

Caribou Blues

Outdoor Activity

In this interactive game, students will become familiar with some of the limiting factors affecting the survival of caribou, as well as the role of humans in contributing to their endangerment. This game is adapted from the Canadian Wildlife Federation's Project Wild activity 'Turtle Hurdles' by Wynona Klemt.

Preface:

Caribou are an important northern Canadian species – they provide ecosystem services by managing plant communities, as an important source of prey for animals such as wolves and are an essential resource for Indigenous people in the north. Caribou are a migratory species, traveling long distances throughout the year to favourable areas to reproduce (in calving grounds), find food, and avoid predators. The Porcupine Caribou herd in the arctic travel 100s of km every year across northern Yukon and Alaska. Caribou generally follow the same routes year after year, but more often lately, their migration paths have been altered due to habitat loss and destruction from impacts of climate change and direct human activities such as mining, logging, and hydroelectric development.

Some of the major problems facing caribou:

- Habitat loss/ destruction
- Parasitic flies (warming climate)
- Increased winter icing (trap food underneath hard snow crust)
- Melting river ice (making crossing dangerous)
- Thawing permafrost - treacherous
- Deep snow (difficult to move and feed, delay spring migration)

Materials:

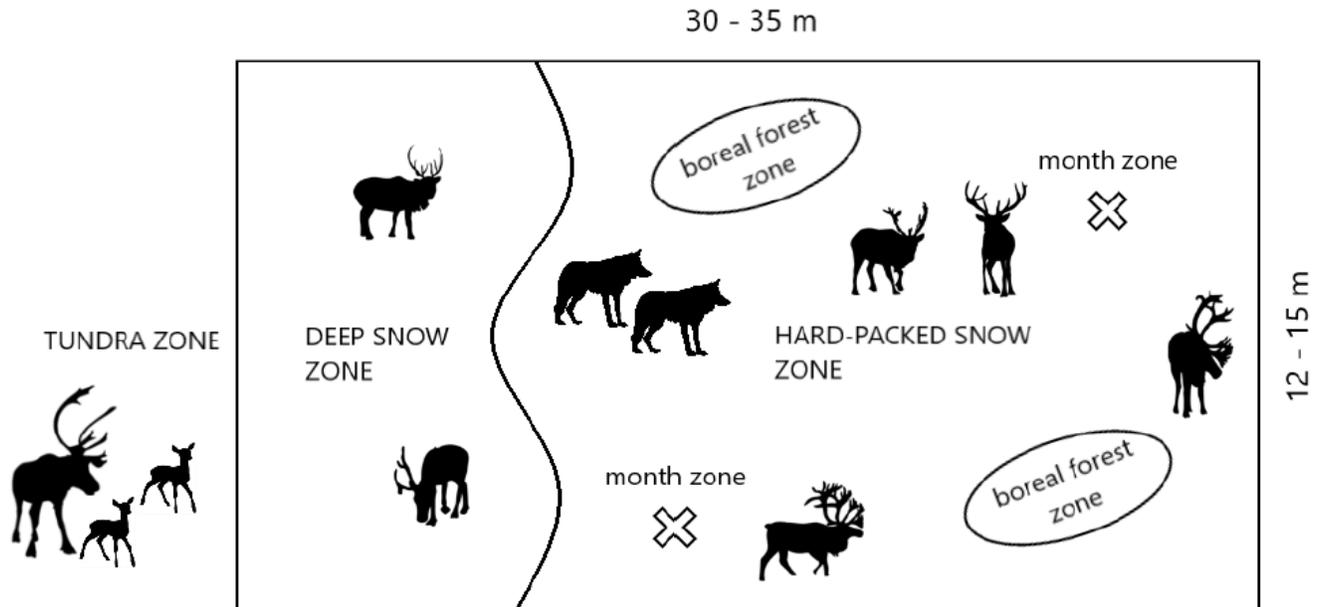
- Rope or string to mark playing area (~150 Metres)
- Backpacks or traffic cones to mark corners of playing area
- 100 popsicle sticks (Caribou cards)
- Identity tags (predators and limiting factors)

