

GET TO KNOW

Beavers



What to expect from this educational packet

This worksheet will teach you more about beavers and the important roles they play in our communities! Through this packet, you will:

- Learn about the lives of beavers, including their relationship to droughts and fires
- Explore Indigenous cultural connections
- Do some fun activities including drawing, crosswords and word searches.
- Reflect on what you've learned with our discussion questions

Introduction

In recent years, British Columbia has had an all-time low snowpack (learn more about snowpack from our [Spring Equinox Curriculum](#)) and severe drought throughout the province. Even though British Columbia is thought to be pretty wet — drought is not only about how much rain we get, but how much we get compared to what is normal. Severe drought not only affects the water that we can drink, but it also has negative effects on our society and all beings in our ecosystem. 87% of B.C.'s electricity is through hydroelectric power, and droughts can seriously hurt our economy. It is also important to reflect on food chains and ecosystem dynamics in the face of drought; the trees that take in water, the fish that rely on streams, and the bears that eat those fish are all affected.

In terms of actions that can be taken to mitigate droughts, we can look to science, Indigenous wisdom, and one unlikely champion: the beaver!

This education package will engage learners with teachings about the life history of the beaver, and how beavers around Turtle Island (a name used by some Indigenous Nations to describe North America) are helping protect our communities from worsening droughts. This learning package was designed to supplement our *Learn to Draw Beavers* webinar with scientific illustrator Dr Julius Csotonyi.

What do you you know about beavers?

Write down some facts you know about this species, and come back at the end of the worksheet to see what you can add!



All about beavers



What are beavers?

Beavers are rodents — in fact, they are the largest rodents in North America! These beings have flat paddle-shaped tails that help them swim and pat down their dams. They are semi-aquatic and can hold their breath for up to 15 minutes. Beavers are much faster in water compared to on land. They have clunky and slow movements on land which can make them more vulnerable to predators. These predators include the wolverine, lynx, bears, coyotes, wolves and more.



Where do beavers live?

A common misconception is that beavers live in dams but in reality, they live in dome-shaped lodges. Beavers build dams to block water flow and create ponds. It's in these dammed ponds that beavers will build their lodge homes, out of reach from hungry predators. These lodges are made of trees, twigs, mud, grass and reeds. They have underwater entrances with nesting and eating chambers to help protect the young.



What do they eat?

Beavers are herbivores. This means they do not eat any meat, but rather rely on plants for sustenance. Beavers have two iconic front teeth called incisors which grow continuously throughout their lifetime. Beavers can wear down their teeth by gnawing down tree trunks. They eat many types of plants, but their favorites are the sugar inside the bark of poplar, aspen, willow, birch and maple trees.



What gifts do they have?

Beavers have many gifts. They are adept swimmers, builders, and tree choppers, but most of all they hold the gift of resiliency. Beavers are some of the first beings to come back to an area after a fire to rebuild the community. They create pond habitats that support biodiversity and in many ways teach us how to give back to our own communities.

Beaver's relationship to drought and fire

Why are beavers beneficial in droughts?

In 2023, 80% of British Columbia faced a severe drought, followed by a record-low snowpack in April 2024. Currently, many areas in B.C. are grappling with a hydrological drought, which occurs when there are critically low groundwater levels. When a fire occurs in a hydrological drought, the area of land burnt increases tenfold. While this may be grim, there's hope in the form of beavers.

These talented beings construct dams that create small pools, effectively retaining moisture and aiding groundwater replenishment. Water from beaver ponds is spread around the landscape in little channels the beavers dig. The pond water slowly seeps into the soil, keeping it wet and plants green. When wildfires come through, the beaver wetlands are too wet to burn. Can't start a fire with soggy sticks!

By mimicking the mechanisms of beaver dams, we can boost groundwater levels, mitigate droughts and reduce the likelihood of severe wildfires. Dams also help to encourage biodiversity within riparian ecosystems.



Mini-Activity: Build a beaver dam

1. You will need a container for materials, a wide shallow dish, and a container for pouring water.
2. Collect the building materials. This can be ANYTHING like rocks, twigs, mud, reeds, or get creative and use some marbles or pencils in your house.
3. Using the materials you gathered, try to build a dam like a beaver across the shallow dish.
4. Test your dam! Tilt the dam at an angle and pour the water into the pan. How much water makes it through your dam?
5. Check out your results! If some of your water went through the dam, that's excellent! Most of the time water goes through real beaver dams to allow fish to swim in or out of ponds and rivers.

Exploring Indigenous cultural connections

When we discuss beavers' impact on reducing droughts, it is also important to learn how humans have taken care of the land for countless generations. Indigenous stewardship has adapted in many ways to increased climate impacts across the landscape.

