



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.



RECREATION AND CONSERVATION (Part II)

GRADE Grade 7

PART 2 of 3

TOPICS Conservation, recreation, values, 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

After learning in Part 1 about the possible impacts that nature-based recreation may have on wildlife, we turn our attention towards people. Though it may seem strange to focus on people in a lesson about wildlife, it is widely agreed upon that a key to success for achieving conservation goals in human-dominated landscapes like the Bow Valley is working closely with different user groups. In this lesson students will explore the importance of understanding values and how we might begin to balance different groups' wants and needs, including wildlife.

OBJECTIVES

- Students will understand that people's behaviours are influenced by their values
- Students will be able to describe strategies that are used to prevent human-wildlife conflict in developed and protected areas
- Students will understand that stakeholder values contribute to their opinions on wildlife-related issues

KEY TERMS

- **Attitude** – a settled way of thinking or feeling about someone or something
- **Attractant** – any substance that could attract dangerous wildlife, such as garbage, pet food, or berry bushes. Attractants can be both natural and unnatural
- **Compliance** – to adapt to a regulation as requested
- **Mitigate** – reduce the severity of seriousness of something
- **Stakeholder** – people or organizations who affect or are directly affected by a decision
- **Values** – a person's principles or standards of behaviour

GUIDING QUESTIONS

- What are some values that might guide people's behaviours with respect to their interactions with wildlife?
- How can we adjust our recreational activities to make more space for wildlife?

BACKGROUND ESSAY

Communities in the Bow Valley have come a long way towards successfully living near wildlife. Successes including improved garbage management, reductions of human use in corridors, highway mitigations like fencing and crossing structures and pro-active education have all contributed to improved coexistence. Ongoing education initiatives by organizations such as Bow Valley WildSmart reach out to diverse audience including new Canadians, children and visitors to ensure that they are well informed about how to coexist safely with wildlife. However despite these successes, many challenges



for coexistence remain due to the wide appeal of the Bow Valley as a place for people to visit, live and recreate.

People have varying **attitudes** towards wildlife. They may see wildlife as something to be exploited and collected, perhaps to feed their families or to be shown-off in their home. They may view wildlife from an ecological or cultural perspective, seeing the complex relationships that wildlife play in the ecosystem. People may regard wildlife for their physical appeal and beauty. Or they may see wildlife as something to be feared and avoided at all costs. These different attitudes – or **values** – inform the way that people interact with the landscape and they can be incredibly difficult to change.

Even among people who might agree that we should share the landscape with wildlife or even prioritise the needs of wildlife by creating protected areas, the approach that we adopt to get there might not be universally agreed upon. As discussed in Part 1, many people view forms of nature-based recreation as compatible with wildlife conservation though this might not necessarily be the case. Differences in values and opinions often lead to heated debates related to wildlife issues, such as excluding humans from certain wilderness areas or limited access to off-highway vehicles (OHVs). Other human needs that are met through access to employment can further complicate people's opinions.

We all share this landscape. Through a broader understanding of others' values we can begin to understand different motivations for valuing nature and subsequently work to care for it as environmental stewards.

DURATION 10-15 minutes

MATERIALS

- Scrap paper or Post-It Notes

ACTIVITY – WALK ABOUT

This activity is useful for getting students to start thinking about a topic, as an icebreaker or for dividing students into different groups. In the variation described here, students will begin thinking about values and needs of diverse groups of people.

1. Ask students to think silently about what people value about the place where they live. Encourage students to consider the values of different groups of people and how these might be different from their own.
2. Instruct students to write down one thing that people value on a Post-It note.
3. When everyone in the class has written something down, give the students two minutes to mingle with each other. They must display what they have written by holding up their Post-It note in front of them. Ask the students to group together with anyone who has written the same (or a similar) word on their note. *This portion of the activity can be done in silence.*



4. Invite the group to share the words that they wrote down and why they think that this is something that people value. What would it mean to people to be without that thing?
5. *Variation: Instead of asking students to write-down something that they value about the place where they live, ask them to write down something that they enjoy doing outside in that place. Run through Step 3 of the activity. Then ask students to brainstorm how the activity that they enjoy might negatively harm the environment, including wildlife. How could it benefit the environment? How can we **mitigate** the negative impact?*

BACKGROUND ESSAY

Coexisting with wildlife requires that we make trade-offs with respect to which spaces we can access, when we can access them and what we can do in those spaces. There are a several different strategies that are used to in the Bow Valley to ensure that wildlife have the space that they need to meet their needs and to avoid conflict with humans. All of the strategies highlighted below require buy-in and **compliance** from humans in order to be successful.

