Chapter 2 Grazing Lands Resources

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Chapter 2 Grazing Lands Resources

600.0200 Extent

Of all lands in the United States, 59 percent are privately owned, 6 percent are owned by state and local governments, 2 percent are Native American lands, and 33 percent are publicly owned Federal lands. For the purpose of this handbook, the term *private grazing land* represents all non-Federal grazing lands.

Forty-seven percent of all private land in the U.S. is grazed land; while 25 percent is ungrazed forest land; 24 percent is ungrazed cropland; and 4 percent is other land.

There are about 634 million acres of non-Federal grazing land in the United States. Rangeland comprises 401 million acres, and pastureland comprises 130 million acres while grazed forest land and hayland comprise 64 and 39 million acres, respectively. The amount of grazed cropland varies annually.

600.0201 Uses and benefits

Grazing lands ecosystems are a complex set of interactions between soil, water, air, plant, and animal resources; temperature; topography; fire; and humans. Any influences exerted on one of these components affects the others. These ecosystems provide water, forage, fish and wildlife populations, wildlife habitat, mineral deposits, wood, landforms, atmospheric visibility, and biological processes. Depending upon the management applied, some of the benefits and services that are derived or directly obtained are:

- Water for domestic, municipal, industrial, and commercial uses
- Livestock products
- Flood protection
- Waste assimilation
- Scenery
- Recreation
- Wood products
- Minerals
- Ecological continuity

The many uses and values of private grazing lands make them extremely important, not only to the landowners, but to the entire nation. Private grazing lands greatly increase the U.S. land area that can be used to produce plants for food purposes. Many native grazing lands will not support cultivated crop production because of soil characteristics, topography, and climatic constraints. They do support vegetation that can be grazed by livestock to transform this renewable resource into food and fiber products.

Proper management is essential for the sustainable production of food and fiber, as well as supporting a wide diversity of other uses. Healthy grazing lands provide an economic base for many regions of our country.

Many benefits of good grazing land management are measured in qualitative terms, such as better air quality, improved water quality, improved wildlife habitat, and a quality recreational experience. These benefits, whether obtained directly or derived indirectly from grazing lands, do not have established market values. This makes the total value of grazing land benefits and services difficult to ascertain. Some of the benefits are easier valued (e.g., livestock forage, wood products), and others are more difficult to value (e.g., scenery, water quality, recreation). The estimated value of forage used by the livestock industry in 1996 was $2.5 billion.

600.0202 Native grazing lands in the United States

(a) Rangeland

Rangeland is a kind of land on which the historic climax vegetation was predominantly grasses, grass-like plants, forbs, or shrubs. Rangeland includes land revegetated naturally or artificially to provide a plant cover that is managed like native vegetation. Rangelands include natural grasslands, savannas, most deserts, tundra, alpine plant communities, coastal and freshwater marshes, and wet meadows.

Non-Federal rangelands comprise 63 percent of the non-Federal grazing lands in the United States. There are more than 400 million acres of non-Federal rangeland in the U.S. They provide numerous products and have many values and uses. Rangelands are a primary source of forage for domestic livestock and for wildlife. Rangelands provide water for urban, rural, domestic, industrial, and agricultural use. They provide wildlife habitat, areas for natural recycling, purification of the air, and carbon sequestration. Rangelands have aesthetic value, provide open space, and buffers for urban areas. They are a vital link in the enhancement of rural social stability and economic vigor.

(b) Forest land

Forest land traditionally provides a diverse range of commodity and non-commodity products and values, including wood products, grazing for wildlife and livestock, high quality water, wildlife and fish habitat, recreational opportunities, and aesthetic and spiritual values. Forest land is often closely associated with or inseparable from other land resources, such as rangeland, pastureland, riparian areas, cropland, and urban-forest interfaces.

Over 60 million acres of privately owned and managed forest lands in the United States produce understory vegetation that is used for the production of livestock. Forest land that naturally has widely spaced trees, such as ponderosa pine and some southern pines, normally produces a crop of forage each year. These forested areas are defined and described as grazed forest lands.

