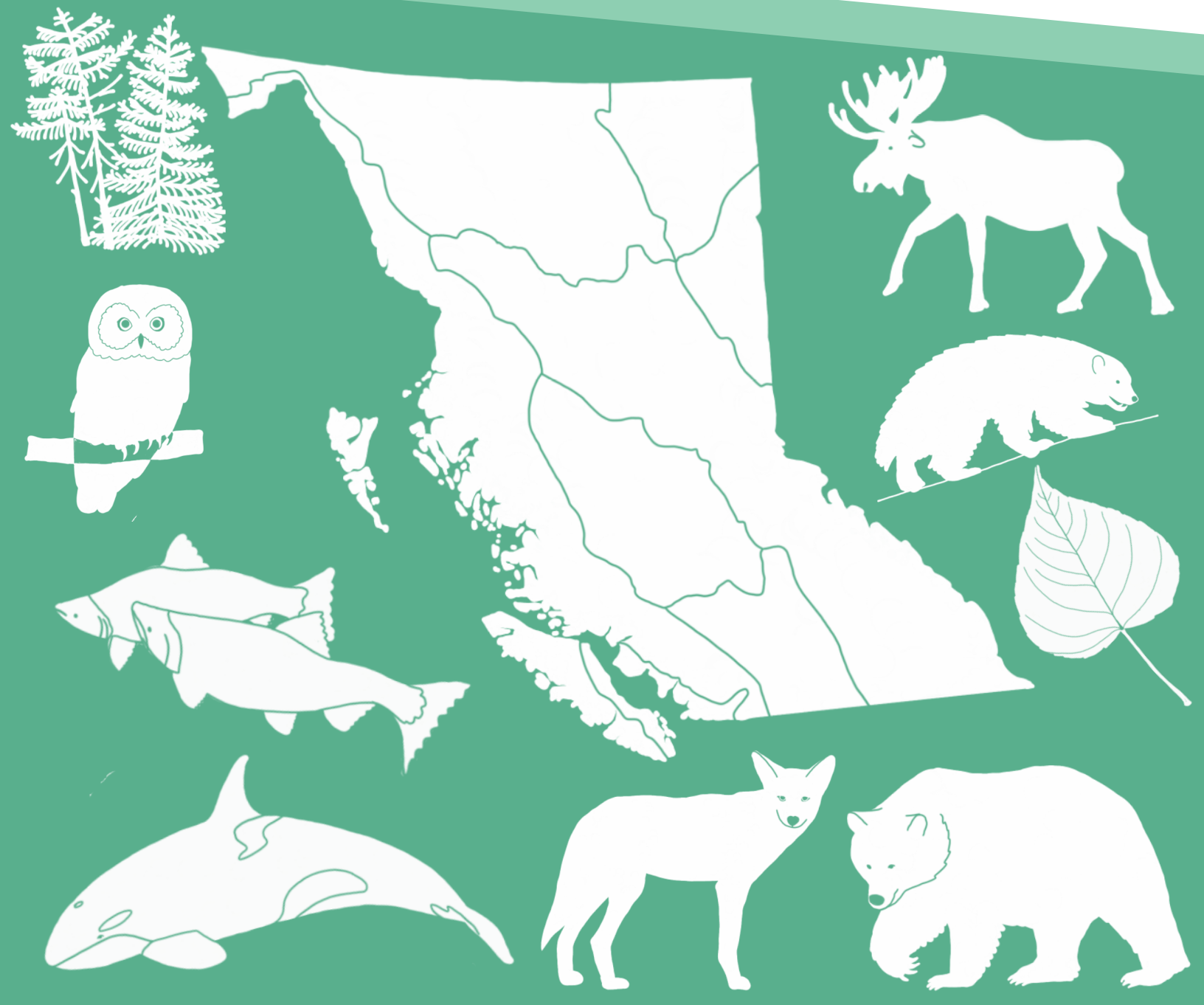
Explore Sierra Club BC's interactive

ECOMAP

SIERRA CLUB BC



Illustrations by Amira Maddison

HOW TO USE THE ECOMAP

This package is designed for middle school students in grades 6-8. Students will be using the EcoMap found on the Sierra Club BC website as a tool to support their learning about B.C.'s ecoprovinces.

