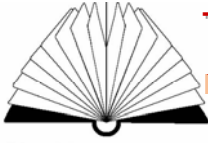


The Northern Edge

Study Guide

Bathurst Caribou Project





Bathurst Caribou Project

Introduction

This story is from **Issue #4 of The Northern Edge**. The Bathurst Caribou Project story gives some basic information about where and how the caribou live, and why they are important for Aboriginal people. Online learning activities include a writing project and an internet search.

This story offers an opportunity to encourage learners to learn more about different caribou herds and why they're important to people.

This section first presents a list of seven learning activities and the written text for the Bathurst Caribou Project story. The pages following the written text give instructor notes and handouts for each activity, in the order on the list.

This symbol marks the written text for the Bathurst Caribou Project story.

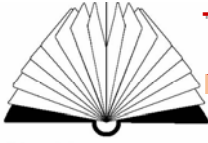




This symbol marks instructor notes.



This symbol marks handouts to copy for learners.





Bathurst Caribou Project		
List of Learning Activities		
Instructor Notes 	Handouts 	Page #s
1) Vocabulary	2 handouts	7 to 10
2) Language skills	3 handouts	11 to 19
3) Questions	2 handouts	20 to 23
4) Writing	2 handouts	24 to 27
5) Other caribou herds	4 handouts	28 to 36
6) Caribou – food and more	1 handout	37 to 41
7) Project Caribou	No handouts	42



Text – Bathurst Caribou Project

Issue #4 The Northern Edge

In this activity we are going to learn about the Bathurst caribou herd in Canada's Northwest Territories and Nunavut.

This image of the earth at night was put together from hundreds of photographs taken by orbiting satellites for NASA - the National Aeronautics and Space Administration.

In this map, we can clearly see the nightlights of Yellowknife - the capital city of the Northwest Territories - population about 17,000. If we look carefully we can just see Great Slave Lake and Great Bear Lake.

Zooming in let's build a detailed map to understand the lives and the challenges this great caribou herd faces.

First let's put in some human communities and borders to orient ourselves.

Next let's show the area the caribou travel over during the course of the year and let's show the scale of the map so we can see the great distances they travel.

Adding the treeline is important. Boreal wolves den at the treeline so in March and April, caribou begin their annual migration to their calving grounds further north and leave a main predator behind, although they still must deal with tundra wolves. Individuals band together, and each small group joins another and another until thousands of caribou are moving to their calving grounds which are as far away as 700 kilometres to the north.



Here are the calving grounds. Most calves are born during the first two weeks of June when temperatures are usually near the freezing point.

Calves can stand and suckle within a few minutes of birth. In an hour, a calf can follow its mother, and within a few days it can outrun a man.

As soon as the calving is over, cows and calves slowly begin the first stage of their long trek back toward the winter range.

As spring turns into summer the cows meet up with the bulls that have drifted north more slowly than the females. Once together, they form into really huge groups in an attempt to reduce the intense disturbance caused by mosquitoes, black flies, and other insect parasites. Groups often number in the tens of thousands or more.

You can see where all the mosquitoes and black flies come from when we add the lakes and rivers.

It is in this land of lakes and rivers that the Bathurst barren ground caribou roam. The Bathurst caribou herd gets its name from its traditional calving areas - in this case Bathurst Inlet, Nunavut. The Bathurst caribou herd always returns to the same general area to have their calves each year. The calving grounds tend to overlap from year to year but they have gradually shifted over time. This map shows how the calving grounds have shifted since 1966.

The Bathurst caribou herd is very important to Aboriginal people in the Northwest Territories and Nunavut. There are ten Aboriginal communities on or near the range of the Bathurst caribou herd:



Bathurst Inlet, Umingmaktok, Kugluktuk, Wekweti, Gameti, Whati, Bechoko, Lutselk'e, Dettah, and Yellowknife.

Did you know?

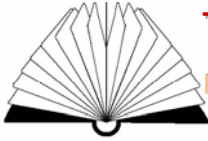
The Bathurst herd is harvested by hunters in the Northwest Territories and Nunavut. The replacement value of the meat that hunters shoot is estimated to be \$10.7 million each year.

