

Livestock & Wildlife Interactions

Duration: 30-40 minutes

Group Size: 6-30 students

Setting: classroom

Activity Source: Karen Launchbaugh, Rangeland Ecology and Mgmt., University of Idaho

The purpose of this activity is to introduce students to terminology related to how rangeland animals interact with one another.

Goals:

1. Learn examples of interactions among rangeland animals.
2. Explore the interrelationships between livestock and wildlife.

Materials Needed:

Chalkboard/whiteboard
Student handouts

Process:

1. Give students the “Student Handout”
2. Go over the definitions of the following terms with the class. The terms can be put up on a screen using an overhead projector, or write the definitions on the board. Ask students to write definitions on their handouts.
 - **Mutualism/Protocooperation:** a relationship between two animals in which both benefit from the association.
 - **Commensalism:** a relationship between two individuals in which one derives some benefit while the other is unaffected.
 - **Antagonism (i.e. predation/parasitism):** one species benefits at the expense of another .
 - **Amensalism:** a relationship between two animals in which one is adversely affected and the other is unaffected by the association.
 - **Competition:** if two animals use the same resource (such as food or water) and if that resources is in limited supply this may cause harm to both animals because neither will have enough of the required resources.
 - **Neutralism:** a relationship between two species which do interact or share the same habitat but do not affect each other.

3. Draw the following interaction matrix on the chalkboard/whiteboard (symbols denote “beneficial”, “detrimental”, or “no effect” interactions).

KEY:	+	0	□
	(Benefit)	(No Effect)	(Harm)
+	mutualism	commensalism	antagonism
0	commensalism	neutralism	amensalism
□	antagonism	amensalism	competition

4. Ask students (as individuals, teams, or small groups) to come up with examples of the terms that describe the relationships between animals. Each individual or group could try to come up with examples for all 6 interactions, or be assigned just one or two types of interactions.

Key – For example:

- **Mutualism/Protocooperation:** *Cattle Egrets (a type of bird) often get up on the backs of cattle or bison and they eat insects and grubs. The insects benefit the birds as a food source. The cows and bison get the benefit of getting rid of the bothersome insects and grubs.*
- **Commensalism:** *Dung beetles eat the feces of ruminant animals (like cows, elk or deer). The dung is a food source and benefits for the beetles, but they have no effect on the ruminant animals.*
- **Antagonism (i.e. predation/parasitism):** *When a coyote eats a lamb it gets a benefit as a food source, but the lamb is harmed (i.e., it dies).*
- **Amensalism:** *When domestic sheep pass a pneumonia-type disease to wild bighorn sheep - the big horn sheep are harmed, but the domestic sheep is unaffected. The same is true when bison pass brucellosis (a disease) to domestic cattle - the cattle are harmed and bison are unaffected.*
- **Competition:** *When elk and cattle eat the same forage and it becomes limited both the elk and cattle may be harmed - they may not have enough to eat and may become thin. Competition only occurs when the common resource is used by both animals. Animals are "competing" for a resource if there is not enough for both of them.*
- **Neutralism:** *Great horned owls are largely unaffected by cattle or elk. And cattle and elk have no real affect on great horned owls.*

Variations:

Instead of providing the definitions to the class, assign each individual, team or group the terms and have the students research the definition. Have students do internet or library research on real-life examples of animal interactions that are examples for each term and give a small presentation to the class.