

CONSERVATION PRACTICE SPECIFICATION

Prescribed Grazing - 528

PLANS AND SPECIFICATIONS

The timing, intensity, degree of use, frequency, duration, and season of grazing will be manipulated to promote ecologically sound and economically stable plant communities, which will sustain the resource and meet the landowner's objectives.

Prescribed grazing schedule:

A properly designed prescribed grazing schedule will meet the producer's goals, ensure maintenance and/or improvement of the plant resource by incorporating adequate recovery/rest periods during the growing season, and meet the needs of the grazing animal. The number of pastures included in the prescribed grazing sequence and the number of times an individual pasture is grazed during the grazing season is the decision of the producer. Adequate recovery/rest periods for grazed plants cannot be attained with continuous, season-long grazing of a single pasture.

Livestock movements should be based on plant growth and utilization, **not calendar dates**. Calendar dates may be used as a **guide** when developing grazing schedules. See Chapter 5 part 600.0500(e) of the National Range and Pasture Handbook for additional information on prescribed grazing schedules. <http://www.glti.nrcs.usda.gov/technical/publications/nrph.html>

To maintain or enhance rangeland plant diversity, the timing of grazing and deferment periods for each pasture will be alternated from year-to-year. This will ensure the warm- and cool-season functional plant groups receive proper deferment during their critical growth periods (seed stalk elongation through seed development) during the rotational sequence. Beginning the grazing sequence in a different management unit (pasture) each growing season will help ensure a pasture is not grazed during the same time of the growing season two years in a row.

Plan the recovery/rest periods so the grazed plants in each pasture will receive adequate time to replenish leaf area and carbohydrate reserves.

RECOVERY/REST PERIOD GUIDELINES:		
Rangeland		
	<i>fast growth May-June</i>	<i>slow growth July-August</i>
west (MLRA's 53, 54, 58)	minimum of 45 days	minimum of 65 days
east (MLRA's 55 & 56)	minimum of 30 days	minimum of 45 days
Under drought conditions, recovery periods may need to be extended to 90 days or longer.		
Tame (cool season) pasture		
	<i>fast growth May-June</i>	<i>slow growth July-August</i>
west (MLRA's 53, 54, 58)	minimum of 25 days	minimum of 35 days
east (MLRA's 55 & 56)	minimum of 15 days	minimum of 25 days

Winter grazing of rangeland and pasture land is permissible provided grazing is done when plants are dormant and adequate cover is maintained to protect the soil resource. Plant dormancy is generally considered to occur from November 15 to April 15. Summer grazing (June 1 to September 1) of pastures that will be used for winter grazing is also permissible provided recovery period guidelines are met. To maintain plant health, grazing winter pastures from April 15 to June 1 and September 1 to November 15 should be avoided. If properly timed, summer grazing may enhance the nutritional quality of the forage for winter grazing.

Deferment on special use pastures such as those seeded to crested wheatgrass for spring grazing or pastures seeded to warm-season grasses (i.e. switchgrass) for summer grazing is not required. In situations where all, or a majority of, the pastures within the rotation are cool-season introduced grasses/legumes (i.e. expired CRP fields), changing the grazing sequence from year-to-year is beneficial to maintaining plant vigor.

Grazing periods should be kept as short as practical **provided adequate recovery periods are maintained**. Keeping the grazing periods as short as practical, especially during periods of fast plant growth, will minimize the opportunity for the grazing animals to graze plant regrowth prior to plant recovery.

These recovery guidelines will be used in the development of the initial prescribed grazing schedule. As the producer gains experience, grazing and recovery periods may be adjusted to reflect actual growing conditions.

The prescribed grazing sequence may be changed for short periods to take advantage of seasonal forages, such as Kentucky bluegrass, annual forages, or crop aftermath.

Grazing prescriptions may need to be changed or adjusted when significant changes occur in plant vigor or composition, animal kinds or classes, and management objectives.

Where needed, grazing prescriptions will be adjusted to maintain or improve riparian and associated upland vegetation, in accordance with the producer's goals and objectives.

A monitoring program is needed to document actual grazing dates, livestock performance, climatic conditions, utilization, and vegetation changes over time. This is needed to analyze results and to develop the following year's grazing schedule.

Livestock movements between pastures should be planned so that livestock stress is minimized. Grazing schedule and livestock movements may also be designed to help break some parasite life cycles.

Degree of use:

Utilization (degree of use) or stubble height target levels are monitoring tools that can be used to help ensure that resource conservation and producer objectives are met.

Grazing use on key range grasses (rangeland) and key forage species (pastureland) should be maintained at levels which meet the client's goals and objectives for the prescribed grazing system. These goals and objectives will be documented on the ND-CPA-556 and/or the assistance notes.