Grazed forest lands comprise about 10 percent of the total U.S. grazing land resources that are not in Federal ownership. These forested areas have considerable value and uses. Production of wood products is a primary use of these lands. They also produce forage for livestock and wildlife and provide habitat for many game and non-game species of wildlife. The forested areas are important locations for outdoor recreation including fishing, camping, and hiking. In western regions they are important snowfall accumulation zones and play a critical role in maintaining summer streamflows. In western mountains they provide critical summer forage supplies when other grazing resources are dry and dormant. Many also supply wood products, such as timber, firewood, poles, and posts, and edible products, such as pinenuts.

Forest land of such species as fir, spruce, hemlock, and Douglas-fir, and many hardwood forests generally maintain a dense stand of trees. As a result, a grazed understory is produced only periodically following such activities as clearcutting, selective logging or thinning, or fire.

(c) Native and naturalized pasture

Native and *naturalized pasture* are defined as forest land and naturalized open areas other than rangeland that are used primarily for the production of forage for grazing by livestock and wildlife. Overstory trees, if present, are managed to promote naturally occurring native and introduced understory forage species occurring on the site. These lands are managed for their forage value through the use of grazing management principles. These lands do not receive the cultural management received by pastureland (see section 600.0203(b)).

Native and naturalized pasture provides a valuable source of forage for livestock and wildlife. It also provides habitat for many species of wildlife and adds diversity to watershed landscapes.

Native and naturalized pasture may be virtually free of tree growth or may have a partial, or rarely, a full stand of trees.

Areas identified as native and naturalized pasture include:

- Forest land depleted of trees by harvesting, fire, or other disturbances. (The management objective is not to restore the tree stand, but to develop and manage understory vegetation.)
- Forest land on which trees have been removed or extensively thinned for the specific purpose of increasing the grazing resource.
- Certain noncommercial deciduous forest land maintained primarily for grazing.
- Forest land that was previously cleared and managed as cropland or pastureland, but has reverted to a voluntary stand of native and/or naturalized vegetation.

Native and naturalized pasture may be stable, or it may naturally revert back to a forest dominated plant community unless practices are applied to keep it in a herbaceous state.

600.0203 Forage croplands and pasturelands

(a) General

Forage croplands and pasturelands are agricultural lands devoted, entirely or partially, to the production of introduced or native forage crops for livestock feeding. They receive cultural treatment to enhance forage quality and yields. The livestock raised on these lands may be pastured, be confined and fed stored forages, or be fed by both methods. Cultural treatments are the human inputs of labor, material, and skill to raise a crop. On forage producing lands, they include at least one of the following practices: clipping, crop residue management, crop rotation, drainage, fertilization, irrigation, landclearing, mechanical harvest, pest control (e.g., brush, diseases, insects, and weeds), planting, rock picking, selection of new species and/or cultivars, soil amendment applications (e.g., compost, gypsum, lime, and manure), and tillage.

Manipulation of grazing intensity, duration, and distribution is not considered a cultural treatment for purposes of definition of forage cropland and pastureland.

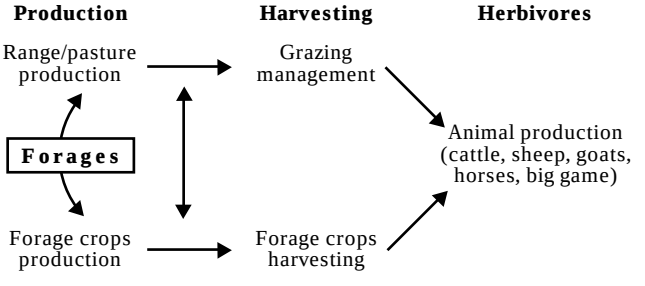
Forage cropland is forage plants mechanically harvested before being fed to animals. Forage crop production occurs primarily on cropland and hayland, which generally are machine harvested, but may be grazed. Pastureland is principally harvested by grazing animals, but may be machine harvested to accumulated stored forage. As shown by the vertical arrow in figure 2–1, the land uses serve a dual use purpose in many instances.

