



City of Loveland



Wildlife Management Lesson – supplemental virtual lesson

Note to Educators:

The following lesson plan can be used to supplement the program lessons given during the short version (2.5hr) field trip to Viestenz-Smith Mountain Park, or as a stand-alone lesson introducing wildlife management.

The long version field trip (4 hours) includes this lesson given in person by one of our instructors.

If you have questions please contact the Open Lands and Trails Environmental Education Coordinator:
michele.vanhare@cityofloveland.org

Intro (7-8 min)

Q: What is 'wildlife management' and why do we care about it?

Hook: video of wildlife/human interactions that create conflict (3-4 min snip of mountain lions)

<https://youtu.be/eCphy8jsP40>

Vocabulary (5-7 min)

List vocabulary; Query students for prior understanding; Discuss

- Extinct – no longer exists; cannot help them
- Endangered – must intervene or they will become extinct ... HELP!
- Threatened – might be able to make it on their own if they receive some protection (e.g., preserve habitat, limit hunting), or remove interference
- ESA (Endangered Species Act) – role is to protect animals classified as 'threatened' or 'endangered'

Tools/Interventions (organizer)

- Laws and regulations (ESA)
- Habitat improvement
- Transportation / Transplantation
- Protected areas
- Population assistance
- Predator/Prey control

Project (30 min) – each group is given a scenario card (see p. 5-7)

1. Research the tools used by wildlife managers to maintain healthy wildlife populations. Give 1-2 examples of this tool (use organizer on p. 2 to jot notes);
2. Brainstorm an intervention for the scenario listed on your card; describe the tool(s) used and why you chose it;
3. Present your solution to the class.

Materials/Supplies:

- Scenario cards/sheet
- Scenario solutions
- Organizer: List of tools w/meanings
- List of resources and references (e.g., videos of interventions, websites)



Wildlife Management Tools

Student Organizer

- **Laws and Regulations (ESA)** – The ESA (Endangered Species Act) classifies as threatened, and endangered. Many animals are protected by the ESA and other laws; these are one of the strongest tools used by wildlife managers.

Examples: _____

- **Habitat Improvement** – can include setting aside natural areas, linking areas for movement corridors, re-establishing natural cycles, restoring native plant species, adding man-made replacements for missing natural shelters.

Examples: _____

- **Transportation / Transplantation** – movement of an animal species from one location to another to grow the species in that area.

Examples: _____

- **Protected Areas** – certain amount of space set aside for small and large animals, scale related to animal needs.

Examples: _____

- **Population Assistance** – captive breeding and foster parenting.

Examples: _____

- **Predator/Prey Control** – refers to removing problem predators; can be a tool to help rebalance populations that are growing beyond their habitat.

Examples: _____



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Wildlife Management Tools

Teacher Answer Key

- **Laws and Regulations (ESA)** – The ESA (Endangered Species Act) classifies as threatened, and endangered. Many animals are protected by the ESA and other laws; these are one of the strongest tools used by wildlife managers.

Examples: Protection of species; e.g., ivory, exotic furs, bear gall bladders (USA)

- **Habitat Improvement** – can include setting aside natural areas, linking areas for movement corridors, re-establishing natural cycles, restoring native plant species, adding man-made replacements for missing natural shelters.

Examples: Set aside natural areas (River's Edge), link areas for movement corridors (Big Thompson River natural areas), re-establish natural cycles (fire), restore native plant species (Morey Wildlife Reserve), add man-made replacements for missing natural shelters (nest platforms/boxes – osprey at Namaqua and River's Edge).

- **Transportation / Transplantation** – movement of an animal species from one location to another to grow the species in that area.

Examples: Bighorn Sheep (transplanted to Big-T Canyon), fish, grey wolf (reintroduced into Yellowstone), moose (moved from WY to North Park, CO).

- **Protected Areas** – certain amount of space set aside for small and large animals, scale related to animal needs.

Examples: amount of space, related to habitat need, set aside for small and large animals; includes natural areas, parks, designated wilderness, wildlife reserves, zoos, and wildlife parks.

- **Population Assistance** – captive breeding and foster parenting.

Examples: black-footed ferrets, peregrine falcons, whooping cranes, condors, zoo exotics, and fish hatcheries raising cutthroat trout.

- **Predator/Prey Control** – refers to removing problem predators; can be a tool to help rebalance populations that are growing beyond their habitat.

Examples: removing problem predators; prey control is used to help balance populations that are growing beyond their habitat (e.g., 41,000 elk harvested in CO [2015]).

Scenario Cards – cut each card and give to a small group of students to brainstorm solutions.



#1) Deer and elk are eating all of the fruit in a farmer's orchard. What can be done?

#2) Bighorn sheep in the Big Thompson canyon have all died from a brain parasite. The sheep are part of the Big-T ecosystem. What can be done?

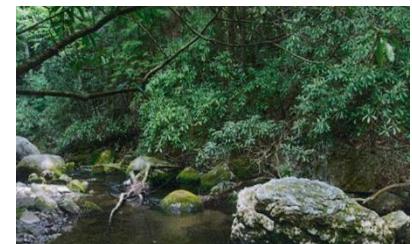


#3) The flood of 2013 filled in the pools and holes where trout would rest and wait for food, or mate and lay eggs. Many fish are gone.