Did you know?

Some community Elders say that when caribou pass a camp on their way south from the summer grounds, people should let them pass for a day before beginning the hunt. They believe that by letting the leaders pass by and hunting from the middle of the herd, the migration of the herd will not be disturbed. If the lead caribou are killed, the herd may change its migration route.

Biologists have been studying and tracking the number of animals in the Bathurst caribou herd for many years. Calving ground surveys are carried out every six years. The number of animals in a caribou herd naturally fluctuates over a forty to sixty-year cycle. Dogrib Elders report that caribou were abundant in 1940, then scarce in the mid 1950s. In 1986 the Bathurst caribou reached the highest numbers ever surveyed. By 2003 the herd had declined to about half the size reached in 1986.

When you're ready click on the learning activities button below.



Vocabulary Learning Activity 1

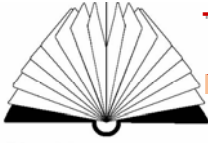
Two handouts

1-1: What do these words mean?

Learners look up the best meaning for words from the story.

1-2: Write your own sentence

Learners use the words they defined to write their own sentences. Encourage them to use two or more words in the same sentence.



Vocabulary Learning Activity 1

1-1: What do these words mean?

Use a dictionary and write down the **best** meaning for these words from the Bathurst Caribou Project story.

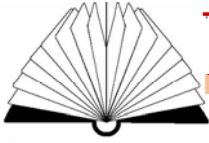
1) Satellite _____

2) Migration _____

3) Predator _____

4) Boreal _____

5) Tundra _____



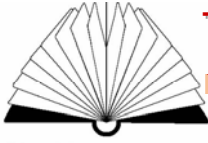
6) Disturbance _____

7) Survey _____

8) Replacement _____

9) Fluctuate _____

10) Abundant _____



Language skills Learning Activity 2

Three handouts

2-1: Find the missing words

Learners fill in the blanks in two paragraphs taken from the Bathurst Caribou Project story. The handout includes the list of words learners use to fill in the blanks.

2-2: Active and passive voice

Learners learn about the active and passive voice. They rewrite sentences in the active voice.

2-3: Noun and verb forms of words

Learners read each sentence and decide if the **bold word** is a noun or a verb. They write a new sentence and use the word in a new way – as a noun if the word was already a verb, as a verb if the word was already a noun.



Language skills
Learning Activity 2

2-1: Find the missing words

Fill in the blanks in the Bathurst Caribou Project story from the list of words below.

calves	mother	winter
bulls	huge	days
calving	mosquitoes	long
temperatures	summer	suckle
slowly	first	reduce

Here are the calving grounds. Most calves are born during the

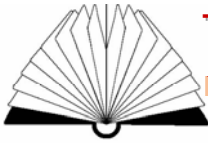
_____ two weeks of June when

_____ are usually near the freezing point.

Calves can stand and _____ within a few minutes

of birth. In an hour, a calf can follow its _____

and within a few _____ it can outrun a man.



As soon as the _____ is over, cows and _____ slowly begin the first stage of their _____ trek back toward the _____ range.

As spring turns into _____ the cows meet up with the _____ that have drifted north more _____ than the females. Once together, they form into really _____ groups in an attempt to _____ the intense disturbance caused by _____, black flies, and other insect parasites. Groups often number in the tens of thousands or more.



**Language skills
Learning Activity 2**

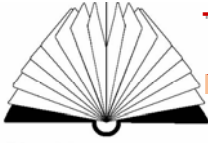
2-2: Active and passive voice

Some sentences use the active voice. In an active sentence the subject does the action.

Some sentences use the passive voice. In a passive sentence the subject receives the action. The person or thing that does the action comes later in the sentence, or may not be there at all.

Here are some examples of active and passive sentences.

Active Voice	Passive Voice
Northern Aboriginal people hunt caribou for food.	Caribou is hunted by northern Aboriginal people for food.
Mary makes bread every Wednesday morning.	Every Wednesday morning bread is made by Mary.
People use skidoos to travel on the land in winter.	Skidoos are used by people in winter to travel on the land.
John ate all the chips before we got home.	All the chips had been eaten by John before we got home.
People listen to the radio every day from noon to 1 pm.	The radio is listened to every day from noon to 1 pm.



