WASHINGTON STATE UNIVERSITY
KITTITAS COUNTY EXTENSION

Tipton D. Hudson
Rangeland & livestock management
507 Nanum Street, Room 2
Ellensburg, WA 98926
(509) 962-7507
hudsont@wsu.edu

RIPARIAN GRAZING STRATEGIES (article for Wash. Animal Ag Team newsletter summer 2011)

--Tipton D. Hudson, rangeland & livestock management faculty

Riparian areas are important because they provide a stable supply of clean water, habitat, forage for large ungulates, and other ecological goods & services. In a forage-based livestock production system, riparian areas are additionally important because they provide a disproportionately large quantity of forage relative to the amount of land they occupy. They also provide forage during times of the year when adjacent upland vegetation is no longer actively growing.

The influences of grazing livestock on upland and riparian ecosystems can positively and negatively affect surface water quality. At the watershed scale, water quality is largely related to riparian function. Properly functioning riparian and aquatic ecosystems have natural processes that serve to filter most natural pollutants, such as sediment, fecal bacteria (shed by all warm-blooded animals), and mobile nutrients. "Proper Functioning Condition" is a qualitative approach based on quantitative science to assess the physical health of wetland and riparian systems.

> "Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation." (TR 1737-9)

When these characteristics are present, the soil/vegetation complex is very effective at producing clean water, aquatic habitat, wildlife habitat, and forage for domestic livestock within some natural range of variability.

There are a number of factors in grazed areas that increase the risk of riparian vegetation overuse and the potential for adverse water quality impacts. The presence of one or more of these factors does not necessarily constitute or generate a water quality problem, but these are given (in no particular order) to provide managers with specific areas of risk that can result in direct or indirect water quality impacts.

- Uplands are unattractively steep or provide little forage
- Riparian areas provide the only shade during hot weather.
- Animals have developed a pattern of use in riparian areas.
- Salt or supplement is placed in riparian zone.

• Riparian area is the only source of water.
• The class of livestock is less mobile.

These conditions are commonly found under a couple of scenarios: single-pasture system, continuous grazing; and sometimes in late summer/early fall grazing when upland forage has reduced forage value and riparian woody species exhibit high nutrient levels.

Most problems relate to livestock distribution: duration, intensity, season, and frequency of use. Grazing management should be planned to protect soil stability, plant vigor, and water cycling. This requires providing riparian plants adequate time to recover from grazing, avoiding livestock use that results in compacted soil, and timing grazing to favor desired plants' reproductive strategies.

Management actions that have been used successfully to achieve these results include:
• Spring grazing (when cattle are less likely to concentrate in the riparian area
• Place salt and mineral away from the stream
• Providing a watering facility near the stream -- an effective strategy with or without riparian fence
• Short-term grazing use
• Late fall or winter grazing where there is adequate cured grass on uplands
• Establishing riparian pastures that can be managed separately from adjacent uplands; this usually requires providing alternative water on the uplands
• Structural features such as hardened crossings, culverts at crossing locations, felled tree barriers to direct livestock movements
• Herding to both reduce time animals spend in a riparian and train cows toward a different pattern of behavior. Remember, animals must be placed somewhere they will have their needs met. They must be placed, not chased.
• Improving forage conditions away from water. This may include interseeding, re-seeding weedy areas, fertilization under more mesic conditions, weed control, etc.

Some basic principles should guide site-specific solutions on your ranch:
1. Avoid grazing the same place at the same time every year.
2. Avoid grazing the same place twice during a growing season if possible.
3. Increase stock density to decrease selectivity.
4. Think about harvesting grass like you would harvest a crop. A pasture/paddock is not where the animal lives, it's where he/she visits to harvest some forage during a discrete window of time.
5. Remove animals once the desired level of grazing is achieved and don't bring them back until that area is fully recovered.
6. Build your understanding of riparian health and processes and pay attention for warning signs.
7. Manage areas of different vegetation differently -- plant productivity and soil quality are good criteria for establishing management boundaries.

Livestock-influenced water quality is a significant legal issue in the West. Reducing your legal risk of a water quality violation is important, and on most ranches this can be accomplished without exclusion fence. Exclusion

fences should be considered when they are necessary to re-establish riparian vegetation and jump-start the ecosystem processes described above. But even if your primary concern is profit, you have a very direct economic interest in protecting the production potential of these riparian pastures. Overgrazing rarely results in an increase in forage production or water availability.

During the next twelve months, there will be a number of riparian grazing workshops available to ranchers in Washington State. Stay tuned for dates and locations. You may also contact me for more information at hudsont@wsu.edu.