

A Short Course on Rangelands

Time: 50 min.

Learning Objectives:

Students will:

- Identify the definition of Rangeland
- Define Pastureland

Content Overview:

Rangeland is a type of uncultivated land that is dominated by native plants, mostly grasses, broadleaf plants like wildflowers, and shrubs. Rangeland is basically all land in the world that is not farmland, dense forest, barren desert, or land covered by solid rock, concrete, or glaciers. Rangeland includes grasslands, shrublands, savannas, and open woodlands. The land cultivated with grasses and legumes for livestock forage is generally called Pastureland. Pastureland is similar to rangeland in many respects except that it is cultivated and managed primarily by agricultural principles, whereas rangeland is not cultivated and managed by ecological principles.

Instructional Approach:

Learning Content:

How much rangeland is there?

- 44% of the earth's land surface is rangeland.
- 36% of the US is rangeland (nearly 1 billion acres)
- 53% of the 19 states west of the Mississippi are rangeland.
- 44% of Idaho is classified as rangeland.

In addition, much of the grazable forests in Idaho are also managed by range management principles and are considered by some to be rangeland.

Multiple Uses of Rangeland

Historically, the primary use of rangeland has been to provide forage for livestock and wildlife. However, the importance of rangeland for recreation and water production is growing. Therefore, most rangelands are managed under principles of multiple-use which means that several uses or values of rangeland are managed simultaneously with care to avoid overuse or destruction of natural resources.

Range Plants

The plants that grow on rangeland can be categorized into 3 main categories:

- **Grasses** are plants with long narrow leaves and hollow stems. They do not have colored flowers and produce grain-like seeds.
- **Forbs** are herbaceous (non-woody) plants that usually have broad leaves and showy flowers. Most of the plants commonly called wildflowers and range weeds are forbs.
- **Shrubs** are woody plants that usually have broad leaves. They are different from trees because they do not have a main trunk; instead, they have several main stems. Some plants can take both a tree and a shrub form but most shrubs never grow up to be trees. Browse is the part of a shrub plant that is used for forage by wildlife and livestock. Mast is the term for the seeds and berries that shrubs produce and is especially important for wildlife.

Why is rangeland important?

Livestock Production - Rangeland and pastureland in the 19 western states are home to 58% of all beef cattle in the United States. Rangeland in the western states also harbor 79% of the stock sheep and 88% of the goats in the United States.

Livestock production on rangeland is very important to supply meat for American and World populations and also for leather, wool, mohair, and other products that livestock yield.

Wildlife Habitat - Rangelands provide habitat for countless mammals, birds, amphibians, fishes, and insects. Of the total number of animal species found in the United States 84% of the mammals, 74% of the birds, 58% of the amphibians, and 38% of the fishes are represented in rangeland ecosystems.

- **Ruminants** are animals such as deer, elk, and moose that have specialized digestive systems that allow them to digest the cellulose abundant in the cell walls of rangeland plants. (Sheep, cattle, and goats are also ruminants).
- **Rodents** and **Rabbits** also have digestive systems that allow them to get energy out of cellulose.
- **Concentrate-selectors** are animals such as birds and bears that find an adequate diet on rangeland by carefully selecting berries, seeds, or roots that have a low cellulose content.

Water -The Western United States has a much drier climate than the Eastern U.S. Because rangelands are located mostly in the Western U.S., water is doubly precious to the 30% of the U.S. population that lives in the Western U.S.

- Most of the water in the streams and rivers of Idaho fell initially on rangeland or forests. Therefore, proper management of rangeland requires careful attention to the amount and quality of water that flows off rangeland.

Recreation - Rangelands are increasingly important for recreational uses such as:

- Hiking
- Hunting
- Camping
- Mountain biking
- Cross-country skiing
- Snowmobiling

What is range management?

Range Management is the careful use and management of rangeland resources (plants, animals, soil, and water) to meet the needs and desires of society. The tricky part of range management is that the “needs and desires of society” are continually changing. Livestock production has always been important, but recently, greater management emphasis is being placed on wildlife management, recreation, and water production.

Tools of Range Management

The proper use of rangeland is accomplished by several simple tools that must be continually monitored and adjusted.