Writers usually use fewer words when they use the active voice. Active sentences are usually more lively, and easier for people to read and understand.

For these reasons, it's usually better to use the active voice. But sometimes writers may choose the passive voice. For example when they don't know who did the action or it's not important. Or when they want to highlight the action itself or the person or thing that received the action.

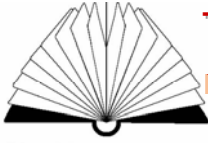
Read each pair of sentences below. One sentence in the pair uses the active voice, the other uses the passive voice. Write 'P' for beside the passive sentence and 'A' beside the active sentence. Write down why you made this choice.

_____ This image of the earth was put together from hundreds of photos taken by satellites.

_____ Hundreds of satellite photos make up this image of the earth.

_____ Great Slave Lake, Great Bear Lake, and the night lights of Yellowknife can be clearly seen on the map.

_____ We can clearly see Great Slave Lake, Great Bear Lake, and the night lights of Yellowknife on the map.

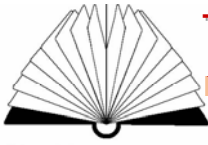


Read the three sentences below. Each sentence uses the passive voice. Rewrite each sentence and use the active voice.

- 1) Standing and suckling are two things done by caribou calves within a few minutes of birth .

- 2) Calving ground surveys are carried out every six years.

- 3) There are ten Aboriginal communities living near the range of the Bathurst caribou herd.



Language skills Learning Activity 2

2-3: Noun and verb forms of words

Look at the list of words below from the Bathurst Caribou Project story. Each word has a noun form and a verb form. Sometimes the noun and verb forms are the same; sometimes they are different.

Noun form of the word	Verb form of the word
Migration	Migrate
Survey	Survey
Harvest	Harvest
Disturbance	Disturb
Fluctuation	Fluctuate

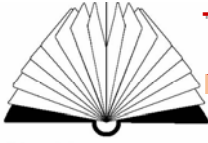
Read each sentence below. Look at the **bold word** and decide if it's a noun or a verb. Write a new sentence and use the **bold word** in a new way. Use it as a verb if it's already a noun; use it as a noun if it's already a verb.

Here's an example:

Caribou begin their annual **migration** to the calving grounds in March and April.

Noun Verb

Caribou **migrate** over 700 kilometres to the calving grounds.



- 1) The Bathurst caribou herd **migration** covers part of the Northwest Territories and Nunavut.

Noun Verb

Write a new sentence and use the word in the other form.

- 2) Biologists and hunters **survey** the caribou herd to find out how many animals the herd has and how they are doing.

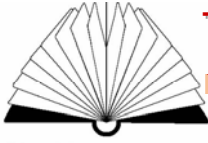
Noun Verb

Write a new sentence and use the word in the other form.

- 3) We estimate that it would cost about \$10.7 million to replace meat people get from the annual caribou **harvest**.

Noun Verb

Write a new sentence and use the word in the other form.



- 4) During the summer mosquitoes, black flies, and other insects often **disturb** the caribou herd.

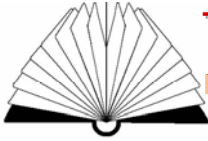
Noun Verb

Write a new sentence and use the word in the other form.

- 5) The **fluctuation** of numbers of caribou means that sometimes people may have a short supply of caribou meat.

Noun Verb

Write a new sentence and use the word in the other form.



Questions Learning Activity 3

Two handouts

3-1: Story questions

Learners answer questions about the Bathurst Caribou Project story. The handout asks learners to use a full sentence with correct punctuation.

3-2: Journal writing

Learners use questions in the handout to guide their journal writing.



Writing Learning Activity 4

Two handouts

4-1: A year in the life

Learners use a list of words from the Bathurst Caribou Project story to write a paragraph about a year in the life of a caribou cow.

4-2: People and caribou

Learners rewrite six sentences. For the first three, they combine two shorter sentences into one longer sentence. For the second three, they make two shorter sentences from one long sentence.