To access the EcoMap visit the Sierra Club BC website at:
sierraclub.bc.ca/ecomap

How to start using the EcoMap: Hold your cursor over a number (1-9) on the map and you will see the name of the ecoprovince pop up. It will ask you if you live near a city in that region and if you do, to click on that ecoprovince to learn more. You can explore all of the ecoprovinces, but choose one to start off with to complete this package.

The EcoMap tool will help you learn about the fascinating beings that live in B.C.'s various 'ecoprovinces,' including traditional Indigenous uses of and connections to these lifeforms. There is even a glossary with vocabulary specific to nature.

What is an ecoprovince? It's an area that shares similar climate, landscapes, animals and plants. B.C. has nine ecoprovinces, each with special features that make it different from anywhere else in the province. The ecoprovince you live in is connected to every other ecoprovince through the air, water and animals that move from place to place.

This EcoMap will help you learn about the amazing plant and animal beings in your ecoprovince and those of other ecoprovinces of B.C. too! You can read about each being's appearance, life cycle, habits and if they are endangered.

Many First Nations have lived in each of these areas since time immemorial. They have longstanding relationships with these plants, animals and places. This EcoMap is a starting point for learning about how Indigenous communities have traditionally used and continue to use many plants we know in B.C. today.

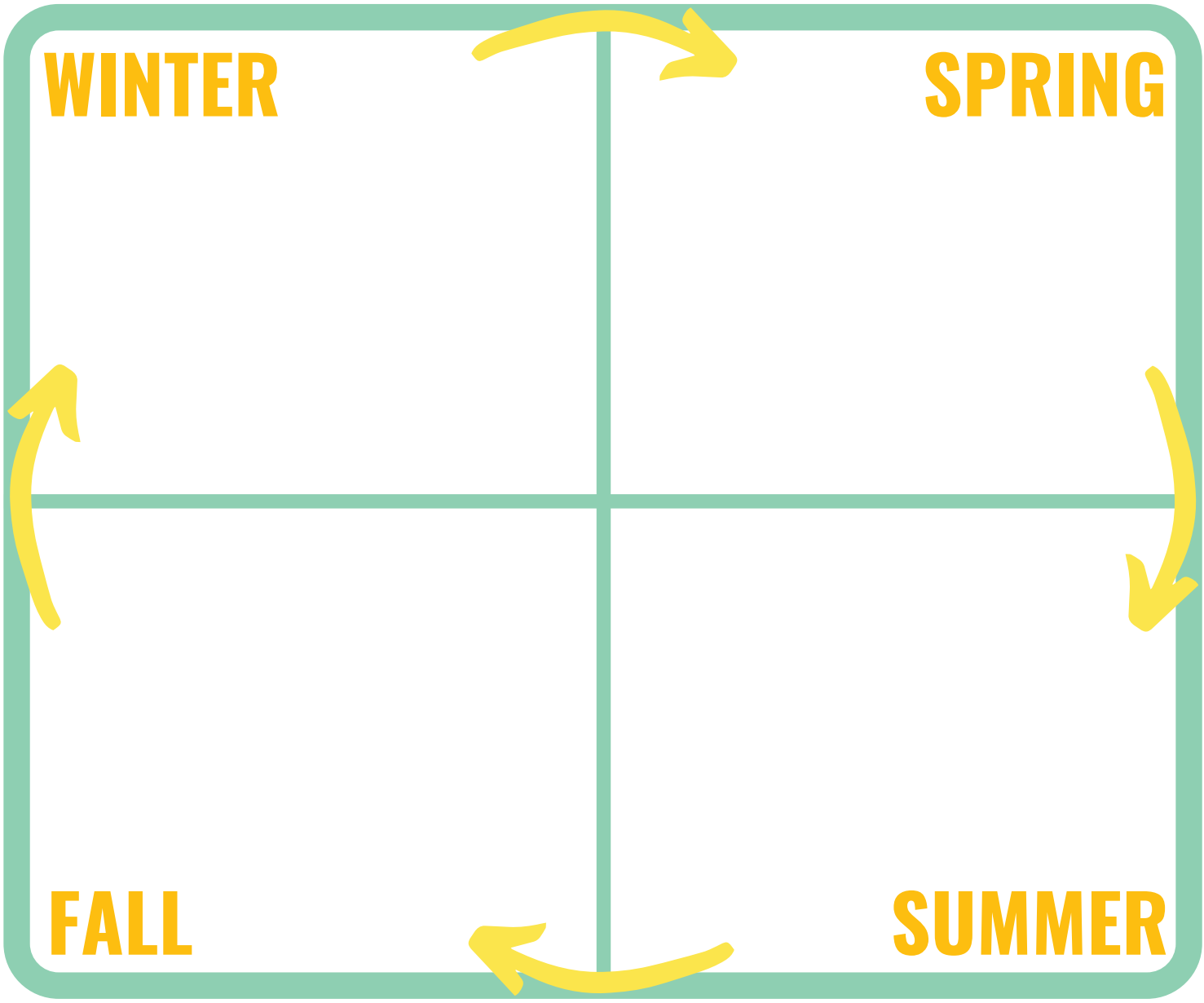
Using the glossary: If you find words that are new to you, click on the Glossary to find a list of words with their meanings. The glossary will open up in a new window so you can keep it open while exploring plants and animals.

