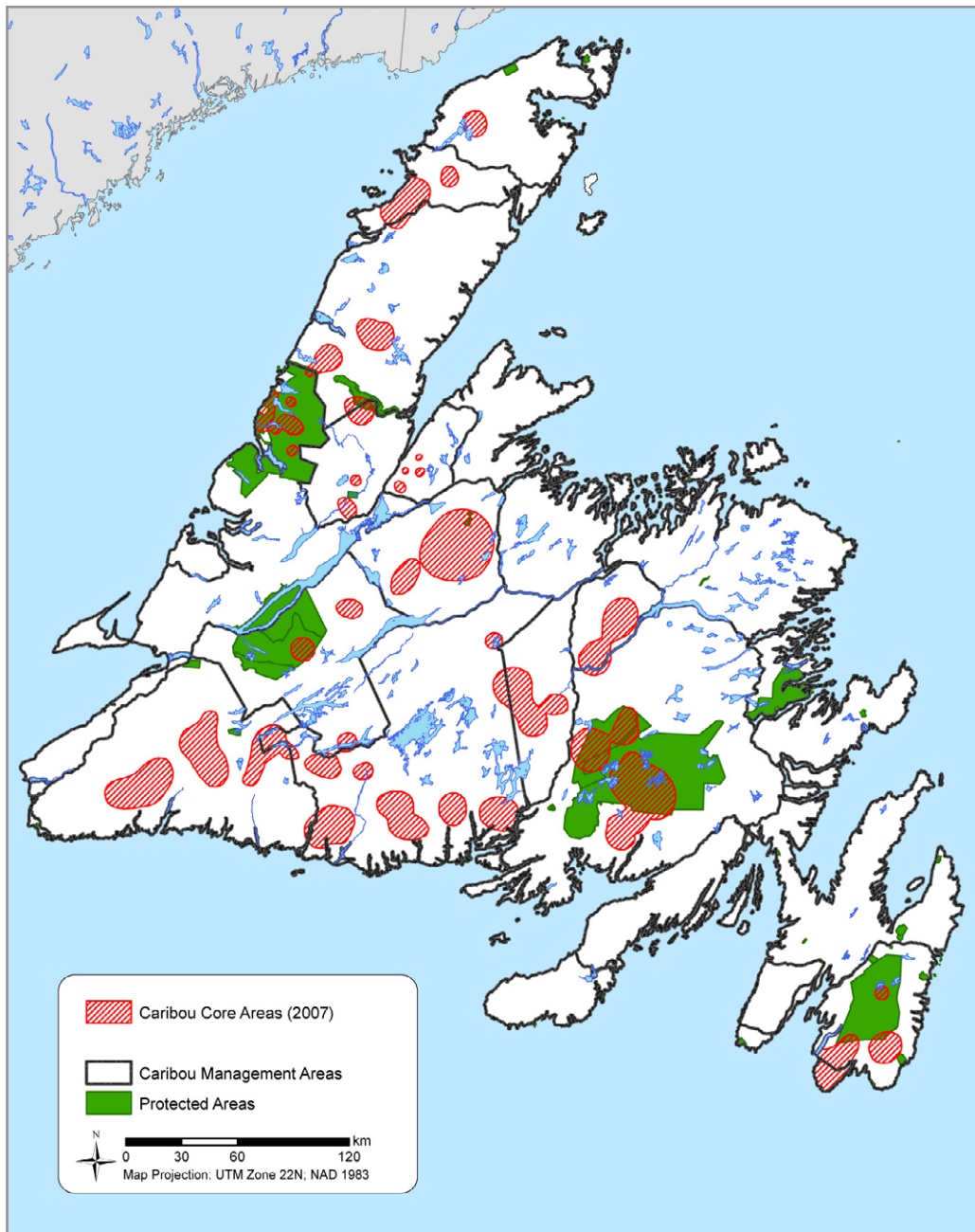


FIGURE 3

Original 2007 mapped areas of high importance for caribou. Few mapped core areas are protected.

LARGE INTACT HABITATS ARE CRITICAL

Woodland caribou require vast landscapes made up of a mosaic of bogs, barrens and mature forests to provide space for migration and calving. These areas can serve as refugia from high levels of predation. While Newfoundland caribou are often associated with the expansive barrens found near the south coast and the Long Range Mountains, these caribou also rely on mature and old growth forests for feeding on arboreal lichens, especially in years of heavy snow cover (Bergerud 1972). These mature and old-growth forests are increasingly rare, and fragmented on the Newfoundland Island landscape. The forest industry has also long relied on these forests because these trees produce the highest density of fiber for commercial purposes.