The planned target utilization levels needed to meet these goals and objectives for selected key species on rangeland will be documented on the ND-CPA-414. On pastureland, planned target stubble heights for key forage species will be documented on the ND-CPA-528. At a minimum, actual use levels will be documented during annual follow-up at the end of the growing season on the ND-CPA-414 (rangeland) and/or ND-CPA-528 (pastureland).

If actual utilization levels exceed those identified as needed to meet the producer’s objectives, the reason will be documented (e.g. drought, too much time spent in a pasture, too many animals, or combination of reasons) in the assistance notes. As needed, the prescribed grazing schedule and/or the livestock/forage balance will be re-planned for the following year, incorporating necessary changes so that proper utilization levels are achieved.

UTILIZATION GUIDELINES	
<i>Producer’s goal</i>	<i>Recommended use level</i>
Maintain or improve plant health and vigor on rangeland	50 to 60%
Maintain or improve forage quantity and quality on rangeland	50 to 60%
Provide or improve habitat for grassland nesting birds on rangeland (See practice 645 – Upland Habitat Management)	40 to 50%
Maintain or improve forage quantity and quality on pastureland	See Table 2, Appendix A for minimum leaf length

On rangeland, Table 1 and Figures 1, 2, and 3 in Appendix A provide a guide for estimating percent of plant weight removed in relation to percent of the plant height removed for various species.

On pastureland, Table 2 in Appendix A provides a guide for minimum heights of key forage species for initiating and terminating grazing

Final utilization determinations should generally be made at or near the end of the growing season. However, reviewing utilization levels after each grazing event permits the producer to make adjustments to the grazing plan in order to better achieve the desired levels of utilization.

See Chapter 5, part 600.0500(d) and (e), of the National Range and Pasture Handbook for additional guidance on selecting key species, degree of use determinations, and key area selection. <http://www.glti.nrcs.usda.gov/technical/publications/nrph.html>

CONSIDERATIONS

Other practices, such as water developments (water well - 642, pipeline - 516, watering facility - 614, spring development - 574 and pond - 378) and fence (382) may be used to facilitate prescribed grazing.

The proper placement of supplemental feed, water, salt, minerals, or insect control devices can be used to facilitate grazing distribution throughout a pasture. Improper placement can have negative impacts on the soil, water, air, plant, and animal resources.

Livestock water supply must be adequate in quantity and quality to meet the demands of the livestock over the specified grazing period in each pasture.

Every grazing program must be tailored to the producer's goals and resources. Animal husbandry requirements, such as breeding programs, calving or lambing, shearing, and animal health, must be considered when designing the prescribed grazing plan. Grazing should be applied in accordance with forage quality and quantity criteria that best meets the production requirements for the kind and/or class of animal. Livestock fecal sampling, plant tissue analysis and the Nutritional Balance Analyzer (NutBal) software are useful tools to monitor the nutritional status of grazing animals.

Timely follow-up and monitoring during the growing season to determine degree of use after each grazing event will permit adjustments to the grazing schedule and/or stocking rate during the growing season to ensure proper utilization levels of key species are attained at the end of the growing season.

The use of annual forages may be a consideration when balancing forage needs on a short-term basis. Additional information on annual forages for grazing may be found at:
<http://www.ag.ndsu.nodak.edu/dickinso/research/1996/grazforg.htm>
<http://www.ag.ndsu.nodak.edu/dickinso/research/1998/range98n.htm>

Prescribed Grazing should consider the needs of other enterprises utilizing the same land, such as wildlife and recreational uses. Grazing periods may be altered as needed to attain utilization levels that benefit ground nesting grassland birds, waterfowl and other wildlife species. The long term impacts of these adjustments on the health of the plant community should be evaluated and understood by the producer.

ADDITIONAL MANAGEMENT CONSIDERATIONS FOR WILDLIFE

The overriding management goal is to adjust the design and management of the prescribed grazing system to produce a healthy, vigorous, diverse plant community which will meet the life requisites of grassland dependent species. Adjustments may include modifying the timing, frequency, and intensity of grazing for a pasture or pastures within the rotation to produce a patchwork of differing cover heights across the pasture(s).

Changing season of deferment from year-to-year and adequate recovery periods for pastures grazed more than once during the grazing season are still elements of prescribed grazing.

Target cover heights should average 6 to 8 inches on those ecological sites/plant community phases capable of producing that level of cover.

The management flexibility needed to meet plant community and wildlife cover goal is enhanced as pasture numbers increase within the prescribed grazing rotation.

Long-term non-use (rest) has proven to be detrimental to native plant community health and results in habitat degradation for many native grassland dependent wildlife species. Periods of excessive rest favor the invasion and increase of Kentucky bluegrass and smooth brome grass which displace native species and reduce native plant diversity. Consult the appropriate ecological site description(s) for information on plant community dynamics, thresholds and guidance on the appropriate length of rest periods.

Where practical, manage woody draws as separate pastures to permit better control of the timing, frequency and intensity of grazing. This will minimize browsing, permit regeneration of shrubs and trees, and promote a diverse herbaceous understory.

