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, and maintain or 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 all lands where grazing and/or browsing animals are managed.

CRITERIA

General Criteria Applicable to All Purposes

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 site production limitations, rate of plant growth, the physiological needs of forage plants, and the nutritional needs of the animals.

Provide desired grazed/browsed plants sufficient recovery time from grazing/browsing to meet planned objectives. 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.

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.

**Criteria for Temporary Concentrated Livestock Areas on Pastures**

Also termed Sacrifice Areas/Lots or Loafing Areas, temporary earthen areas on pastures may be used for concentrated livestock areas when needed and provided that all of the following criteria are met:

- Use the concentrated livestock area site no more than 180 days in a year. Limit each concentrated livestock area to a maximum of 50 AU and 1 acre in size.
- Use the same concentrated livestock area site no more than once every 4 years, unless soil test results including phosphorus levels show that more frequent use is possible (<200 ppm and P-Index value <100).
- Provide a 150’ flow length vegetative buffer located down-slope from and the same width on the contour as the concentrated livestock area. In lieu of the 150’, NRCS Conservation Practice Standard (CPS) Vegetated Treatment Area (Code 635) and Design Guide 5 may be used to design a specific flow length.
- Locate the concentrated livestock area site on average land slopes between 1% and 8% and locate the vegetative buffer area on average land slope between 1% and 15%.
- Ensure that runoff leaves the concentrated livestock area site and enters the vegetative buffer as sheet flow, not concentrated flow. Protect the buffer from livestock damage.
- Design the concentrated livestock area with a maximum flow length (L) to width (W) ratio of 1L to 2 W.
- Locate the vegetative buffer area outside of natural or constructed drainage-ways, at least 50’ from neighboring property lines, streams, 100-yr floodplains, wells, springs, wetlands, karst basin intake areas, and ponds, etc.
- The seasonal high water table must be no closer than 18” from the ground surface for the concentrated livestock area and 1’ from the ground surface for the vegetative buffer area.
- The vegetative buffer can be partially or fully in the pasture and will maintain at least 3 inches of vegetation.
- Locate the concentrated livestock area outside of natural or constructed drainage-ways, at least 100’ from neighboring property lines, wells, springs, wetlands, karst basin intake areas, and ponds, etc.
- Locate the concentrated livestock area on soils with a permeability of less than 6 inches/hour in the upper 40 inches of the soil profile.
- Locate the concentrated livestock area on soils with convex slopes. Maintain positive slopes within the area. NRCS CPS Diversion (Code 362) will be followed where slopes do not meet this criteria.
- Accumulated manure and feed will be removed from the concentrated livestock area after use and vegetation establishment for the next growing season. Refer to criteria in NRCS CPS Critical Area Planting (Code 342) or Forage and Biomass Planting (512) for vegetation establishment.

If all of the above criteria are not met, then the area must meet the criteria found in CPS Heavy Use Area Protection (Code 561). See Concentrated Livestock Area Guidance in Section III, PA FOTG for more information and guidance on planning concentrated livestock areas on pastures.
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 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.

Practice biosecurity safeguards to prevent the spread of disease between on-farm classes of livestock and between livestock farm units.

Use 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.

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 Surface and/or Subsurface Water Quality and/or Quantity.
Minimize concentrated livestock areas to enhance nutrient distribution and improve or maintain ground cover.

If a current soil test is not available and more than 2 AU/Acre are being planned, the Nutrient Calculator within the PA NRCS Pasture Planning Tool will be used to assess nutrient deposition loads. When nutrient deposition exceeds the uptake of the growing vegetation and therefore is out of balance, criteria found in CPS Nutrient Management (Code 590) will be followed.

Locate infrastructure to promote uniform grazing and manure distribution. Locate feeding and sacrifice areas away from environmentally sensitive areas such as wetlands, streams/creeks, adjacent riparian areas and drainage swales.

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**
Protect soil, water, air, plant, and animal resources when locating livestock feeding, supplementation, handling, and watering facilities. Include the *Pasture Inventory and Evaluation Worksheet* when documenting existing conditions during client interview.

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.

Referenced worksheets can be found in FOTG Section IV. Sizing guidelines can be found in Section III, Planning and Environmental Compliance under *Concentrated Livestock Area Guidance- Exhibit 5*.

Include Temporary Livestock Concentration Areas (Sacrifice Areas) when planning to prevent damage to the larger pasture area or system. These small areas are temporarily fenced out of a larger field or paddock to hold and feed livestock. This avoids overgrazing or damaging remaining pasture due to drought, lack of forage or wet soil conditions during the growing season. During frozen ground (winter dormancy) conditions, the entire pasture area may be used as appropriate and per detailed contingency guidelines.

Include PA NRCS *Prescribed Grazing Contingency Worksheet* to document specific limitations based on seasonal or site conditions. Using the worksheet will help to develop clear and detailed management requirements for periods of deferment as described.
When developing a prescribed grazing plan, the Pasture Condition Scoring (PCS) Guide/Worksheet will be used to determine benchmark conditions then followed periodically as monitoring documentation. Set goals to maintain a minimum score of 35 using PCS sheet on all grazing units (with exception of the designated sacrifice area).

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.

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 mechanically 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.

PLAN AND SPECIFICATIONS

Prepare a prescribed grazing plan for all planned conservation management units where grazing and/or browsing will occur according to State standards and specifications. Seek measures to avoid adverse effects to endangered, threatened and candidate species and their habitats.

Prepare a prescribed grazing plan for all management units where grazing and/or browsing will occur according to state standards and specifications. The PA NRCS Pasture Planning Tool or hand calculations are acceptable methods to be used in determining specifications outlined in the grazing plan.
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 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 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.
- 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.
- Monitoring plan developed with appropriate protocols and records that assess whether the grazing strategy is resulting in a movement toward meeting goals and objectives. 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.

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.

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.

REFERENCES


National Drought Mitigation Center, Vegetation Drought Response Index, http://vegdri.unl.edu/.


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