

# PRESCRIBED GRAZING SPECIFICATIONS

## CODE 528

### Goals and Objectives

Goals and objectives of the grazing operation should be clearly identified in the Conservation Plan of Operations.

### Resource and Forage Inventory

During the inventory process, the type of grazing land for which prescribed grazing is being planned needs to be identified. The following list includes the types of grazing land that are present in Louisiana. The type of grazing land affects conservation practices that are planned for the site, the intensity of grazing management, along with the methods used to monitor the site.

#### Grazing Lands in Louisiana

- Rangeland, grazed forest, native pasture and pasture are present in Louisiana. Rangeland is land on which the historic climax vegetation is predominately grass, grasslikes, forbs and shrubs. Traditionally, rangelands in Louisiana are considered to be the area encompassed by the Gulf Coast Marsh. Historically rangeland also included the Gulf Coast Prairie in Louisiana; however due to conversion to cropland and pasture, and unrestricted grazing only a few small remnant areas occur in the state.
- Grazed forestland occurs throughout the state. This landuse is primarily for wood production but these lands also produce forage and habitat for domestic animals and wildlife.
- Native pasture is land that was forested, but has been cleared and is now primarily used for forage production. Overstory trees, if present are managed to promote naturally occurring native and introduced understory species. Native pastures do not receive the cultural management practices, such as pest management and nutrient management that are more consistently applied to pastureland.
- Pastureland, improved pasture, or introduced pasture is grazing land that produces introduced forages or domesticated native forages. These areas receive varying degrees of cultural treatment to improve production and maintain the established forage. The cultural treatments include such actions as seeding, irrigation, nutrient management and pest management.
- Cropland is defined as land used for the production of cultivated crops. Forage produced on cropland is typically machine harvested, but can be grazed by livestock. Grazing on cropland usually occurs when forage shortfalls occur such as a drought. Cropland producing residue is often grazed following harvest.

Rangeland, grazed forestland, and native pasture are generally managed for many species and in many cases multiple benefits. These lands are manipulated through the use of grazing or browsing animals, fire, chemicals, and mechanical treatment. Pastureland is also manipulated with these methods, but usually more intensively. Additionally, pastureland usually has a nutrient management program being implemented to increase productivity.

### Documenting the Resource Inventory

Louisiana Range and Pasture Job Sheet 24: Inventorying Grazing Land Resources may be used to assess the animal, forage, soil and structural components of a livestock operation for grazing lands. Additional information in the Guide to Pasture Condition Scoring and Pasture Condition Score Sheet may be used during the inventory process to rate key indicators and causative factors when evaluating the condition of the pasture resource. These resources will also help identify problems that may not be readily apparent to the landowner or field office personnel. The documents can be found under the Prescribed Grazing Practice Standard in Section IV of the eFOTG.

Chapter 4 of the National Range and Pasture Handbook describes the accepted method to determine rangeland health on existing ecological sites when working with rangeland. This method can be used to provide a preliminary evaluation of the soil/site stability, hydrologic function, and integrity of the biotic community. It also provides information on potential problems and identifies areas that may be at risk of degradation.

### **Balancing Forage Supply and Animal Demand (Stocking Rate)**

The following guidance should be used to assist producers in the process of determining appropriate stocking rates.

- Use information in the Forage Suitability Groups or Woodland Suitability Groups to determine the annual or seasonal amount of forage available for grazing. Or, use estimates of total annual/seasonal forage production, where available for rangeland. When total annual or seasonal production is used and the number of pastures is known, a harvest efficiency based on the management intensity can be determined (Table 1). (Harvest efficiency is the percent of annual or seasonal production that is harvested by the grazing animal). This information can then be used to determine forage available for the grazing animal.

The recommended harvest efficiency on rangeland, native pasture and grazed forestland is 25% to 50%, depending on the degree of management intensity. In a pasture situation, the recommended harvest efficiency will depend on management intensity and pasture number (Table 1).

Table 1. Relationship of pasture number to approximate forage harvest efficiency and days in pasture per rotation.

<b>No. of Pastures</b>	<b>Approximate forage harvest</b>	<b>Approximate No. of days in pasture/rotation</b>
1	25 – 30%	No rotation; continuously
2 – 4	30 – 40%	7 – 14 days
5 – 8	40 – 50%	4 – 7 days
9 – 12	50 – 65%	1 – 4 days
24+	65+%	0.5 – 1 day

When using Forage Suitability Group information, the harvest efficiency has been predetermined, thus forage production in the Forage Suitability Groups reflects the amount of forage available for grazing not the total amount of forage.

