

**NATURAL RESOURCES CONSERVATION SERVICE
NEW JERSEY
CONSERVATION PRACTICE STANDARD**

**PRESCRIBED GRAZING
(Acre)**

CODE 528

DEFINITION

Managing the harvest of vegetation with grazing and/or browsing animals

PURPOSES

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

- Improve or maintain desired species composition and vigor of plant communities.
- Improve or maintain quantity and quality of forage for grazing and browsing animals' health and productivity.
- Improve or maintain surface and/or subsurface water quality and quantity.
- Improve or maintain riparian and watershed function.
- Reduce accelerated soil erosion, and maintain or improve soil condition.
- Improve or maintain the quantity and quality of food and/or cover available for wildlife.
- Manage fine fuel loads to achieve desired conditions.

CONDITIONS WHERE PRACTICE APPLIES

This practice may be applied on all lands where grazing and/or browsing animals are managed.

CRITERIA

General Criteria Applicable For All Purposes

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

Adequate quantity and quality drinking water will be supplied at all times during period of occupancy.

Adjust intensity, frequency, timing and duration of grazing and/or browsing to meet the desired objectives for the plant communities and the associated resources, including the grazing and/or browsing animal.

Manage kind of animal, animal number, grazing distribution, length of grazing and/or browsing periods and timing of use to provide grazed plants sufficient recovery time to meet planned objectives. The recovery period of non-grazing can be provided for the entire year or during the growing season of key plants. Deferment (non-grazing period less than one year) and/or rest (non-grazing period equal or greater than one year) will be planned for critical periods of plant needs.

Provide deferment or rest from grazing or browsing to ensure the success of prescribed fire, brush management, seeding or other conservation practices that cause stress or damage to key plants.

Manage grazing and/or browsing animals to maintain adequate vegetative cover on sensitive areas (i.e. riparian, wetland, habitats of concern, karst areas).

Manage livestock movements based on rate of plant growth, available forage, and allowable utilization target.

Develop contingency plans to deal with expected episodic disturbance events e.g. insect infestation, drought, wildfire, etc.

Frequency of defoliations and season of grazing will be based on the rate and physiological conditions of plant growth (Table 1).

Duration and intensity of grazing will be based on desired plant health and expected productivity of key forage species to meet management unit objectives (Figure 1).

Additional Criteria to Improve or Maintain the Health and Vigor of Plant Communities.

Duration and intensity of grazing and/or browsing will be based on desired plant health and expected productivity of key forage species to meet management objectives.

Plan periodic deferment from grazing and/or browsing to maintain or restore the desired plant community following episodic events, such as wildfire or severe drought.

Where appropriate, soil test every 3 years for nutrient status and soil reaction and apply fertilizer and/or soil amendments according to soil test to improve or maintain plant vigor.

Suggested rest periods for typical cool season grass/clover pastures can be found in Table 2.

Additional Criteria to Improve or Maintain Quantity and Quality of Forage for Animal Health and Productivity

Manage livestock to avoid the spread of disease, parasites, and contact with harmful insects and plants.

Plan grazing and/or browsing to match forage quantity and quality goals of the producer within the capability of the resource to respond to management.

Enhance diversity of rangeland and pasture plants to optimize delivery of nutrients to the animals by planning intensity, frequency, timing and duration of grazing and/or browsing.

Plan intensity, frequency, timing and duration of grazing and/or browsing reduce animal stress and mortality from toxic and poisonous plants.

Supplemental feed and/or minerals will be balanced with the forage consumption to meet the desired nutritional level for the kind and class of grazing and/or browsing livestock.

Dietary needs of livestock will be based on the National Research Council's Nutrient Requirements of Domestic Animals or similar scientific sources with appropriate adjustments made for increased energy demand required by browsing or grazing animals foraging for food including travel to and from pasture site.

Biosecurity safeguards will be in place to prevent the spread of disease between on-farm or ranch classes of livestock and between livestock farm or ranch units.

Shelter in the form of windbreaks, sheds, shade structures, and other protective features will be used where conditions warrant to protect livestock from severe weather, intense heat/humidity, and predators.

Additional Criteria to Improve or Maintain Surface and/or Subsurface Water Quality and Quantity.

Minimize concentrated livestock areas to enhance nutrient distribution and improve or maintain ground cover.

Plan intensity, frequency, timing and duration of grazing and/or browsing to:

- Minimize deposition or flow of animal wastes into water bodies,
- Minimize animal impacts on stream bank or shoreline stability.
- Provide adequate ground cover and plant density to maintain or improve infiltration capacity and reduce runoff.

