

Section 7: Plant and Animal Interactions

1. Web of Life
2. Skills Challenge: Calculating Stocking Rates
3. Livestock Grazing Systems

Learning Objectives:

- Demonstrate an understanding of food webs, discover the many ways that plants and animals on rangelands are connected.
- Describe livestock grazing systems
- Calculate Stocking Rates

Idaho General Education Performance Standards

- PS3-5-1, LS2-5-3, LS2-5-4, LS2, MS-1, LS2-MS-2, LS2-MS-4, LS2-MS-5, LS2-MS-6

Introduction: Plant and Animal Interactions

Rangelands are incredibly dynamic ecosystems. Drastic changes can be observed among seasons within a year and across years and over decades. There are many factors that cause rangelands to change over time—so far, you’ve learned about fire, invasive plants, and weather and climate. Another major factor that causes change is grazing which we will learn more about in this section. These factors change the plants and animals that inhabit rangeland sometimes in ways that land managers and users find desirable and other times, in ways that are considered adverse.

1. Web of Life

(Adapted from Project Learning Tree)

Time: 20-25 minutes

Supplies:

- Plant, animal, and rangeland tools cards
- Ball of string, yarn, or twine

Background:

Rangelands are complex, living systems that are composed of many different animals and plants that interact with and depend on each other. A **food chain** is a simplified way of showing these relationships between plants and animals on rangeland. For example, a food chain on rangelands may consist of the following components:

Sun > bluebunch wheatgrass seeds > ground squirrel > Prairie falcon

Food chain explanation: the bluebunch wheatgrass seed that uses the sun’s energy to grow, is eaten by a ground squirrel, which in turn is eaten by a Prairie falcon

Note: In reality it is rare for an animal to eat only one type of food.

A **food web** represents the interactions of many food chains in an ecosystem. With your students, create a food web (i.e., Web of Life) on rangelands.

Do:

- Each student will pick (or randomly distribute) a plant, animal, or rangeland tool card
- Have the students form a circle around the “sun”
- Randomly hand the ball of string to one participant and have them throw (gently) the ball to someone with a card that links either as food, water, or shelter (habitat)
- Keep a hold of the string and throw to another “link” until everyone is a part of the web of life (some will have more than one connection)

Reflect/Apply:

- Once everyone is connected, tug gently to find who is connected to who
- What happens if one species is removed from the web? How many other connections are impacted?
- What happens if the water development is removed?
- Do many of these animals compete for habitat?
- How does the habitat change from year to year? How can this be demonstrated?