



RECREATION AND CONSERVATION (Part I)

GRADE Grade 7

PART 1 of 3

TOPICS Habitats, species, conservation, stewardship

CURRICULAR CONNECTIONS

Grade 7 Science

Unit A – Interactions and Ecosystems

1. Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
 - Identify examples of human impacts on ecosystems, and investigate and analyze the link between these impacts and the human wants and needs that give rise to them
 - Analyze personal and public decisions that involve consideration of environmental impacts, and identify needs for scientific knowledge that can inform those decisions
4. Describe the relationship among knowledge, decisions and actions in maintaining life-supporting environments
 - Identify intended and unintended consequences of human activities within local and global environments
 - Analyze a local environmental issue or problem based on evidence from a variety of sources, and identify possible actions and consequences

OVERVIEW

While it is no secret that human activities pose a threat to wildlife populations around the world, there are some activities that we often consider complementary to conservation, including nature-based recreation. In this lesson students will delve into that assumption in order to better understand the impact that different forms of recreation could have on wildlife in the Bow Valley.

OBJECTIVES

- Students will understand the ways in which nature-based recreation can disturb wildlife
- Students will understand how wildlife adapt to human activities
- Students will understand the concept of carrying capacity with respect to people and the natural environment

KEY TERMS

- **Carrying capacity** – the number of people (or other organisms) that a region can support without environmental degradation
- **Disturbance** – a change in the environmental conditions that causes a change in an ecosystem such as mortality or changes in species distribution
- **Environmental stewardship** – the responsible use and protection of the natural environment through conservation and sustainable practices
- **Species Interaction** – the effect that individuals living together in a community have on each other, either between the same species (intraspecific) or different species (interspecific)

GUIDING QUESTIONS

- How might different types of nature-based recreation such as hiking and biking disturb wildlife?
- Are recreation and wildlife conservation compatible with one another?

BACKGROUND ESSAY

Human activities pose a threat to wildlife populations around the world. Declines in the amount and quality of suitable habitat have led to large declines in population sizes. In the Bow Valley, the protected areas of Kananaskis Country and Banff National Park that surround towns seek to protect natural ecosystems and the wildlife that live and move through them. At the same time, many parks have the stated goal of improving humans' quality of life through nature-based recreational opportunities such as hiking, mountain biking and hunting. In countless cases the public demand for outdoor recreation is a major driver for land protection.

Many people refer to Kananaskis Country as “Calgary’s Playground.” This protected area was originally established both as an ecological reserve **and** recreation area. Vast networks of trails exist primarily in



valley bottoms, where recreationalists – hikers, bikers, campers – compete for space with wildlife, including grizzly bears. It is in these same valley bottoms that many foods that are favoured by bears grow, such as buffaloberry and cow parsnip.

Environmental stewardship is widely understood to be a guiding principle for residents of communities throughout the Bow Valley. People value the proximity to wildlife and vast areas of wilderness and enjoy immersing themselves in the outdoors through various types of nature-based recreation. But what impact could these recreational opportunities have on wildlife communities?

Conservationists and land managers have historically viewed recreation as compatible with biodiversity conservation goals, especially when compared to more disruptive activities such as urban development and resource extraction. The view that recreation and biodiversity protection are harmonious exists around the world – so much so that recreation is permitted in 94% of International Union for Conservation of Nature (IUCN) protected areas.

As the population and recreational footprint of the Bow Valley continues to increase, we are faced with trade-offs between land protection and an increased human influence on the landscape. Activities such as hiking and sightseeing may cause significant **disturbances** for large wildlife species such as bears, cougars, wolves and elk. As a result, our community must ask itself some big questions. Do we want to share this landscape with large mammals? Are recreation and wildlife conservation compatible with one another? What would it mean to different groups of people if large wildlife species disappeared from the landscape entirely? And what are we willing to give up to keep them here?

DURATION 15-20 minutes

MATERIALS

- Scrap paper
- Multiple sets of word cards (optional)

ACTIVITY – WORD CATEGORIZATION

In this activity, students will start by looking at our perceptions of different outdoor activities and the impacts that they have on the landscape. Students will be challenged to consider how our choice of activities may impact wildlife in ways that might not be readily apparent to us.

1. Display the words listed below. Ask the students to divide the words into at least two different categories. The students can be made responsible for creating the categories. Alternatively, assign categories (e.g. harmful vs. not harmful to wildlife, low environmental impact vs. high environmental impact) or criteria (e.g. impact on the environment from highest to lowest, impact on wildlife from highest to lowest).

