Forest, Riparian, and Range Grazing

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RPMS: Production Profile KRBNG

Annual Production (lbs/acre)

Year

Kiowa/Rita Blanca National Grasslands (~ 30% variability) but…

The 2013 calf crop was called the lowest since 1949 at 33.9 million head

2.5X
Rules of thumb collection

• Take half, leave half
• Stubble height
• Graze half the growing season
• Harvest coefficient at 35% (not utilization)
• "Defer" grazing every third year

All of these will feel like leaving feed behind
• Annual grazing during critical period
• Perennial grass grazed too tight
• Season-long use in many places at moderate to high stocking rate

• Bad rule of thumb for Western rangelands: “Don’t let it go to seed.”
Floyd Reed’s 3 Rules

1. Don’t graze the same place at the same time every year
2. Defoliate primary forage species moderately
3. Allow plenty of time for recovery
Grazed too close and for most of the growing season
Light grazing intensity
Tip’s rules of thumb

1. Let bunchgrasses go to seed periodically (every other year?)
2. Provide growing season recovery by creating shorter grazing periods
3. Leave something behind – don’t slick it off – preserve surface roughness and soil cover
4. Use higher stock densities where possible
5. Graze after seed shatter sometimes
Terminology

- Stocking rate
- Carrying capacity
- Animal density
- Grazing intensity
- Animal Unit Month
2 patterns of grazing are sustainable

Short-duration, high density

Light continuous
Riparian grazing principles

• **Good**
  - Early
  - Short duration
  - Avoid hot season
  - Rotate use areas and timing
  - Light to moderate use
  - Long recovery periods
  - Regrowth before winter
  - Occasional rest
  - Stutter deferred (willows grow taller for two years, then a late year)
  - More offsite water
  - Well scattered salt/supplements
  - Cleaned pastures and closed gates

• **Bad**
  - Season-long
  - Long season of use
  - Hot season grazing in big pastures with limited riparian
  - Few waters and only riparian water
  - Heavy use too often in the system
  - Little or no regrowth before winter
  - Use at same time every year – repeating stress
  - No rest – little recovery with long seasons use
  - Salt on creeks
  - Little or no riding
  - Stragglers
A Management Chain Reaction
Where is the objective?

- Rotation grazing
- A four inch stubble height and 85% growing season recovery
- An increase in colonizers
- Deposition thereof of fine sediments
- An increase in stabilizers
- Narrowing a stream
- Increased floodplain access & aquifer recharge
- Improved base flow etc.
- Improved habitat quality
- Improved water quality
- Increased fish populations
- Increased recreationist satisfaction

Efficiently Monitored Actions or tools

Efficiently Monitored (MIM) Objectives

PFC

Values (difficult to monitor)
1. Landowner communication
2. Animal influences on riparian planting
3. Upland factors driving potential riparian overuse
4. Strategies to keep animals out of planted area
5. Vegetation management goals that may be achieved by controlled grazing
6. Pros and cons of fence options
7. Fence placement principles
8. Frequent fencing faux pas
Physical function

PFC is almost always the management goal

Proper Functioning Condition from TR 1737-15

PFC exists where “adequate vegetation, landform, or woody material is present to dissipate stream energy associated with high waterflow . . ., capture sediment and aid floodplain development, improve floodwater retention and groundwater recharge, develop root masses that stabilize streambanks against erosion, and maintain channel characteristics.”
Landowners vary in opinions

To fence or not to fence . . .
Communication

1. Understand first
2. Act like you value the landowner’s attachment to, and knowledge of, place
3. Be able to talk grazing management
4. Be prepared to accommodate post-recovery grazing options
5. Understand that livestock exclusion is more than just fence construction
Context matters

Landowners often have context but not the language to communicate it scientifically.
Old Timer Insisted:

“Beaver River has never had a lot of cottonwoods and willows.”
Then an area was fenced off . . .

28 Years After Fencing
No management change here . . .
Through the 28 year fence . . .
Factors influence livestock pressure on riparian area

1. Forage yield of uplands and riparian area
2. Pasture size
3. Contrast
4. Stockwater
5. Riparian vegetation types
6. Topography
Planting and livestock
Places trees won’t grow (and livestock are not to blame)

- Anaerobic soils
- Heavy wildlife use
- Finicky trees
- Unique hydrologic features
How to keep livestock out

- Fence is a psychological barrier
- Not a brick wall . . . Make a yellow brick road
- Riparian planning begins at the ridgeline rather than the greenline
Upland considerations in controlling riparian pressure

- Supplement placement
- Shade
- Drift fence
- Planting
- Water
- Timing of use
- Cross-fencing uplands
- Low-stress handling
Biological control of undesirable plants in riparian enclosure

- Reed canarygrass
- Giant reed (Phragmites australis)
- Broadleaf weeds
Reed canarygrass suppression allows other riparian obligates to be expressed.
Strategies to eliminate or minimize impact in planting areas

- Permanent exclusion
- Temporary or partial barriers
- Non-fence barriers
Temporary fence
Benefits of permanent fence:

• Greater control over livestock, usually more secure and durable than temporary fence.
• Smooth wire fences that can be electrified or not are more wildlife-friendly.
• Where a manager won't change management, this is the only option and it is often necessary!!!
Downsides of permanent fence

- COST OF CONSTRUCTION
- COST OF MAINTENANCE
- RESPONSIBILITY FOR MAINTENANCE (social cost)
- Restricts wildlife and livestock movement
- Restricts recreationists
- Injures recreationists
- Are damaged by recreationists
- Sometimes traps animals inside the fence; cure can be worse than the problem (ex. elk and cattle both on water development exclosures)
- Must be checked regularly, i.e., more than once per week.
Fence placement principles

- Avoid using the top of the streambank
- Ordinarily, should fence the entire riparian zone unless it's a huge floodplain
- Consider applicability of fence location after recovery objectives are met
- If riparian pasture, should be a viable size with natural edges. A riparian pasture allows complete control of timing, duration, frequency, intensity of grazing regardless of what's going on outside the riparian area.
- When fencing, fence areas of "like" vegetation for consistent effects under the grazing management applied.
Frequent fencing faux pas

- H-brace too narrow
- Electric fence not hot
Non-fence barriers, example
Buffalo Peaks Wilderness, central Colorado

USUAL ISSUES
• Livestock – Range Management
• Erosion Control - Prevention
• Mountain Pine Beetle Mitigation
• Historic Erosion Issues
• Balancing Erosion/Deposition
• Riparian Protection
• Soil Stabilization
• Water Developments
• Noxious Weeds

Photo by Chad Horman, USFS
Instructions to the logging contractor: “Take this timber and MAKE A MESS!”

Photo by Chad Horman, USFS
Case studies to increase resilience among farmers and ranchers in the Pacific Northwest

Many strategies can enhance resilience to climate change and other future challenges – and these strategies often also provide immediate benefits to farming and ranching operations. This case study series explores strategies that innovative farmers and ranchers in our region are already using, and which may be of interest to others. Each case study and its complementary video centers around the experience of a regional producer, and provide summaries of relevant biophysical, economic, and social science that help inform when and how these strategies might work in other places.

LIVESTOCK CASE STUDIES

- Grazing for Multiple Use Goals: Russ Stingley
- Resilience Through Engagement: Brenda & Tony Richards
- Adaptive Rangeland Management: Jack Southworth
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