

Decision Support Science to Assist Management of Riparian Grazing



Background

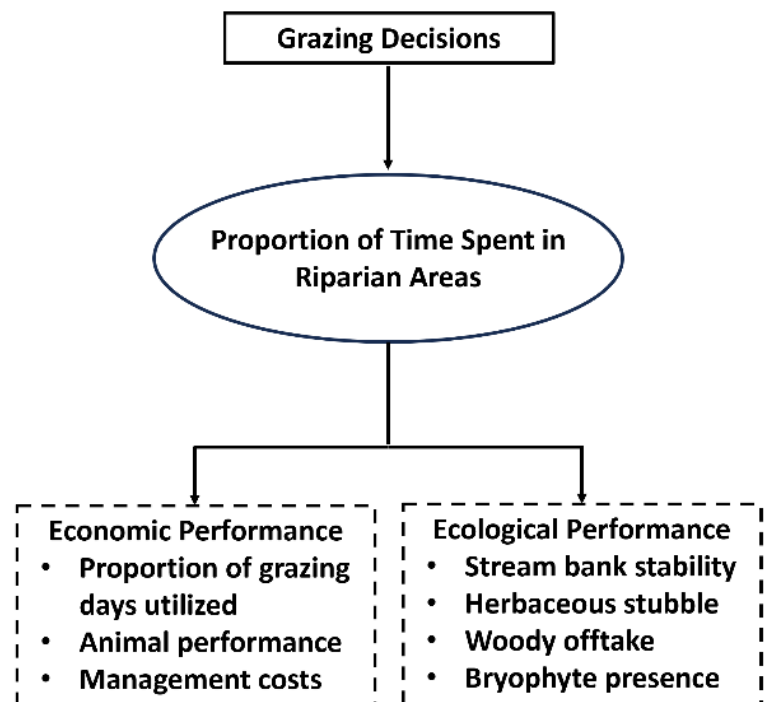
- Grazing is common across western public lands & supports rural communities & economies.
- Overuse of riparian areas by cattle can degrade stream and riparian ecosystems, conflict with habitat conservation for coldwater fish (including threatened salmonids), and limit effectiveness of riparian restoration.
- Management seeks to meet both ecological and economic sustainability objectives by limiting cattle use of riparian areas to minimize effects on coldwater fish and ensure success of riparian restoration efforts, while also achieving better use of upland forage.
- Starkey Experimental Forest and Range (SEFR) has a long history of grazing and space use research that provides a unique opportunity to develop decision support tools.

Importance

- Grazing affects ecological sustainability of riparian systems and economic sustainability for local communities.
- Minimizing riparian cattle use is key to balancing multiple use objectives – utilizing grazing opportunities provided by upland forage and minimizing impacts to riparian health.

Research Goals

- Clarify scope of grazing decisions and their spatial scales and timing.
- Synthesize results from SEFR & build tools that inform best management practices relative to economic and ecological sustainability objectives.
- Identify specific tools for USFS range program at a variety of levels – local operational, allotment management planning, broad-scale planning.
- Provide roadmap for future– highlight data needs and knowledge gaps.

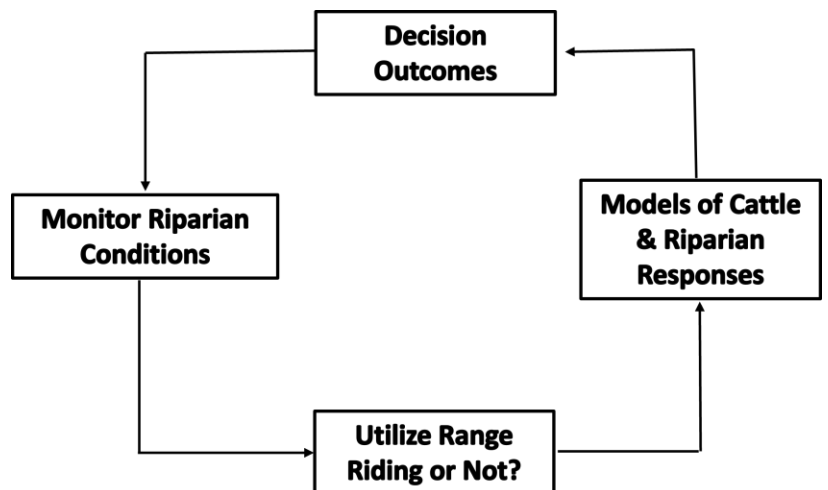
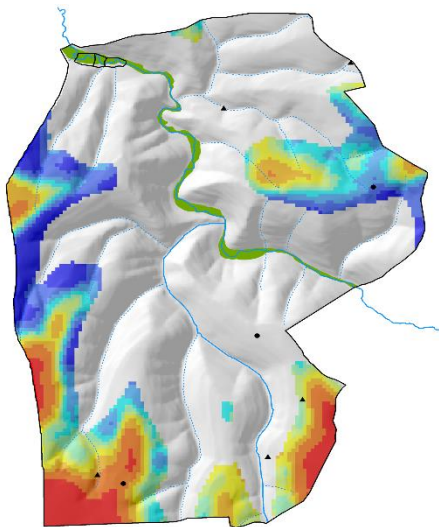


Example Decisions

| Grazing decision | Spatial scale | Timing | Link to riparian conditions |
|--|-----------------------------|-----------------------------------|---|
| 1. Where to locate upland supplements? | Within pasture or Allotment | Within or between grazing seasons | Optimally placed supplements will more effectively retain cattle in uplands |
| 2. Utilize range riding? | Pasture or allotment | Regular, within grazing season | Herding cattle to uplands reduces fraction of time spent in riparian areas |

Example Decision Support Tools

- **Simple tool:** maps to optimize resource investments – for example, supplements to maximize upland cattle retention.
 - Useful for operational & allotment management decisions.
- **Complex tool:** computer simulation models to assess current best management practices – for example, range riding to push cows into uplands when monitoring deems appropriate.
 - Useful for broad-scale planning and identifying best practices over a range of conditions (e.g., changing environmental conditions, uncertain responses by cows).



Next Steps

- Synthesize & integrate SEFR data sets to build decision tools that inform common riparian grazing decisions at their appropriate spatial and temporal scales.
- Collaborate with partners and range managers to improve tool application and delivery and identify data gaps limiting implementation.
- Provide recommendations for future data and tools to improve riparian grazing decisions.

Contact Information

Bryan Stevens, Research Wildlife Biologist,
 PNW Research Station, U.S. Forest Service;
bryan.stevens@usda.gov; 541-962-6559



Oregon State
 University

