Small Acreage

Pasture Management

Small Acreage Pasture Management

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Wyoming residents value the open spaces and the seemingly endless panoramic views. As the population increases, more and more home buyers are choosing to live on small acreage farms or ranchettes. Rural living offers multiple opportunities not available in urban environments; one of the most common is the ability to grow and produce food for the dinner table or to sell; vegetables, berries, eggs, and meat. Many landowners choose small acreage living to accommodate various types of livestock as a hobby, as a 4-H project, or for food. With a little planning and discipline, even large animals (cows and horses) can thrive on small acreages.

Animals grazing on small acreages can provide unique and educational opportunities for the entire family; however, there are challenges that must be addressed to preserve and protect existing natural resources and maintain a healthy environment for animals and humans.

For those who have recently moved from a metropolitan area, ten acres can seem like unlimited space. Consequently, many small acreage landowners put too many grazing animals on too little pasture, and neglect to identify and plan how to manage grazing areas, forage, water, and the inevitable mud and manure. The problems of over grazing are easily detectable; pastures with little to no edible grass, a preponderance of weeds, bare ground with no vegetation, animals in poor health due to lack of nutrition or that require year-round supplemental feeding. Faced with these conditions, the pleasure of grazing a few large animals on a small acreage can quickly diminish. A little pre-planning can result in healthy animals and happy land owners.

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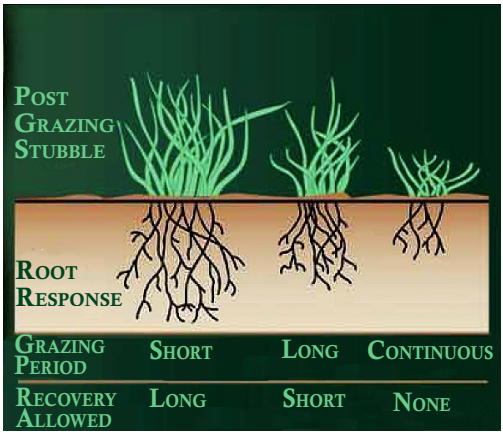
Growing More Grass

Creating productive pasture to support healthy livestock grazing depends entirely on the quality and quantity of grass produced, and frequency of grazing allowed. Landowners choosing to pasture livestock, whether one 4-H animal or hundreds of beef cattle, are in reality grass farmers. They raise and care for grass plants which are then harvested by their animals.

Grasses have evolved over time in a direct response to grazing by wildlife and domestic animals. Grass needs grazing, fire, or some other type of removal to survive, as its growth point is located at the base rather than the top. This growth pattern enables grass plants to not only survive grazing, but thrive with it, when properly managed.



Source: Colorado State University Extension

Proper grazing can increase grass growth. When grass is grazed before it produces a seed head, the plant remains at a "young" stage and sprouts nutritious side shoots. A recovery period is essential to the growth of healthy pasture grass. When grass is grazed again too quickly, before the leaf area is large enough to support growth, it has to use its root reserves, causing plant health and production to decline. Giving the grass a little time to recover will build root mass, leaf production, and boost plant regeneration.

In a pasture livestock will eat the young, palatable plants and leave dried

out stems, less palatable grasses and weeds. Once palatable plants are grazed lower than 2-to-3 inches, the plants will not regenerate.

Understanding the pasture size required to support grazing animals is important to maintain healthy, nutritious grass and to avoid over grazing. Actual acreage will vary according to pasture conditions, management, availability of irrigation, and weather.

It is difficult to place a definitive number on how many animals should be placed on a particular pasture, as environmental conditions will effect forage growth from year to year. A grazing rule of thumb is to *take half and leave half.*

By managing the length of the grazing period and the number of grazing animals so that half the grass is removed and half is left, and allowing a sufficient resting (regrowth) period, it is possible to maintain a healthy, productive pasture. Too many animals on a pasture for too long can harm the resources, resulting in poor livestock performance.