Forage croplands and pasturelands are the plant, soil, and water resource base of a farming system called grassland agriculture. This farming system emphasizes the importance of forages in livestock production and land management. The forage croplands and pasture are raised to provide feed to livestock and to protect the air, soil, and water resources from degradation. The forage crops are central to the cropping rotation strategy employed by the land unit manager. The other crops, if any, are in the rotation to provide a more balanced livestock feed ration, prepare the ground for a new forage seeding, or diversify farm income.

Forage crops are important to the crop rotation mix for several environmental reasons:

- Once established, most provide an erosion resistant cover.
- Their root systems, especially of the perennial species, promote soil aggregation that improves soil aeration, tilth, and moisture conditions.
- With time, they increase soil organic matter content, primarily through the production of root biomass. This sequesters carbon dioxide, a greenhouse gas.
- In rotation with other crops, they can break up life cycles of some weed, insect, and disease pests, thus decreasing reliance on chemical controls.
- Legume forage crops provide fixed nitrogen to grass species grown in association with them or to later crops in the rotation.
- They restore microfauna populations often lost under intensive row crop production by providing a more stable and inviting soil habitat.
- They can add to landscape diversity.
- Depending on management, spatial arrangement with other land uses, and wildlife species present, they can add a source of wildlife food, cover, and habitat diversity.
- Depending on position on the landscape, length of time and sequencing in the crop rotation, and plant architecture and physiology, they can act as nutrient sinks and sediment traps to protect surface and ground water from unwanted contaminants.

Figure 2–1 Two track production-harvesting system of forage conversion by herbivores on forage crops and pasturelands (Vallentine 1990)



(b) Pastureland

Pastureland, often called improved pasture, or tame pasture, is defined as grazing land permanently producing introduced or domesticated native forage species receiving varying degrees of periodic cultural treatment to enhance forage quality and yields. It is primarily harvested by grazing animals. Permanent pastureland in this context means the present operator has no desire to change the land use or rotate crops in the field.

Pastureland does not include native or naturalized pasture that is permanent pastureland receiving no recent cultural management. Pastureland also does not include rotational pasture that is part of a cropland rotation. Pastureland may be machine harvested when and where the need arises, site conditions permit, and the forage type is of sufficient stature, quantity, and quality to permit efficient machine harvest preserving. If part of the annual growth is machine harvested, but regrowth is available and used for grazing during the majority of the growing season, the primary land use is pasture. If the machine harvesting schedule results in little or no appreciable regrowth for grazing, the primary land use is then cropland or hayland. If the crop being mechanically harvested is other than a forage crop, but is grazed either before or after harvest, the primary land use is cropland.

According to the 1992 National Resources Inventory, pastures comprise 21 percent, or about 126 million acres, of the private grazing lands resource. This is total permanent pasture including improved, native, and naturalized pasture.

(c) Cropland and hayland

Cropland is defined as land used for the production of cultivated crops, including forage crops, and harvested primarily by human labor and equipment. As a secondary use, cropland can be grazed by livestock. Cropland producing machine harvested forage crops may also be grazed. Grazing occurs on this cropland either as an emergency procedure after a drought or other unanticipated shortfall or as part of a planned pasture rotation system. Cropland producing grazable residue is often grazed following harvest.

Forage can be defined as the edible parts of plants, other than separated grain, that can provide standing feed for grazing animals or be harvested for feeding. Crops that are sometimes classified as grain crops are also forages, such as corn and sorghum grown for silage. Small grains may also be ensiled or baled as cured hay. In this context they are as much forages as alfalfa, bermudagrass, or any other grass or legume typically regarded as a forage crop.

Cropland as a grazable resource has five main forage categories:

- Mechanically harvested forages
  - — Legume-grass
  - — All grass
  - — All legume
- Pre-harvest cropland pasture
- Post-harvest cropland pasture
- Supplemental or emergency cropland pasture
  - — Summer annuals
  - — Winter annuals
- Crop-rotation pasture