

## CONSERVATION PRACTICE STANDARD

### PRESCRIBED GRAZING (ACRE)

CODE 528

#### DEFINITION

The controlled harvest of vegetation with grazing or browsing animals, managed with the intent to achieve a specified objective.

Removal of herbage will be in accordance with the site production limitations, rate of plant growth and physiological needs of forage plants.

Frequency of defoliation and season of grazing will be based on the rate and physiological conditions of plant growth, not calendar dates.

#### PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

Maintain enough vegetative cover to prevent accelerated soil erosion due to wind and water.

Manipulate the intensity, frequency, duration, and season of grazing to:

- Maintain or improve the health and vigor of desired plant communities.
- Maintain or improve livestock health and productivity.
- Maintain or improve water quality, quantity and availability.
- Reduce accelerated soil erosion and maintain or improve soil condition.
- Promote economic stability through grazing land sustainability.
- Insure optimum water infiltration
- Maintain or improve riparian and upland area vegetation
- Protect stream banks from erosion
- Manage for deposition of fecal material away from water bodies
- Promote ecologically and economically stable plant communities on both upland and bottomland sites which meet the landowner's objective

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all lands where grazing and/or browsing animals are managed.

#### Criteria For Plant Health And Vigor

Grazing duration and intensity should be managed based on plant health and productivity of the dominant forage species. The rest period (recovery time between grazings) should be based on season of the year and weather conditions. Suggested rest periods for typical cool season grass/clover pastures are contained in Table 1. Pastures containing alfalfa require a 25 day minimum rest period.

#### CRITERIA

##### General Criteria For All Purposes

The stocking rate of the grazing animals on a particular management unit shall be controlled to meet the purposes of this standard.

Table 1. Rest periods for grass/clover pastures

Season	Weather conditions	Growth rate	Rest period
Spring	Cool, moist	Fast	10 – 14 days
Spring	Warm dry	Medium	14 – 20 days
Summer	Hot, moist	Slow	30 – 35 days
Summer	Hot, dry	Very slow	40 – 60 days
Fall	Cool	Medium	14 – 20 days

Rest periods should only be used as a guide. Livestock should be rotated into paddocks based on the vegetative condition and re-growth of the forages. Forages should be allowed to re-grow to reach a height that allows the replenishment of carbohydrate reserves thereby helping to ensure long term productivity of the pasture.

Grazing management should be accomplished according to forage growth and animals should be introduced to a paddock when the forages reach a certain height and remove from that same paddock when a residual stubble height is attained. Table 2 contains a list of suggested forage heights for control of livestock turn-in and removal.

Table 2. Suggested grazing stubble heights for species grazed rotationally

Species	Height in Inches	
	Turn in	Removal
Cool-Season Grasses		
Kentucky bluegrass	4 to 6	1 to 2
K. bluegrass-white cl.	4 to 6	1
Smooth bromegrass	6 to 8	2 to 3
Orchardgrass	6 to 8	2 to 3
Orchardgrass-ladino cl.	6 to 8	2
Reed canarygrass	8 to 10	2 to 3
Ryegrass	6	1 to 2
Ryegrass-clover	6	1 to 2
Small grains	4 to 6	3
Tall fescue	6 to 8	2 to 3
Tall fescue-ladino cl..	6 to 8	2 to 3
Warm-Season Grasses		
Common bermudgrass	4	1
Sorghum	18 to 30	18
Switchgrasses	10 to 14	6 to 8
Legumes		
Alfalfa	6	1 to 3
Birdsfoot trefoil	4 to 7	2 to 3
Ladino or white clover	6 to 8	2
Red clover	4 to 7	2

### Criteria For Animal Health And Productivity

Movement of animals will be in a manner to improve and/or maintain animal health and performance, and to reduce the spread of diseases and/or parasites.

Plan grazing to match forage quality and quantity criteria with the goals of the livestock producer.

### Criteria To Maintain Or Improve Water Quality

Duration, intensity, frequency, and season of grazing near surface waters will be planned and applied in such a manner that vegetation and water quality are maintained or improved.

High animal concentration areas, such as feeding, watering or shade areas, shall not be located adjacent to surface water bodies whenever possible.

Limit or eliminate livestock's access to streams and riparian areas. When streams must be crossed with grazing livestock properly stabilized crossings will be provided.

### Criteria To Reduce Soil Erosion And Maintain Or Improve Soil Condition

Ground cover provided by grasses and legumes shall be maintained at a level (80% or more) to minimize soil erosion.