Grazing each pasture within the rotation only once during the grazing season will permit those pastures grazed early in the season an opportunity to re-grow. This will provide enhanced winter cover and nesting cover the following spring. Plant vigor will be maintained or enhanced by designing the system with sufficient pastures so that grazing periods are 10 days or less. This will minimize the opportunity for livestock to graze plant re-growth during the grazing period.

Grazing some pastures within the rotation once, and others twice is also a viable design provided recovery periods between grazing events are adequate for plant recovery and grazing intensity is adjusted to meet cover requirements.

ADDITIONAL MANAGEMENT CONSIDERATIONS TO MAINTAIN RIPARIAN AND WATERSHED FUNCTION

Where practical, manage riparian areas as separate pastures to permit better control of the timing, frequency and intensity of grazing to minimize impacts on wet soils and to maintain healthy, diverse, deep rooted native herbaceous and woody vegetation. Additional information on riparian area management can be found at:

<http://www.ag.ndsu.edu/pubs/ansci/range/r1539.pdf>
<http://www.ag.ndsu.edu/pubs/ansci/range/r1540.pdf>
<http://www.ag.ndsu.edu/pubs/ansci/range/r1541.pdf>
<http://www.ag.ndsu.edu/pubs/ansci/range/r1542.pdf>
<http://www.ag.ndsu.edu/pubs/ansci/range/r1543.pdf>
<http://www.cowsandfish.org/>

REQUIRED DOCUMENTATION

A prescribed grazing schedule will be prepared for all fields and pastures, incorporating any additional feed supplementation for the operating unit or portion of an operating unit being addressed. **Prescribed grazing schedules will be recorded in a manner that is readily understood and useable by the producer in his/her daily operations.** The manner of documentation will depend upon the size and complexity of the operating unit and the details required for a grazing prescription.

A prescribed grazing schedule will incorporate the following information:

1. *Forage inventory* - Document the expected forage quantity and quality for each grazing unit and when it is available. Also document any special problems restricting forage availability or nutritional quality, such as toxic plants or mixed land uses. ND-CPA -19 Grazing Land Forage Inventory Summary (hardcopy or electronic) shall be used for documentation. See Appendix C for inventory procedures.
2. *Animal inventory* - Document animal numbers or animal unit equivalents and forage demands by day, week, or month, nutritional surpluses or deficiencies from the forage resource, and supplemental feed requirements for each kind and class of domestic livestock and grazing/browsing wildlife species of concern. Also, document any special needs of animals such as nesting cover, shelter, et al. ND-CPA -1, Livestock Forage Balance Sheet (hardcopy or electronic) shall be used for documentation. See Appendix C for inventory procedures.
3. A *grazing schedule* which identifies both planned and applied periods of grazing, recovery/rest, and other treatment activities for each grazing unit. ND-CPA-556, Prescribed Grazing Schedule (hardcopy or electronic) shall be used for documentation.
4. A *monitoring plan* will be implemented to document resource conditions and changes. At a minimum, one of the following monitoring options will be used on each land use (rangeland and/or pasture land).
 - Photo points as outlined in Appendix A (applicable to both rangeland and pasture land)
 - ND-CPA-414 (rangeland only) supported by one of the following:
 - Utilization clipping using forage production cages
 - ND-CPA-414, Estimated Utilization: Key area - key species
 - Actual Weight Transect method. Consult area or State specialist for guidance on transect protocol or see procedure outlined on page 103 of 1996 interagency publication "Utilization Studies and Residual Measurements" available at <http://www.blm.gov/nstc/library/pdf/utilstudies.pdf>
 - ND-CPA-415, Landscape Appearance for each pasture in the rotation.
 - ND-CPA-528, Pasture Management Design and Documentation (pasture land only)

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Depending upon the producer's goals and objectives, additional monitoring may be desirable but is optional. Assistance is available on a case-by-case basis from the area or State specialist.

Note: If actual degree of use levels exceed that established by the producer to meet his/her goals, adjustments will be made so that livestock forage demand and production are in balance. See Chapter 5 part 600.0500(d) and (e), National Range and Pasture Handbook for guidance on selecting key species, degree of use determinations, and key area selection.

<http://www.glti.nrcs.usda.gov/technical/publications/nrph.html>

5. A drought contingency plan, which provides guidelines for adjusting the grazing prescription to ensure resource management and economic feasibility without resource degradation, will part of the overall grazing strategy. See Appendix B for drought management guidelines and options.

OPERATION AND MAINTENANCE

Operation: The producer will apply prescribed grazing on a continuing basis, making adjustments as needed to insure the objectives are met.

Maintenance: Periodic on site follow-up with the producer should be done to evaluate the results of the grazing prescription. If the planned goals or objectives are not being met or there is degradation of any of the resources, including animal performance, the prescription will be adjusted to ensure resources are maintained/improved and objectives are met.