Attractant Management

A variety of wildlife travel through the towns and communities in the Bow Valley. This may be because these towns are the quickest or safest way to move from Point A to Point B or they may be drawn in by natural (e.g. berry bushes, prey species) or unnatural **attractants** (e.g. garbage, pet food, fruit trees). Wildlife that use these developed areas can become habituated, potentially resulting in increased conflict with humans, and the possible translocation or destruction of those animals. Attractant bylaws such as fruit tree and bird feeder removal can help prevent wildlife entering into developed areas. This can be challenging for people who enjoy seeing wildlife in their backyard and view these species as their neighbours.

Dog On-Leash Bylaws

We love being outside with our four-legged friends, however off-leash dogs may harass wildlife, provoke defensive encounters or bring aggressive wildlife back to their owner. Within Banff, Canmore and Exshaw town limits as well as Provincial and National Parks, dogs are required to be on-leash at all times (with the exception of designated off-leash dog parks). Despite these bylaws, compliance with these bylaws remains low. An estimated 94% of use in the wildlife corridors surrounding Canmore is by humans (as opposed to wildlife). About 61% of those people are recreating with a dog and of that number approximately 60% of the dogs are off-leash.

Trail and Area Closures

There are a range of different types of trail and area warnings and closures that are put in place for public safety or when wildlife are



most sensitive to people. For example, seasonal closures are frequently put in place during early spring when bears are emerging from their dens, during berry season, or during the elk calving season. In some cases (e.g. the Middle Springs wildlife closure in Banff National Park) areas of wilderness will be permanently closed to humans. In other cases trail access is restricted to groups of 4 or more people and dogs and bikes are not allowed. Despite clear signage and education there is plenty of evidence of recreationalists ignoring these warnings and entering closed areas. This places people and wildlife at risk.

DURATION 30-45 minutes

MATERIALS

- Stakeholder descriptions
- Laminated topographical map
- Dry-erase markers (4 colours)

ACTIVITY – LAND-USE PLANNING

Students will be responsible for assigning different land-use designations to parts of a map based on a **stakeholder** role that they have been assigned.

1. Introduce students to the different stakeholders. Lead a discussion about the needs of the different stakeholders. How might the needs of these stakeholders impact the environment? How could you see them potentially clashing with other stakeholders' needs?
2. Divide the students into small groups (2-3 students per group) and assign each group a stakeholder description. Ask the groups to reflect on the discussion about the needs of their group.
3. Provide each group with a laminated topographical map. Explain to the students that they will be responsible for assigning different land-use designations to the map. Each land-use type corresponds to a different coloured dry-erase marker:
 - **Settlement, including roads (humans only)**
 - **Industry (humans only)**
 - **Recreation (humans and wildlife)**
 - **Restricted areas (wildlife only)**
4. Remind students that they are dividing the area up based on the needs of their stakeholder. For this exercise, students will only assign a land-use designation to the area in the valley bottom that is bound by the black line (see map). Remind students that that these are the areas that are favoured by both humans and wildlife. Very few species live entirely above the treeline, or even on steep, treed slopes.
5. Students must meet the following criteria:
 - a. *There must be an uninterrupted path to allow animals to travel from one end of the valley to the other.*
 - b. *There must be an uninterrupted path to allow humans to travel from one end of the valley to the other.*
 - c. *All of the different land-uses must be represented on the map.*



6. Other things for the students to consider: How will topography affect the way that humans and animals will use the land? How will waterbodies affect the way that humans and animals use the land? What compromises will you make to ensure that other stakeholders have their needs met?
7. Pair two stakeholder groups with different interests together (e.g. a developer and an elk). Ask each group to explain to the other who they are, what their needs are and how they chose to assign areas on the map. Then have the groups erase their map and create a single map that best reflects both of their needs combined.
8. Once the groups have assigned a land-use to all the area on the map bound by the black line, invite them to share with the class who they are and why they made the assignments that they did. Discuss with the students whether it was easier to make decisions as a single stakeholder or by collaborating with other stakeholders. How does this compare with real-world decision making? How important was habitat security for wildlife in your decisions? Are there voices that were not included that should have been?

REFERENCES

- Peters, J. et al. (2018). Human-Wildlife Coexistence: Recommendations for Improving Human-Wildlife Coexistence in the Bow Valley. Bow Valley Human-Wildlife Coexistence Technical Working Group.
- Thomas, S.E. & Reed, S.L. (2019). Entrenched ties between outdoor recreation and conservation pose challenges for sustainable land management. *Environmental Research Letters*, 14(11), 115009.



