WILD HARVEST INITIATIVE®

A Program of conservation VISIONS®

QUARTERLY UPDATE

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JUNE 2018

We are very pleased to announce a new addition to the Wild Harvest Initiative® Partnership Alliance:

Safari Club International Foundation's Hunter Legacy 100 Fund

CARIBOU RANGE ACROSS THE NORTHERN REGIONS OF NORTH AMERICA & HAVE BEEN A CRUCIAL FOOD SOURCE FOR MANY OF THE REGIONS' INHABITANTS

SPECIES PROFILE - CARIBOU

Harvest in Canada

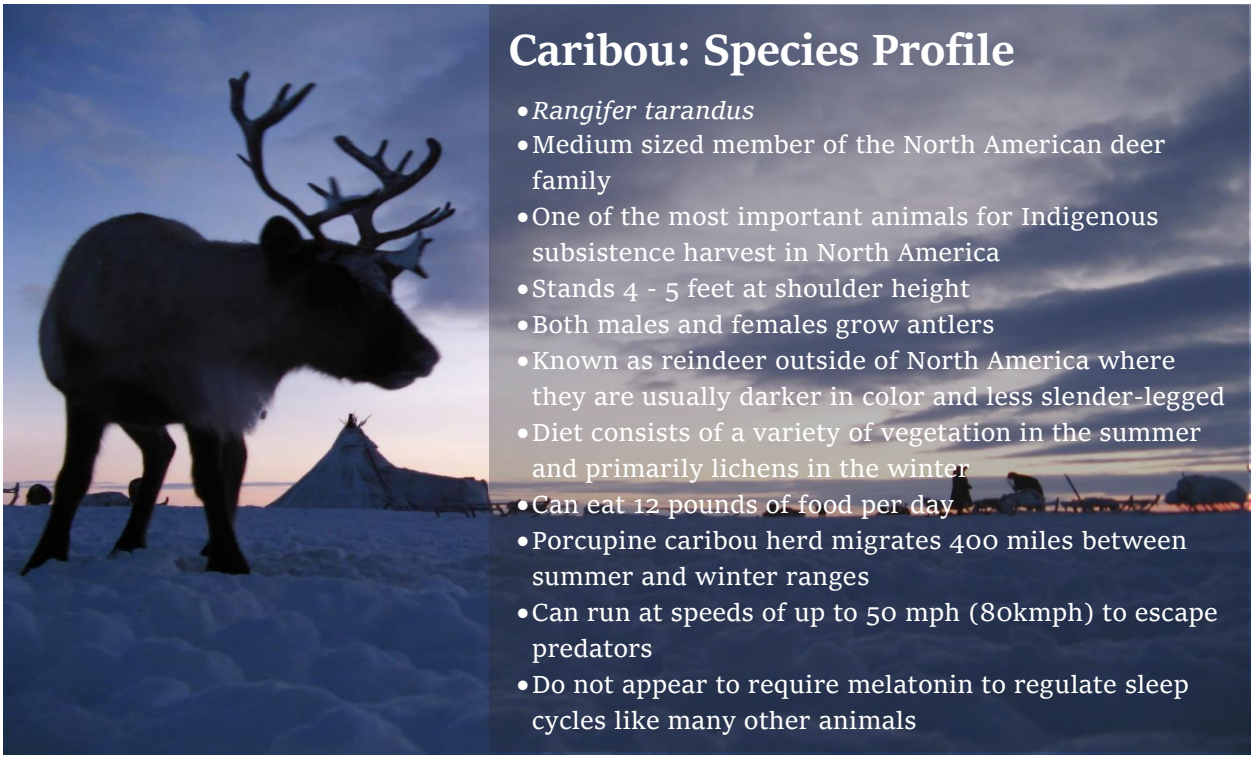
In Canada, caribou are harvested in 8 jurisdictions including British Columbia, Manitoba, Newfoundland and Labrador, the Northwest Territories, Nunavut, Quebec, Saskatchewan, and the Yukon. Hunting harvest data have been acquired for 6 of these jurisdictions and records have been entered into the Wild Harvest Initiative Database. Nunavut and Saskatchewan do not compile offtake data for caribou, though harvest occurs.