Minimize concentrated livestock areas, trailing, and trampling to reduce soil compaction, excess runoff and erosion. Plan and layout laneways so that erosion and runoff are kept to a minimum.

Grazing on somewhat poorly, poorly, and very poorly drained soils shall be deferred during times of high water table occurrence. These areas may be grazed during wet conditions for short durations (12 hours or less).

### Criteria to Promote Economic Stability through Grazing Land Sustainability

Evaluate the economics of the forage system and associated infrastructure.

Develop a grazing system that provides forage for as much of the year as possible to minimize supplemental feed cost.

Reduce the loss of livestock from toxic and poisonous plants.

## **CONSIDERATIONS**

Supplemental feed may be necessary to meet the nutritional requirements of grazing livestock or to meet the producer's performance goals.

Use of shade and/or shelters will be included as part of this practice as conditions require to maintain animal welfare.

If the producer desires, consider the need of other enterprises utilizing the same land.

Extend the grazing season by stockpiling, use of annuals (summer and winter), legumes, crop residues, and brassicas.

Consider renovation of pastures if forage composition is undesirable and cannot be changed by grazing management or if stand density becomes too thin to meet livestock's nutritional needs or to control soil erosion.

Perimeter fences shall be barriers, capable of preventing livestock escape and their placement should be planned, where possible and practical, on the farm boundary. Interior fencing shall provide control necessary for effective forage utilization and implementation of the grazing plan.

Hayland or cropland forages or crop residues may be grazed when minimum beginning and ending forage heights or residue amounts are observed.

Adequate quantity and quality of water must be available in all grazing systems. Locations of water facilities will consider slope, soil, and other potential water quality and soil erosion issues. Whenever possible, livestock will not utilize streams. If streams must be used, take care to insure minimal disturbance to streambanks and degradation of water quality.

## **PLAN DEVELOPMENT**

Consider the following when developing a prescribed grazing plan:

### **Landowner's Objectives**

In order for any prescribed grazing plan to work, this primary objective must be considered.

### **Livestock Producer's Time**

Consider available time when developing a grazing system.

### **Livestock Producer's Management Skills**

Consider the management skills of the landowner or operator when developing a grazing system because a prescribed grazing plan requires good management skills.

### **Soils**

Where possible, avoid placing fields/paddocks across different soil types to reduce differential grazing.

### **Topography**

Strive for topographical uniformity in field/paddock layouts to promote uniform grazing. Consider aspect when planning early spring grazing.

### **Special Features**

Consider roads, streams, ponds, and wooded areas.

### **Source and Location of Water**

Strive to reduce the distance animals travel to water. Locate water to reduce negative impacts. Desired walking distances to water should be 800 or less feet for most grazing livestock.

### **Location of Supplemental Feeding Areas**

Consider effects on resource base and grazing distribution when locating feeding areas. Also consider storage requirements, labor, and access.

## Fencing

Consider the condition, location, and type of existing fences. See Pennsylvania Conservation Practice Standard *Fence (Code 382)* for types when developing plan.

## Working Facilities

Consider location of working facilities when laying out a prescribed grazing system.

## Weather Conditions

Consider the use of shade when designing a grazing system. Shelter may be needed for livestock in inclement weather.

## Other Enterprises

Consider other goals and enterprises.

## TYPES OF PRESCRIBED GRAZING METHODS

A prescribed grazing plan may include one or all of the following types of grazing methods. Each plan should contain the method(s) needed to meet the goals of the livestock producer.

**Continuous Grazing** – A method where livestock are grazed on a specific unit of land (pasture) with unrestricted access through out the time period when grazing is allowed (generally the grazing season).

**Rotational Grazing** – A method that utilizes recurring periods of grazing and rest among two or more paddocks in a grazing management unit throughout the period when grazing is allowed.

Rotation of animals through two or more pastures. A rest period follows each grazing period. Refer to Table 1 for suggested rest periods.

**Management Intensive Grazing** – ( Intensive rotational grazing) Allocates a small amount of forage in a short time (several hours to one or two days). May involve large pastures offered to animals in strips with the use of temporary fencing.

**First and Last Grazers** (leader – follower) - Involves two livestock groups. First grazers utilize one half or less of available forage and then rotate to another field followed by the last grazers who graze the remaining forage to a desired residual height. Considerations need to be given to livestock biosecurity when using this method.

