Wood Bison Classroom Kit

Teacher's Guide

Dear Educator,

Ecology North developed this resource with funding from the Northwest Territories Species Conservation and Recovery Fund. It contains fun and interactive ways to educate students about Wood Bison and the threats affecting them. These activities are ideal for grades 3-6.

Name: Wood Bison

Latin Name: Bison bison athabascae

Status: Threatened

Size

Wood bison are the largest land mammal in all of North America. Although at 1.8m in height, they are slightly shorter than moose, wood bison can weigh up to 1,000kg.

Appearance

It's hard to misidentify a bison, but wood bison can be confused with their southern cousin, the plains bison. Wood bison have a hump in front of their shoulders covered in a cape of long shaggy hair that reaches down to their front knees. The highest point of a plains bison, however, is right above their front legs. Wood bison also have wider horns.

Photo: Danny Allaire

Young

Calves are born during the spring and summer after a 9-month gestation period (just like humans). Young wood bison are a light orange-brown colour. As calves, their horns may only be 2-8 cm, but by the time they are yearlings, their horns stick straight out and can grow up to 10-20 cm long. Calves wean off their mothers after seven months.

Adults

As they grow, wood bison's horns slowly curve up to look like "L's. By the time they reach old age, their horns will be "C" shaped; the male's horns will wear down from fighting. Female bison (cows) have a narrower horn base and slimmer faces than males (bulls). Bulls are also slightly larger than cows. Cows start breeding by age three, but competition prevents bulls from breeding until they are seven or eight. Wood bison have been known to live for up to 22 years. Remember, they might look sweet, but bison know how to charge, they can run at 55 km/h.

Diet

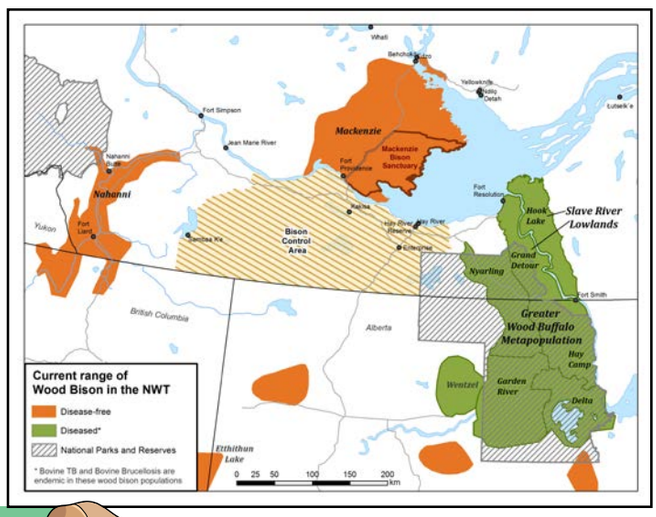
Like other bovine, they are primarily grazers. They have a wide variety in their diet and require a large area for sustinance. In the summer, they like dry meadows to eat the new sedges, grasses, willows, and forbs. In the Fall their diets may expand to include some lichens. Wet sedge meadows provide abundant low-quality grasses and sedges for the winter, which they find by sweeping away the snow with their woolly faces.

Population Size

Between 1800 and 1893, their population dropped from an estimated 168,000 to 250. Officials thought wood bison were extinct until 1957, when they discovered a herd in the NWT Nyarling River area. Efforts have been made to reintroduce bison from this herd to different regions of the north, but they still face many challenges. The most recent survey estimates their current population in the NWT to be approximately 2,500.

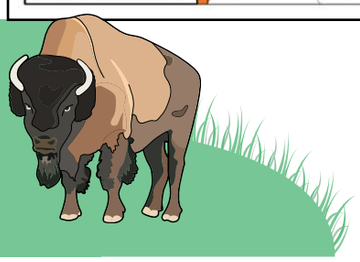
Range

Wood bison used to inhabit the boreal forest extending from northern Alberta and northeastern British Columbia through to southwestern NWT, the Yukon, and central Alaska. In the NWT, they are now mainly found in four populations: Mackenzie, Nahanni, Wood Buffalo National Park, and Slave River Lowlands. To stop the spread of disease and of a further decline in numbers, the Bison Control Area program keeps the disease infected Wood Buffalo National Park and Slave River Lowlands populations apart from the healthy Mackenzie and Nahanni populations.



