Grazing System Basics

Since the invention of barbed wire in the late 1800's, land managers have been tasked with figuring out how to best manage livestock grazing on native prairie. Over the years there has been considerable debate regarding which system is best or whether grazing should be utilized at all to manage native prairie. While there are still some dissenting voices, most have realized that native prairie evolved under grazing pressure and other natural disturbances such as fire, and thus grazing is an important tool in maintaining species biodiversity (both plant and wildlife) and the health of native range today. This is not to say that grazing does not have an impact on native prairie. Grazing affects the productivity of native prairie in the short term, by its effect on the local environment and energy balance within the plant, and over the long term, by its effect on species composition. It is the control of grazing impacts where managers of native prairie can make their mark.

So if most of us can agree that grazing should be included in the management of native prairie, which systems should be considered? In the 21st century, land managers are inundated with grazing system options – short duration, deferred, rotational, intensive, extensive, rest rotational, management intensive grazing and so on. It's easy to see how some folks get confused and maybe even intimidated by the nomenclature surrounding grazing systems. In reality, it all boils down to two systems – continuous or rotational. All other systems are derivatives of these two.

Continuous grazing systems are those where grazing animals are allowed continual access to a parcel of land for a set period of time (often the entire grazing season). A one pasture grazing system requires the least amount of money invested and management because of its simplicity. But unrestricted access allows the animals to be highly selective during much of the grazing season, creating areas of both overgrazed forage and areas of underused forage. Loss of desirable forage species, the invasion of weeds, soil erosion, and the non-uniform distribution of animal manure frequently are problems in continuously stocked pastures. However, continuous grazing systems can be reasonably successful if the stocking rate (number of head divided by size of grazing area) is matched to the productivity level of the site.

Rotational grazing systems involve the use of 2 or more fields or paddocks so that animals graze one area and are then moved to a new area allowing the previously grazed area to "rest" or regrow without the possibility of being grazed. Generally, as the number of paddocks in a rotational system increase, the length of the rest period increases. Common benefits noted in a rotational grazing system include increased growth and vigor of pasture plants, improved animal gain per acre, more stable and more nutritious forage supply, as well as more uniform distribution of manure. However, rotational grazing requires a greater financial investment (fences and infrastructure – namely water development) as well as more labor and management than continuous grazing.

Basically, the practice of rotational grazing allows for land managers to have a greater degree of control over the effects from grazing on native prairie when compared to continuous systems. A few of the things land managers can control by introducing rotational grazing include the intensity, season and frequency of grazing.

Season of grazing can be controlled in a rotational system whereas in a continuous system, animals have access to pasture plants during the entire grazing season. In a rotational system it is possible to vary the season of use in each paddock which can have a positive effect on species biodiversity and lessen the impact of grazing on sensitive wildlife species. An example of this is often referred to as deferred grazing

– where one or more paddocks are deferred or left ungrazed until later in the growing season (ex. summer or fall) or in some cases, not at all in a season.

Intensity of grazing refers to the degree to which the plant material is removed by the grazing animal. The more material removed, the greater the intensity. In a continuous system, the grazing animal controls the intensity of grazing whereas in a rotational system, the land manager can control grazing intensity. In cases where high intensity grazing is employed over extended periods of time, there can be a significant reduction of litter. Litter is the plant material "leftover" from a previous growing season. It is well established that litter has a positive effect on native prairie by increasing water infiltration, reducing soil temperature, and by providing a food source for soil microorganisms not to mention a home for some species of birds and wildlife. While it is often tempting to graze as much plant material as possible to improve animal performance, carryover is essential in stabilizing forage production and can provide an important forage source in drought years.

Similarly, frequency of grazing is determined by the land manager in a rotational system and by the grazing animal in a continuous system. The land manager can choose to move animals through paddocks at a varying rate thus controlling the number of times that a particular plant in a paddock is grazed during the growing season. Overgrazing occurs where a plant is grazed without allowing for adequate rest prior to subsequent grazing events. Overgrazing can still occur in rotational systems, but land managers have a better opportunity to avoid it when employing this grazing method. Avoiding overgrazing is key to maintaining a healthy, functioning native prairie ecosystem.

So regardless of what you call it, employing some controls over where and when animals are grazing through the use of a grazing system, can result in sustained positive effects for native prairie as well as for livestock production.