For assistance in determining the number and type of healthy grazing animals your pasture can support, contact any of these local resources:

Natural Resources Conservation Service
Casper Office: 307.261.5436 Ext. 113
University of Wyoming Cooperative Extension
Casper Office: 307.235.9400
Natrona County Conservation District
Casper Office: 307.261.5436 Ext. 103
Natrona County Weed & Pest
Casper Office: 307.472.5559

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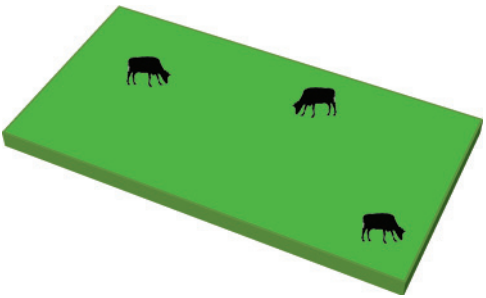
Pasture & Grazing Options

Pasture and grazing options that support healthy animal growth and maximize resources are primarily dictated by the available acreage, the type and number of grazing livestock. Considering these factors, identify the goals of your grazing plan based on production strategies unique to your operation, farmstead characteristics, available time and resources. Goals might include:

- Increase livestock numbers and/or available forage
- Improve animal health
- Accommodate/encourage 4-H or other youth projects
- Reduce feed costs
- Reduce soil erosion, etc.

Based on the goals of your operation and available acreage, there are various types of grazing practices that can be considered.

Continuous Grazing



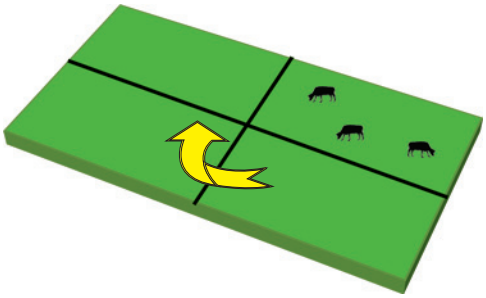
A one-pasture system where livestock have unrestricted access throughout the grazing season. This approach requires minimal capital investment and is less management intensive than other grazing options. Generally only one water source is required in this pasture system. However, forage quality and quantity will be relatively lower than with other grazing options, primarily due to uneven or over grazing, limiting the number of animals the pasture can support.

Managed Intensive Grazing (MIG)

MIG is known by several names; Intensive Cell Grazing, Rotational Grazing, Mob Grazing, or High-Density Grazing. It is a grazing practice that is quickly gaining popularity in the grass-fed, naturally-raised livestock sector, primarily with cattle, but also with sheep, goats,

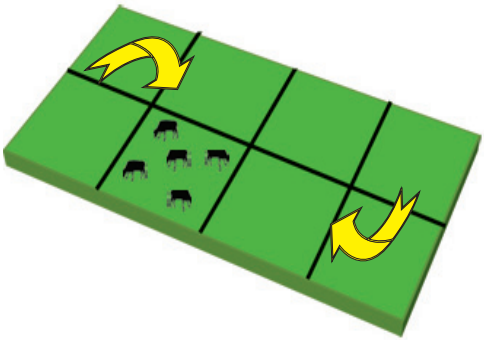
chickens and horses. Adaptation of this grazing practice can be highly efficient when employed on small acreages where grazing livestock is one of the primary goals of the operation.

Rotational Grazing



A system with more than one pasture in which livestock are moved to allow for periods of grazing and periods of rest to regrow forage. This method can increase forage production, improve pasture health, and provide a longer grazing season thereby reducing the need for supplemental/mechanically harvested forages. Costs for fencing and water systems can be higher than with continuous grazing.

Intensive Rotational Grazing



This is a system with many pastures, sometimes referred to as paddocks. Livestock are moved frequently from paddock to paddock based on forage growth and utilization, which results in higher forage production and use per acre than with other grazing systems. Plus, the number of animals can often be increased with careful monitoring of forage regrowth. The initial costs are somewhat higher due to the additional fencing material and water distribution systems required.