Bison Help the Land

Bison change the very ground that they walk on. The meadows that wood bison graze in have wet, soft soil. Because of their size, their large hooves trudge through the earth and act like a farmers plow. Their patties are full of nutrients that fertilize the soil.



Threats and Limiting Factors

NWT wood bison are at risk of contracting diseases from southern bison populations. Plains bison introduced brucellosis and tuberculosis to the Wood Buffalo National Park population in the 1920s. The disease levels have not declined since.

Bison are at risk of drowning, both from falling through thin ice or from turbulent waves while swimming. A large number can be lost during one event. This frequently affects the Nahanni population as they cross the Liard River.

Bison are susceptible to anthrax, which is a naturally occurring bison disease. It has been found in the Slave River Lowlands and Wood Buffalo National Park populations.

The Mackenzie and Nahanni populations are disease-free, but their lack of genetic diversity may limit their ability to adapt and can have other negative consequences.

Vehicle collisions are a significant cause of mortality for wood bison in the NWT and can be fatal for those in the vehicles, too. Collisions usually happen in the Fall around dawn or dusk as bison are very hard to see in the dark.

Photo: Janet Winbourne

How You Can Help

Report sightings of bison within the Bison Control Area, the exclusion zone between healthy and diseased populations. It is crucial to keep the populations separate so that they can't spread diseases between them. You can show kids how easy it is for sickness to spread between individuals by playing a modified tag game. Instead of joining the rest of the herd after tagging someone, the bison who is "it" continues tagging along with the "newly infected."

Bison are most at risk of a vehicle collision on the highways from Fort Providence to Yellowknife, Fort Smith to Big Buffalo Junction, and Poplar River to the British Columbia border. Remember to look out for them on the road, slow down and give them lots of room.

Once, wood bison were a large part of the northern way of life. They were hunted for their meat, hides, and bones. Bison are an important part of our history and ecosystem. Engage with elders and knowledge holders in your community and help share their information about wood bison.

What's in a Name?

You may have heard someone call bison "buffalo". It is believed that this is beacause when French settlers first saw them, they called them "bœufs" meaning ox or bullox. The only true buffalo live in Africa and Asia.

Although, buffalo has become an accepted name for bison, they had many other names already:

Nēhiyawēwin: sakāwmostos

Dené Sųłiné Yatıé: dechen yághe ejere

French: bison des bois

Gwichya Gwich'in: dachantat aak'ii

Teetł'it Gwich'in: dachan tat gwi'aak 'ii

Sahtúot'ınę Yatı: ejuda

Tłı̨chǫ Yatìì: ejıre

Diseased Bison Game

Form two groups in your class, each group will represent a different population of wood bison. Choose one student (or an educator) to represent a diseased bison.

Group 1: Low genetic diversity, disease-free
Group 2: High genetic diversity, disease-free

Represent genetic diversity with pieces of paper or stickers in four different colours: red, yellow, blue, and green. Each bison gets to choose, or is randomly assigned, their genetic diversity colours. Bison in group 1 get one colour each, and bison in group 2 get three colours each. Finally, the diseased bison secretly chooses one of the four colours.

Once every bison has their colours, they all get to roam around the land. Have the diseased bison come into contact with the two groups of disease-free bison. Once all of the disease-free bison have been "infected" by the diseased bison, the diseased bison reveals their colour. All bison that do not have this colour must sit down and play dead - they did not have the genes that would protect them from the disease! Look at how many bison are left from each of the two populations that started off healthy. Note that the group with high genetic diversity has more bison left.

Discuss how genetic variety allows populations to adapt to changing environments, and the importance of limiting disease transmission through the use of exclusion zones.

Discuss, Challenge, Explore

Wood bison are a great species for any discussions and activities that look at genetic diversity, population growth, disease transmission, and keystone species.

Resources

nwtspeciesatrisk.ca Information about species at risk in the NWT and their management plans. Includes photos and maps.

nwtsciencefocus.ca Ecology North's educator resource hub for lesson plans and activities, including more related to Species at Risk.

Alaska Wood Bison Teacher's Guide Activities, games and learning materials about wood bison in Alaska. **www.adfg.alaska.gov/static/education/educators/curricula/pdfs/woodbison/alaska_wood_bison_curriculum.pdf**