Intact landscapes are areas that have little or no commercial or industrial footprint, without roads or transmission lines. Mapping of large intact habitat landscapes in Newfoundland shows that, in many parts of the island, there are still large blocks (Fig. 4) which provide an exceptional opportunity to maintain caribou populations. We estimate that approximately seven million hectares of land occur in large intact landscapes in Newfoundland, 11% of which is within protected areas. These intact

Intact landscapes provide exceptional opportunities to maintain caribou populations.

blocks show broad overlap with Caribou Management Areas including all those where habitat protection is inadequate (Fig. 5).

The large intact habitat blocks within Caribou Management Areas should be considered for immediate, temporary deferrals of new forestry operations while longer-term planning is completed to ensure habitat protection for caribou. A temporary deferral will provide

certainty to industry by ensuring time and expenses are not invested in areas that may be deemed inappropriate for future activity. Especially important to protect are large intact habitat blocks that receive highest caribou use (Fig.6) and migration/movement corridors. Many herds migrate, prior to calving and wintering periods. In 2007, NLDEC identified seven caribou migration corridors on the island (Morgan and Doucet 2007). These corridors demonstrate the continued use of large landscapes by caribou and highlight the need for a landscape-level approach to planning and management to ensure connectivity between caribou habitats (Fig.7).