Provide adequate ground cover and plant density to maintain or improve filtering capacity of the vegetation

Adequate quality and quantity 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 are used, take care to insure minimal disturbance to streambanks and degradation of water quality.

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

Provide livestock on pasture with free access to clean water. The following are average daily requirements to be used when sizing a water system, for grazing livestock:

<u>Species</u>	<u>Gal/Head/Day</u>
Lactating Dairy (based on production)	25-35
Cow/calf pair	12
Yearling steers/heifers	12
Horses	12
Yearling Horses	12
Sheep/goats/llamas	2
Swine	4

Additional Criteria to Improve or Maintain Riparian and Watershed Function.

Minimize concentrated livestock areas to enhance nutrient distribution and improve or maintain ground cover and riparian/floodplain plant community structure and functions.

Plan intensity, frequency, timing and duration of grazing and/or browsing to:

Provide adequate ground cover and plant density to maintain or improve infiltration capacity and reduce runoff.

Provide adequate ground cover and plant density to maintain or improve filtering capacity of the vegetation.

Maintain adequate riparian community structure and function to sustain associated riparian, wetland, floodplain and stream species.

Additional Criteria to Reduce Soil Erosion and Maintain Soil Condition

Minimize concentrated livestock areas, trampling, and trampling to reduce soil compaction, excess runoff and erosion. Deep Tillage Std 324 or Grazing Land Mechanical Treatment Std 548 shall be used in cases where excess runoff from pasture is being caused by soil compaction.

Plan intensity, frequency, timing and duration of grazing and/or browsing to provide adequate ground cover, litter and canopy to maintain or improve infiltration and soil condition.

Additional Criteria to Improve or Maintain Food and/or Cover for Fish and Wildlife Species of Concern

Identify species of concern in the objectives of the prescribed grazing plan.

Plan intensity, frequency, timing and duration of grazing and/or browsing to provide for the development and maintenance of the plant structure, density and diversity needed for the desired fish and wildlife species of concern.

Additional Criteria for Management of Fine Fuel Load

Plan intensity, frequency, timing and duration of grazing and/or browsing to reduce hazardous fuel loads.

Plan intensity, frequency, timing and duration of grazing and/or browsing to manage fuel continuity, load and other conditions to facilitate prescribed burns.

Criteria for Management Intensive Grazing

A grazing system is perceived to be intensively rotated when livestock are rotated at a minimum of every 2 days, and a lactating dairy herd is rotated at least every 24 hours.

Pastures must receive adequate rest periods based on predominant forage species. See Table 2.

Rations of mature animals must consist of a minimum of 80% forage, either pasture or dry hay.

Paddock systems should be broken down into a series of smaller management units or cells, allowing strip grazing with the use of temporary, movable fencing, moved every time the animals are moved. Backfencing should also be incorporated to prevent animals from continually grazing on already grazed pasture.

Supplemental forages must be made available to extend the grazing system into the winter and/or provide alternative grass sources during the intense summer months. Planning year long plant productivity can be done using any or all of the following:

- Supplemental annuals (summer or winter)
- Fall stockpiling
- Grazing row crop residue
- Bale-grazing during winter

Pasture and dry forage testing are required within the first 12 months to more accurately balance the feed ration.

The same record keeping that is required with Prescribed Grazing is also required with MiG, with the addition of calculating AUM (animal unit month), AUD (animal unit day), annual pasture inventory and evaluations, animal body condition score and forage test results for fiber, protein and energy.

CONSIDERATIONS

Consider contour strips of deep rooted warm season grasses combined with Deep Tillage (324) to provide infiltration locations within the pasture on long slope lengths.

Utilization and stubble height target levels are tools that can be used in conjunction with

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monitoring to help ensure that resource conservation and producer objectives are met.

Duration, intensity, frequency, and season of grazing will be applied to enhance nutrient cycling by better manure distribution and increased rate of decomposition.

Use of natural or artificial shelter will be included as part of this practice when conditions demand.

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

Extend the grazing season by stockpiling, use of annuals (summer or 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 or where livestock pressure is great. Interior fencing shall provide control necessary for effective forage utilization and implementation of the grazing plan.

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

Animal husbandry requirements which may affect the design of the grazing prescription will be considered.

Prescribed Grazing should consider the needs of other enterprises utilizing the same land, such as wildlife and recreational uses.

PLANS AND SPECIFICATIONS

The prescribed grazing plan shall conform to all applicable federal, state and local laws.

Seek measures to avoid adverse effects to endangered, threatened, and candidate species and their habitats.

Prepare a prescribed grazing plan for all planned management units where grazing and/or browsing will occur according to state standards and specifications.