Based on the current data compilation, a minimum of 21,067 individual caribou were harvested across Canadian jurisdictions during the 2014-2015 and 2015-2016 seasons. This harvest, while almost certainly underestimated due to the limited availability of data, represents approximately 1,167,715.02 kg (2,574,370.95 lb) of edible meat, enough food for more than 10 million standard 4-ounce servings.

In most jurisdictions, recreational caribou harvest has declined in recent years. In Quebec, for example, 22,737 animals were harvested during the 1999-2000 season, whereas only 1,344 animals were harvested in 2014-2015. This difference represents an estimated annual loss of approximately 1,422,193 kg (3,135,400 lb) of meat or 12.5 million meals. In February, 2018, Quebec's Ministry of Forestry, Wildlife and Parks enacted an indefinite ban on all recreational caribou harvests in the province due to population declines.

Harvest in the United States

In the United States, caribou are currently harvested only in a single jurisdiction, Alaska. The Alaskan harvest for 2014-2015 and 2015-2016 was reported at 13,203 animals, about 63% of the annual Canadian harvest. Alaska's harvest, however, has remained relatively steady over the past few decades. For example, 5,673 caribou were harvested in 1990-1991; 10 years later, during the 2000-2001 season, 241 caribou were harvested. A timeline depicting Alaska's annual recreational caribou harvest is shown in figure 3.



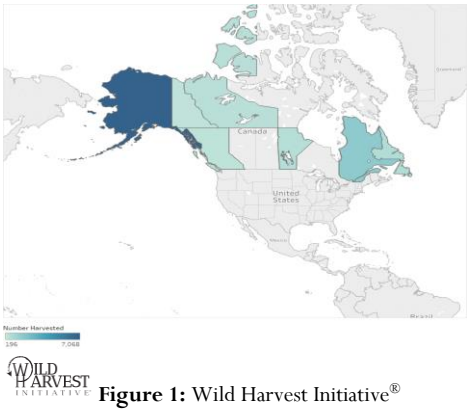


Figure 1: Wild Harvest Initiative® Database Harvest Density Map for caribou (*Rangifer tarandus*) in the United States and Canada.

A Healthy Harvest

The rich nutrient profile of caribou meat is one of the primary reasons why caribou has historically been highly sought-after as a game animal. A single 4 ounce serving of caribou typically provides 25.7 grams of protein; about half of an adult's daily protein requirement. The same serving contains only 3.8 grams of fat, less than a quarter of the amount of fat contained in an equivalent serving of beef or pork. Organically grown and often locally sourced, caribou meat also contains numerus vitamins and minerals which are essential to human health. A single 4 ounce serving contains about 28% of an adult's daily value (DV) of pantothenic acid, 48% of riboflavin, 32% of thiamin, and more than a full days' worth of vitamin B12.

Natural History

The word caribou comes from the French explorers of eastern North America who derived it from the MicMac Indian term *xalibu*, meaning "the one who paws," a reference to the caribou's wide hooves, well-adapted for walking through snow.

Caribou evolved in North America and spread to Eurasia where they are known as reindeer. The earliest fossils of caribou in North America are 1.3 –1.8 million years old and are from Alaska and northwestern Yukon. These animals became the barren-ground caribou, spreading east to Hudson Bay. Today, barren-ground caribou are found in the tundra stretching from Alaska to Baffin Island. Woodland caribou survived the Pleistocene epoch, sometimes known as the Great Ice Age, in the Appalachian Mountains. They then moved north, reaching the Ontario and Québec regions 10,000 years ago. They also colonized the Québec-Labrador Peninsula. Today, the woodland caribou live in almost all Canadian provinces and territories, with the exception of Nunavut and the Maritime provinces. Peary caribou (R.t. pearyi) possibly survived the Pleistocene on Banks Island and later spread to the Queen Elizabeth Islands. They are still found there today, living entirely within Canada's Arctic Archipelago.

