

NO HOME ON THE RANGE (continued) LESSON DETAILS

Tell the students that the catastrophic loss is a result of a new housing development along the River severely damaging riparian habitat. (The result of this catastrophe is a large number of student “Elk” waiting on the sidelines to re-enter in the *summer* habitat). Add in the surviving calves as necessary to keep the players engaged with an explanation of changes in the habitat conditions to make it possible for them to re-enter. For the student to re-enter the game as a calf, the following question must be answered-- *What is one good example of changes in the habitat conditions that made it possible for the calf to survive?*

REPEAT. Repeat the migrating patterns for eight or ten migration cycles with each cycle providing examples that limit survival.

Migration Headache Limiting Factors

waterfowl survival limiting factors

- oil spill
- droughts
- wetland drainage
- pollution and contamination
- urban expansion
- land conversion to farm land
- natural waterway conversion to canal
- illegal hunting
- predation
- disease

survival factors

- wetland preservation
- high rainfall
- habitat restoration (weed control)
- dynamic balance with predators
- human action aimed at protection and restoration of private lands
- education
- regulation of hunting and human predation

Leafy Spurge Activities

Meet the Beetles - Before and After
Play Audio Track #6

(20 minutes)

Levels

Grades 3-6

Subjects

Science, Art

Skills

Observing, Interpreting, Identifying, Illustrating, Discussing

Concepts

Structure and functions of living things; interactions among technology, science and society

Objectives

Students will learn how to make observations and demonstrate their findings in illustration.
Students will understand insect predation on plants as a biological noxious weed control.

Materials (20 student class-size)

What's in Your World? CD audio track #6 (inside the back cover) - 1 per class
flash card of leafy spurge flea beetle (inside the back pocket of the *What's In Your World?* activity tool kit) - 1 per student
drawing paper, crayons/markers/ and a hole punch

Time Considerations

Preparation - 5 minutes
Activity - 20 minutes

Lesson Overview

- Biological Control of Leafy Spurge (20 minutes)

Background

There are 6 insects approved for release in the United States for the control of leafy spurge. Researchers test the viability of host specificity before importing insects for distribution in America. Host specificity means that the insects only eat the plant we want them to and they do not reproduce to eat other plants. Quarantine labs specialize in testing insects for disease and to confirm the insect really is the insect ordered for distribution.

Science projects engage high school students in rearing biological control insects across Montana. Insects are part of community-wide management plans--students working with landowners to monitor, collect, and re-distribute. It can take 5 to 10 years after introduction for insects to visibly impact noxious weed plant populations.