The components to successful grazing of livestock on small acreage farmsteads are growing sufficient grass to support healthy animals, limiting the number of

animals your pasture can support, and managing grazing periods to allow for pasture forage regeneration. A rotational system provides an opportunity for forage plants to *rest* so they can regrow more quickly. The rotational system provides the flexibility to move livestock based on forage growth, while promoting better pasture forage utilization and extending the grazing season.

For productive pasture to support healthy animals, remember the grazing rule of thumb: take half, leave half.

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Make A Plan For Your Land

Making the transition from continuous or single pasture grazing to MIG requires comprehensive planning; an assessment of your land's physical characteristics; a review, or possible revision, of the goals originally established for your operation. Over time, and with experience, the plan may require subtle changes to more efficiently manage the grazing operation to support a variety of livestock or changing climatic conditions.

The economic benefit of MIG comes from improved animal health and increased forage production. As the new system is fine-tuned, feed quality improves, quantity increases, your management skills and knowledge increase. As a result, more animals can be raised on the same acreage. It takes commitment to succeed in making the change to MIG, as the system requires an initial financial investment and more complex management skills.

Implementing a MIG system may not be as simple as dividing an open pasture into multiple paddocks/pastures as fencing, water sources, and livestock movement between pastures may not be easily accommodated. It is recommended that landowners start from scratch and take a fresh look at everything, including existing fence lines.

Where To Begin

Start with paper and pencil, and draw a ranch map. Identify the location of physical characteristics that will influence potential grazing opportunities.

- *Sensitive Areas:* A stream flowing through the pasture is a sensitive area because uncontrolled access to this area by livestock will cause stream bank erosion as well as degrade water quality. Manage these resources by reducing the amount of time livestock have access to any segment of the stream and provide alternative drinking facilities.

A flood-prone area or soggy lowland can easily be damaged by livestock traffic during periods of wet weather or shortly after flooded conditions. A steep slope which is also drought prone, is a sensitive area because it is easily damaged by over-utilization and livestock traffic.

- *Livestock Summary:* The type and number of grazing livestock as determined by the goals of your operation.
- *Fencing System:* Indicate if perimeter fences already in place are in adequate condition. Note type and potential placement of interior fence lines.
- *Livestock Watering System:* Indicate placement of existing livestock watering system and analyze for sufficient supply to support potential expansion: paddock sharing tanks, above ground pipelines and tanks in each paddock, or secondary water well, etc.
- *Forages:* Identify type and location of existing forage, periods of growth and areas of bare ground that may need to be restored. A County Soil Survey is a good first step for determining soil types in your pastures. The publication contains general characteristics of each soil type, including soil texture, drainage, water holding capacity, and organic matter content.

Forage grass and legume species each have their own unique growth, persistence, and quality characteristics. Because they respond differently to soil conditions, weather patterns, fertility, and grazing management, the plants that are currently growing in your pastures may be different from one area to another. Identify dominant plant species and areas in which they grow on your pasture map. The plants you find during the initial inventory of your forage species may or may not be the

desired species for meeting the long-term goals of your grazing system. Therefore, information on forage species growing in the pasture may have an impact on future modifications to the grazing system.

In addition to the above, indicate on the ranch map the location of the following features that need to be considered when developing a MIG system:

- Utilities (buried or above ground)
- Property boundaries
- Buildings
- Wells (Human or stock)
- Septic System
- Soil type
- Depth of groundwater
- Neighboring land uses
- Farm equipment available

MIG systems require more management time than is required for continuous or open pasture grazing. Management goes beyond building fences and moving livestock. It includes understanding and monitoring pasture plants and livestock-pasture interactions as a system. Choose the system that fits with your skills, management time you are willing to dedicate, and available resources.

Researching MIG system options that best fit with the goals of your operation prior to developing your plan will save time and money in the long term. Numerous resources are available to assist in planning a MIG system both locally and online. For local MIG system planning assistance contact:

Natural Resources Conservation Service (NRCS)
University of Wyoming Cooperative Extension Services
Natrona County Conservation District

Once the ranch map and assessment are complete, layout a grazing system that fits your unique land characteristics, available resources and goals.