The link for the glossary can be accessed on the title page under "Explore Ecoprovinces in B.C." or at *sierraclub.bc.ca/ecomap/glossary/*

CLIMATE IN YOUR ECOPROVINCE

Chose an ecoprovince to focus on for this package. Part of what makes each ecoprovince unique are the different climates in each. The weather is the current conditions; whether it is will be rainy or sunny when we wake up in the morning. The climate gives a big picture about the overall patterns of weather in a specific area.

Using the information on the ecoprovince of your choice, create a climate calendar. For each season (spring, summer, fall, winter) make a small illustration that shows the climate for that season in your ecoprovince.



Add more details to your climate calendar using the Government of Canada's Climate Normals and Averages. Scroll through the list to find a weather station that falls within the ecoprovince of your choosing. Click on it to see Daily Maximum Temperature, Daily Average Temperature, Daily Minimum Temperature, and Precipitation.

climate.weather.gc.ca/climate_normals/station_select_1981_2010_e.html?searchType=stnProv&lstProvince=BC

CONNECTING WITH THE INDIGENOUS TERRITORIES

Check out *native-land.ca/* to learn more about Indigenous territories in the ecoprovince.

Click somewhere on the map that falls under your ecoprovince. Once you have clicked on a territory, find the language that is spoken there. Click the name of the territory on the left-hand side of the screen OR change the toggle in the upper top left-hand side of the screen to show language groups instead of territories.

Try learning a new word for a plant or animal in the local Indigenous language for this ecoprovince.

- Once you know the name of the language that is spoken in the territory, visit the First Voices website at *firstvoices.com* to learn a new word.
- Click at the top of the page on “Explore Languages” and then click on “Learn our language”
- First, listen to the word. Then practice saying it. Listen again and practice saying it again.
- Write the word in the local language and its translation here:

Then, learn a new phrase in the local language. Click on the button for ‘phrases’ (there is a separate list from the list of ‘words’). Choose one that you do not already know. Write the phrase and its translation here:

Languages grow out of the culture of the peoples who speak them. Take a moment to reflect on how your language reflects your culture and your cultural values.

BEING ID CARD

Using the template on the next pages, **create identification cards** for three plants and/or animals specific to the ecoprovince you are exploring. Gather as much information as possible from the EcoMap for your card. Draw an illustration of the being and be sure to include lots of detail!

DID YOU KNOW?

Keystone species help hold ecosystems together. These species have a larger effect on the ecoprovince they live in than other species. This means that if a keystone species is impacted by overhunting or climate change, there is a huge impact on the whole system! *What are the keystone species in this ecoprovince?*

Some examples of keystone species include: Grizzly Bears, Wolves and Orcas

Extra challenge: create a species ID card for an invasive species from that ecoprovince!