Prescribed Grazing Plan will include:

- Goals and Objectives clearly stated.
- Resource Inventory that identifies:
 - existing resource conditions and concerns
 - ecological site or forage suitability group
 - identifies opportunities to enhance resource conditions
 - location and condition of structural improvements such as fences, water developments, etc, including seasonal availability and quality of watering sites.
- Forage Inventory of the expected forage quality, quantity and species in each management unit(s).
- Forage-Animal Balance developed for the grazing plan, which ensures forage produced or available meets forage demand of livestock and/or wildlife.
- Grazing Plan developed for livestock that identifies periods of grazing and/or browsing, deferment, rest, and other treatment activities for each management unit.
- Contingency plan developed that details potential problems (i.e., severe drought, flooding, insects) and serves as a guide for adjusting the grazing prescription to ensure resource management and economic feasibility without resource degradation.
- Monitoring plan developed with appropriate records to assess in determining whether the grazing strategy is resulting in a positive or upward trend and is meeting objectives. Identify the key

areas and key plants that the manager should evaluate in making grazing management decisions.

OPERATION AND MAINTENANCE

Operation. Prescribed Grazing will be applied on a continuing basis throughout the occupation period of all planned grazing units.

Adjustments will be made as needed to ensure that the goals and objectives of the prescribed grazing strategy are met.

Maintenance. Monitoring data and grazing records will be used on a regular basis within the prescribed grazing plan to insure that objectives are being met, or to make necessary changes in the prescribed grazing plan to meet objectives.

All facilitating and accelerating practices (e.g. Fence (382), Pest Management (595), Brush Management (314), Pasture Planting (512) (etc.) that are needed to effect adequate grazing and/or browsing distribution as planned by this practice standard will be maintained in good working order and are being operated as intended.

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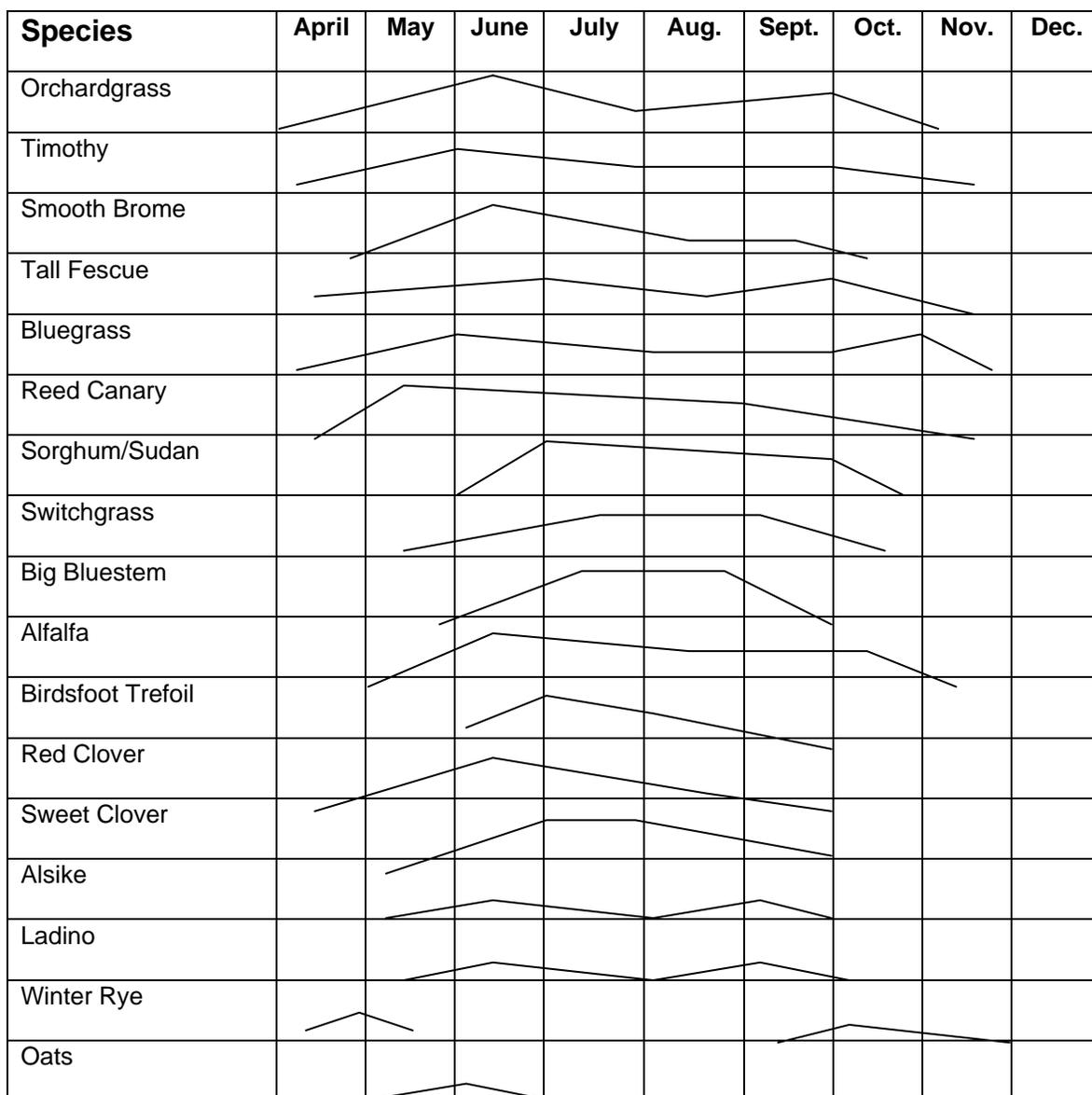
Table 1. Suggested Turn-in and Residual Grazing Heights for Rotational Grazing