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Instructions

1. Set up the playing field as shown.



2. Introduce the threats facing caribou in Canada's north. Read the activity preface, as well as any other supplementary materials/ facts about caribou.
3. Divide the students into 2 groups. Approximately $\frac{1}{4}$ of the class represent threats/limiting factors facing caribou survival. The rest of the class are caribou.
4. CARIBOU – Give each student (who represents a herd of caribou) 4 caribou “cards” (Note: You can use whatever supplies you have. Popsicle sticks are durable and last.).
5. LIMITING FACTORS/THREATS – Give each student who represents a predator or other limiting factor a marker or tag that designates what threat they represent. Examples of threats you can use:
 - Predators: wolves, bears, scavengers (e.g. ravens)
 - Limiting factors: parasitic insects, climate change, humans, etc.
6. Explain the playing field as follows:
 - Tundra/ calving zone: Female caribou return to the same calving grounds year after year to have their babies (calves). This is the zone where the surviving caribou will return in 10 months.

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- Deep/ Open snow zone (difficult travelling): the zone where caribou must cross to get to a safer packed snow zone, and boreal forest areas. It is a place of high predation and other limiting factors.
- Packed/ Sheltered snow zone (easy travelling): the area where caribou must travel for 10 months before returning to the tundra zone.
- Month zones: the two zones that the caribou must visit to get the month cards necessary to “mature” (1 card/ popsicle stick = 1 month of travel). One card is awarded for each one-way trip between zones. During the trip between the zones, the caribou are vulnerable to predators and other limiting factors. Caribou are safe from threats when they are in either month zone. **Enforce that these are not rest zones like the Boreal Forest zones. Students cannot linger here. They must quickly collect their card and then move on. (If you have adult helpers, they can hand out the caribou cards. If not, place extra caribou cards in a small container.)
- Boreal forest zones: places where the caribou are safe until they leave. Only 4 students may stay there at a time. **Might be good to give students a time limit so that they do not just sit there the whole time.

7. Explain the rules as follows:

- Caribou must calve in the tundra, cross the deep, soft snow, spend ten months in the hardpacked snow zone, and return to the tundra to reproduce. This is represented by collecting 10 caribou cards while migrating and returning to the tundra with 10 cards.
- You must always cross the deep, soft snow on your knees (difficult to cross). This includes the caribou as well as the threats.
- The caribou must survive the limiting factors they encounter. Limiting factors cost the caribou a specific number of their original caribou cards:
 - Tagged in the deep/open snow zone: lose 3 cards.
 - Tagged in the hard-packed snow zone <4 months in (i.e. they have <4 cards): lose 2 cards.
 - Tagged in the hard-packed snow zone >4 months in (i.e. they have >4 cards): lose 1 card.
- Students who are predators/limiting factors must obey the following rules:
 - They cannot tag the same caribou twice in a row.
 - They cannot pick-on only one caribou.
 - Wolves must link arms when chasing caribou (pack animals) **this may be difficult to enforce – may be more appropriate for larger groups where there are more threats as opposed to smaller groups.
 - They must also stay on their knees in the deep, soft snow.

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- If a caribou loses all their caribou cards, they must lie down on the ground and become a logging road, or crouch down and become a mine. These become obstacles for the remaining caribou travelling to get back to the calving grounds.
- The game is over when the remaining caribou (with 10 cards representing the 10 months) return to the calving grounds/tundra or are all dead (threats have won).
- Debrief the game with students. Students may be surprised there are so many threats facing the Porcupine caribou or that they migrate over such a long period of time. Here are a few reflection questions:
 - Did anything surprise you in this simulation game of caribou?
 - What impacts and limiting factors had the biggest impact on caribou?
 - How did you feel if you were a caribou?
 - What recommendations would you suggest to increase caribou survival?

Learning Extension

In Alberta, caribou are considered threatened under Alberta's Wildlife Act. The Woodland caribou and Mountain caribou populations have declined dramatically in recent years. Despite effort, research and a recovery plan, many people feel these animals are nearing extirpation in many of the populations in Alberta. The most significant factors affecting their status are:

- Industrial activity (e.g. forestry, oil and gas, mining) that fragments, destroys or alters caribou habitat.
- High predation from animals such as wolves and bears. Often this is associated with industrial activity that allows easier access for predators into old growth forests preferred by caribou.
- Disturbance and displacement by industry and recreationists into caribou habitat.

Give students time to do research on Alberta's caribou. Have students write a position piece on the value of caribou. Should effort and resources continue to be given to conserve a species that is declining and likely will be extirpated or are these resources and effort better spent on other species who are more likely to be conserved? Explain your reasoning.