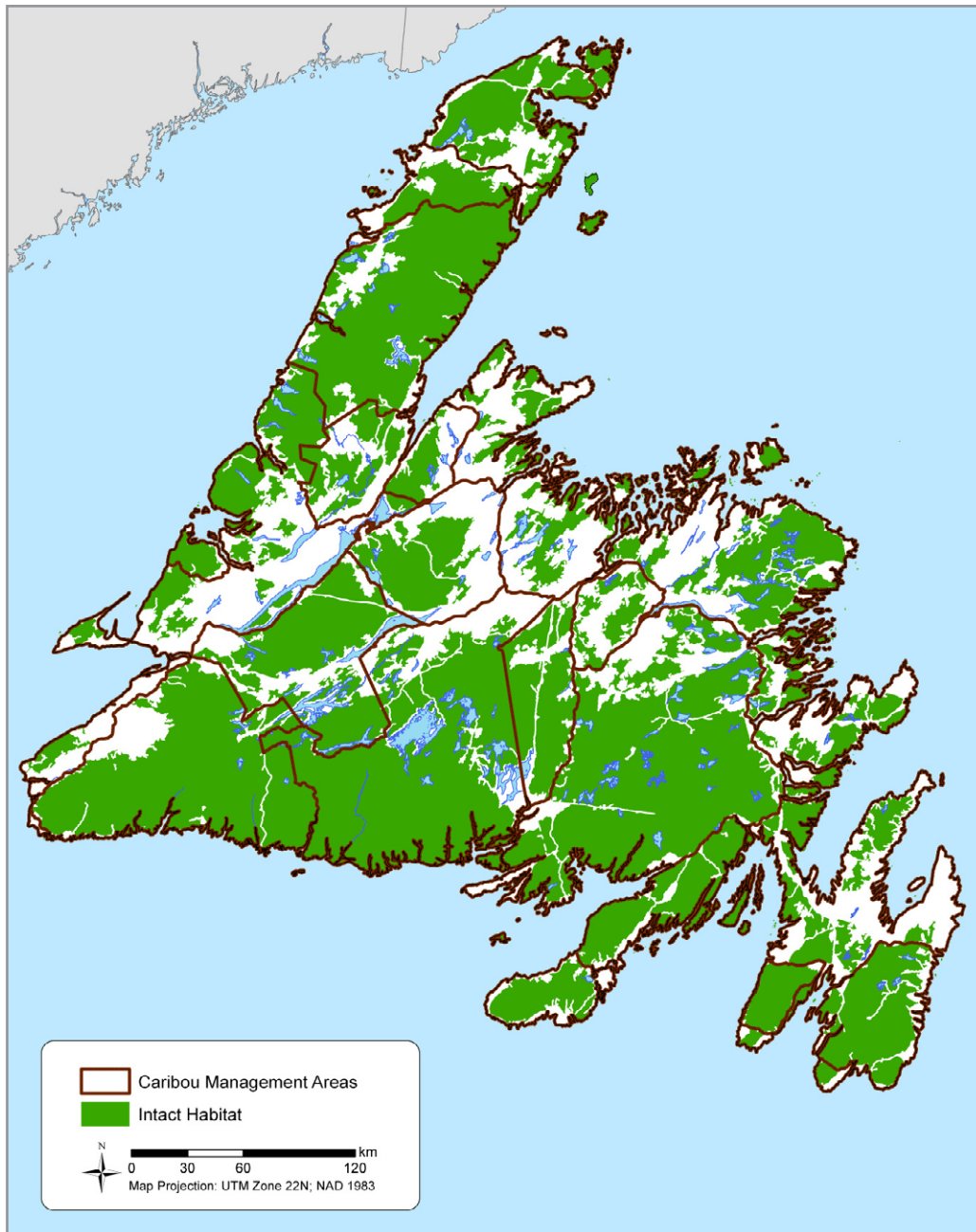


FIGURE 4

Large intact habitat landscapes on the Island of Newfoundland.

