



Habitat Fragmentation in B.C.

Grade 9 Lesson Plan

Lesson #4: Habitat Fragmentation in B.C.

Duration: 90 mins

Subject: Social Studies

Topic: Human Impacts to Wildlife require Human Solutions

Overview

Students explore the Yukon to Yellowstone Conservation Initiative and the disturbances to wildlife habitat caused by human development and industry. Students conduct their own research to identify which stakeholders are contributing to habitat fragmentation and determine necessary measures to address the issues.

Lesson Objectives

Students will be able to:

- Conduct research using web-based resources to find solutions to the problem of habitat fragmentation
- Develop an opinion with respect to habitat fragmentation
- Explain the importance for preserving connected migration pathways that allow wildlife (especially keystone species) to move freely in pursuit of food and reproduction opportunities
- Make real life connections to local environmental concerns in the Tumbler Ridge UNESCO Global Geopark (TRUGG) to protect flora and fauna

Curriculum Connections

Please see the *TRUGG Education Toolkit Curriculum Connections Matrix* for specific connections of this lesson to the B.C. Curriculum for Grade 9.

Materials

- Class set of computers/laptops with access to the Internet
- Yukon to Yellowstone Conservation Initiative Website: <https://y2y.net/vision/why-y2y>
- *Critical Thinking – Habitats* Activity Handout
- *CSI Report* Student Handout

Teacher Prep

- Arrange access to laptops/computers, the Internet and other resources to support independent research.
- Print, photocopy (one per group) and cut up of the *Critical Thinking - Habitats* Activity Handout.
- Print and photocopy a class set of the *CSI Report* Student Handout.
- Review the *Tumbler Ridge UNESCO Global Geopark* Teacher Backgrounder.

Background Information

Habitat fragmentation is often the result of human encroachment (residential, industrial and urban development) on the natural landscape to a point where wildlife (such as grizzly bears) can only live in protected and isolated areas. Encroachment, often in the form of roads, railways, pipelines, and industrial projects, often leads to an inability for animals to travel freely to find appropriate food sources and mates.

Without a food source and mates, the population's mortality rate increases and their genetic diversity may become impacted. In worst case scenarios, inbreeding or hybridization may occur, both decreasing the population's chances of long term survival and leading to major consequences for the ecosystem food webs to which they belong.

The Yukon to Yellowstone Conservation Initiative is an organization dedicated to maintaining wildlife habitats in the Rocky Mountain corridor (from the Yukon down to the Yellowstone), especially those that are key animal migration pathways. The organization works with many Indigenous groups, scientists, conservation groups, businesses, and local communities all along the Rocky Mountain corridor to ensure that the habitats are properly protected and maintained appropriately for wildlife. Grizzly bears are of primary concern for the Yukon to Yellowstone initiative due to their status as a top predator throughout the Rocky Mountain corridor.

Encourage students to think critically and communicate effectively about the impact of human development and activities on other species and their habitats, and how we might take action to ensure the long term survival of these species. Students can work in partners or groups on this assignment, as desired, and will need to have access to the Internet and/or the library.

Please see the *Tumbler Ridge UNESCO Global Geopark* Teacher Backgrounder for more background information and details on the Geopark.

Lesson Activities

Introduction/Hook:

1. Divide students into groups of four. Distribute the slips of paper from the *Critical Thoughts – Habitat Activity Handout* so that each group member has a different question.
2. Ask students to spend five minutes reflecting on the question then discuss each question in the groups.
3. Once students have finished their group discussions, facilitate a brief class discussion for each question.
4. Explain to students that the concept they are discussing is known as habitat fragmentation, an issue that is affecting both the grizzly bear and woodland caribou populations in Northeastern British Columbia

Activity 1:

1. Present the Yukon to Yellowstone Conservation Initiative website to students, and explain that they will access this website to complete this activity.
 - Yukon to Yellowstone Conservation Initiative website: <https://y2y.net/vision/why-y2y>
2. Distribute the *CSI Report Student Handout* to students and review it with the class. Introduce that students will complete an investigation into how different human activities affect grizzly bears and come up with an action plan on how to limit our impact on the species.
3. Working independently or in pairs, have students conduct research using the Internet and other resources to complete their *CSI Report Student Handout*.

Closure:

1. Have students sit in a circle around the class, and facilitate a sharing circle to review and reflect upon their learning in this lesson. Some suggested sharing circle prompts include:
 - a. Ask each student to come up with one word that describes how they feel about their learning.
 - b. Ask each student to come up with “two stars and a wish” related to what they learned today.
 - c. Ask students to come up with one idea on how they can personally limit their own contributions to habitat fragmentation.

Assessment/Evaluation

- Observe the students during the hook and other lesson activities, and assess their ability to access prior knowledge, conduct research effectively and work cooperatively in groups.
- Review and assess each student's *CSI Report Student Handout*. Circle "CASE CLOSED" if the students have completed the handout to expectations, and "CASE OPEN" if their work is not up to expectations.

Extensions

- Have students write letters to a chosen industry to share their learning about habitat fragmentation and what they feel the industry could do to help.
- Further explore the maps and other resources on the Yukon to Yellowstone Conservation Initiative website, and discuss several of the other issues related to wildlife conservation (e.g. climate change).