Barren-ground caribou are probably the most wide-ranging land mammal in North America. In the spring, some barren-ground females migrate en masse hundreds of kilometres to Arctic calving grounds that have reduced forage, late phenology (i.e., when green plants begin to appear in spring) and often some snow cover. This migration results in spacing away from the treeline where wolves commonly den, and therefore improves calf survival. Woodland females migrate generally less than 50 km and disperse away from other females and animals their predators may also prey on, such as moose. They seek high mountain slopes, islands or shorelines

where they can reduce the probability of being found by predators or increase escape by swimming.

Single calves are born in May or June. Gestation is about 228–234 days and the mating season is in October. Maximum longevity is about 13 years for males and 17 years for females. Age of first breeding (one to three years of age) depends on body size, meaning summer nutrition is important. Caribou have several mates. Males seek nutritious forage to maximize body size for competition with other males. The reproductive fitness of females is enhanced by choosing safe habitats to raise her single calf. This dichotomy has resulted in females being more wary than males.

Humans and Caribou

Caribou have always formed a basic part of the cultures of people living in the Arctic and subarctic. They have provided meat for people and their dogs; fat for light and cooking; hides for clothing and shelter; and bones for needles, fish hooks and ornaments. People also formed mythologies and legends and structured their cultures around the caribou. They travelled to known migration routes to intercept herds for hunting. They told stories about caribou. They taught their children to respect these animals. Traditional hunters believed that if they had the right thoughts about animals and treated the carcasses properly, they would always have enough to eat. They also created taboos that showed their respect. For example, in both Inuit and Dene cultures it was taboo to mix foods from the water with foods from the land. Therefore, caribou and fish could not be eaten on the same day. Inuit did not even cook caribou over driftwood fires because the wood came from the sea.

Changing relationships

The arrival of Europeans changed the northern people's relationship with the caribou. The nature of the caribou harvest was dramatically altered by the needs of whalers who travelled the arctic seas in the 1800s. They needed caribou for provisions. So did later waves of fur traders and trappers, prospectors and miners, who all added their needs to the caribou harvest. Between 1890 and 1910, professional meat hunters worked to feed all the people on the land. In the 1930s, a great deal of caribou meat was needed to feed the animals of the many people who used dogs and sleds for travel. The introduction of the rifle made it easier to kill the caribou and lessened the amount of skill needed in the hunt. In less than a generation, mechanized transportation and high-powered rifles have again revolutionized hunting.

Today, the dietary and cultural aspects of the caribou remain important, especially to northern indigenous groups and rural communities.

Population

Historically, caribou were abundant in North America with an estimated 3-5 million animals across Canada and the U.S. By 1980, the North American population had dropped to approximately 935,000 individuals.

While caribou numbers tend to undergo highs and lows influenced by a number of factors, including weather, disease, the condition of their range and the threat of predators, overall, the North American population has continued to significantly decline. B.C.'s Selkirk Mountains' Gray Ghost caribou herd, for example, was considered functionally extinct in April 2018 and none of Canada's 51 herds is known to be growing. In 1996 the Bathurst herd consisted of 472,000 animals; today, it has just over 19,000 individuals. The Baffin Island herd, consisting of more than 235,000 individuals in 1991, now numbers only 5,000 animals and the George River herd, estimated at 800,000 in the 1990s now consists of fewer than 9000 animals.

A population increase has recently been reported in Alaska. However, this follows a decade of significant decline.

