Grazing Management for Riparian Areas

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Management Goals

1. Repair and maintain a healthy vegetative soil cover on stream banks and within riparian areas.
2. Harvest forage economically for profitable livestock production.

Introduction

Riparian areas which surround streams are important sources of forage for grazing livestock. These areas are also important for recreation and wildlife habitat and perform a variety of ecosystem services, such as filtering nutrients and pathogens from surface runoff to protect streams and lakes. Inappropriate grazing management can result in damage to these areas, decrease productivity and harm the environment.

The riparian area can be managed in a variety of ways.

- Fencing off the riparian area as a vegetative buffer is the most desirable option and will limit livestock stream access and protect stream banks from hoof traffic or overgrazing, which may lead to erosion of nutrient-rich sediment into surface waters. In this management system, cattle access to the stream can be facilitated by constructed livestock watering or crossing points.
- Fencing off the area as a dedicated riparian paddock and allowing periodic flash grazing will limit cattle access to streams and reduce the potential for negative impacts associated with overgrazing. This method allows the livestock producer to continue grazing livestock on the land and the periodic, controlled removal of the vegetation helps to maintain a healthy forage stand.
- If fencing off the stream for use as a riparian paddock is not possible, management practices that attract cattle away from the riparian area, such as the use of off-stream water or supplementation, may reduce the likelihood of cattle causing damage.

Managing a Riparian Paddock

Flash grazing is grazing a paddock at a relatively high stocking density for a short period of time, typically involves not more than two to four days. This is the preferred management practice if livestock will have access to a stream and riparian area.

Appropriate riparian paddock size will differ for each situation depending on the stream, pasture and type of livestock. The size should be large enough so that fences are not damaged during normal high water events. However, it should not be so large that the riparian paddock will be occupied for greater than two to four days during a single grazing bout. It should be rested for a minimum of 30 days between grazing events.

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Riparian paddocks should not be grazed to less than 4 to 6 inches of residual forage height depending on forage species. Shorter residual forage levels may increase the amount of bare ground in the riparian area, increase the chance of erosion and reduce the ability to filter nutrients from surface runoff.

Avoid grazing of a riparian paddock during wet periods, such as early spring. These soils are often highly susceptible to treading damage when wet, and stream banks may easily erode.

Flash grazing of a riparian paddock can be a normal part of a grazing rotation in a well-managed rotational grazing system. The figure below shows how a riparian paddock and reinforced stream crossing can be incorporated into a pasture layout to make the best use of pasture and stream resources while protecting the environment.

Construction of a controlled stream access site, such as a stream crossing, requires a permit from the Michigan Department of Environmental Quality. Protecting surface waters protects producers from violating water protection laws and also provides high quality water to livestock.

Riparian Management Without Fenced Paddocks

Fencing livestock out of the stream and managing the riparian area as an ungrazed vegetative buffer or grazed riparian paddock is the recommended management practice. In some situations, however, development of a riparian paddock may not be possible. When the use of fencing to exclude livestock from the stream and riparian area is not possible, the livestock producer should manage the rest of the pasture in a way that encourages livestock to stay away from the riparian area.

Various species will graze riparian areas differently. Sheep and goats will tend to avoid low and wet areas and rarely will cause wetland/stream bank damage. During dry periods, however, sheep

