

**7<sup>th</sup> Grade Lesson Plan**  
**Ecological Relationships** (created 11-5-03, modified 2-9-04)

- Time:** 50 minutes minimum (prefer 2, 50 minute class periods)
- Curriculum:** Focus will be on the ecological relationships and the effect noxious weeds have on these ecosystems.
- Objective:** The 7<sup>th</sup> grade students will participate in a class activity and work in small groups to predict, research, and draw their own conclusions about noxious weeds and their ecological impact. If time allows the students will be presenting their findings to the class.
- Materials:** Weeds of the West, SRP brochures, JHWMA brochures, Pocket guides, computer stations with internet access (if available), State of WY Noxious Weed list, Teton County's Declared Noxious Weed list, biological control information, poster board, and writing materials.
- Wyoming State Standards:**  
**Science grades 5-8:** 1.4, 1.6, 2.1, 2.2, 2.3, 2.4, 3.2  
**Language Arts grade 7:** 1.1b, 1.1c, 1.3, 2.2b, 3.1, 3.2, 3.4, 3.5, 3.6, 3.7
- Start-10 minutes:** Introductions- opening activity: "Habitat Lap Sit" from Project Wild: K-12 Curriculum Guide p. 61. Demonstrate interdependence of organisms in an ecosystem. (optional)
- 10-15 minutes:** Brainstorm as a class some ideas about **Ecological Relationships**, **Noxious Weeds**, and **Methods of Control** based on prior knowledge and the Lap Sit activity. Break into groups of 3-4 students. **Instructions:** Each group will be given a scenario and answer questions on worksheet.
- 15-30 minutes:** Groups will be given materials to begin their research. I encourage accessing the internet for more information. Develop a short powerpoint presentation for the class (no more than 5 slides). The instructor will also be available to answer questions and should walk around to the groups encouraging them to stay on task and develop meaningful questions.
- 30-50 minutes:** Each group will be allowed 5-10 minutes to summarize their research, support their claims and draw conclusions in a presentation format for the class. (longer if 2 periods are allowed)
- 55 minutes:** Closure- class period over

## Understanding Ecological Relationships

🌲 Read this short story about a chipmunk in the forest ecosystem (community)

**It was late fall, and a chipmunk was busy preparing for the long winter ahead. The chipmunk was gathering pine seeds and grass seeds and storing them in its underground home beneath a large Douglas fir tree. Chipmunks don't hibernate, so they need plenty of food to last through the winter. In its search for seeds, the chipmunk had found a moth cocoon, which it was eating when it heard the warning call of a blue jay. The chipmunk dropped the cocoon and quickly hid in an old woodpecker hole in a nearby tree. Moments later, a hawk swooped through the woods, grabbed the blue jay with its sharp talons and, after a short struggle, flew off with the dead blue jay. The chipmunk might have been the hawk's meal instead of the blue jay if it hadn't quickly escaped into the tree. After the hawk had gone, the chipmunk gathered some of the blue jay feathers that had been left behind and used them, along with some grasses and deer hair it found in the forest, to build a warm underground nest to help it survive the winter.**

🌲 In this short story, the chipmunk has interactions with many other members of the forest community. Each one of these interactions is called a *relationship*. The chipmunk has a relationship with the pine trees and grasses that make the seeds the chipmunk eats. It has a relationship with the caterpillar that made the cocoon that it was eating. The roots of the large Douglas fir tree hold the soil together; this allows the chipmunk to make underground tunnels, so the chipmunk has a relationship with the Douglas fir. The chipmunk has two relationships with the blue jay. One is hearing the blue jay warning call, which helped the chipmunk escape from the hawk, and the other is using the blue jay feathers in its nest. The chipmunk also has a relationship with the woodpecker that made the hole in the tree where the chipmunk hid from the hawk. The chipmunk has relationships with the grasses and the deer because it used parts of them to build its nest. The chipmunk also has relationships with non-living factors such as the air it breathes, the soil that it walks on and burrows into, and the water it drinks. As you can see, the chipmunk depends on many other organisms and non-living factors to survive. This is true for all living organisms, including humans. \*\*\*Remember, a community is all the organisms in an ecosystem, and an ecosystem is a group of interacting organisms and the non-living factors that affect them.

## Ecological RELATIONSHIPS Worksheet

🌿 Read the following short story about the Snake River ecosystem. At the bottom of the worksheet, list as many relationships as you can find in the story.

**It was a warm summer day on the Snake River in Teton County. A deer was grazing on grasses along the edge of the river and a beaver was eating the bark of a Cottonwood tree. The beaver was using some of the branches to build a house with an underwater entrance where it would raise its young. An adult *Larinus minutus*, a biological control agent which has spent the winter buried in the plant matter at the base of a spotted knapweed, had emerged and was crawling up the stem. Some of the eggs laid by another *L. minutus* had already hatched and the tiny larvae were feeding on the spotted knapweed seed head. A spider had built a web between the spotted knapweed plant and a small willow. A small moth and a couple mosquitoes had already been captured in the web and the spider was busy eating the moth. A ladybug had also found the spotted knapweed plant and it was eating the *L. minutus* larvae when a blackbird flew in, grabbed the ladybug, and flew to a nearby group of willows. The blackbird had a nest made of sedge and grass leaves that were woven around the willow branches. The blackbird fed the ladybug to one of the baby birds in the nest, a garter snake was sitting in the sun on top of a large rock near the water as a cutthroat trout swam by.**

Make a list of the relationships you can find in this story (use the back of the worksheet if you need more room).

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