

## DESIGN AND INSTALLATION GUIDE

### 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>

When two or more pastures are planned to be grazed **only one time** during the growing season, the same pasture will not be grazed during the same period of the growing season in consecutive years. On rangeland, grazing periods should be alternated from year-to-year to ensure that either cool season or warm season grasses receive deferment during the majority of their critical growth period. Critical growth period for cool season grasses is April 15 to June 30 and warm season grasses is June 1 to August 31.

When **two or more** pastures are planned to be grazed **two or more times** during a growing season, plan the grazing sequence to avoid grazing the same pasture during the same portion of the growing season in consecutive years. Plan the recovery/rest periods so the grazed plants in each pasture will receive adequate time to replenish leaf area and carbohydrate reserves.

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

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FOTG – Section IV – Conservation Practices**

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.

Changing season of use on special-use pastures such as a crested wheatgrass spring pasture or a pasture(s) seeded to warm season grasses for summer grazing is not required. In situations where all or a majority of the pastures 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, 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.

<b>UTILIZATION GUIDELINES</b>	
<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 nesting cover for grassland nesting birds on rangeland	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(c), 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.

A "twice-over" prescribed grazing schedule has demonstrated improved nutritional quality throughout much of the growing season.

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.

## 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)

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(c), 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.