Questions Learning Activity 3

3-1: Story questions

Answer the following questions in one or more sentences. Begin with a capital letter and end with the correct punctuation.

1) Why is this herd called the Bathurst caribou herd?

2) Where do the caribou migrate?

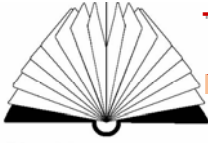
3) Why is the treeline important?



4) Why do community Elders say to wait for a day to begin the hunt?

5) What number of years is the natural cycle for caribou numbers to fluctuate?

6) What groups of Aboriginal peoples depend on the Bathurst caribou herd?

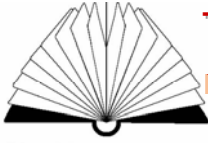


Questions Learning Activity 3

3-2: Journal writing

Use these questions to guide your journal writing.

- ✓ How did you feel after you read this story?
- ✓ Have you ever seen a caribou herd? Have you ever hunted caribou?
- ✓ Have you ever eaten caribou meat? If yes, do you eat caribou meat regularly? If no, would you like to?
- ✓ What might happen if we hunt too many caribou when they are at the low part of their cycle?
- ✓ What do you think about what the Elders say – to let the herd pass for a day before people begin hunting?
- ✓ What do you think we can do to help make sure the caribou herds stay healthy?

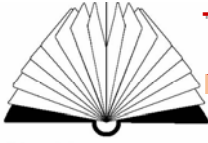


Writing Learning Activity 4

4-1: A year in the life

Read the words in the list below. Use these words as a guide to write a paragraph about a year in the life of a caribou cow. Remember to use a topic sentence, a supporting sentence, an ending or closing sentence.

- | | | |
|-----------|-----------------|--------|
| calf | calving grounds | cow |
| predators | migration | herd |
| winter | summer | bulls |
| hunting | bugs | wolves |
| range | forest | tundra |
| spring | mining | fall |



**Writing
Learning Activity 4**

4-2: People and caribou

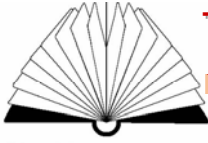
Follow the directions to rewrite the sentences below. For the first two, you combine two shorter sentences into one sentence. For the second two, you make two sentences out of one longer sentence.

Rewrite - combine these two sentences into one sentence.

People from Nunavut hunt caribou. People from the Northwest Territories also hunt caribou.

Rewrite - combine these two sentences into one sentence.

Elders say hunters should let the lead caribou pass. They say hunters should shoot animals from the middle of the herd.



Rewrite - write two shorter sentences from this one longer sentence.

Biologists have studied and tracked the number of animals in the Bathurst caribou herd for many years, and carried out calving ground surveys every six years.

Rewrite - write two shorter sentences from this one longer sentence.

The number of animals in a caribou herd naturally fluctuates over a 40 to 60-year cycle and we know the Bathurst herd was abundant in 1940 and again in 1986.



Other caribou herds Learning Activity 5

Four handouts

5-1: Write about other caribou

Ask learners to choose a different caribou herd to write about. The handout lists some websites that learners can use to find out about different caribou herds.

Ask learners to use the questions on the handout as a guide to write about the caribou herd.

5-2: Make a map

Ask learners to make a map for the caribou herd and show:

- ✓ The total area the caribou herd uses in a year
- ✓ The calving grounds
- ✓ Major rivers and lakes in the area
- ✓ Communities and other human development in the area

Use the blank map in the handout or ask learners to find or make their own map.

5-3: People and caribou

Ask learners to do research and identify different ways people use and value caribou now and in the past. Ask learners to organize and illustrate their ideas - use the mind map on the handout or make up a different one.



5-4: Make a caribou book

Ask learners to bring all the information together and make a book. Put all the books on display in the classroom or give them to the school or the local library.

Use the instructions to 'Make a padded binder' from the story **Learning in Action**, Learning Activity 7, page 7-37 to 7-40 in this Study Guide.



Other caribou herds Learning Activity 5

5-1: Write about the caribou

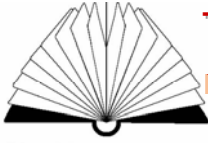
The NWT, Nunavut, and Yukon territories are home to other caribou herds. Choose a different caribou herd to write about.

