United States Department of Agriculture

Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

PRESCRIBED GRAZING

CODE 528

(ac)

DEFINITION

Managing the harvest of vegetation with grazing and/or browsing animals with the intent to achieve specific ecological, economic, and management objectives.

PURPOSE

Apply this practice as a part of a conservation management system to achieve one or more of the following:

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

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to Pasture, Associated Agriculture, and/or Crop lands where grazing and/or browsing animals are managed.

CRITERIA

General Criteria Applicable to All Purposes

The Pasture Condition Score Sheet (PCS) must be completed for all planned land units where grazing and/or browsing is currently occurring and planned to occur in order to properly assess benchmark conditions.

NRCS reviews and periodically updates conservation practice standards. To obtain the current version of this standard, contact your Natural Resources Conservation Service State office or visit the Field Office Technical Guide online by going to the NRCS website at https://www.nrcs.usda.gov/ and type FOTG in the search field.

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A Prescribed Grazing Plan must be developed and include all the necessary primary and supporting conservation practices to facilitate the adoption of this standard, and it must include all the necessary specifications and action items to achieve the nine items in the following table:

Achievement Items	Planning Criteria
1. PCS Percent Desirable Plant score	Must be ≥ 4
2. PCS Live or Dormant Plant Cover score	Must be ≥ 4
3. PCS Grazing Utilization and Severity score	Must be ≥ 4
4. PCS Livestock Concentration Areas score	Must be ≥ 4
5. PCS Plant Vigor score	Must be ≥ 4
6. PCS Erosion score	Must be ≥ 4
7. Grazing of forage must be in accordance with the “start/stop” forage specific grazing heights, as specified in the NCSU Forage Facts Grazing Guidance document. The minimum number of paddocks needed should be calculated based on the planned number of grazing days for each paddock and the number of recovery days needed by the forage species before regrazing.	
8. Nutrients must be applied to achieve the yields used in Forage Production estimates for the Planned Grazing Scenario. Furthermore, if nutrients are applied, then they must be applied based on a soil test, tissue tests, or nutrient budget.	
9. If organic materials are applied, stored, and/or handled, they must be handled in a way that mitigates negative impacts to ground and surface water sources.	

Implementation of the Prescribed Grazing Plan must not result in any additional resource concerns on any land units grazed and/or browsed by the animals.

Careful consideration should be given to the selection of sacrifice areas. The National Range and Pasture Handbook defines a sacrifice area as a fenced-off, small portion of a grazing management unit intentionally overgrazed and heavily trafficked to prevent lasting damage to the entire unit. This is only done for short periods during extreme weather conditions. After which the site is deferred from grazing until it recovers. The period of recovery and deferment should include reseeding for any areas having less than fifty percent ground cover. Sacrifice areas should be shown on the Grazing Plan Map, and detailed operation and maintenance criteria of the sacrifice area shall be included in the Prescribed Grazing Plan.

The grazing and/or browsing animal species must get the majority of their diet from eating forage.

Land dedicated to the facilitation and production of high-intensity animal agriculture in a containment facility where daily nutritional requirements are obtained from other lands or feed sources is considered Farmstead, according the National Planning Procedures Handbook, so it should not be considered as a sacrifice area in the Grazing Plan. 40 CFR 122.23 (b)(1) provides the definition of an animal feeding operation, and all applicable federal, state, and local laws must be followed.

Manage stocking rates and grazing periods to adjust the intensity, frequency, timing, duration, and distribution of grazing and/or browsing to meet the planned objectives for the plant communities, and the associated resources, including the grazing and/or browsing animals.

Remove forage in accordance with the “start/stop” forage specific grazing heights, as specified in the NCSU Forage Facts Grazing Guidance document.

Provide desired grazed/browsed plants sufficient recovery time from grazing/browsing to meet planned objectives, as specified in the NCSU Forage Facts Grazing Guidance document. The recovery period can be provided for part or all of the growing season of key plants. Deferment and/or rest will be planned for critical periods of plant or animal needs.