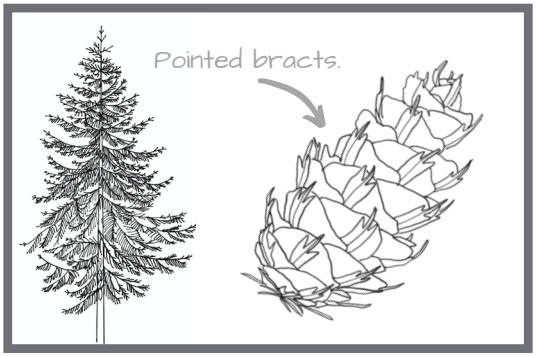
What is an invasive species? It is an introduced species that is non-native to an ecosystem and whose introduction causes environmental harm.

Example: Himalayan Blackberries may be sweet and delicious! However, they are an invasive to the Coast Mountains, Georgia Depression, Southern Interior and the Southern Interior Mountains ecoprovinces. They can quickly grow to dominate over plants native to an area.

Tip: Check out iNaturalist.org for even more details on the plant or animal you choose.

NAME OF BEING: Douglas Fir

NAME OF BEING IN A LOCAL INDIGENOUS LANGUAGE: xa̱xw'mas (Kwak'wala)



APPEARANCE:
Grows up to 85m! Pointed bracts in cones

RANGE & HABITAT:
Wide range including western Canada.

DIET & BEHAVIOUR:
Photosynthesis! Fun fact: not a true fir!

LIFECYCLE & THREATS:
Quick growing tree. Can survive fire.

USES: Snowshoes, firewood, edible seeds, Building material for beams and floors...

NAME OF BEING:

NAME OF BEING IN A LOCAL INDIGENOUS LANGUAGE:

APPEARANCE:

RANGE & HABITAT:

DIET & BEHAVIOUR:

LIFECYCLE & THREATS:

USES:

NAME OF BEING:

NAME OF BEING IN A LOCAL INDIGENOUS LANGUAGE:

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RANGE & HABITAT:

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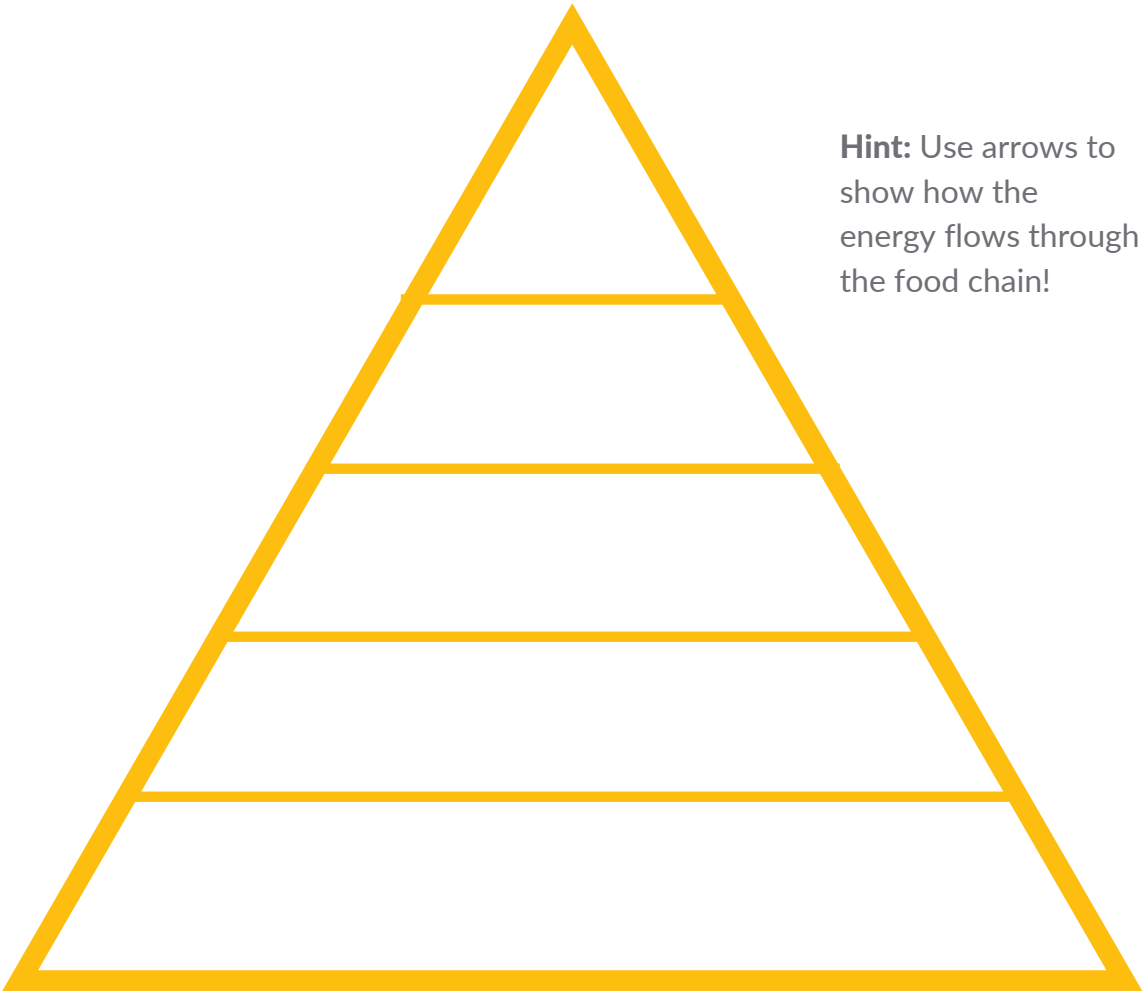
LIFECYCLE & THREATS:

USES:

ECOPROVINCE FOOD CHAIN

Create a food chain for your ecoprovince: Food chains show how an ecosystem is linked together by food sources. A food chain is useful because it shows how species are connected, and the flow of nutrients throughout an ecoprovince.

To create a food chain, start at the top. Beings at the top of the food chain have few or no predators. Once you have found the beings at the top of the food chain, work your way down by reading what each being eats! Use the information from the EcoMap to guide you.



Hint: Use arrows to show how the energy flows through the food chain!

FOLLOW-UP QUESTIONS:

If you were to cross out one member at the base of the food chain, what would happen to the rest of the species?

In this region, what are some factors that are impacting the survival of one or many of the species in the food chain?

If humans were introduced into the food chain, what role would they play?

CLIMATE CHANGE CONNECTION

What is climate change? Climate change refers to the significant changes in average weather patterns (i.e. precipitation, temperature, wind and other indicators) that persist within a climate system, caused directly or indirectly by human activity.

Provide three examples of human activities that cause climate change:

-
-
-

DID YOU KNOW?

Recently (late April 2020) a flood watch has been issued for communities across B.C.'s central and northern Interior, as rising temperatures are expected to lead to increased snowmelt and rising river levels.

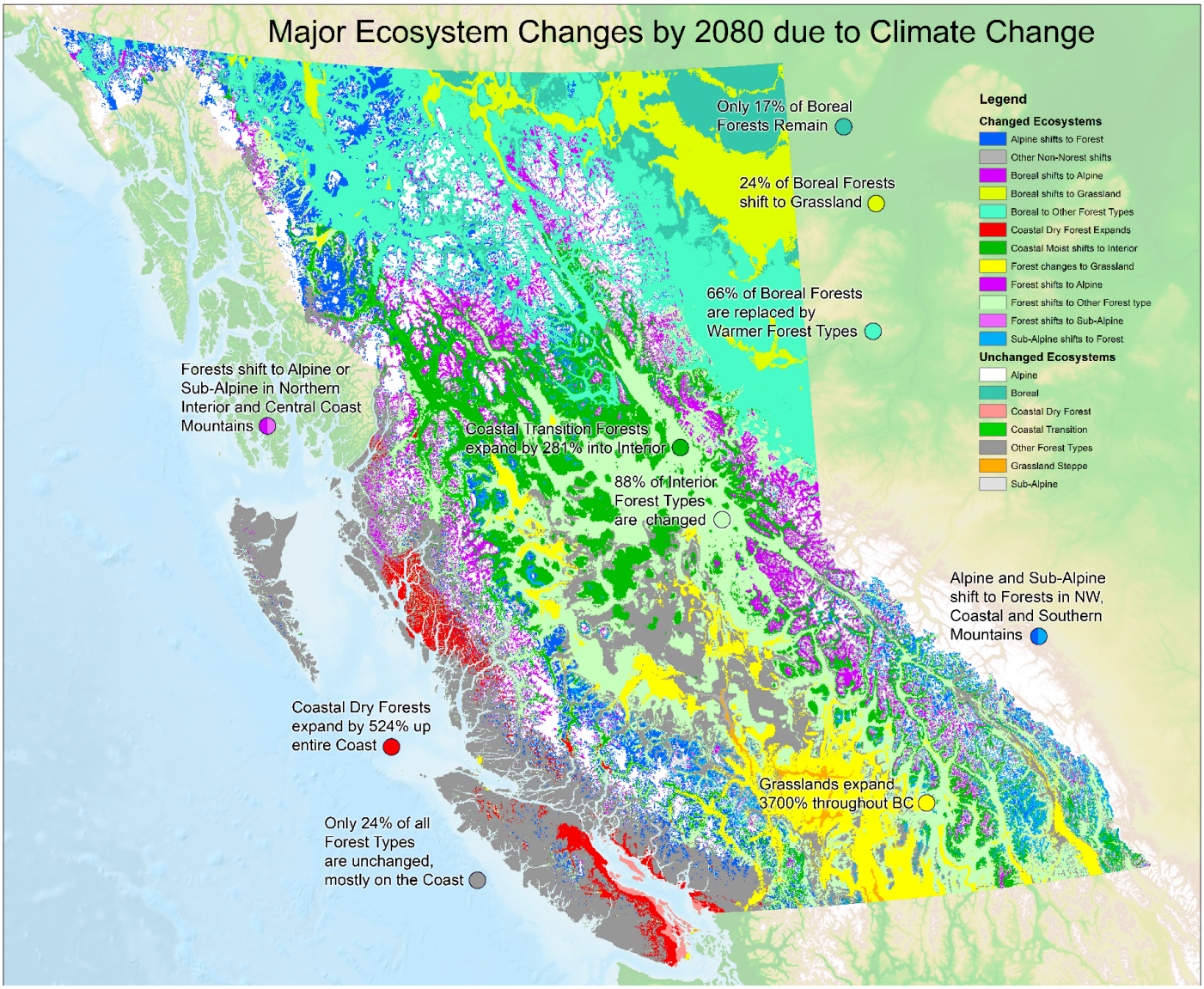
We are all impacted by climate change! Each region is impacted by the effects of climate change in drastic ways. In B.C., impacts of climate change include forest fires, drought, insect breakouts, floods, severe storms, glaciers melting and extreme temperatures.

What do you think is the biggest impact of climate change for this ecoprovince?

What species are going to be impacted the most by climate change?

Start by picking one impact of climate change. Feel free to use the examples that have been provided and one you are familiar with. Next, refer to your food chain illustration. Add to your illustration by using words or pictures to describe how this particular climate change impact affects each of the species specific to this ecoprovince.

CLIMATE CHANGE CONNECTION



Write down the most obvious changes you see happening for the ecoprovince over the next few decades:

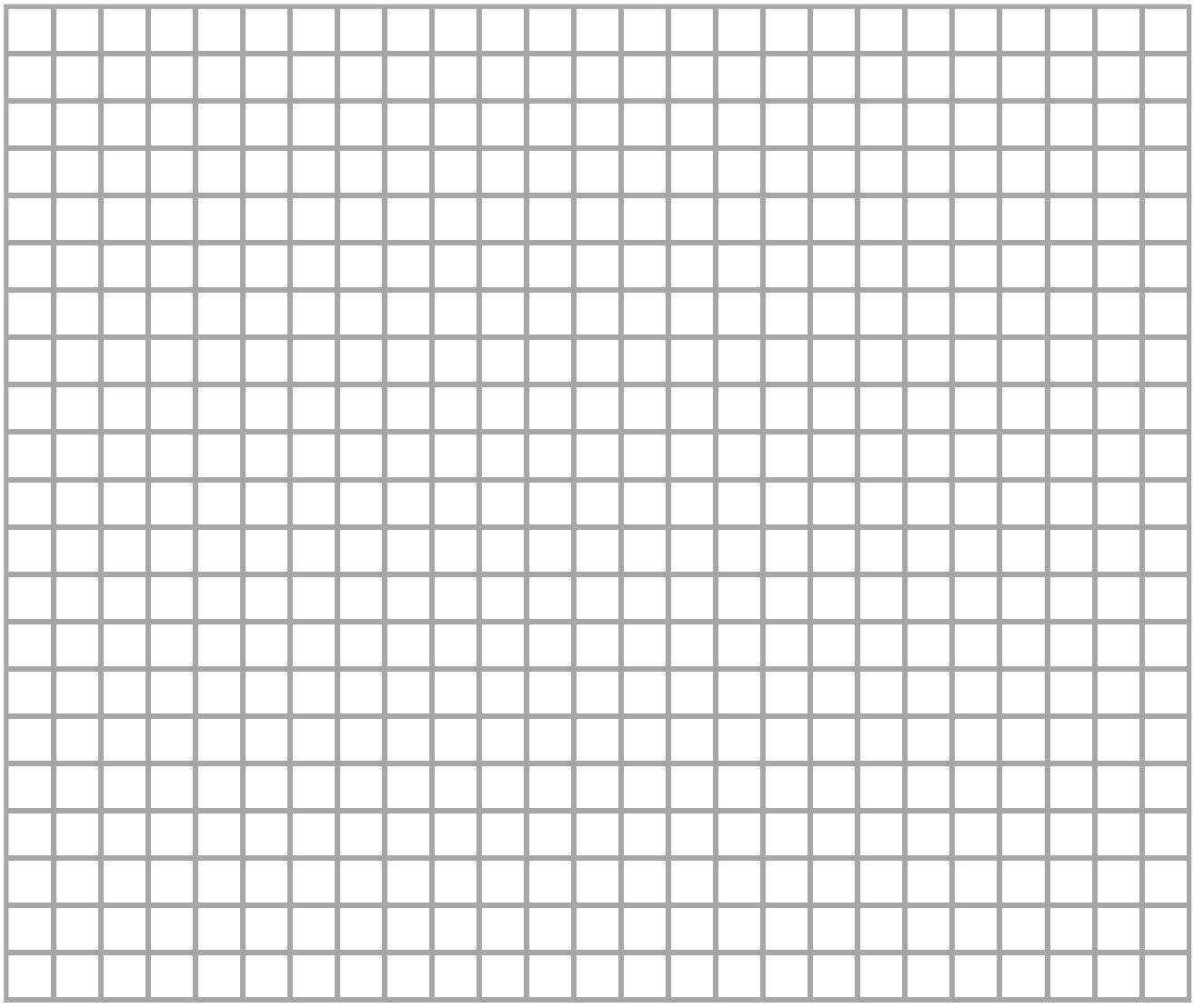
How will these changes in an ecosystem impact the species currently living there?

DID YOU KNOW?

Species that are most vulnerable to become extinct due to these changes are those with small populations or that are slow to leave an area. Other reasons for risk are the needs of species to live at certain elevations, having limited habitat available or habitat that only occurs in small patches, which makes it challenging to move between habitats.

ECOPROVINCE WORD SEARCH

Create your own word search! Pick ten plants and animals or new words you learned from the ecoprovince and fill them into the word search template. Copy those names in the blank spaces below the word search. Once you have put those in, fill the rest of the boxes with letters at random until all the boxes are filled. Once finished, challenge someone in your family to try and find all the words!



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ECO-ART

Ecoprovince snapshot drawing activity – As an expert in this ecoprovince, create an illustration that captures what makes this place special and unique! Remember to include details about climate, plants and animals.

Extra challenge: Include a fun fact about each plant or animal that is in your snapshot!

LINKS AND RESOURCES

Local field guidebooks are a great way to learn more about a region!

Here are some suggestions to help get you started:

Plants of the Pacific Northwest Coast, Washington, British Columbia & Alaska by Jim Pojar & Andy MacKinnon

A resource easy to take outside is a set of *Pacific Northwest Plant Knowledge Cards*, available through Strong Nations bookstore.

Plants of Northern British Columbia by Andy Mackinnon

Plants of Southern Interior British Columbia and the Inland Northwest by Roberta Parish

British Columbia Nature Guide by Erin McCloskley & Gregory Kennedy

Check out the BC Bird Atlas for ID and bird calls *birdatlas.bc.ca*

iNaturalist – This is a cool app! You can post a photo of a being if you are not sure what species it is, and other people can write back to you. Have fun exploring and sharing your observations. Download the app onto a phone or tablet. *inaturalist.org*