Go to these websites to learn more:

- <http://www.arctic-caribou.com/index.html>
- <http://www.rangifer.net/rangifer/index.cfm>
- <http://www.taiga.net/pcmb/>
- <http://www.hww.ca/hww2.asp?pid=1&cid=8&id=85>
- <http://www.nwtwildlife.com/NWTwildlife/caribou/cari boutop.htm>

Write one or more paragraphs to describe:

- ✓ What is the name of the herd? Why are they called that?
- ✓ Over what total area does the caribou herd travel during a year? Has this changed over time?
- ✓ Where are the calving grounds? Have the caribou always used the same calving grounds?
- ✓ How big is the herd? Has the size of the herd fluctuated over the past 50 to 100 years? When? Why?
- ✓ What Aboriginal peoples are connected with the herd?
- ✓ What are the main problems the herd has to deal with? For example predators, human development close to the calving grounds or in other parts of the area, deep snow in winter, too many insects in summer, etc.



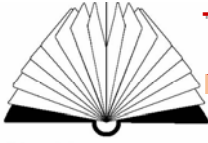
Other caribou herds Learning Activity 5

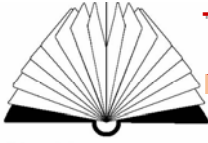
5-2: Make a map

Make a map for the caribou herd and show:

- ✓ The total area the caribou herd uses during the year
- ✓ The calving grounds
- ✓ Major rivers and lakes in the area
- ✓ Communities and other human development in the area

Put the map together with your story.