Sierra Club BC aims to honour Indigenous voices and to ensure that unique Nations and worldviews are respectfully acknowledged. While we've shared some publicly available resources below as a starting point, it's best to engage with your local Indigenous community.

Each Indigenous Nation has distinct perspectives, cultures and governance systems. This means that different communities will have different perspectives and relationships with beavers and droughts. Many Nations have websites with a wealth of publicly shared knowledge that you can check out, or you could attend a public event hosted by the community. If you don't know whose territory you live on, you can visit Native-Land.ca to learn more.



This next section includes website links for deeper learning. To explore these resources, please visit sierraclub.bc.ca/beavers-resource



Beavers create worlds

Leanne Betasamosake Simpson is a member of Alderville First Nation and is an acclaimed artist, writer, and teacher. In her book *A Short History of the Blockade*, she describes beavers — Amikwag in Ojibwe — as beings with gifts of wisdom, and as the original teachers of resistance.

Leanne writes, “And who is the first back after a fire to start the regeneration makework? Amik is a world builder. Amik is the one that brings the water. Amik is the one that brings forth more life. Amik is the one that works continuously with water and land and plant and animal nations and consent and diplomacy to create worlds. To create shared worlds.”

We invite you to read more about Amikwag with the link above.

Beavers in different languages

Learn how to say beaver in the language of the Indigenous community on whose territory you live. Visit FirstVoices.com to find words, songs and stories about beavers from different First Nations.

Activities

Watch a tutorial
on how to draw
beavers!



Draw beavers and their aquatic home!

With this activity, we encourage you to draw beavers and their habitat. If you'd like a tutorial, we invite you to watch our *Learn to Draw Beavers* lesson with the QR code above or visit sierraclub.bc.ca/draw.

Beaver

WORD SEARCH

R	E	E	D	S	C	A	P	R	I	L	Y	V	J	R	F	C	Q
U	I	N	P	C	G	R	M	C	F	M	I	Z	L	L	H	T	F
V	N	N	Q	B	W	N	T	I	P	K	J	J	A	Q	T	O	L
B	I	J	C	O	Q	U	W	Q	K	L	A	T	E	T	Z	D	E
Q	H	G	H	I	S	S	I	H	M	W	A	J	D	A	M	S	B
O	X	A	M	T	S	B	G	P	D	T	A	N	Y	D	C	T	E
M	W	I	K	S	U	O	S	P	N	R	Q	G	T	R	K	R	A
M	U	G	R	A	S	S	R	M	M	E	B	Z	R	S	G	R	V
L	O	D	G	E	V	D	O	S	U	E	O	Y	C	Q	L	I	E
N	L	X	G	H	V	A	I	A	J	S	I	J	P	Q	D	R	R
X	H	Y	D	R	O	L	O	G	I	C	A	L	Z	M	P	F	T
Q	P	X	P	H	V	T	V	P	O	P	L	A	R	E	I	F	S

Trees: Woody, tall plant with a single trunk and many branches, usually living for a long time

Twigs: Thin, and often short, branches of trees and bushes

Mud: A mix of earth and water which helps strengthen beaver dams

Grass: A type of plant with narrow leaves that grow from the base

Reeds: A hollow-stem plant that often grows near water

Hydrological: A type of drought which occurs when there are critically low groundwater levels

Lodge: The structure that beavers live in

Dams: A structure created by beavers to ensure a safe pond space

Amikwag: The Ojibwe name for multiple beavers

Beaver: Semi-aquatic rodent native to North America

April: The month after March, also the month in 2024 with a record-low snowpack in B.C.