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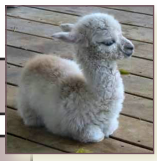
Animal Forage Requirements

In Wyoming, it is recommended that small acreage pastures be allowed to rest during May, June and September. This is when seed production occurs and root reserves are developed, resulting in healthier, more abundant pasture forage.

The below chart offers average animal forage requirements. Quantities consumed may vary with the season, age and size of the animal. As a general rule, animals consume 2-3 percent of their body weight daily, either in fresh or harvested forage.



Total Forage Requirements

Animal		Forage
Horses		
	Young	17-22 lbs/day
	Mature	22-23 lbs/day
Cattle		
	Young	14-18 lbs/day
	Mature	22-39 lbs/day
Sheep		
	Young	3-4 lbs/day
	Mature	6-7 lbs/day
Llama		
	Young	4-6 lbs/day
	Mature	7-9 lbs/day
Goats		
	Young	2-4 lbs/day
	Mature	4-7 lbs/day

Source: D.M.Ball, C.S.Hoveland, G.D.Lacefield and NRCS

Harvested forage is the hay or hay cubes fed to animals when fresh forage is not available. For animal food guidelines, contact a University of Wyoming Cooperative Extension Services agent or your veterinarian.

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MIG System Plan Development

Using your ranch map, farmland characteristics, areas of special consideration or sensitivity, available resources, number and type of grazing animals, it is time to begin the process of determining a grazing system to achieve your goals. If your research, ranch assessment, and available resources indicate the goals can be achieved through continuous grazing, pasture improvement and/or restoration maybe a worthwhile consideration immediately or in the near future.

If the goals of the operation are better addressed with the implementation of a MIG system, the information you have assembled will guide the development of a grazing plan. The plan should include how many paddocks/pastures are required, and the size and shape of each. The shape may be dictated by property boundaries and each paddock need not be the same shape. The important consideration is that livestock can be moved easily from one paddock/pasture to another without disturbing previously grazed forage.

Determine the type of interior fences to be used and identify where they will be located initially; then consider the options for alternative locations to accommodate pasture forage grazing and rest periods. Boundary fences are normally woven wire (with barbed wire top and bottom) or five to seven strand, high tensile steel, electrified fence. These should be constructed with the idea of containing all of the types of livestock classes that will be in the grazing system. Properly designed and constructed boundary fences can also help deter many predators. Keep in mind that most predators go under or through boundary fences as opposed to over the top.

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Water sources are an essential component of the grazing plan and should be strategically placed to ensure animals have access from each pasture/paddock. Traveling long distances to water can limit animal performance (the less they drink, the less they eat) and tends to promote overgrazing in areas closest to water. Water use varies considerably depending upon the animal's health, air temperature, water temperature, stage of lactation, and other environmental factors. Portable water systems using high density polyethylene, freeze resistant above ground portable pipe may be an option. Temporary water sources can also be strategically placed along temporary fence lines that are accessible from multiple pastures/paddocks.

Estimated Water Intake Table

Livestock Type	Daytime Temperature 50 Degrees F	Daytime Temperature 90 Degrees F
Sheep or Goat	1.5 gal/day	3.5 gal/day
Beef Cow	8 gal/day	20 gal/day
Dairy Cow	15 gal/day	30 gal/day
Calf (400 lb.)	4 gal/day	10 gal/day
Horse or Mule	8 gal/day	12 gal/day

Source: Natural Resources Conservation Service (NRCS)

Once the components of your MIG plan have been identified with plans to accommodate the unique characteristics and sensitivity areas in the pasture areas, it is time to create a MIG plan layout. Indicate on the layout the size and location of the pastures, gate placement to facilitate livestock movement from one pasture/paddock to another including access to the confinement area, placement of water sources, location of temporary fences.

