1. Range Management Terminology

Range Management - Manipulation of rangeland components to obtain optimum combination of goods and services for society on a sustained basis.

Rangeland (Range) - Uncultivated land that will provide the necessities of life for grazing and browsing animals.

Multiple Use - Harmonious use of the range for more than one purpose; livestock, wildlife, water, recreation, etc.
Grazing and rangelands

Range Management Terminology cont.

**Common Use** - Intentional grazing of the range by more than one type of animal to obtain economic and/or social benefit.

**Ecology** - Study of the relationship between organism or group of organisms and their environment.

**Economics** - Study of how to allocate scarce resources among competing uses.

Range Management Terminology cont.

**Ruminant** - Have enlarged compartment (rumen) that permits microbial degradation of food before it passes to the stomach (abomasum) [cow, deer, sheep, goat, elk, moose, etc.]

**Forage** - All plant material on a given area potentially edible by livestock and wildlife.

**Grasses** - Plants that have hollow; jointed stems; fine narrow leaves; and fibrous roots.
Range Management Terminology cont.

**Forbs** - Nongrass-like plants that have tap root, broad leaves, and solid non-jointed stems.

**Shrubs** - Woody plants that have long, coarse roots; branch near ground level; and generally have broad leaves.

**Trees** - Woody plants that have a trunk that branches well above ground.

Basic Range Management Concepts

1. Grazing land is a renewable resource.
2. Energy from the sun can be captured by green plants which can only be harvested by the grazing animal.
3. Grazing land supply us with food and fiber at a very low additional energy cost.

Basic Range Management Concepts

4. The amount and kind of forage available is determined by the type of soil and the climatic conditions. A given set of soil and climatic conditions define a “range site”
5. Grazing lands supply us with multiple products: food, fiber, fishing, hunting, sightseeing, minerals, timber, and water.
Range Management Information Sources

1. Society for Range Management
   Formed in 1948
   Publications
   Rangeland Ecology & Management
   Rangelands
   Books
   Newsletters
   Brochures

Society for Range Management

C. Address
Society for Range Management
445 Union BLVD
Lakewood, CO  80228
Website- Society for Range Management
(SRM): www.rangelands.org

Range Management Information Sources

2. Textbooks
   c. 1991- Grazing Management: An Ecological Perspective. Heitschmidt and Stuth
Other information sources

a. Journal of Soil and Water Conservation
b. Journal of Wildlife Management
c. Journal of Animal Science

Key Range Management Components

1. Protection and enhancement of soil and vegetation complex.
2. Maintaining or improving output of consumable range products, such as red meat, wildlife, water, wood, fiber, recreation, etc.
   • Distinguishing feature of range management is that it deals with manipulating the grazing activities of large herbivores so both plant and animal production will be improved or maintained.

Four Basic Principles in Range Management

1. Proper stocking rate.
2. Proper distribution of grazing animals.
3. Proper kinds of grazing animals.
4. Proper grazing system.
   *Proper stocking rate or correct animal numbers is considered the most important part of range management.
<table>
<thead>
<tr>
<th>Risk category</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climatic risk</td>
<td>Drought, severe winter</td>
</tr>
<tr>
<td>Biological risk</td>
<td>Uncertainty in outcomes of range management practices; disease infects livestock; predation; grasshopper infestation</td>
</tr>
<tr>
<td>Financial risk</td>
<td>Rising interest rates, falling cattle prices, rising livestock production costs, falling land value</td>
</tr>
<tr>
<td>Financial risk</td>
<td>Rising taxes, increased regulation, increased grazing fees on public lands, discontinuation of subsidies, increased protection for endangered species, land use restrictions.</td>
</tr>
</tbody>
</table>
Major risks associated with rangeland livestock production in the United States cont.

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Example</th>
</tr>
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<tbody>
<tr>
<td>Other</td>
<td>Fire, theft, vandalism</td>
</tr>
</tbody>
</table>

Ecosystem Services

- Basic processes such as maintenance of air and water quality essential to human life performed by natural or near natural landscapes (ecosystems).
- These processes have generally been taken for granted by humans but their importance is increasingly being recognized as the world human population increases and the world’s natural landscapes diminish.

Ecosystem Services (examples)

- Maintenance of air quality
- Maintenance of water quality
- Decomposition of waste and organic matter
- Nutrient cycling
- Pollination of plants
Ecosystem Services (examples)

f. Renewal of soil fertility
g. Provision of genetic resources
h. Natural control of pathogens and diseases
i. Regulation of freshwater supplies.

Ecosystems services and products

1. Clean air
2. Clean water
3. Biodiversity
   a. Medicine
   b. Agriculture
   c. Environmental barometer
   d. Pest control
e. Right to live

4. Esthetics
5. Food
6. Ozone
7. Climatic stability
8. Environmental purification
9. Plant products (non-food)
10. Animal products (non-food)
Importance of Rangeland

Land Area of Rangeland

1. Composition of World Land Area
   30% Deserts, Glaciers, Mountain Peaks
   11% Farmland
   24% Permanent Pasture (grassland)
   31% Forest and Woodland
   3-4% Urbanize (cities, airports, highways)

**70% of World Land Area is Rangeland.
***Rangeland is the primary land type in the world.

Two Biggest Challenges of the 21st Century

1. Stabilization of human population.
2. Stabilization of Climate.
Primary Rangeland Issues in New Mexico

1. Drought
2. Invasive Plants
3. Grazing Management
4. Urbanization
5. Fire
6. Wildlife
7. Watershed Improvement
Primary Rangeland Issues in New Mexico
8. Monitoring
9. Income Diversification
10. Multiple Use Conflicts
11. Insects/Disease
12. Riparian Improvement
13. Energy Development
14. Increased Regulations
15. Rangeland Restoration