Manage livestock movements based on rate of plant growth, available forage, and identified objectives such as utilization, plant height or standing biomass, residual dry matter, and/or animal performance.

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

Provide adequate quantity and quality of drinking water during period of occupancy.

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

Develop monitoring plans that directly support adaptive management decisions based upon identified ecologic triggers and thresholds to optimize the conservation outcome for the selected purposes.

Calculate a forage balance to determine a reasonable carrying capacity that allows the manager to achieve a target level of animal performance without deterioration of the grazing land resources.

Conform to all applicable Federal, State, Tribal and local laws. Seek measures to avoid adverse effects to endangered, threatened, and candidate species and their habitats.

Successful implementation of a Prescribed Grazing system can only take place after all supporting practices have been installed. Then this system must be evaluated through the course of at least one complete grazing season for successful practice implementation.

Additional Criteria to Improve or Maintain the Health and Vigor of Desired Plant Communities Base the intensity, frequency, timing, and duration of grazing and/or browsing on desired plant health, expected productivity, and composition of key species to meet management objectives.

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

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

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

Plan grazing and/or browsing to match forage quantity and/or 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 to reduce animal stress and mortality from toxic and/or poisonous plants.

Provide supplemental feed and/or minerals as needed to balance with forage consumption to meet the desired nutritional level for the kind and class of grazing and/or browsing livestock.

Base the dietary needs of livestock 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 grazing/browsing area.

Additional Criteria to Improve or Maintain and/or Subsurface Wateer Quality and/or Quantity Minimize concentrated livestock areas to enhance nutrient distribution and improve or maintain ground cover.

Manage intensity, frequency, timing, and duration of grazing, browsing and/or feeding to—

- Minimize deposition or flow of animal wastes into water bodies.
- Minimize animal impacts on stream bank or shoreline stability.
- Maintain or improve hydrologic function including infiltration and/or filtering capacity and soil surface stability to reduce runoff by providing adequate ground cover, plant spacing, and plant density.

Additional Criteria to Improve or Maintain Riparian and/or Watershed Function

Minimize concentrated livestock areas to improve or maintain 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 optimum ground cover, plant density, and/or plant structure 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 or Improve Soil Health

Minimize concentrated livestock areas, trailing, and trampling to reduce soil compaction, excess runoff and erosion, and maintain soil organic matter.

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

Additional Criteria to Improve or Maintain Food and/or Cover for Fish and/or 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 habitat requirements of 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 manage fuel

continuity and loading to reduce wildfire hazard and/or facilitate desired conditions for prescribed burns.

CONSIDERATIONS

Periodically assessing the pastures with the Pasture Condition Score sheet to record and review results can aid the producer and planner in evaluating the grazing strategy.

Forage stockpiling is encouraged to extend the duration of the grazing season. Refer to the Production and Utilization of Stockpiled Tall Fescue: Understanding the Basic Concepts publication by NC State Extension for additional information. This practice will promote year-round grazing, and also improve soil fertility and forage yield through improved manure distribution in managed pastures. Similarly, optimize on- farm forage production and plant diversity by overseeding or using annually seeded forages (warm and cool season) to extend the grazing performance period.

If feeding of hay is needed, consider rotational hay feeding methods to increase hay utilization, improve nutrient distribution, improve forage production, and to reduce the potential natural resource impacts.

Protect soil, water, air, plant, and animal resources when locating livestock feeding, supplementation, handling, and watering facilities.

Design and install livestock feeding, handling, and watering facilities in a manner to improve and/or maintain animal distribution. Design and install facilities to minimize stress, the spread of disease, parasites, contact with harmful organisms, and toxic plants.

Utilization, stubble height, and other target levels are tools that can be used in conjunction with monitoring to help ensure that resource conservation and producer objectives are met. Refer to the NCSU Forage Facts Grazing Guidance document for additional information.

Where practical and beneficial, start the grazing sequence in a different management unit each growing season.