Producers should be cautioned when setting stocking rates with high harvest efficiencies, as it is very difficult to maintain the integrity of the resource base. Animal waste,

trampling, physical weathering, and grazing by other animals are factors that make the management of high harvest efficiencies difficult.

- Estimate animal demand using the *Forage Budget Worksheet* (Excel spreadsheet located in eFOTG in Section IV under this practice standard)
- Enter estimated forage available for grazing into the Forage Budget Worksheet (Excel spreadsheet). Along with estimated animal demand, the resulting values will show where monthly forage surpluses and deficiencies occur throughout the year. Based on these numbers an overall stocking rate can be determined.

When calculating stocking rate for season long use (less than 1 year), the amount of forage consumed by the animal will need to be adjusted based on the length of the season. The amount of forage produced during that season may also need to be adjusted.

## Grazing Management Plans

### Grazing Systems

Once climate and soil factors affecting forage growth are accounted for, the system of grazing management employed is one of the most powerful tools for influencing animal production, forage production, forage species composition, and grazing land sustainability. All grazing systems should be developed so as not to impair natural resources. Additionally, grazing systems should be implemented to improve situations that are negatively impacting natural resources. The grazing system that is planned should be site specific. The system should be determined by the producer, be economically feasible, and accommodate existing time constraints. Grazing systems shall be designed to be flexible in terms of adjusting to climatic conditions and other considerations. If a 'grazing calendar' is used to develop a grazing system, stress that this tool is used to develop a baseline only. Adjustments will invariably be needed due to changes in weather, plant growth, and other factors.

The following discussion includes a brief description of several types of grazing systems that are used in Louisiana. This list is not all inclusive. Grazing systems are unique based on the specific situation encountered. Continuous and rotational stocking represent the two extremes in grazing management. However, there are other specialized systems that can be used to selectively feed livestock or ration limited forage resources.

- Continuous stocking is the continuous, unrestricted grazing of a specific range or pasture by livestock throughout the year or grazing season. Continuous grazing can occur with multiple pastures if the gates are always left open. Common types of continuous stocking include:
  - Continuous – Unrestricted access to grazing livestock within a management unit throughout the entire year.
  - Deferred continuous – A pasture or management unit is grazed until the minimum stubble height of the management species is reached. Animals are then placed in a holding pasture and given supplemental feed during the deferment period.
  - Seasonal grazing - Livestock are grazed during a particular season and deferred for the remainder of the year. This system is used primarily on coastal marsh rangeland, grazed forestland, and when grazing residual forage on cropland.
  - Dormant season grazing – Grazing livestock while the management species is not actively growing. In Louisiana this type of grazing normally entails stockpiling forage and grazing it in the late fall and early winter period prior to the availability of planted cool season annuals. This method is often used as a substitute for feeding hay.

- Rotational stocking is the practice of grazing of two or more pastures in sequence followed by a rest period for recovery and re-growth of the grazed forage. The following types of rotational stocking are often given and refer to the overall variation in grazing intensity that can be used. There is a continuum of grazing intensities from non-intensive to management intensive grazing. As grazing intensity increases, the number of animals/acre (stock density) increases while the amount of time the animals are present on a single pasture/paddock decreases.
  - Non-intensive Rotational Grazing – usually one or two herds rotated through four pastures or less. Grazing periods can be longer than rest periods.
  - Management Intensive Grazing – usually one herd of animals grazing multiple pastures with grazing periods of one week or less, and rest periods depending on the recovery period of the forage. This method of grazing is also known as short duration grazing, intensive grazing, or cell grazing.
- Decision deferment stocking is employed with no planned sequence of rotation, pastures are deferred when the manager determines the need. The decision to defer a pasture is based on a predetermined set of indicators and most of the time the livestock are moved into the pasture with the best forage condition.
- Specialized stocking systems include systems such as strip grazing, limit grazing, first-last grazing, and creep grazing. These systems are used to provide high forage quality to animals requiring high nutrient requirements and also to maximize use of limited available forage.
  - Strip Grazing – movable electric fences are used ahead and behind the grazing animals to ration forage for a single day.
  - First-Last grazing or forward grazing – access to a pasture is given first to animals having high nutritional requirements. As those animals are moved out, beef cows are moved in to harvest the remaining, lower quality forage.
  - Limit grazing – maintaining cattle on perennial pastures and moving them onto high-quality forage for a limited number of hours each day.
  - Creep grazing – allows young calves through a small fence opening to a special pasture of high-quality forage adjacent to a lower quality pasture where their mothers are kept.