Conservation Status

Under Canada's Species at Risk Act (SARA), Woodland caribou are considered Endangered (Atlantic-Gaspésie population), Threatened (Boreal population), and no status (Northern Mountain and Southern Mountain Populations). The 2014 COSEWIC assessment reports: Endangered (Atlantic-Gaspésie population and Southern Mountain population (BC, AB)), Threatened (Boreal population), and Special Concern (Northern Mountain population (YK, NT, BC)). Peary Caribou are currently listed as Endangered by SARA, though a 2015 COSEWIC assessment recommends the subspecies be down-listed to threatened. Barren-ground caribou were assessed by COSEWIC in 2016 as Threatened and SARA is reviewing whether to list the subspecies.

In the U.S., Woodland caribou (Selkirk herd) are listed as Critically Endangered under the Endangered Species Act.

Figure 2: Range Map for Caribou (*Rangifer tarandus*) in the US and Canada. Source: Ray and Hummel, 2008.

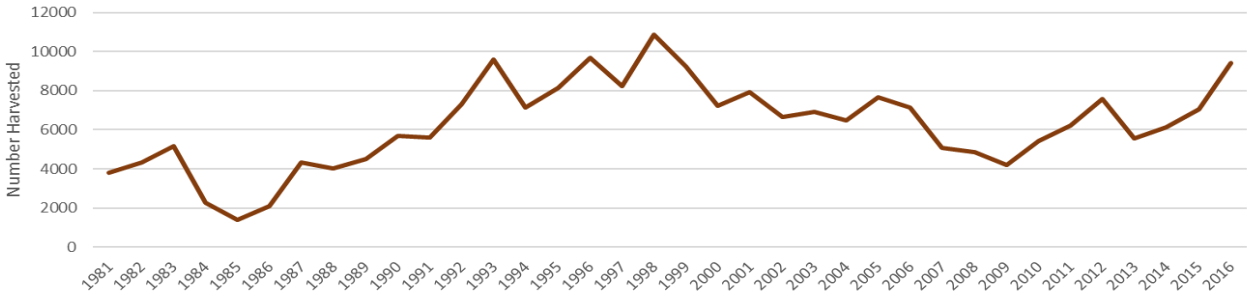


Figure 3: Time Trend of Reported Caribou (*Rangifer tarandus*) Harvest in Alaska

Modern Conservation Challenges

Caribou populations fluctuate dramatically under natural conditions. When faced with external threats, their numbers can drop to dangerous levels and may fail to recover from natural population lows. There are multiple cumulative environmental and human-caused stressors that are contributing to caribou decline. Challenges include:

Climate change, which is altering the habitat of Arctic caribou, increasing the presence of biting flies in the summer, and creating irregular icing events in the winter that prevent caribou from accessing their food.

Increased mining exploration and development across caribou ranges, which place caribou herds under pressure, with the most significant risk of habitat loss and disturbance occurring when industrial development occurs on their calving grounds.

Harvest management during times of low abundance, which is very complex due to the difficulty in assessing the status of populations and a lack of reported harvest information.

Absence of effective land-use planning. Most caribou are migratory, and their habitat crosses territorial and provincial borders. As the climate changes, and migration patterns shift, it will be increasingly important for governments to implement plans that support wildlife and ecosystems.

WILD HARVEST INITIATIVE® DATABASE

Data Compilation and Entry

Hunting harvest records for 128 species from 63 reporting jurisdictions in the U.S. and Canada have been entered into the database. Categories include big game, small game, migratory game birds, upland game birds, furbearers, and unspecified.

Quality Assurance

Quality assurance testing is ongoing and estimates will be refined as data are confirmed. Jurisdictional harvest verification forms were distributed to all 63 jurisdictions at the end of 2017. Forms have been completed and returned by 53 of 63 jurisdictional contacts and these are being reviewed so harvest records may be entered or adjusted as necessary.

Weight Calculations

Defensible equations for live, dressed, and consumable weights for both commonly and rarely consumed species have been derived. These are being integrated into the database to facilitate preliminary analyses.