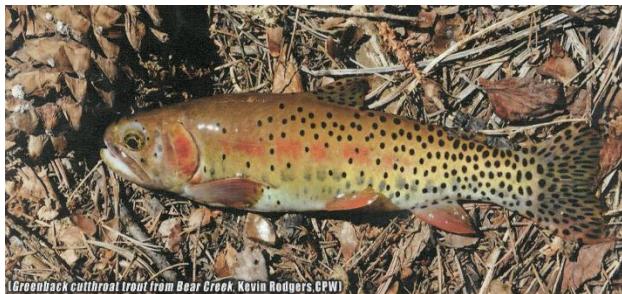
What can be done?



<Post flood



Good habitat>



#4) Greenback Cutthroat trout, our state fish, has been interbred with other trout species so that there is only one place where genetically pure fish can be found. Is it important to have genetically pure fish?

If you decided yes, What can be done?



#5) Black bears used to have multiple hunting seasons. Years ago, spring bear hunts were abolished; people felt it was wrong to hunt bears coming out of hibernation, possibly leaving orphaned cubs. Bear populations are now so numerous that bear-human conflicts have grown.

What can be done?



#6) Herds of elk are protected in Rocky Mountain National Park; there is no hunting allowed in national parks. Predators are few – they don't like being around people; and elk don't mind people. The result is growing populations of elk who damage the habitat.

What can be done?

#7) Gray wolves are being actively re-introduced into Colorado. Proposition 114, directing the Colorado Parks and Wildlife Commission to develop a plan to introduce gray wolves onto the Western Slope, passed on November 3, 2020. What do you think is a big concern to the people who live in the surrounding area?

What might be your response to their concerns?



Optional – this one may be too personal for class members – **read first** before making copies to share



#8) Gray Wolves – Though some feel wolves make wonderful pets, opponents argue that they are unpredictable, impossible to train and inherently dangerous. Because of this, having a wolf or wolf-dog is illegal in many places. Wolves are not domesticated; they are wild animals and by nature, fearful of human beings. An animal that is tame may not be fearful of humans but will possess their wild instincts.

This photo is taken at the Wild Animal Sanctuary in Keenesburg, Colorado. All animals in this sanctuary have been rescued, predominantly from private collectors of wild animals. These wolves came from a private zoo that was closed due to animal abuse violations.

As a CPW ranger or wildlife manager, what would you say to people who 'love' wolves and want them as pets?



Scenarios: Possible Solutions (facilitator sheet)

#1) Deer and elk are eating all the fruit in a farmer's orchard. What can be done?

[fence, dog, scary stuff; hunting, if allowed]

#2) Bighorn sheep in the Big Thompson canyon have all died from a brain parasite. The sheep are part of the Big-T ecosystem. What can be done?

[transplant healthy sheep, treat for parasite, monitor sheep health]

#3) The flood of 2013 filled in the pools and holes where trout would rest and wait for food, or mate and lay eggs. Many fish are gone. What can be done?

[make holes, add boulders, plant riverbank species/river restoration]

#4) Greenback Cutthroat trout, our state fish, has been interbred with other trout species so that there is only one place where they can be found. Is it important to have genetically pure fish? What can be done?

[If we decide it is important to support genetically pure greenbacks, there will be an option to raise them in fish hatcheries, then release them into streams that do not have any other trout or into streams that have been "emptied" of other fish (by electroshocking, removing and transplanting the original fish to another river)]

#5) Black bears used to have multiple hunting seasons. Years ago, spring bear hunts were abolished; people felt it was wrong to hunt bears coming out of hibernation, possibly leaving orphaned cubs. Bear populations are now so numerous that bear-human conflicts have grown. What can be done?

[some may say bring back the spring hunt – it is an option but remember that this leaves orphan cubs to a slow death. Increase the number hunted in the fall, more education and hazing techniques shared with homeowners, hire more CPW officers to be able to get to bear calls faster to haze bears]

#6) Herds of elk are protected in Rocky Mountain National Park; there is no hunting allowed in national parks. Predators are few – they don't like being around people; and elk don't mind people. The result is growing populations of elk who damage the habitat. What can be done?

[Allow special limited hunting in the park, capture and move elk, try birth control (like used in wild horses), bring back wolves]

#7) Gray wolves are being actively re-introduced into Colorado. Proposition 114, directing the Colorado Parks and Wildlife Commission to develop a plan to introduce gray wolves onto the Western Slope, passed on November 3, 2020. What do you think is a big concern to the people who live in the surrounding area? What might be your response to their concerns?

[People are concerned about possible conflicts – wolves going after livestock and pets, there are some concerns about wolves reducing the availability of animals desired by hunters (there are people who make their living guiding and packing in tourist hunters). What can you do? Point out the need for predators to keep prey animals deer and elk in balance, offer to support ranchers with livestock loss insurance, educate people on how to keep pets and pet livestock safe, allow hunting guides to have permits for hunting wolves if the population gets too big.]



#8) Gray Wolves – Though some feel wolves make wonderful pets, opponents argue that they are unpredictable, impossible to train and inherently dangerous. Because of this, having a wolf or wolf-dog is illegal in many places. Wolves are not domesticated; they are wild animals ...

As a park ranger, what would you say to people who 'love' wolves and want them as pets?

[Point out it has taken 1000s of years to develop dog breeds that work better with humans and that wolves and wolf hybrids are unpredictable and many are now in rescues (one of the largest being WOLF in LaPorte just north of fort Collins). Suggest they seek out wolf descendants such as malamute or husky, breeds that have been domesticated but retain many wolf physical traits.]