RECREATION AND CONSERVATION (Part III)

GRADE Grade 7

PART 3 of 3

TOPICS Conservation, recreation, 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

DURATION 60+ minutes

MATERIALS

- Stakeholder descriptions

OVERVIEW

Wrapping up what students learned in Part I and II, this lesson will look at some of the approaches that governments and non-profits might take for addressing complex land-use questions when multiple user-groups are involved. Students will assume the persona of different stakeholders with the goal of resolving a land-use question through dialogue. Finally they will apply what they have learned through a public education initiative.

OBJECTIVES

- Students will understand some of the barriers to compliance with strategies for minimizing disruption to wildlife
- Students will develop their own messaging to promote WildSmart practices among different user groups

KEY TERMS

- **Advocacy** – public support for a particular cause
- **Buy-in** – acceptance of and willingness to actively support and participate in something
- **Proposal** – a plan or suggestion put forward for consideration or discussion by others
- **Town hall** – an event at which politicians or public officials answer questions from members of the public

GUIDING QUESTIONS

- What are some of the challenges that arise when different user-groups try to find solutions to land-use questions?
- What are some of the factors that prevent people from following best practices for human-wildlife coexistence?

ACTIVITY – TOWN HALL

Students discuss the merits and problems associated with a local land-use **proposal** from the point of view of different stakeholders, with the goal of arriving at a solution that meets the needs of the maximum number of stakeholders.

This activity works well as a follow-up to the ‘*Land-Use Planning*’ activity from Part II or as a stand-alone activity. It can also be adapted to meet a variety of science and/or social studies learning outcomes.

Set-up

1. Divide the class into groups and introduce students to the different stakeholders (*Note that if you have completed the ‘Land-Use Planning’ activity from Part II, students will already be familiar with different stakeholders*).
2. Introduce the land-use proposal. This could be entirely fictional or related to a real land-use proposal that is being considered in your community. The chosen proposal should present the



various challenges that could arise and consider the social, economic and environmental impacts. For example students could discuss a proposed expansion of a residential development into a wildlife corridor.

3. Students should research the land-use proposal in question, considering the local context and the perspectives of the stakeholder group they are representing. Consider the following prompting questions: *What are the values of your group? What are the needs of your group? What are the goals of your group?*
4. If time permits for multiple classes to be devoted to this activity, students can interview real members of their stakeholder group to gain additional information and to answer the questions above.
5. The goal of the **town hall** meeting is to find a solution that meets the demands of the maximum number of stakeholders. Students should seek to create the following:
 - a. A list of common town goals
 - b. A general plan outlining how to achieve the proposed goals
 - c. A list of responsibilities for who will carry out the proposed goals

Conducting the Town Hall

6. Arrange tables and chairs into a circle so that all stakeholders can see and hear each other. The meeting will be chaired by a representative from the town who will invite different stakeholders to speak.
7. Inform students that each stakeholder will have a set amount of time to introduce themselves (time allocated to each stakeholder will depend on the amount of time that is available for the activity and the number of stakeholder groups).
8. Each stakeholder will have a set amount of time to present their opening views and state their needs. Students should support their positions using research and facts. Consider the following prompting questions: *Why is your perspective valuable (i.e. why do you have a seat at the table)? What are the goals that you have identified? What is your proposed plan? Consider advantages and disadvantages of this plan from your perspective and from the perspective of other stakeholders.*
9. Each stakeholder will have a set amount of time to respond to other stakeholders' statements. This can be conducted 'popcorn style' by taking statements as they come, or by



addressing each group in turn. The representatives from the town are then responsible for proposing a solution that meets the needs of the maximum number of stakeholders.

10. To debrief the activity, ask students to step out of their stakeholder roles and take a few minutes to consider or record their thoughts on the process. Consider the following prompting questions: *What could have made the discussion flow better? Which stakeholder group had the least just/fair outcome? Did all the stakeholders have equal input on the outcome of the town hall? How did you feel about representing a viewpoint that wasn't necessarily in line with your own? What sorts of factors shape community decisions? Was this a realistic process? Why or why not? Is it possible for people to fall under multiple stakeholder roles?*

Follow-up

11. Students can follow-up with what they have learned in this activity by sharing their outcome with town officials (particularly if you have explored a real land proposal that is being explored by your community).
12. If students identify environmental challenges that may arise from the proposal, reach out to local non-profits or government agencies for advice on how to take action. Youth have an incredibly powerful voice and participation in local politics is a great way to engage them as active citizens.

