

- Vol. I. Biologically Effective Management of Grazinglands 4<sup>th</sup> Ed.

### **Rangelands of the Northern Plains**

- Northern Plains Rangelands
- Physiography, Soil, and Native Vegetation
- Seasonal Weather Patterns
- Soil Formation
- Prehistorical Conditions of Rangelands
- Problems Inherent in Grasslands

#### **Effects of Environmental Factors**

- Climatic Factors Affect Plant Growth
- Plant Water Stress Frequency and Periodicity
- Grazing Starting Dates
- Grass Growth in Height
- Effects of Fall Grazing on Height
- Proactive Management of Pest Grasshopper Habitat

#### **Effects of Partial Defoliation**

- Grazing Effects on Rangeland Vegetation
- Grazing Effects on Tillering and Rhizosphere Volume
- Tillering Responses to Partial Defoliation
- Tiller Initiation and Tiller Density
- Forage Tiller Response to Partial Defoliation

#### **Effects of Grazing Management Treatments**

- Cow and Calf Performance on Grazing Strategies
- Cow and Calf Performance on Fall Pastures

- Vol. II. Biogeochemical Processes of Prairie Ecosystems 2<sup>nd</sup> Ed.

- Biology of Defoliation by Grazing
- Ectomycorrhizal Fungi in Rhizosphere
- Biogeochemical Model to Improve Soil Quality
- Nitrogen Cycle on Rangelands
- Mineral Nitrogen Threshold at 100 Pounds per Acre
- Mineral Nitrogen Influence on Water Use Efficiency
- Reduction of Detrimental Effects from Drought Conditions
- Effects from Fire
- Grazing and Burning Effects on Ecosystem Processes
- Restoration of Degraded Prairie Ecosystems
- Degradation and Biological Restoration of Prairie Ecosystems
- Perpetually Sustainable Grazingland Ecosystems
- Initial Restoration Changes of Degraded Ecosystems
- Management Based on Ecosystem Mechanisms and Processes

- Vol. III. Evaluation and Development of Forage Management Strategies for Range Cows
- Efficient Management Strategies for Range Cows

### **Herbage Quality and Range Cow Requirements**

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- Annual Mineral Quality Curves
- Mineral Requirements for Grazing Beef Cows

### **Increasing Value Captured From the Land**

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- Old Style Range Cow vs Modern Range Cow
- Range Cow Nutrient Requirements
- Costs and Returns for Twelve Month Forage Management Strategies
- Cost and Returns for Nongrowing Season Forage Management Strategies
- Vol. IV. Methods for Development of Biologically Effective Management Strategies
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  - Length of the Average Grazing Season Month
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- Third Trimester Production Period
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