**Co-grazing** – Two or more species of livestock grazing the same unit of land at the same time.

**Stockpiling** (deferred grazing) - Grazing is delayed during part of the grazing season to provide later grazing. Tall fescue is well suited to this type of grazing.

**Creep Grazing** - Allows passage by smaller animals to higher quality forage.

There are many modifications and variations of the grazing methods and all are important in the development of the prescribed grazing plan. All of the methods must have enough grazing units (paddocks/pastures) or acreage to allow for an appropriate rest period. The fewer the pastures or paddocks, the more difficult it is to manage for proper rest periods and the lower the utilization rate. If the number of grazing units is not sufficient for proper rest periods, then the animals must be totally or partially removed at necessary intervals to insure adequate forage and ground cover.

## PLANS AND SPECIFICATIONS

The following Pennsylvania Conservation Practice Standards for component practices need to be successfully implemented into a prescribed grazing system as needed:

**Residue Management** (Codes 329A, B, C) for soil protection

**Residue Management, Seasonal** (Codes 344) where crop residues are grazed but some residual amount is planned to be left for erosion control or water quality needs.

**Fence** (Code 382) for perimeter and cross fencing necessary to establish pastures and/or paddocks.

**Animal Trails and Walkways** (Code 575) where necessary for proper movement of grazing livestock.

**Brush Management** (Code 314) for control of invasive species into pastures.

**Conservation Crop Rotation** (Code 328) when certain crop fields are grazed when in annual or perennial cover.

**Cover Crop** (Code 340) when they can be grazed without damaging the intended conservation effects.

**Forage Harvest Management** (Code 511) for harvest of hay or grazing.

**Nutrient Management** (Code 590) for proper use of animal wastes and commercial fertilizers on pastureland.

**Pasture and Hayland Planting** (Code 512) where new species need to be established or re-established.

**Pest Management** (Code 595) to control insects, disease, weeds and other organisms (including invasive species and noxious weeds).

**Pipeline** (Code 516) for proper water development.

**Spring Development** (Code 574) for proper water development.

**Watering Facility** (Code 614) for proper water development.

**Water Well** (Code 642) for development of water sources so livestock can be properly rotated.

**Streambank and Shoreline Protection** (Code 580) for proper management of riparian areas in grazing systems.

**All of the following items must be contained in a written prescribed grazing plan:**

1. Livestock producer's goal and objectives.
2. A map showing farm, tract, field numbers, soil mapping units, grazing unit layout, lanes (if any), acres, fencing, shade (if any), shelter (if any), watering system, and sacrifice areas.

3. Identification of dominant forage specie(s) or mixture in each grazing management unit and expected yields.
4. Identification of fields that may be used to be used for hay harvest.
5. Identification of crop fields that may be used for grazing aftermath, crop residues, or annual forage grazing.
6. Indicate the range of days in a grazing period and the range of days in a rest period for each grazing cycle. Give the beginning and ending forage heights.
7. Number, kind, class and average weight of livestock throughout the grazing season.
8. Forage-Animal Balance developed as a sustainable grazing plan for the management unit(s), which insures forage produced or available meets forage demand of livestock and/or wildlife of concern.
9. Stocking rate.
10. Contingency plan for drought, heat stress (especially grazing dairies) and parasite control.

#### **OPERATION AND MAINTENANCE**

- Apply the prescribed grazing plan on a continuous basis, making adjustments as conditions require. The producer will insure that the objectives are met without degrading the resource base.
- Repair or replace fences incapable of controlling livestock to the level required by the prescribed grazing plan.
- Adjust available forage or livestock numbers if stocking rates are too high or too low to utilize forage properly according to the above criteria.
- In times of prolonged drought livestock shall be moved to a sacrifice area, feedlot, or previously ungrazed emergency pasture until regrowth is achieved to the heights or

stage of maturity in the criteria stated previously.

- Soil test fields prior to implementing a grazing plan and at least once every three to four years after achieving the proper fertility for the forages. Apply lime and fertilizer when soil tests indicate the need.
- Clip pastures as needed to trigger vegetative regrowth and/or control weeds.
- Renovate or overseed pastures to introduce desired forage species. Make certain of compatibility between existing species and introduced specie(s).
- Remove or eliminate any hazard from a pasture that may injure livestock, such as loose wire, other hardware, holes, downed trees or heavy limbs, and poisonous plants.
- Maintain watering system components in good working order. Clean out water troughs as needed to maintain good water quality.

## REFERENCES

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