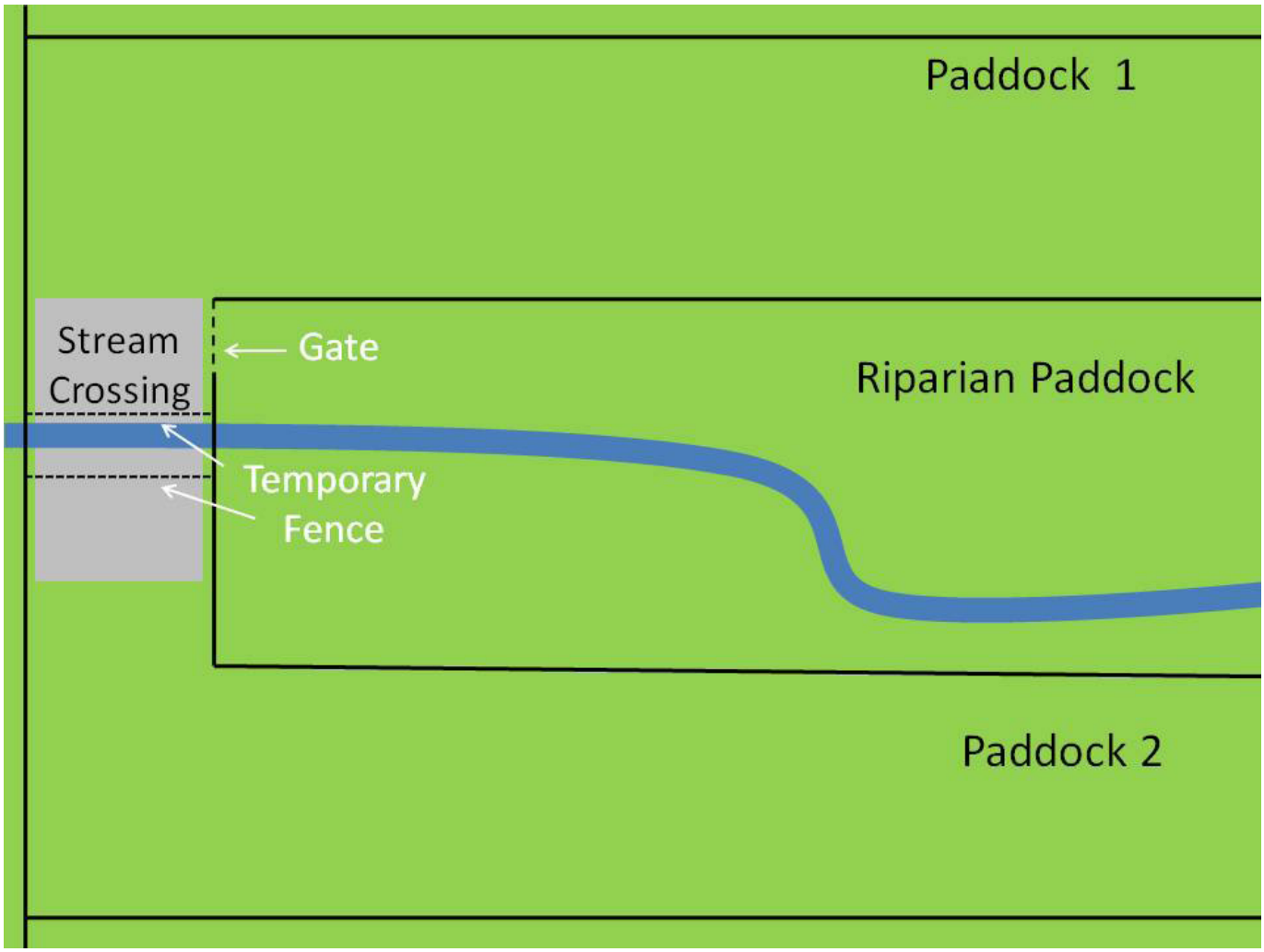

Figure 1. Paddock layout incorporating a riparian paddock and improved stream crossing.

and goats can put a lot of grazing pressure on woody plants that cattle usually do not graze.

To prevent cattle from overgrazing riparian areas, be sure to have a clean and convenient source of water away from the area. A clean off-stream water source will not only encourage cattle to avoid the riparian area but has also been shown to improve cattle performance.

Another critical issue is to have or offer adequate and desirable grazing away from the riparian area. If the only green feed left in the pasture is down by the stream, the cows will graze there. Fertilizing and/or reseeding as needed for adequate pasture across the entire paddock will increase forage production and help keep cattle out of the riparian area. When pasture is gone, move cattle to another grazing paddock or a dry lot, if necessary.

Strategic placement of salt, minerals and other supplements will also alter cattle distribution. Placing supplements away from wetlands and stream banks, preferably close to an alternative water source, will decrease the amount of time that cattle spend in the riparian area.

Avoid using riparian pastures during hot weather if the only trees are in riparian areas. Cattle will go for shade and damage riparian areas.

Monitoring of the Riparian Area

Rest riparian areas until some type of vegetative cover is well-established. Leave at least 30 days between grazing events in a riparian paddock. Leave 4 inches or more of residue at the last fall grazing to give protection of the soil from spring runoff.

Monitor plant cover during grazing events so that desirable woody plants—willows, for example—are not damaged. If annual plants are important, be sure to allow seed formation. Residual plant height is important, but be sure also to monitor those plants that are not grazed for both number and health. Moving livestock in and out of a riparian paddock quickly will ensure harvesting of the best forage without overgrazing or causing livestock to eat less desirable trees and shrubby growth.

Summary

Adapt your grazing plan to your riparian and grazing situation. Do you have dairy cattle and use 12-hour paddocks, a sheep flock, a large cow/calf beef herd and just one pasture? Do you have a warm, slow-flowing creek or a class 1 cold-water trout stream? There is no one best plan. Design a riparian grazing system for your resources and goals.

The use of a riparian paddock and flash grazing is a management tool that protects surface waters and also provides high quality forage to livestock. Moving animals in and out of paddocks quickly several times a year achieves both goals.

Have a way to monitor the health of your riparian areas. Do you have good vegetative cover? Do you have the kinds and numbers of grasses, forbs and woody plants you desire? Is your grazing system user-friendly and providing the best possible grazing forage potential? A great monitoring method is to take pictures of the same place at the same times of the year every year. The changes that will occur but not be noticed at the time can be amazing.

For additional assistance, contact a member of the MSUE Forage or Livestock teams at:

http://beef.msu.edu/

www.animalagteam.msu.edu

http://web1.msue.msu.edu/fis/

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