

EDUCATIONAL LEARNING RESOURCES: ENDANGERED SPECIES

At Sierra Club BC we see the importance of educating youth on the serious conditions facing many species in our province. Without access to knowledge, youth will likely continue with habits that have been compromising our planet's future for generations.

BC is Canada's most species-rich province with over 5000 different kinds of plants, 1,000 vertebrates (fishes, amphibians, reptiles, birds, and mammals), 60,000 insects and 10,000 fungi. In BC there are approximately 1,900 species and sub-species presently at risk according to the BC Government's Conservation Data Centre. There is currently no stand-alone endangered species legislation. Studies show that the existing system of species management is not working. Sierra Club BC's current Endangered Species campaign is asking the BC government to create one law to protect all endangered species.

When teaching youth about endangered species the key concepts that we present start with basic knowledge. The following definitions are can be useful:

- ❖ **Endangered** – Any plant or animal species whose ability to survive and reproduce has been jeopardized; in danger of becoming extinct.
- ❖ **Extinct** – No longer left existing or living.
- ❖ **Habitat Requirements** – All animals require food, water, shelter and space.
- ❖ **Food Chain** – A series of steps in which one group of plants or animals serves as food for another, and these, in turn, for another. For example, a green plant may be eaten by an insect and the insect may be eaten by a bird.
- ❖ **Keystone Species** – A species that is integral to the ecosystem where it lives. If we remove a keystone species from an ecosystem it means that almost all, if not all, of the animal and plant species in the system will be affected.
- ❖ **Old-Growth Forest** – A forest that has undergone at least two centuries of natural succession. They are identified by: trees of at least two species, including several large, living Sitka Spruce and/or other coniferous trees that are at least 200 years old or more than 32 inches in diameter; a multi-layered canopy; standing dead trees and large fallen trees on land and in streams.

What are the main causes of species extinction?

Habitat loss – When habitat is gone, not only do species lose food, water and shelter but they also can't reach their friends in other patches of wild spaces.

Introduced species – Once an exotic species makes its home here it takes the space of the native species and has no natural predators to keep it under control.

Overuse of plant and animal species – Hunting or using up more animals faster than they can replace themselves, leads to species extinction.

Pollution of the water, soil and air – Just because you can find chemicals on the store shelf doesn't make them healthy to put down your drain or in the ecosystem.

Global climate change – Air pollution changes the climate and many animals can't adjust. Scientists estimate that in 50 years polar bears will be extinct due to melting ice in the arctic.

Fragmentation – Splitting ecosystems into smaller, detached areas as a result of road building, farming, suburban development and other activities. This can isolate wildlife populations and may result in areas too small to meet some habitat requirements.

SOME B.C. ENDANGERED SPECIES

Spotted Owl – Only 6 breeding pairs of Spotted Owls remain in Canada – an 87% decline since 1992. The Federal Government refuses to protect them while the BC Government continues logging in their critical habitat. The main threat affecting this species is habitat loss.



Vancouver Island Marmot – One of the world's rarest mammals; it is found only on Vancouver Island. They are different from their mainland cousins in a number of ways, mostly that they're a different colour (a rich chocolate brown with white muzzle, chest and abdomen), and they use different vocalizations (they whistle like no other marmot!). Logging roads and newly-cleared mountainsides give predators (wolves and cougars) easy access to the higher elevations where the marmots live. Threats also include golden eagles hunting in high elevation clearcuts; (something not recorded before extensive logging practices).

Marbled Murrelet – A small seabird which nests in the coastal, old-growth forests. It is listed as a threatened species under the Endangered Species Act. Unlike other seabirds, murrelets do not form dense colonies, and may fly 70 km or more inland to nest, generally in older coniferous forests. More commonly found inland during the summer breeding season, but they make daily trips to the ocean to gather food, and have been detected in forests throughout the year. The habits of the murrelet make this bird vulnerable to forestry practices, gill netting, and habitat destruction.



Mountain Caribou – are found in the Yukon, Northwest Territories and in central/northern BC with a small pocket in the Central Interior's Chilcotin. Mountain caribou populations have declined by 40% over the past decade because of habitat loss and fragmentation due to logging. They depend on old growth forests for their winter survival. Predators include wolves, cougars, bears and wolverines.

Vancouver Island Southern Resident Orca Whales –

This group of killer whales is located on Canada's Pacific coast, and is a naturally small population with less than 100 animals. Concern exists for the quality of the whales' habitat, with main concerns being availability of prey, human disturbance and pollution. These killer whales eat only fish, especially salmon. Of the five salmon species in BC, they selectively prey on Chinook salmon (listed as threatened). They are also affected by sources of pollution, including pulp and paper mills, marine waste dumping sites, agricultural and garden products, fire-retardant chemicals and sewage.

Sharp-tailed Snake – In Canada, this snake is found only on the Gulf Islands and on southern Vancouver Island. These populations are small and isolated, and are vulnerable to human disturbance, natural catastrophes, and chance events. The rarity of these snakes, combined with the loss and fragmentation of their forest habitats, raises concerns about the persistence of the species in BC.

ACTIVITY ONE: AWAKEN THE SENSES SCAVENGER HUNT

Purpose

- To engage students through exploring the natural world
- To increase their understanding of the connections between plant and animals

Activity Overview: A great activity to get students excited about exploring their surroundings and using their senses to learn about interconnectedness.