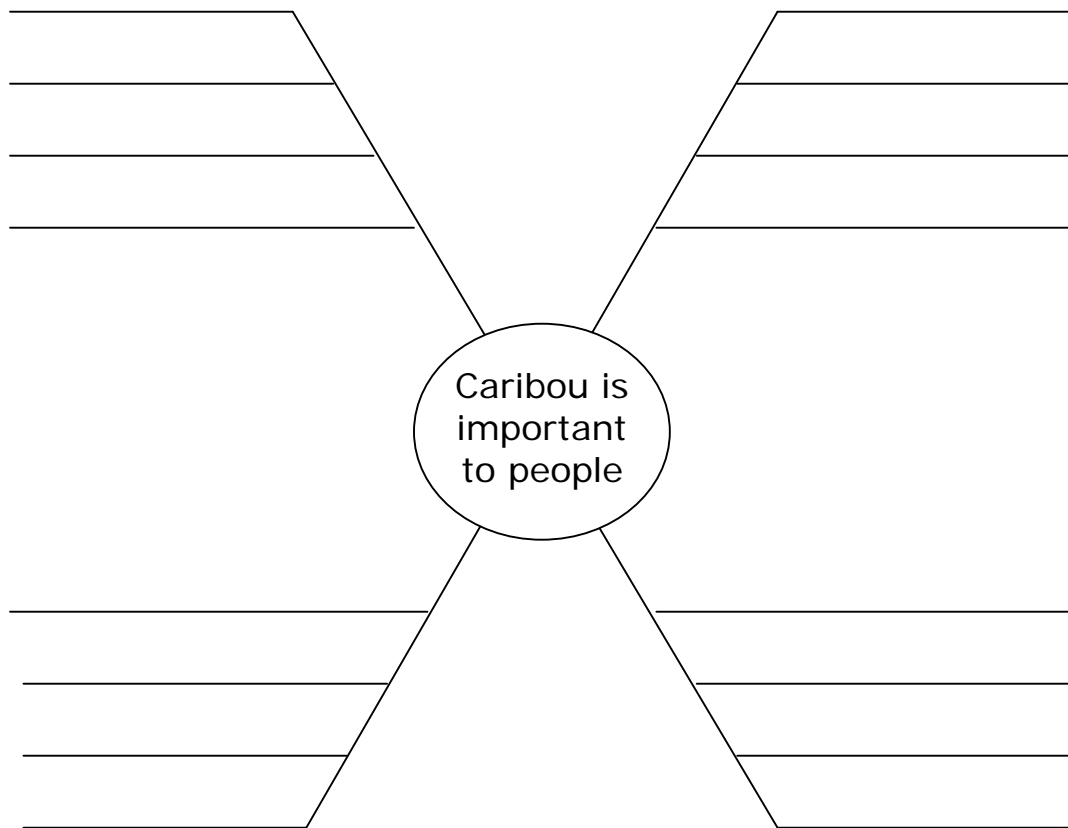


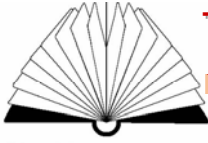
Other caribou herds Learning Activity 5

5-3: People and caribou

Use the spider map below, or make your own mind map, to identify different reasons why caribou is important for people now and in the past.

Write the main ideas, such as food, on the slanted lines that connect to the circle. Write details on the branching lines – such as why and how caribou is important to people as food.



