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BACKGROUNDERS

CARIBOU MIGRATION

An Ancient Strategy and the Test of Time

A Long History of Migration

The Porcupine Caribou Herd has been around much longer than the automobile or the insatiable human appetite for oil. In fact the Porcupine Caribou was around for the last two major glaciations and once grazed beside Mastadons, Woolly Mammoths, and tried to avoid the Sabre-tooth Cat. Archaeological work at some of the caribou's current-day river fords shows some of those same crossing points were used as long as 27,000 years ago by predecessors. So why have the caribou survived when many of these other animals have died out? Unique arctic adaptations, such as heat exchange between arteries and veins, a coat of hollow guard hairs, and expansive snowshoe-like hooves are part of the reason, but migration itself is much of the reason the caribou have survived tough conditions for so many thousands of years.

Why Move When You Can Stand Still?

Moving with the seasons is a strategy employed by many animals around the world. For the Porcupine Caribou Herd, it is one that allows them to take advantage of three things during the critical spring calving season: nutritious food, relatively few predators, and relief from insects along the coast of the Arctic Ocean. However, wind-hardened snow and extreme cold render this same early-summer sanctuary inhospitable for caribou in the winter, necessitating their long southward journey back to treeline each fall. It is an arduous way of life – a typical caribou will travel between 2,000 and 3,000 kilometres a year across spongy muskeg, flooding rivers, and snowy mountains – but it is a strategy that has stood the test of time.

The Cycle of Caribou Seasons

Caribou are always on the move, but the direction, pattern and intensity of their movements differs significantly within seven broad seasons:

1) **Spring Migration** (Apr. 1–May 31) – Race to the Calving Grounds

Pregnant cows destined for the calving grounds initiate spring migration. It corresponds with significant snow melt — commonly in April and May. Bulls, yearlings and dry cows follow weeks later. Pregnant cows (who move north before the flush of early spring forage) are in constant energy deficit during this period, traveling an average of 20km per day. Deep snow, early breakup, and spring floods are just some of the factors that can delay this tough stage of the Porcupine Caribou Herd's annual journey.

2) **Calving** (June 1 –10) – Brief Sanctuary

You can almost set your watch to when the Porcupine caribou calve – almost always between June 1 and 10. Adult females are in the poorest condition of the year when they arrive on the calving grounds and, after giving birth, are dependent on the area's high-energy food to produce milk for their nursing calves. The general absence of wolves (who aren't in the area because of a lack of denning sites), and the steady cool breeze off the ice of the Arctic Ocean (which keeps the insects at bay) are just some of the characteristics that make this area worthy of a 2-month-long 1,000km migration (see Calving Grounds backgrounder). Even with this sanctuary, life is difficult. An average of 25% of the calves get killed by golden eagles, grizzly bears, sudden storms, and accidents in their first month of life.

Cows are least tolerant of human disturbance while on the calving grounds, which is why the Gwich'in people have a longstanding taboo against even visiting the area. It is a taboo that is being disregarded by the oil and gas companies, as well as the Alaskan and US federal governments, who are keen on opening up fossil fuel reserves in the heart of the caribou's calving grounds (see Human Development and the Caribou backgrounder).

3) Post Calving Movements (June 10-July 15) – The Herd Gathers

Insects usually dictate when this dramatic stage of the caribou's annual migration begins. Spurred on by biting mosquitoes and oestrid flies, tens of thousands of caribou group together and move like a river across the landscape, covering as much as 25km/day as they search out areas that offer relief from the bugs (i.e. windy ridgetops) and good quality food.

4) Summer (July 16 – Aug 7) – The Herd Scatters

Towards the end of July and the first half of August, the large aggregations of caribou split into smaller bands that disperse throughout northeastern Alaska and the Yukon. Where exactly they go is largely determined by food quality and the presence of insects. Areas that offer good forage and cool humid conditions are sought, such as northeastern Yukon's Richardson Mountains. Lactation demands are still high for the nursing cows and insect harassment can easily send them into energy deficit.

5) Fall Migration (Aug 8 – Oct 7) – Guided by Snow

The start, pace, and progress of the fall migration are all strongly influenced by weather. The caribou tend to move slowly southwards in a widely dispersed pattern until substantial snowfall or a rapid temperature drop move them south more quickly. However if the weather improves (i.e. temperatures rise), the migration may slow down, halt, or even reverse temporarily until renewed snowfalls and cold temperatures send the caribou south again.

6) Rut and Late Fall (Oct 8 – Nov 30) – Battle for the Right to Reproduce

The rut is a spectacular phase of the caribou's annual life cycle, a period when the big bulls spar with one another for the privilege of mating with the cows. Dueling and chasing preoccupy the bulls to the point of exhaustion, rendering them easy prey for wolves and bears that continue to shadow the migration. There is no affinity for where the rut occurs. Rather, it transpires wherever the herd happens to be along the fall migration.

7) Winter (Dec 1 – March 31) – Abiding the Cold and Dark

This is the time of dark and cold when Arctic temperatures can plummet as low as -50C. Surprisingly, if snow isn't too deep, it is also a time of year when the well-adapted caribou can gain weight. The cows are no

longer lactating, the bulls aren't sparring, and the herd, although widely scattered, isn't moving much compared to the rest of the year. Winter range is generally south of the treeline, where the snow remains soft, making it easy for the caribou to paw and "crater" down to the ground lichens that sustain them.