#### Grazing System Management:

Grazing management implies some degree of control over the animal and/or the area being grazed. Generally, management input increases as grazing intensity increases.

- In a continuous stocking situation the grazing period and grazing area are usually set. Grazing management can be imposed on the system by varying the stocking rate over the grazing period. However in most cases, animal numbers do not vary, so little management is employed. One of the benefits of continuous stocking is that few management decisions are required, which minimizes investment of time. This system also requires lower input costs because there is only one pasture to fence and provide water for livestock.

In a continuously stocked pasture, the grazing/browsing animal makes the decision on where to graze, what to graze, and when. While this may increase animal performance under light to moderate stocking rates, pasture performance is often sacrificed. During much of the year, forage supply is not matched with forage demand. Spot grazing is prevalent and areas surrounding water facilities and shade are often overgrazed. To improve grazing distribution in a continuous stocking system, consider the following actions:

- Set overall stocking rate at the appropriate level and adjust stocking rates
  - to utilize forage more effectively during rapid forage growth
  - to decrease potential of overgrazing during slow growth
- Put up temporary fence to reduce grazing area during periods of rapid forage growth and harvest set aside acres
- Distribute minerals, supplement, salt, etc., across the pasture and away from water and shade.
- For large pastures consider increasing number of water sources to distribute grazing pressure.
- When possible, locate water source away from existing shade.

For proper management of the forages in continuously grazed pastures, stocking rate needs to be set conservatively. Forage re-growth is often re-grazed before the plant has time to adequately recover. Re-grazing increases the potential for the increase of weedy species or less desirable forage species. In contrast, other areas of the pasture are often comprised of over mature, low quality forage which will ultimately decrease animal performance when animals are forced to consume it during slow growing conditions. Forage harvest efficiencies in a continuous stocking system are approximately 25-30% (Table 1).

- In rotational stocking, time becomes a management tool. The land manager now controls the animal's access to forage with the objective of putting the animal's in the specific pasture that needs to be grazed and will provide the animal with an adequate level of nutrition.

The duration of grazing in one pasture, and the amount of rest allowed in the remaining pastures are influenced by the number of pastures and the forage growth rate, which is predominately influenced by the season and current weather patterns. Grazing intensity, management intensity, and management flexibility increase as pasture number increases. The need for additional fences, water supply, and available shade will also increase as pasture number increases.

Under less intensive rotational stocking systems, spot grazing is usually still evident and management flexibility is not as great as that realized when using more intensive levels of rotational stocking. Less intensive systems will normally require more pasture maintenance in the form of mowing after rotations due to spot grazing and in some cases grazing distribution problems.

More pastures are added to increase utilization of the available forage through the grazing animal (Table 1). Increased forage utilization is accomplished by having the flexibility of moving animals through multiple pastures at sufficient stock densities to remove a specified amount of forage while still maintaining the proper degree of use. One of the concepts behind this grazing system is to allow livestock in a pasture only long enough to where they will not re-graze plants. Depending on the stock density and season of year, this will normally occur after 3-7 days, but it can occur in time periods as short as 1 day when forage is growing rapidly.

With a rotational stocking system it is essential to periodically assess the effects of grazing on the managed forage. As grazing intensity increases, the frequency of these assessments needs to increase, such that assessments may be required daily. Assessments become more important during periods of slow growth. The height to which the forage is grazed prior to livestock removal is a critical decision for the grazing manager. The initial grazing period, and the degree of use allowed at the beginning of the season is critical for maintaining proper grazing during the remainder of the year.

If a pasture is grazed too long, this type of system can be very detrimental to the plant resource as well as the performance of the grazing animals. Rest periods should be set no longer than the time required for the plants to adequately recover so that they remain in a vegetative (non-reproductive) state, which is the optimal time for forage species to be grazed. One of the reasons that this system often results in higher rates of utilization is that livestock can be moved to pastures to harvest plant growth prior to the vegetation becoming rank and 'turning over' into the litter component. Grazing systems with longer rest periods will not have the flexibility of moving animals to utilize the forage in this manner. Generally 6 to 12 management units for one herd is a good starting point and provides acceptable control for the manager. Fencing development beyond that is mainly an economic and management objective decision.

- A common and effective practice is to use a combination of stocking methods during a given management period. During peak growth periods when ample forage is available, managers may choose to utilize less intensive grazing management to meet specific management objectives. During periods of low production or when using stockpiled forages, a manager may choose to implement more intensive grazing practices to more fully utilize limited forage resources. Various stocking methods can be used at different times of the year to meet the needs of certain classes of livestock with high nutritional requirements.