- Birdwatching
- Camping
- Dog walking
- Mushroom Harvesting
- Natural Gas Extraction
- OHV Riding



- Fishing
- Hiking
- Horseback riding
- Hunting
- Logging
- Mining
- Mountain biking
- Photography
- Rock Climbing
- Skiing
- Snowboarding
- Snowshoeing
- Trail Running
- Trapping

2. Lead a discussion about the categories that the students have identified. Ask students to share their categories and why they decided to group the words that way. What impact does the place that we live have on the way that we grouped the words together? What impact do the types of recreation or work that we participate in have on our groupings?
3. *Variation: In order to facilitate shuffling the words around and ongoing discussion within the group, instructors may wish to print and cut out the words ahead of time. Alternatively, students can write words individually on Post-It notes or small pieces of scrap paper. After the first round of the activity, ask students to create entirely new categories or criteria and reassign the words.*



KEEP WATCHING

“Living with Wildlife” (Run Time – 23:18) is the story of how communities in the Bow Valley have come together over the past 20 years to live with grizzly bears and other wildlife. It also highlights the effect that off-leash dogs and recreation at nighttime can have on wildlife.

vimeo.com/214597705.

BACKGROUND ESSAY

What do we mean by disturbance and how might recreation cause a disturbance for wildlife? A disturbance is a temporary change in environmental conditions that leads to a change in ecosystem conditions. For example, a bear that is interrupted from its feeding by a passing cyclist expends energy to avoid the interaction. This can have serious consequences for bears, who have to eat almost constantly during late summer and fall in order to put on the weight needed for hibernation. In the case of female bears, if the individual does not put on enough weight during this time she will not get pregnant. This can have far-reaching impacts on wildlife populations over time, particularly for species like bears who give birth to only one to three cubs every few years.

Studies have shown that bears are able to adapt to predictable human use patterns, such as daily fluctuations on roads and weekly and seasonal fluctuations on trails. This suggests that in order for bears and people to continue to coexist in the same places, limitations on how many people and the times when humans recreate are necessary. Recreating at nighttime for example is highly disruptive to wildlife, who anticipate predictable patterns of human use. If there are too many people using an area, animals may abandon an area altogether.

Recreational activities that we have historically viewed as having little impact on the environment still have tremendous potential to disrupt wildlife. In many cases, wildlife perceive human disturbance as a form of risk that they should avoid. Wildlife face a trade-off between



meeting their needs of food, water, shelter and space and avoiding the risk of encounters with people. The immediate responses of wildlife to recreation are numerous: increased flight and vigilance, interrupted feeding patterns and avoidance of otherwise suitable habitat.

As the number of people living and recreating in the Bow Valley continues to grow, it seems impossible that large mammals will be able to entirely avoid humans. The term **carrying capacity** is used to describe the number of people (or other organisms) that a region can support without environmental degradation. The concept of carrying capacity provides an interesting lens to consider how many people the wildlife in the Bow Valley can tolerate before they are no longer able to survive or meet their needs here.

DURATION 15-30 minutes

MATERIALS

- Foam pads (optional)
- Plastic bag (optional, for sitting on wet days)
- Appropriate outdoor clothing

ACTIVITY – SIT SPOTS

This activity gives students an uninterrupted opportunity to observe some of the possible impacts that nature-based recreation could have on wildlife. Afterwards, there are lots of opportunities for reflection to accommodate different learning styles. Guiding questions relate this activity to the topics of disturbance, **species interactions** and recreation.

1. Begin by setting the expectations and ground rules for the activity. This is an independent activity. Students will be expected to sit in one spot for a set amount of time. During this time they should not talk or interact with their classmates. This is their opportunity to quietly observe their surroundings.
2. Encourage students to use their senses to hear, see, smell and feel their surroundings. In particular, students should make observations about species interactions that are happening around them.
3. Students should find a spot where they can sit safely and comfortably. If possible, students should sit alongside a trail. Teachers may want to strategically select spots for the students to prevent distractions that are likely to occur between certain individuals.
4. Once the time has passed, bring the students back together to share their observations and reflections. Lead a discussion about the exercise, using the following prompting questions:
 - Did you notice any wildlife or signs of wildlife immediately when you sat down? Did you notice any wildlife when you had been quietly sitting in your spot? Approximately how long did this take from the time you sat down?
 - Did you see any other people (other than classmates) participating in forms of nature-based recreation? What were they doing? Did you see any noticeable impacts on wildlife if they were passing through an area?



- What steps were those people taking to either avoid wildlife or observe wildlife that you could notice?

5. *Variation: If you live in an area with readily accessible trails, students can complete the activity as described on their own time then compare results with their classmates later on. Alternatively, students can chat with different users on the trails to gain a better understanding about their values and motivations for getting outside, which will help inform the activities in Part II and Part III. This can be done either informally or by using a predetermined set of questions.*

Safety Note: Depending on the location where this activity takes place, additional measures with regards to wildlife safety may be necessary. If bears and other wildlife are a concern in your area it may not be advisable to sit quietly in one location for an extended period of time.

Some measures that can be taken to ensure safety include staying together as a large group with less spacing in between students, equipping each student with bear spray (where appropriate) and having a supervisor monitoring the area.