When weeds are a significant problem prescribed grazing and/or browsing should be implemented in conjunction with other pest management practices to promote plant community resistance to invasive species and protect desired plant communities.

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

Develop alternatives that minimize additional grazing management infrastructure while still achieving plan objectives for the desired fish and wildlife species of concern.

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

Use drought forecasting tools and soil water forecasts where available to promote the accuracy of forage production projections.

Improve carbon sequestration in biomass and soils through management of grazing and/or browsing to produce the desired results.

Plan biosecurity safeguards to prevent the spread of disease between on-farm or ranch

classes of livestock and between livestock farm or ranch units.

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

If nutrients are being applied, CPS Nutrient Management (Code 590) will be applied.

Maintain conservative stocking rates as a drought contingency strategy to minimize detrimental consequences during drought on economic and ecological sustainability.

Outdoor swine and chicken operations do not obtain the majority of their diet from grazing and/or browsing forage. To address resource concerns for these types of operations, refer to other applicable conservation practices.

PLANS AND SPECIFICATIONS

Prepare a prescribed grazing plan for all planned conservation management units where grazing and/or browsing will occur. The grazing plan shall be developed utilizing C-Graz. Other tools or methods must be approved by NRCS prior to use.

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.
    - Opportunities to enhance resource conditions.
    - Location and condition of existing structural improvements such as fences, water developments, etc., including seasonal availability and quality of watering sites.
- Forage inventory of the existing (benchmark) forage quality, quantity, and species in each management unit(s).
- Animal Inventory of the existing (benchmark) operation.
- Forage-animal balance of the existing (benchmark) operation.
- The number of cool season paddocks and warm season paddocks needed, based on the planned number of grazing days and the number of recovery days needed for the applicable forage species.
- Forage inventory of the expected forage quality, quantity, and species in each management unit(s) for the planned scenario.
- Animal Inventory of the planned scenario.
- The NCSU Forage Facts Grazing Guidance document that specifies “start/stop” grazing heights and applicable recovery times according to the species and time of year.
- Forage-animal balance developed for the grazing plan that 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/or other treatment activities for each management unit that accommodates the flexibility needed for adaptive management decisions as supported by the contingency plan and monitoring plan in order to meet goals and

objectives.

- Description of any inorganic and/or organic nutrient applications that are needed and/or planned to achieve the results prescribed in the grazing plan.
- All planned actions necessary to achieve the results prescribed in the grazing plan, including supporting conservation practices, changes in herd numbers, changes in herd management, changes in forage management, etc..
- If applicable, planned location of sacrifice area(s) along with specifications for use and management.
- If some annual supplemental feeding is needed, specifications for the expected time period, location, feed type, estimated amount, feed management, and feed distribution
- Contingency plan developed that details potential problems (i.e., drought, flooding, and insects) and serves as a guide for adaptive management decisions in grazing prescription adjustments in order to mitigate resource and economic effects.
- Operation and Maintenance Plan.
- Monitoring plan that includes the use of the Pasture Condition Score sheet to assess the results of implementing the grazing strategy. Short-term and long-term monitoring may be needed to determine outcomes and support timely adaptive management decisions. Identify the key areas, key plants, or other monitoring indicators that the manager should evaluate in making grazing management decisions.
- Signature block for the Conservation Planner
- Signature block for the Producer where he/she acknowledges the plan has been reviewed and his/her agreement to implement the plan.

OPERATION AND MAINTENANCE

Operation

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

Adaptive management decisions will be made as needed and documented within the plan 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 ensure that objectives are being met, or to make necessary changes in the prescribed grazing plan to meet objectives.

Soil test all grazing land units and maintain adequate nutrient and pH levels based on soil test results to achieve expected forage productivity and persistence.

All facilitating and accelerating conservation practices (e.g., CPS Fence (Code 382), Pest Management (Code 595), Brush Management (Code 314), Forage and Biomass Planting (Code 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 operated as intended.

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