#### Documenting the Planned Grazing System

For grazing operations:

- Identify the key species or management species in each management unit.
  - Identify and document the periods of grazing and rest for each management unit. When a rotational stocking system is to be used, both the planned grazing and rest periods shall be suggested that correspond to the key forage species that are being managed. Refer to the average recovery periods for different forage species under rotational stocking (Table 2) for guidance. It should be noted that grazing/rest periods are only estimates and will fluctuate.
  - For rangeland, grazed forest, and native pasture, key areas need to be identified and a target percent utilization should be documented for each management unit. For pastureland and cropland, or areas where species such as bermudagrass, bahiagrass, and carpetgrass dominate, the stubble heights (Table 2) for beginning and ending grazing should be documented.
  - Water sources should be identified for each pasture.
  - Planned pest management, brush management, or nutrient management activities should also be documented.
- **Monitoring Grazing Lands**

#### Degree of use on Rangeland, Native Pasture, Grazed Forest:

The composition of livestock diets largely depends on plant availability, palatability, and community diversity. A high prevalence of plants that are preferred by livestock in a management unit is an indicator of proper utilization; conversely a high proportion of weeds, brush, or plants that livestock don't normally utilize can be an indicator of overgrazing. Overgrazing of preferred plant species occurs due to the selectivity of grazing animals. Overgrazing is facilitated by assigning a desired utilization percentage to an entire pasture or grazing unit. Understanding that animals are selective in their grazing habits and knowing the plants that grazing animals prefer allows the planners to identify one or two 'key' plants to use in determining proper utilization of a management unit.

Landusers and conservation planners should realize that the degree to which forage utilization is possible largely depends on the type of grazing management being applied by the land manager and target utilization of key species should reflect this fact.

Degree of use will be determined for key species indicative of the Desired Plant Community for each management unit. The desired plant community is one of several plant community types, which may occupy an ecological site. In addition to satisfying the producer's objectives, this plant community must meet the minimum quality criteria for the soil, water, air, plant, and animal resources.

Range and Pasture Jobsheet 25: Determining Degree of Use provides a method for determining degree of use, including the selection of key grazing areas and key species. This jobsheet can be found in eFOTG in Section IV under this practice. Individuals who have experience with this method of estimating forage utilization can usually estimate utilization with a fair degree of accuracy using a reduced transect size or ocular estimates only. If ocular estimates are being made, demonstrate accuracy by clipping the key species on one or two transects. Degree of use should be documented on the NRCS-RANGE 414 form, Proper Grazing Use. This form and directions on how to fill it out can be found in the National Range and Pasture Handbook, Exhibit 4-3. The form itself is attached to Range and Pasture Jobsheet 25.

Key grazing areas and key forage species will be determined for each management unit when providing grazing management assistance on rangeland, native pasture, and grazed forest with the following exception. If the management units that are dominated by plant species such as common bermudagrass, bahiagrass, or carpetgrass; use the method documented in the subsequent section (Minimum Residual Grazing Heights for Pastureland and Cropland) and refer to the minimum use heights for these species in Table 2.

Degree of use for key grass species:

- Degree of use at the end of the grazing period for management intensive grazing systems shall not exceed 60% of the total annual production
- Degree of use at the end of the grazing period or growing season, for continuous or non-intensive grazing management systems, shall not exceed 50% of the total annual production
- Dormant season grazing shall not exceed 60% by weight of the current standing crop.

Degree of use for key browse (shrub/tree) species:

- Degree of use shall not exceed 50% by weight of available twigs and leaves during growing season use, and no more than 65% of available twigs of deciduous species, or twigs and leaves of evergreen species during dormant season use.

Degree of use on key browse species will be determined on the basis of the current year's growth within reach of the browsing animals.

When the primary use is for wildlife, less than 50% use of the key species may be specified where there is a significant overlap in preference for the available forage between the livestock and the wildlife of concern.

Minimum Residual Grazing Heights for Pastureland and Cropland:

The proper use of culturally managed forages on pastureland and cropland or naturalized stands of sod forming grasses will be determined by measuring the average residual grazing heights established for the management species. See Table 2 "Grazing Use Heights and Recovery Periods for Pastureland". Use the Louisiana Range and Pasture Job Sheet 23 *Determining Pasture Utilization Using Average Stubble Heights* to determine proper use of pastureland and cropland. This jobsheet can be found in eFOTG in Section IV under this practice.