Grazing Management: Part Science-Part Art

International Mountain Section
Society for Range Management
Great Falls, Montana

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Pre-European Grazing Management
Montana’s Range Livestock Industry

• No range livestock until after Little Bighorn (1876)
• Cattle and sheep numbers mushroom from ’78 to 1902
• 1891-1897 Federal reserves created
  – Westerners resent “recommendations by eastern scientific men”
• 1915-1920 Passage of more “Homestead Acts” increase western livestock numbers
• 1920 – sheep and cattle markets plummet
Management of the Federal Reserves

- 1897- FS Organic Act
  - Forest reserves for protection of watersheds and timber production
    - Grazing NOT listed
  - Secretary could authorize use to “preserve forests from destruction”
    - “tramp” sheep grazing and fires were primary dangers
  - Colville Report (1898)
    - **Recommends permits to hold sheep numbers to levels that will not damage forage**
Forest Service Regulations - 1907

- Livestock Associations advise FS on allotment assignments
  - Preference to neighboring landowner
- Grazing permit fees
- Regulations
  - Grazing not “injurious to water supply”
  - All grazing under permit
  - Permit sets district, numbers, off and on dates
Management for Non-Forest Reserves

Mizpah-Pumpkin Creek Grazing District (1928)
- Grazing leases
- Restrict numbers
- Fences, stock ponds
- 1931; 20% better forage

Foundation for Grazing Service (BLM) Lands
Limited Success

- **The Western Range**
  - Western ranges seriously depleted
  - Recommended
    - Soil surveys
    - use of “imported” species and plant development
- **Taylor Grazing Act**
- **Soil Conservation Service**
### Northern Great Plains 1916-1940

<table>
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<th>System</th>
<th>Stocking Rate</th>
<th>ADG</th>
<th>Condition</th>
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<td>0.26 aums/ac</td>
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<td>5 month season</td>
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<td>Slight decline</td>
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<td>Continuous 4</td>
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<tr>
<td>Deferred rotation</td>
<td>0.5 aums/ac</td>
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<td>static</td>
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<tr>
<td>(73 more pounds of gain on 88% of land base compared to C3 and C4)</td>
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</table>
Season of Use

(Blaisdell and Pechanec 1949)
Utilization Becomes A Topic

• NGP Research (1916-1940)
  – ADG is measure
  – 25% residual

• Bighorn NF Research (1963)
  – Soil type affects grazing response
  – 40 to 45% to maintain
  – Lighter use to improve
Hormay Rest Rotation

• Designed to re-establish new plants
  – Deferment for vigor

• Stocking Rate
  – By pasture

• Utilization Level
  – 60-75% expected

• Any season
  – Grazing during seed ripe

• Regrazing desirable
  – Don’t drive livestock
Note! Blaisdell and Pechanec recorded nearly full recovery with supplemental watering
Stocking Rate More Important than System

(Van Plool and Lacey 1976)

• Improvement in Range Condition
  – 13% for implementing any grazing system
  – 35% for adjusting SR downward from heavy to light
  – 28% for adjusting SR down from moderate to light
  – West TX; ≤ 40% use of annual growth maintains range condition under yearlong grazing
Attitude of Manager More Important than System

(Erhardt and Hansen 1997)
General Rules

• Most if not all grazing animals will be highly selective of both species and individual plants
  – Highest during active plant growth
  – Lowest in uniform, mature stands

• Plant recovery is dictated by temperature and available soil moisture
  – Defoliation near end of soil moisture (temperature) = no opportunity to recover (CHO only 7-9 days)

• Utilization levels indicate length of recovery period
  – Light, infrequent use = short rest
Discussion Points

- What can we really control?
- What escapes our best intentions?