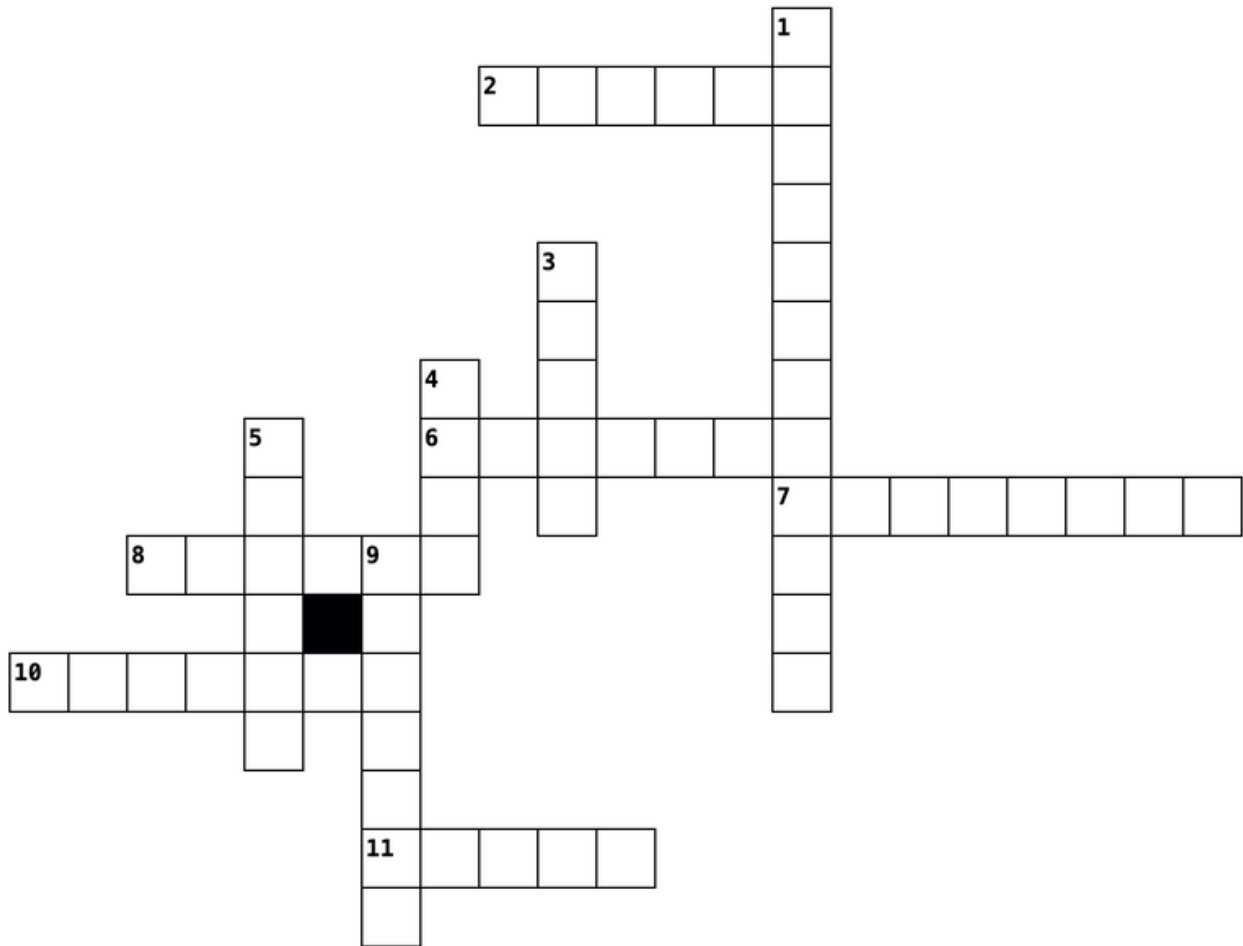
Incisors: The name of beavers' two front teeth

Plants: Photosynthetic life forms which derive energy and sugars from the sun, water and nutrients

Poplar: A type of tree favoured by the beaver

Beaver

CROSSWORD PUZZLE



Across

2. ____ percent of B.C. is currently facing a severe drought.
6. Ojibwe name for multiple beavers.
7. The name for beavers' two front teeth.
8. What do beavers eat?
10. Beavers can hold their breath for up to ____ minutes.
11. What is the structure that beavers live in called?

Down

1. A type of drought which occurs when there are critically low groundwater levels.
3. What month in 2024 had a record-low snowpack in B.C.?
4. What do beavers build to create a safe pond space?
5. What being is an incredible engineer with the capacity to reduce drought?
9. The amount of area burnt when groundwater is low compared to if groundwater was high.

Answers: 1. Hydrological, 2. Eighty, 3. April, 4. Dams, 5. Beaver, 6. Amikwag, 7. Incisors, 8. Plants, 9. Tenfold, 10. Fifteen, 11. Lodge

Discussion questions

Write down your thoughts and reflections to the questions below.

- How can we learn from the beaver? In what ways can we show dedication, creativity and persistence in our daily lives?
- We are all connected. How are you connected to other animals and plants in your community?
- Many plants and animals are being lost from our cities because of climate change effects. What are the repercussions if a species becomes locally extinct? How can we fix this?
- What are our responsibilities in preventing drought? How can we help lessen the burden of the beaver?
- Some plants and animals in this packet bloom in the face of adverse conditions. In what ways can we take note from these beings?
- What is a belief or worldview that is dissolving in you to make room for a caring future?
- What messages do you receive about our forests and fire? How can we better take care of the forests?

Keep learning with us!

We wanted to express our sincere gratitude to all those who helped breathe life into this work.

To explore our resource list and additional learning materials, we invite you to visit sierraclub.bc.ca/beavers-resource