Replacement Values

During the previous quarter, efforts began to assess domestically produced replacement values of the wild harvested protein in the U.S. and Canada. Domestically produced substitutes have now been selected for all commonly consumed species. Research and preliminary analyses to support meaningful dollar valuations for the list of domestically produced substitutes are ongoing, with data collection underway.

Literature Review

The WHI Team has begun a literature review to assist data analysis efforts with respect to the quantification of economic value of wild harvested protein in the U.S. and Canada. Technical and statistical reports and analyses, as well as peer-reviewed articles, are being compiled to procure relevant information, i.e. hunting equipment expenditures, greenhouse gas emissions and meat production, contributions to rural livelihoods, etc.

Methods of Take

Methods of take used by recreational harvesters are now being integrated into the database. The database will report a method of take for each hunting harvest record for big game as either firearm or archery. A custom form is being designed and will be provided to each jurisdictional contact to enable reporting and quality assurance for this database field.

Database Security

In the next quarter, we will migrate the database to a cloud-based server to enhance data protection and security.

SOCIAL SHARING INDEX

As work continues to implement the first hunter sharing survey, the WHI Team has expanded its work on the initiative's Social Sharing Index to include a review of charitable giving of wild meat by jurisdiction, and by species (where possible). A literature review has begun and the WHI Team has also begun compiling a list of charitable organizations, as well as food banks and hunting and conservation-based organizations, likely to have knowledge and/or experience concerning the charitable giving of wild meat. Outreach has begun for some jurisdictions. Food security statistics for each reporting jurisdiction will also be compiled as part of this process.

WILD HARVEST INITIATIVE® ALLIANCE

New Partners

In April 2018, the Wild Harvest Initiative® welcomed a new partner, Safari Club International Foundation's Hunter Legacy 100 Fund.

There are now 28 partners actively supporting the Initiative as members of the Wild Harvest Initiative® Partnership Alliance.

COMMUNICATIONS

Work has begun on a stand-alone website. We have, however, decided to extend our decision-making process concerning the selection of a professional marketing/public relations firm into the next quarter.

Since 2016, we have continuously updated informational and promotional materials to showcase new partnerships, project implications, and relevancies. Categories of relevance, a focus of current marketing materials and efforts, include food security; human health, nutrition, and fitness; animal health and welfare; wildlife and habitat conservation; ecological benefits; economic contributions; and hunter and angler recruitment, retention, and reactivation.

Promotional outreach is ongoing as we continue to engage with media, academia, special interest groups, and the broad public to increase awareness of the Wild Harvest Initiative® and the myriad benefits of sustainable wild harvest.

Latest Brochure:

http://conservationvisions.com/wild-harvest-initiative (Scroll & click brochure button)

Updated Project Summary:

http://conservationvisions.com/sites/default/files/WHI-MoreInfoDocs/whi_project_summary_v.052018.pdf

Press Releases:

Nevada's Department of Wildlife: http://www.prweb.com/releases/2018/04/prweb15414580.htm

Safari Club International Foundation's Hunter Legacy 100 Fund: http://www.crossroadstoday.com/story/38246918/safari-club-international-foundations-hunter-legacy-100-fund-invests-in-conservation-visions-wild-harvest-initiative

Web links to media mentions:

http://damovc.xyz/wildharvest-com

http://www.nvwf.org/famed-conservationist-shane-mahoney-sits-down-and-talks-about-his-wild-harvest-initiative/

Podcasts:

The Hunting Collective: https://thehuntingcollective.com/blogs/podcasts/ep-5-shane-mahoney

Videos:

Speech at 2018 Rocky Mountain Elk Foundation Elk Camp: *https://www.youtube.com/watch?v=3LpJyuEfGRU*

THE WILD HARVEST INITIATIVE® PARTNERSHIP ALLIANCE

"In the harvest of wild food we engage the circle of life as true participants, and thus learn the truths about man's place in nature."

~ Shane Mahoney