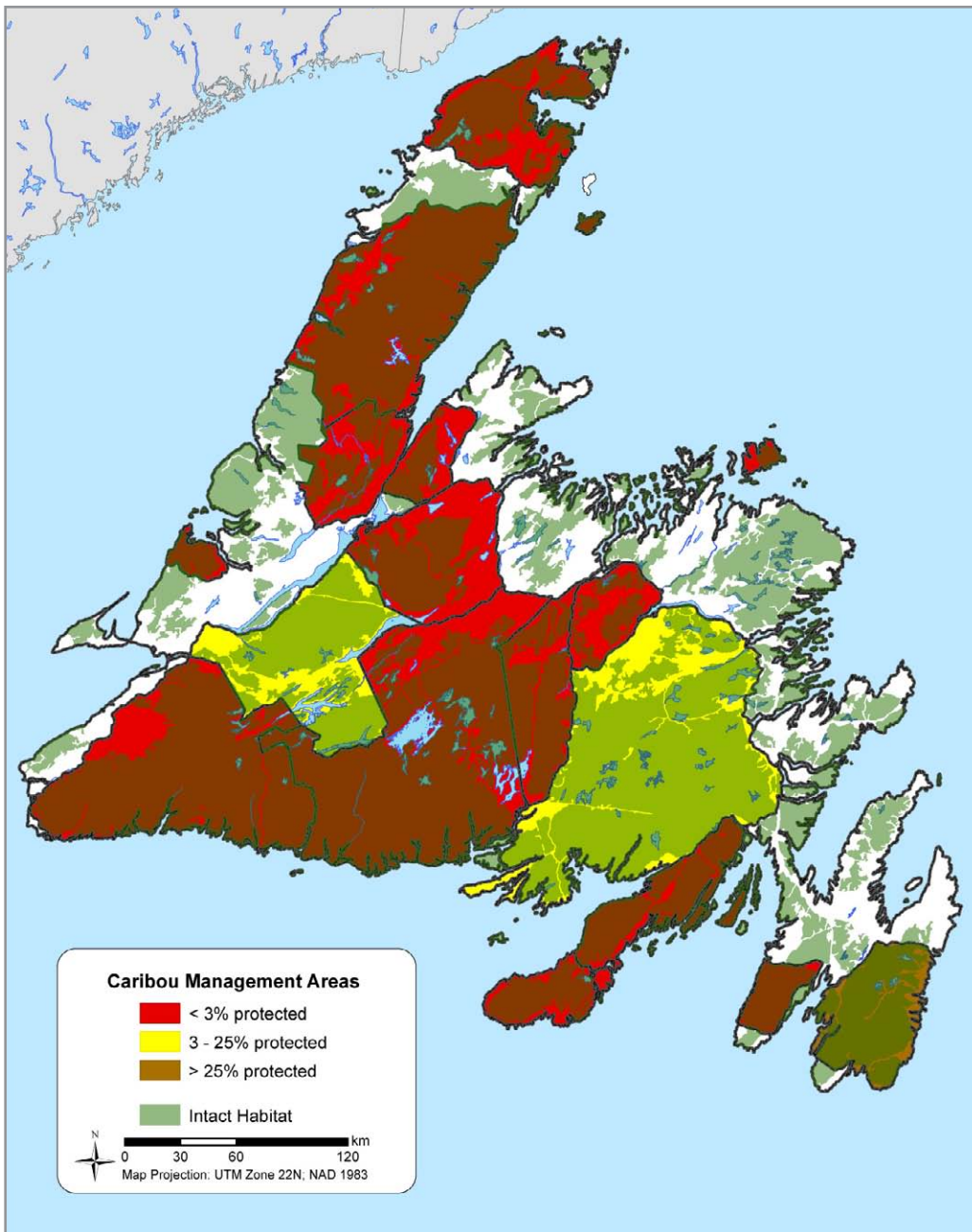


FIGURE 5

Proportion of protected lands within Caribou Management Areas as compared to existing current intact habitat landscapes (in green). Remarkable conservation opportunities still exist to increase habitat protections for caribou across the Island of Newfoundland.

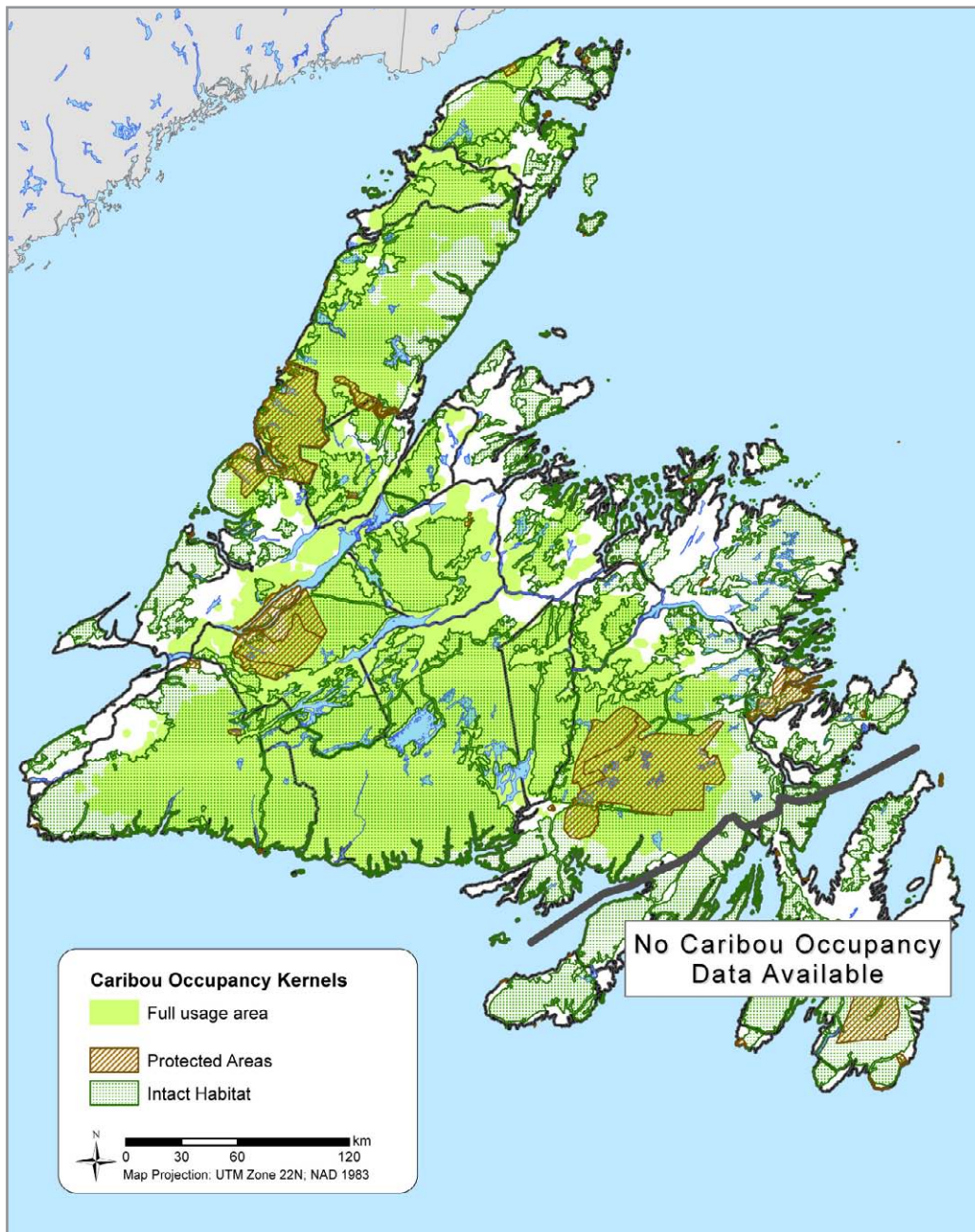


FIGURE 6

Areas of highest caribou use as determined by recent satellite and radio tracking of caribou in comparison to large intact habitat landscapes. Most high-use caribou areas overlap extensively with existing large intact habitat blocks that are currently not protected. Note that no data were available for caribou on Burin and Avalon Peninsulas.