PASTURE TYPE	GROWTH STAGE TO START GRAZING IN SPRING	SUCCESSIVE GRAZING	REMOVE LIVESTOCK AT RESIDUAL HEIGHT
Orchardgrass, Ladino Clover Tall Fescue, Reed Canarygrass, Red Clover	4-6 inches	8-10 inches	2-3 inches
Bluegrass, White Clover, Ryegrass, Sweet Vernal, Redtop	3 inches	4-6 inches	0.5-1 inch
Smooth Brome, Timothy	4-6 inches	-12 inches medium head, new basal sprouts	2-3 inches
Alfalfa	4-7 inches	At late bud, early bloom, 28- 35 day interval	2-3 inches; 3 inches in Fall
Lespedeza	12 inches	½ bloom	3 inches

Table 2. Rest periods for cool season grasses/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

Figure 1. Seasonality of Forages



**PRESCRIBED GRAZING MANAGEMENT PLANNING WORKSHEET FOR USE
WITH THE ROTATIONAL STOCKING METHOD**

COOPERATOR NAME _____ DATE _____

PLANNING ASSISTANCE PROVIDED BY _____

STEP 1. Estimate the Forage Demand:

The forage demand is the amount of forage dry matter (DM) required to feed the herd/flock for one-day. It is calculated based on the rule of thumb that grazing animals require an amount of forage DM equal to about 2.5 to 3.0% of their body weight per day. For lactating animals and growing stock use 3.0% of body weight. For all other classes of livestock use 2.5%.

_____ X .025 or .03 = _____ X

Average weight/animal

lbs DM/head/day

_____ = Total Forage Demand _____

of animals

lbs/day

STEP 2. Estimate the Forage Supply:

This is the amount of forage dry matter that is estimated to be available for grazing after a 15 day growth period in the spring and a 30 day growth period in the summer and fall.

****NOTE**** These numbers are for planning purposes only.

Unless actual measured yields are available, use estimated yields from NRCS Land Classification data. Use the following table to convert seasonal yields to forage availability on a rotational basis.

Forage Availability Estimates

Hay Yield							
tons/acre/year	5.5	5.0	4.5	4.0	3.5	3.0	2.5
Forage Availability	2200	2000	1800	1600	1400	1200	1000
lbs/acre/rotation							

Forage Supply _____ lbs/acre/rotation

STEP 3. Select Residency Period:

One half to 1 day residency periods are recommended for lactating dairy cows. Residency periods of 2 to 7 days may be used for all other livestock. ****NOTE**** For maximizing harvest efficiency, use the shortest residency period possible.

Residency Period _____
Days

STEP 4. Determine Paddock Size:

Paddock size is based on meeting the total forage demand for the herd or flock for the number of day of grazing indicated by the residency period.

_____ ÷ _____ = _____
Forage Demand Forage Supply

X _____ = Paddock Size _____
Residency Period Acres

STEP 5. Calculate the Number of Paddocks:

The number of paddocks required is based on the meeting the longest regrowth interval recommended, i.e. 30 days.

30 ÷ by _____ = _____ + 1 = _____
Residency Period Number of Paddocks

STEP 6. Estimate the Total Number of Acres:

_____ X _____ = _____
Paddock Size Number of Paddocks Acres Planned

****NOTE**** This planning procedure is designed to balance the forage supply with the forage demand during the mid-summer period when forage growth rates are generally 50% less than what they are during an average spring. As a result, during the spring and early summer, only about 40 to 60% of these planned acres will be required for grazing. The remaining 40 to 60% should be mechanically harvested or planned to be grazed by another group of livestock following their own prescribed grazing management plan.