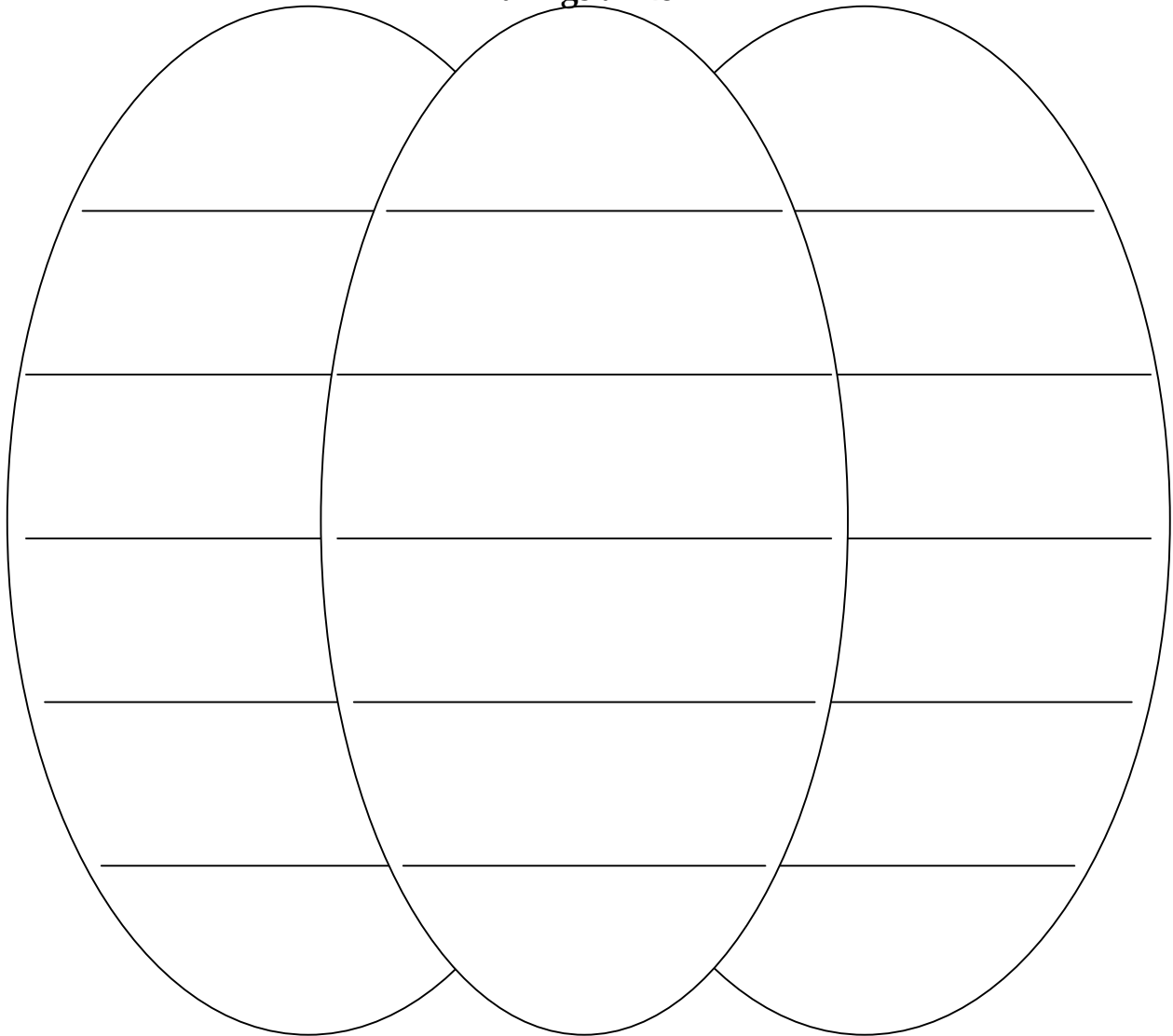


Use the information from your mind map about why caribou is important to people, and fill in the Venn diagram below. Write details in the outer circles about how things are different now and in the past. Write details in the inner circle about how things are alike now and in the past.

Caribou is important to people now

Caribou was important to people in the past

things alike





**Other caribou herds
Learning Activity 5**

5-4: Make a caribou book

Bring together all the things you wrote about caribou. Edit and rewrite each piece and put them in a binder. Give the binder a title page and decorate it.

Put all the binders on display or give them to the school or library.



Caribou – food value and more Learning Activity 6

Two handouts

6-1: Monetary value

Learners look at the monetary value of caribou meat, as the story defines it. They write the value as numbers and as words.

As a group, calculate how much meat people could buy from the store with the same amount of money.

6-2: More than monetary value

Learners brainstorm and write a paragraph about how people value caribou.

Write this statement on the board:

‘Eating caribou is worth more to people than just saving money.’

Ask learners to brainstorm what this statement means to them - their family, their community, and their culture. Write their ideas on the flipchart.

Ask each learner to write use the ideas from the brainstorm to a paragraph.



Caribou – food value and more Learning Activity 6

6-1: Monetary value

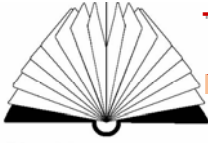
The Bathurst Caribou Project story says people in Nunavut and the NWT would have to spend \$10.7 million each year to buy meat to replace the caribou they hunt.

How many zeros in 1 million? _____

Write \$10.7 million as a number _____

Write \$10.7 million out as words. Use the words dollars, million, thousand, and hundred.

If meat was \$10 per pound, how many pounds of meat could \$10.7 million buy?



If each family eats two pounds of meat per day, how many days of meat would people have altogether?

Each year has 365 days, how many families could have meat in a year?

How does this compare with the number of families in the NWT and Nunavut?



Project Caribou Learning Activity 7

No handouts

Project Caribou is a 150-page learning package on the wild caribou of North America.

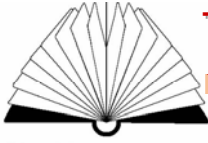
Project Caribou is an educational resource with general information and activities on caribou. It includes specific case studies on several North American herds.

<http://www.taiga.net/projectcaribou/index.html>

The Project Caribou website offers free PDF downloads:

- All About Caribou – information section with background info on caribou.
- Instructions and handouts for 17 different activities, including caribou bingo.
- Case studies for seven different caribou herds.

http://www.taiga.net/projectcaribou/activity_downloads.html



Resources

Blank, printable maps of the NWT and Canada.

- www.eduplace.com
- www.nationalgeographic.com

Information about caribou

- <http://www.arctic-caribou.com/index.html> - website of the Beverly and Qamanirjuak Caribou Management Board, with an **excellent and extensive** 'links' section.
- <http://www.rangifer.net/rangifer/index.cfm> - global update on herds in Russia, North America, Europe, as well as research projects, programs, co-management and cultural perspectives, on caribou and reindeer
- <http://www.taiga.net/pcmb/> - website of the Porcupine Caribou Management Board
- <http://www.hww.ca/hww2.asp?pid=1&cid=8&id=85> - cross-Canada viewpoint of caribou — woodland, barren ground and Peary — courtesy of the Canadian Wildlife Service.
- http://www.nwtwildlife.com/NWTwildlife/caribou/cari_boutop.htm - information on herds throughout the Northwest Territories, from the Department of Environment and Natural Resources, Government of NWT.