BACKGROUND ESSAY

Throughout this lesson, we have learned that human activities – even those that we consider to have minimal impact on wildlife – can lead to significant disturbances. There are numerous strategies that are used to minimize disturbances to wildlife, including attractant management and trail and area closures. While enforcement by conservation and bylaw officers is one way to achieve compliance, the mission of the Biosphere Institute is to encourage a conservation ethic among visitors and residents alike.

Knowing what we *should* do is only part of the challenge when it comes to compliance with the strategies that are in place to minimize disturbance to wildlife. There are several different challenges to achieving compliance among recreationalists. These include:

1. Those who are genuinely unaware about how to behave responsibly around wildlife
2. Those who are aware and educated yet make a conscious decision to not comply with best practices
3. Those who are aware but strongly believe the rules do not apply to them
4. An individual's level of risk tolerance



5. Not fully understanding the impact their behaviour may have on wildlife, themselves and others
6. How their individual actions contribute to, and culminate in, negative impacts

The *'Human Wildlife Coexistence: Recommendations for Improving Human-Wildlife Coexistence in the Bow Valley'* (Peters et al, 2018) report was written by a group of experts from Parks Canada, the Government of Alberta, the towns of Banff and Canmore and non-profit organizations. One of the visions that the group identified is that:

"Visitors and residents maintain year-round opportunities to undertake a wide range of outdoor activities in support of a healthy lifestyle within the Bow Valley, and understand their roles and responsibilities in learning how to avoid occurrences with wildlife, consistently adhere to best practices, and comply with human-use zoning strategies and legislation, aimed at providing wildlife with habitat security where and when it is needed."

With this vision in mind, the Biosphere Institute and Bow Valley WildSmart seek to design education programs that target specific user groups such as mountain bikers, trail runners, or backcountry skiers. By identifying and working with key members of these communities, we can tailor education messaging to the values of these specific communities. **Buy-in** from different user groups is key in order for behaviour change to take place.

There is an understanding among conservationists that people will protect the things that they love. There are lots of examples of recreational groups rallying to protect wilderness areas. Often these **advocacy** efforts occur with the primary goal of protecting access to recreation, however they often also protect wildlife in the process. Some examples include the efforts by [Wildsight](#) to prevent the development of the Jumbo Glacier Resort or by the [Federation of Mountain Clubs of British Columbia](#) to protect the popular Smoke Bluffs climbing area in Squamish, B.C. The Biosphere Institute hopes to work alongside the community to encourage people that recreate to become advocates for wildlife and protected areas.

ACTIVITY – TARGETTED EDUCATION CAMPAIGN

Students will identify an outdoor user group with which they are affiliated and work to craft messages that will encourage strong conservation actions and ethics.

1. Students will start by identifying the user group with which they would like to work. Ideally this will be a group that they are already associated with such as off-highway vehicle users, hunters or cross country skiers, but could also be one that the teacher assigns to them.



2. Next, explore what impacts on wildlife and the environment might be associated with the activities of this user group. Consider the 6 challenges for achieving compliance that are listed in the preceding background essay. Which ones apply to your group? Why? What evidence exists to support this conclusion? Which of these groups might be the hardest to reach and what strategies could you use to appeal to them?
3. Identify any key organizations in your area that are already working with your user group or may be able to connect you with key members of the group. For example in Canmore, the *Canmore and Area Mountain Bike Association (CAMBA)* is a strong voice for the mountain biking community.
4. Once students have identified the key groups, connect with these groups to better understand their perspectives on recreation and wildlife management using a questionnaire or interview questions. What are the values of this user group?
5. Next, brainstorm ideas for how users can mitigate the impacts of their activities that you identified in Step 2. For example if you have found that trail runners are recreating at nighttime in order to avoid people, you might propose that individuals plan runs in less popular areas (note that this solution could present its own challenges). What information might this group have been lacking that you could provide them? For example, perhaps the user group is not familiar with seasonal closures and better signage is required.
6. Craft messaging to share these mitigations with members of your user group. Consider what the best method of sharing the information might be (e.g. radio, social media, posters, word of mouth).

REFERENCES

- Jacobs, M. H., Vaske, J. J., Teel, T. L., & Manfredi, M. J. (2018). Human dimensions of wildlife. (pp. 85-94). Chichester, UK: John Wiley & Sons, Ltd.
- Peters, J. et al. (2018). Human-Wildlife Coexistence: Recommendations for Improving Human-Wildlife Coexistence in the Bow Valley. Bow Valley Human-Wildlife Coexistence Technical Working Group.