Materials: Scavenger Hunt Sheet, Clip board, Pen, an Imagination!

Time: 25 minutes

Procedure

1. Warm-up (5 min)

Stand in a circle and awaken the groups' senses before exploring the environment. What are our five senses?

- Ask the students to close your eyes and reach out with their ears and count all the different sounds they can hear. What did they hear?
- Have them close their eyes again and use their noses to smell the nature smells around them. Big deep breaths in through your noses. What did they smell?
- Have students turn their backs to the group and look from their feet up in to the sky, taking in as many plants and animals as possible. Do this SLOWLY.
- Ask the students what senses are left and then discuss whether it is a good idea to taste things in nature (*Potential danger (poison), endangered plants*).

2. Scavenger Hunt (20 min.)

Explore for about ten minutes, pointing out different habitats, smells, sounds, textures, colors, plants, and animals. Talk about how things in nature are connected.

For each micro-habitat that is visited, the group will refresh what makes good habitat (*i.e. food, water, space, shelter*).

Sample scenario:

- Look up in the sky. What do they see (clouds, bird, rain)? Discuss what clouds make, why rain is important to plants and what or who needs plants.
- Challenge them to make connections and make it fun. For example, if you were examining the grass, ask who might live there (*snails, earth worms, etc.*).
- Have everybody squiggle like an earth worm. What might eat a worm (*eg. robins*)? →Have them act like a robin including sounds. Where do robins live (*trees*)? Travel (*fly*) to the nearest tree and examine the tree. →Have them pretend their arms are branches. Ask what they need to grow, who else might live in their branches (*eg. squirrels*). → Have them pretend they are squirrels.
- Linking areas in nature will help the students see the interconnectedness of our environment and begin building ecosystem awareness.
- Have the groups share what they have seen, smelled, heard and touched.

ACTIVITY TWO: MINIATURE HIKE

Purpose

- To closely examine a small section of the forest ecosystem
- To visualize some of the lifestyle habits of various forest floor critters

Activity Overview: This activity challenges youth to be creative and imaginative about the life of small creatures on the forest floor. Youth will have some quiet time to look closely at a small section of nature and imagine what might happen there.

Materials: 1 Length of rope or twine 4 – 6 feet long for each team or individual

Time: 15 minutes

Procedure

- Once in the forest explain that today we are going to create our own tours for each other! Each student or pair of students will be given a rope and they will explore the area and plan a miniature hike along their length of rope.
- The students will come up with four or five stops. Encourage super creativity – slug homes, ancient moss, mushrooms, nurse logs, mouse homes etc.
- Have students share their hikes with each other. Ask the students to give some reasons why their stops are important and unique to them.

ACTIVITY THREE: ENDANGERED SPECIES WILDLIFE TAG

Purpose: To help students remember the names of endangered species.

Activity Overview: A fun, running game that will help students remember the names of some of BC endangered species. This activity follows well after the scavenger hunt.

Materials: Area markers to mark game area

Time: 15 minutes

Procedure

- This game is similar to frozen tag. Except, just before someone's touched, they need to yell out the name of an animal or a plant that lives in BC. If they do they are safe and can't be tagged. If they don't and are touched, then they are frozen.
- You may want from one to three people to be it. At the beginning of each round, stand the "it" students together and make sure the others know who they are.
- They can then start running around trying to touch people. Another student needs to go under their arm to un-freeze them.
- Start by having students say animals and plants from BC or animals and plants that live in the temperate rainforest.
- Have each round last 4-5 minutes. In each round choose new students to be it and narrow the animals allowed and/or add new rules. For example, you might get them to slithering like snakes while trying not to be tagged.

Endangered Species Variation: Now they can only say ones that are endangered!

- Brainstorm as a group what a few of those are before playing.
- In the next round make the playing area smaller. Explain that the habitat is inaccessible due to human development. How do the students feel? Is it much easier to be caught? Emphasize that this is the main reason why species are going extinct. Ask what we can do to prevent habitat loss from occurring at the present rate (*i.e. Build higher not wider, use space efficiently, plant native species, etc.*).



ENDANGERED SPECIES LEARNING RESOURCES

PRINT

Sierra Club BC has a number of elementary and secondary resources available to teachers, including our ***TRFic! A Temperate Rainforest Teachers Guidebook and Poster***.

Downloadable PDF guidebooks: The *For Educators* section of our website has a number of resources, including recommended web links and downloadable guidebooks. The direct link to this is:

http://www.sierraclub.bc.ca/education/ed_educators.

WEBSITES

<http://www.protectbiodiversity.ca/homepage/> - A coalition campaigning for a species and ecosystems protection law in BC. The website has a lot of great information about BC's species and ways to take action.

<http://organizingforchange.org/> - This site provides ideas for taking action.

www.cosewic.gc.ca/eng/sct5/index_e.cfm - This is the government website that lists species at risk for various areas.

Take action by writing to your MLA you can find the address at

<http://www.leg.bc.ca/mla/index.htm>.

ENVIRONMENTAL GROUPS

Wilderness Committee - This not-for-profit organization has offices in Victoria, Vancouver, Winnipeg, and Toronto, and welcomes volunteers! It is a great resource when trying to gather further endangered species information. Their webpage is:

www.wildernesscommittee.org.

World Wildlife Fund Canada (WWF-Canada) has been active for many years and runs the rare plant rescue program. **www.wwf.ca**.