- Fences can be placed to control when a pasture is grazed and provide seasons or years of rest from grazing.
- The number of livestock can be increased or decreased to meet management objectives. Very heavy grazing may be required for some needs (e.g., weed control or water harvest), and light grazing is necessary for other purposes (e.g., improved water quality or forage for elk).
- The species of livestock to be grazed must be carefully selected because each species differs in the diet they select. For example, cows generally prefer grasses, goats consume mostly shrubs, and sheep eat mixed diets of grasses, browse, and forbs. Different species of livestock also differ in type of terrain they use. For example, sheep can graze steeper slopes than cattle.
- Fire is a natural force in nearly all rangeland ecosystems. For healthy rangelands, fires are often carefully set and controlled (by prescribed burning techniques). For example, in Southern Idaho, fire is often used to control the spread of sagebrush and encourage the growth of productive grasses.
- Invasion of weeds on rangelands is a growing problem. Range managers often need to use weed control practices (such as fire, grazing, or herbicides) to reduce the growth of weeds and allow native plants to grow.

Contemporary Rangeland Issues in Idaho

What is Overgrazing? Many people are concerned that excessive grazing by livestock or wildlife creates areas of rangeland that are overgrazed. Range plants are designed to withstand some grazing. In fact, proper grazing can improve the health of many types of rangeland. However, if too much green material is removed from plants, they cannot recover from grazing and overgrazing occurs.

Overgrazed rangeland is difficult to recognize but is often characterized by an increase in weeds, increased soil erosion, and decrease biomass of important forage plants. Caution must be taken when declaring a range overgrazed. Not all rangelands are equally productive, and therefore, a low amount of biomass does not necessarily indicate overgrazing. Some weeds invade even healthy rangeland and unusually heavy rainstorms can cause erosion even on properly grazed rangeland.

Many of the signs of overgrazing we see on rangelands in Idaho occurred 50 to 100 years ago when much of Idaho was “open range” and livestock numbers were not controlled. Idaho rangeland is in better condition today than it was in 1930. One of the primary goals of range management is to prevent overgrazing and this requires a thorough understanding of how much biomass can be removed from plants and during what time of the year grazing is most damaging to plants. A good range manager can recognize overgrazing and take steps to correct it.

Can Livestock and Wildlife Live Happily Together? Rangelands are very diverse habitats with a great variety of plants and geographic features. Livestock and wildlife can often use the same area of rangeland without conflict because they have different diets and habitat requirements. In fact, livestock can be an important management tool for improving wildlife habitat. For example, grazing by cattle in the low elevation forests near Boise encourages the growth of shrubs that are important winter forages for deer and elk. Of course, in some areas,

livestock do compete with wildlife, such as elk, for forage and space. The important thing to remember is that cattle are not always bad for wildlife. Some wildlife are healthier and more productive on land grazed by livestock, and others are harmed by livestock grazing. Careful grazing management is the key to reducing conflicts between livestock and wildlife.

Public vs Private Rangeland. In Idaho, 66% of all rangeland (15.6 million acres) is “Public Land”. This means that the land is owned and managed by federal and state governments for the good of the general public. In Idaho, the most important land management agencies are the Bureau of Land Management, the U.S. Forest Service, and the Idaho Department of Lands. Officials in these agencies make decisions on how public rangeland should be managed, with input from the public. Livestock producers in Idaho can gain the opportunity to graze public lands by purchasing a permit from the agency in charge of managing a particular piece of land. The fee paid by ranchers to graze public land is often much lower than the fee paid to graze on privately owned rangeland, and this leads to much misunderstanding and controversy. Here are some reasons why the fee paid to graze on public land is lower than that paid to graze private land:

- Public land is usually less productive than private land because historically, the land that was too poor to be homesteaded became public land. From a grazing standpoint, this means that livestock need to expend more energy to harvest an adequate diet.
- Livestock producers on public land must accommodate other uses of rangeland such as recreation and wildlife habitat. Some of these multiple-uses of rangeland can reduce the productivity of livestock.
- On public land, livestock producers must develop and maintain water sources, salt, and fences. On private land these are usually provided by the person leasing the land.
- Ranchers that use public land sometimes need to show that they have adequate forage or land resources to maintain livestock when they are not on public land. This is not true of private land leases.
- On public land, the land management agency makes decisions on how many livestock can be grazed and for how long. These decisions are usually more flexible and negotiable on private land leases.

Public land is to be managed for the greatest good of the general public. A century ago, most citizens considered rangelands “wasteland” and thought that meat production was the best use of rangelands. Recently, more and more people are enjoying rangelands for recreation and aesthetics. Therefore, there is pressure to discontinue livestock grazing on public land. In the future, all users of rangeland will need to compare the values brought by livestock (e.g., meat production, aesthetics, and support of local economies) to the values enhanced without livestock (e.g., recreational quality, wilderness aesthetics, wildlife habitat).