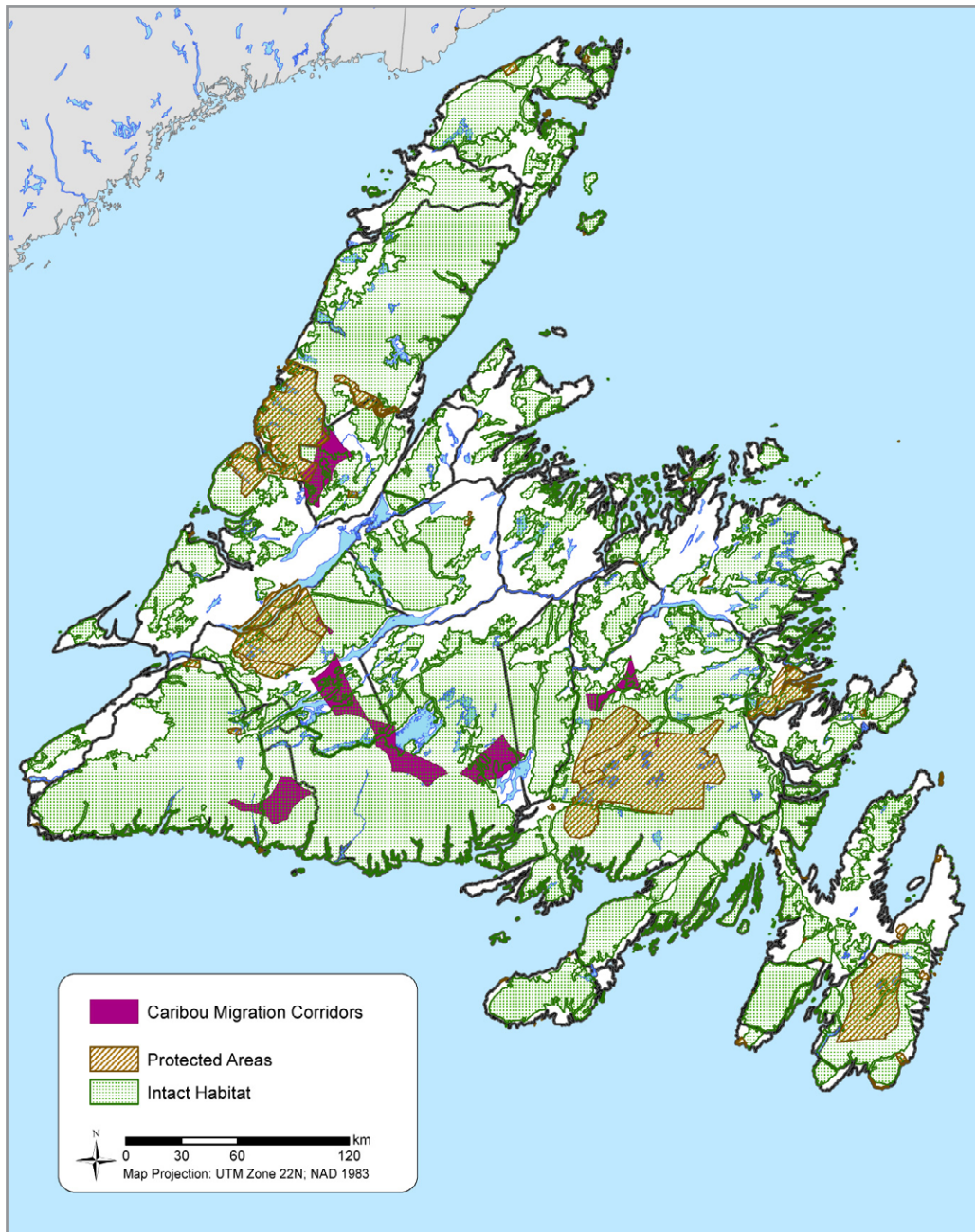


FIGURE 7

Mapped key caribou migration corridors within large intact habitat landscapes.

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