R-1542

Fact Sheet

Grazing Riparian Ecosystems: Season of Use

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Livestock often are attracted to riparian systems for the availability of forage and water, shade and smooth terrain.

Riparian ecosystems are extremely productive, with some providing 81 percent of the summer forage utilized by grazing livestock (Roath and Krueger 1982). Changes in riparian vegetation induced by grazing can result in a decline in soil health, loss of biotic diversity, degradation of wildlife habitat, reduced water quality and alterations in stream hydrology. However, grazing has been found to be important for the proper functioning of many riparian zones. Implementation of proper grazing management practices is essential to prevent degradation by livestock and improve riparian health. The season of use or timing is critical when designing a grazing system aimed at maintaining healthy riparian systems.

Spring

Spring grazing is an effective management strategy for utilizing riparian zones. Upland forages are more palatable in the spring, creating a grazing behavior pattern in which livestock select upland sites, using riparian areas less frequently at this time. This results in a more uniform grazing distribution pattern (Parsons et al. 2003, DelCurto et al. 2005).

In the spring, upland plant species have high forage quality and are low in dry matter. Crude protein and total digestible nutrients are at their highest and fiber content lowest in the spring. Crude protein and digestibility reduce into the summer period as the plant matures and fiber increases. Riparian ecosystems grazed in the spring have greater potential for regrowth, compared with summer use, resulting in greater production and protection of stream banks.

One disadvantage of spring use of riparian ecosystems is an increased chance of soil compaction and erosion due to increased soil moisture during this period.

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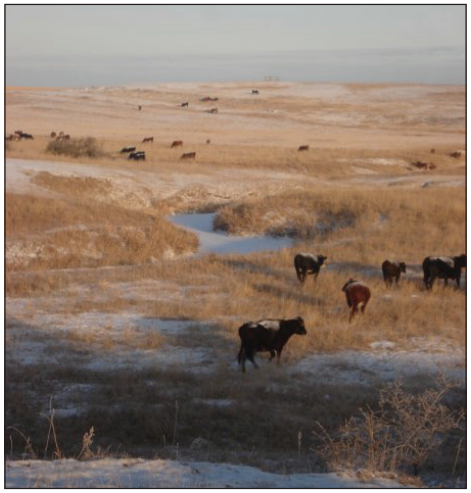
Summer

Summer grazing is second only to seasonlong grazing as having the most negative impact on the health of riparian vegetation. Summer grazing of riparian ecosystems results in greater utilization of riparian areas than adjacent uplands because livestock are attracted to water, cooler temperatures, shade for fly control and higher-quality vegetation. Summer vegetation removal has less potential for regrowth, decreasing production and cover potential, leaving stream banks more exposed to peak flows, and increasing erosion and sediment loads in the stream.

Fall/Dormant Season

Although most research favors spring utilization of riparian pastures for maintenance of riparian health, fall grazing can be beneficial to riparian health. Riparian vegetation is more palatable and of greater nutritive quality than adjacent upland vegetation late in the growing season, with many sedge species outranking key upland forage species in crude protein and energy content (Kauffman et al. 1983).

Dormant-season grazing reduces the impacts of trampling on soil compaction because river levels are generally low and flood plains are either dry or frozen (Sedgwick and Knopf 1991). Overuse of riparian areas in the dormant season leads to increased utilization of shrubs and trees (Clary and Leininger 2000). However, these impacts can be reduced by careful monitoring and controlling the time livestock are present and grazing distribution by using other management practices.



Conclusions

Implementation of proper grazing management practices is required to prevent overgrazing by livestock and improve riparian health. The season of use or timing is critical when designing a grazing system aimed at maintaining the health of riparian systems (Table 1). Spring and dormant-season grazing have been shown to be effective for livestock utilizing riparian zones.

Table 1. Impact of season of grazing on upland and riparian vegetation communities in the northern Plains.

Season	Spring	Summer	Fall
Upland Vegetation	-	+	-
Riparian Vegetation	+	-	O
	- Negative	+ Positive	O Neutral

Literature Cited

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