An example of a MIG plan layout is offered here as a guide. Remember, depending on forage growth and other land characteristics pasture/paddock sizes and shapes may vary. And, with temporary internal fencing, the pasture/paddock delineation may be adjusted for seasonality depending on available forage.

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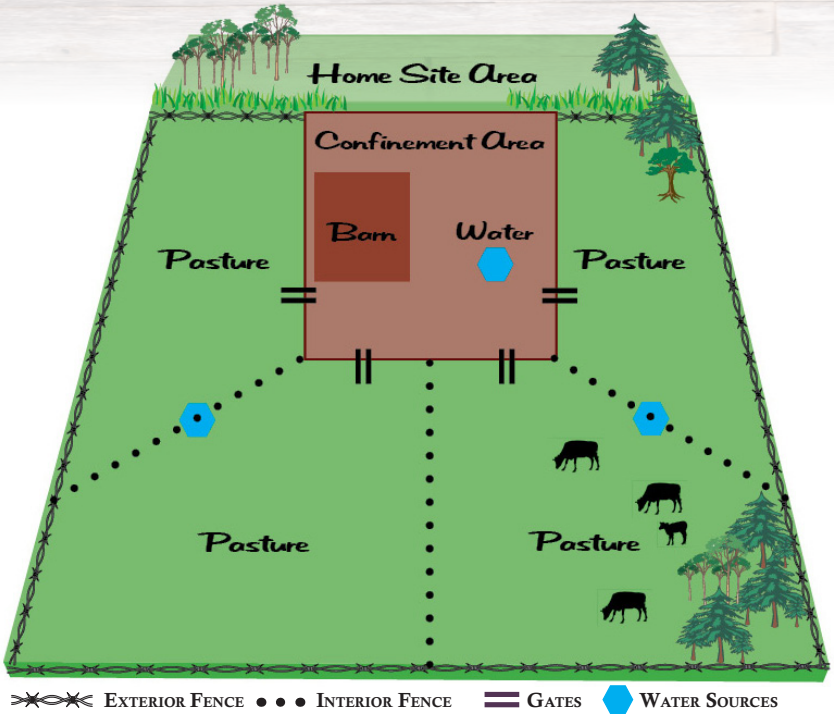
MIG System Plan Layout



When the fences and water facilities are correctly installed, and the forage is lush it's time to *begin rotational grazing*! Start by resting the best pastures first. The best pastures will respond the fastest to a grazing deferment, giving you the most forage return for your time, labor, and investment. When the vegetation in the first pasture has grazed to the proper height, move the livestock to the next pasture.

As livestock rotates through the pastures, if the pasture ahead of the rotation is seeding out, then shorten the grazing periods in order to keep the pastures from becoming over mature. If the pasture ahead of the rotation has not fully recovered then lengthen the grazing periods in order to provide longer rest periods. If this issue persists, then consider reducing the numbers of grazing animals in order to match your forage requirements with the available forage.

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Rotational Grazing Resources

Natrona County Conservation District
www.nccdwyoming.com

Natrona County Weed & Pest
www.natronacountyweeds.com

Soil data and information
Natural Resources Conservation Service
websoilsurvey.sc.egov.usda.gov

Pastures for Profit: A Guide to Rotational Grazing
Living on a Few Acres
University of Wyoming Cooperative Extension Service
www.uwyo.edu/ces

Rotational Grazing (multiple publications)
Natural Resources Conservation Service
www.nrcs.usda.gov

Grazing Systems Planning Guide
University of Minnesota Extension Service
www.extension.umn.edu

Ideas for Small Acreage Pasture Management
Pasture Range Information
www.beefmagazine.com

Managing Pastures Fact Sheet No. 6, January 1999
Oregon State University Extension Service
www. extension.oregonstate.edu

Small Acreage Management Grazing Management
Colorado Forage Guide
Colorado State University Extension
www.ext.colostate.edu

Getting Started Grazing
Ohio State University Extension
http://ohioline.osu.edu/gsg

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