

2013 Canon Envirothon Current Issue Topic

Sustainable Rangeland Management:

Achieving a balance between Traditional Agricultural Uses with Non-Agricultural uses on Montana Rangelands.

Background: Rangeland in Montana and across the nation contributes immensely to a sustainable agricultural economy. Montana's number one "industry" is agricultural production, and the number two "industry" is tourism. Rangeland provides forage and habitat for domestic livestock and wildlife. Recently there has been increasing demands on the rangeland for a multi use concept. Multi use includes hunting, precious metals, fuel (gas, coal) exploration and recreational uses such as; access to fishing, bird-watching, hiking, snowmobiling, cross-country skiing, trail bike/ATV riding. Today, management methodologies vary greatly while attempting to balance rangeland uses that result in maximized benefits to all.

Montana alone has approximately 93.2 million acres. Rangeland in Montana is located in the short grass prairie and mountain regions. Of that, there are approximately 36.3 million acres of Private Rangeland, 31.2 million acres of Public Rangeland, 3.7 million acres of Dryland Pasture, and 454,000 acres of Irrigated Pasture. Rangeland and Pastureland in Montana would comprise about 70% of the total land area – this would include the prairies, mountain parklands, forested areas with 25% or less canopy openings, alpine plant communities, wetlands, introduced tame pastures - dryland and irrigated.

History: Rangeland has seen major changes from the large bison herds on the prairies during the 1800's, to the homesteading days during the early 1900's, to the multi uses and management of today's rangeland. Native prairie once covered nearly a quarter of the continental United States, providing a home for specially adapted, diverse plant and animal life. Prairie ecosystems thrive on the intermittent disturbance brought by frequent fire and the irregular mosaic of vegetation carved out by the periodic passage of native grazers (bison, elk, mule deer, white-tailed deer, and antelope). These disturbance and subsequent renewal have shaped the life cycle of every native prairie organism.

As our knowledge of Rangeland has increased, it became evident that what helps the rancher is often good for wildlife. In this grazing-dependent ecosystem, many species of both plants and animals rely on the presence of large grazing animals. Properly managed rangeland can provide a sustainable agriculture economy and healthy rangelands for future generations.

Definitions:

- Rangeland – land on which the plant community is comprised of predominately native or indigenous grasses, grasslikes (e.g. sedges), forbs and/or shrubs. Rangeland includes natural grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes and wet meadows.
- Pastureland – grazing lands comprised of introduced or domesticated native forage species that are used primarily for the production of livestock. They receive periodic renovation and/or cultural treatments such as tillage, fertilization, mowing, weed control and may be irrigated. They are not in rotation with crops.
- Grazing Management – the manipulation of grazing and browsing animals to accomplish a desired result.
- Ecological Site – a distinctive kind of land with specific soil and physical characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its ability to respond similarly to management actions and natural disturbances.
- Stocking Rate – the amount of land area allocated to each animal unit for the entire grazing period in one year.
- Homestead Act of 1862 - An act passed by Congress in 1862 promising ownership of a 160-acre tract of public land to a citizen or head of a family who had resided on and cultivated the land for five years after the initial claim.

2013 Learning Objectives

“Sustainable Rangelands”

Key Topics

1. Basic rangeland and pastureland knowledge, to include: identification of state grass, plant I.D. and definitions, importance of grazing lands in Montana.
2. Range Ecology Processes – definition of ecological sites (soil – plant relationships), ecological processes (energy flow, nutrient cycle, water cycle and plant succession).
3. Rangeland and pastureland management – stocking rates/carrying capacity, general types of grazing systems, improvement practices (fencing and water development), wetland, riparian and upland communities
4. Basic knowledge of livestock and wildlife interactions, forage preferences, forage overlap, and habitat requirements.

LEARNING OBJECTIVES

1. Define rangeland and pastureland, percentage of state encompassed by rangeland and pastureland, importance of grazing lands.
2. Identify state grasses of Montana, differentiate between plant types (grass, forb, shrub, and trees), identify parts of a grass and/or grass like species.
3. Define rangeland ecological sites, understand ecological process, understanding of all definitions inclusion to all key topic areas.
4. Understanding of basic rangeland and pastureland management concepts, i. e. grazing systems, stocking rates, and rangeland improvements.
5. Understanding of Best Management Practices (BMPs) on rangeland and pastureland and how different communities (wetland, riparian, and upland areas) interact.
6. Recognize different classes of livestock and understand their interaction with wildlife species.
7. Understanding of the historical use of the land by humans, domestic livestock and wildlife and its effect on the plant community.
8. Understanding the rights of the private landowner and citizens' rights to public land.

2013 Recommended Resources

**(click on links below)*

The ABC of Pasture Grazing

Interpreting Indicators of Rangeland Health Technical Reference 1734-6

Sustainable Grazing Lands Providing a Healthy Environment

Ecosystems, Sustainability and Grassland Management

Hope on the Range

Montana Access Guide to Federal and State Lands

Rangelands - An Intro to Wild Open Spaces

Envirothon current competition information: <http://www.envirothon.org/the-competition/current-competition.html>