



# Prescribed Grazing

## Conservation Practice Specifications

### Natural Resources Conservation Service, Idaho

ID-528-SPEC  
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#### Plans and Specifications

The following procedures and technical information provide guidance and supplements the requirements for carrying out selected components and considerations of Conservation Practice Standard 528, Prescribed Grazing.

**Prescribed Grazing** – Prescribed grazing, developed as a sustainable grazing plan, will include the following information and support documentation for all fields of the operating unit being addressed.

**Goals and Objectives** – Clearly defined and recorded goals and objectives will assist the land manager in achieving desired results on grazing lands. Objectives should be specific, measurable, and achievable with a given time. Resource inventory and analysis may need to be completed with land manager prior to development of specific resource objectives.

**Resource Inventory** – The resource inventory will include the following information on the conservation plan map(s) or in the conservation plan folder in a manner that is readily understood by the producer using approved forms or suitable documentation.

#### Conservation Plan Map

- All fields properly numbered. It is encouraged to add names provided by landowner.
- Acres properly shown for all fields
- Land use for all fields properly identified and shown
- Locations of fences, gates, and natural barriers both planned and existing
- Locations of watering facilities for livestock and wildlife by type both planned and existing
- All ecological sites properly identified and shown on map similar to Order 3 soil survey (e.g. Loamy 60%, Loamy Bottom 20%, Shallow Stony 20%)
- All known areas of concern properly identified and shown. For example poisonous plants, noxious weeds, heavy use areas by wildlife etc. that may affect grazing management.
- Public Land Survey identifying Townships, Ranges, and Sections
- All state and federal lands properly identified and shown
- North Arrow properly shown
- Title block that includes ranch name, county, state, approximate acres, name of preparer and date
- Map legend
- Scale Bar. Recommended that scale should be easily measured e.g. 4" = 1 mile (1:15840), 8" = 1 mile (1:7920), or 1:24,000 (USGS Quad)
- Location of Key Areas and Monitoring sites properly shown and identified

#### Soils Inventory

- Soils Map
- Non-Technical descriptions by map unit symbol

#### Animal Inventory

- Livestock numbers by type and class
- Wildlife species that may have impact on Feed and Forage balance. Estimate by species, number and period of occupation.

#### Threatened, Endangered, and Species of Concern

- Location of known occurrences and potential habitat (Conservation Data Center database)

#### Cultural Resources

- Location of known sites and culturally significant areas

**Forage Inventory** – The forage inventory provides data on expected forage quantity, quality, and species of forage in each management unit during the grazing period. Additional resources including hay production, supplemental feeding records, and lease information should be used in conjunction with the following:

- ID-CPA-006 – Similarity Index. This should be completed for at least one key area in each rangeland pasture. It is recommended that Similarity Index also be calculated for Ecological Sites that compose 20% or more of the grazing unit.
- ID-CPA-008 – Range/Pasture Computation Worksheet. For all grazed areas included in the plan.
- ID-CPA-012 – Rangeland Trend
- ID-CPA-011 – Rangeland Health Evaluation
- ID-CPA-013 – Stocking Rate and Forage Value Rating
- ID-CPA-016 – Line Point Intercept

The forage inventory should identify the quantity of forage in each management unit expressed in terms of Animal Unit Months (AUM), Pounds per Acre, or other quantitative value used by the land manager. The production in each management unit should be determined based on upon values of response units. Production of each response unit (ecological site and similarity index, improved pasture and forage value rating) is based upon the total production with adjustment factors which affect the available forage for livestock or wildlife. Local knowledge should be used when available.

**Adjustment Factors for Rangeland.** For further guidance see Chapter 5 NRPH

Distance to Water in feet	Percent Adjustment
2640	100%
5280	90%
7920	70%
10560	50%

Percent Slope	Percent Adjustment
0-15	100%
15-30	70%
31-60	40%
>60	0%

**Harvest efficiency** is defined as the percentage of total *annual* standing forage that is consumed by the grazing animal. Harvest efficiency should not be confused with grazing efficiency which refers to the percentage of *allowable* standing forage consumed and results in higher percentages.

Grazing Management Level	Harvest Efficiency
Continuous, Season Long	25%
Deferred Rotation, 2+ Pastures	25-30%
Rest Rotation, Multiple Pastures	25-30%
Short Duration , High Intensity	30-35%

**Analysis of Resource Conditions** – The analysis of resource conditions is the interpretation and identification of probable causes and potential solutions to those concerns. Careful analysis of collected resource data can lead the conservation planner to the core source of many resource issues allowing for ecological and economically sound solutions. Information on the history of the grazing operation such as stocking rates, type and class of livestock, seasons of use, brush management, wildlife numbers etc. should be collected. The following should also be used in analysis:

- ID-CPA-015A or15B – Pasture Condition Score sheet. For all grazed pasture included in plan.
- ID-CPA-012 – Rangeland Trend
- ID-CPA-011 – Rangeland Health Evaluation
- ID-CPA-007 – Browse Resource Evaluation
- Soil Survey
- Ecological Site Descriptions

**Forage-Animal Balance** – The forage/animal balance should be developed as a sustainable grazing plan for the management units, which ensures that forage produced or available meets demand by livestock and/or wildlife. The forage balance should also be used when considering conservation practices that result in deferment or rest in a management unit.

**-ID-CPA-009** – Livestock, Forage, and Feed Balance with livestock numbers that assures for a sustainable grazing plan for the management units, which insures forage produced or available meets the demand by livestock and/or wildlife.

**- ID-CPA-020** – Pasture Grazing System Calculations (Draft). Develops feed and forage balance for irrigated pasture systems. Designed for Management Intensive or High Intensity grazing plans.

**Grazing Plan** – A properly designed grazing management plan will meet the land manager's goals, and promote the maintenance and/or improvement of the plant, animal, soil, and water resources. The grazing plan should be site specific and based on information obtained from the resource, forage, and animal inventories. The system should be selected by the land manager, and consider the economic factors and time constraints of the land manager in performing scheduled livestock movements. The grazing system should be designed to be flexible in terms of adjusting to climatic conditions and other factors. The grazing plan will include a grazing schedule that identifies periods of grazing, deferment and rest and other treatments or prescriptions over a period of three years that will support achievement of the resource objectives. Adequate plant recovery/rest periods during the growing season will help meet the needs of both the plant resources and grazing animal. Alternatives to the number of pastures included or developed for the prescribed grazing sequence and the number of times an individual pasture is grazed during the grazing season should be discussed with the land manager in terms of maintaining forage balance. Livestock movements should be based on plant growth and targeted utilization levels and not on calendar dates. Calendar dates should only be used as a guide when developing grazing schedules.

Examples of the more common grazing systems used include the following:

**Alternate Rotation Grazing** is a system in which two pastures are alternately rested and grazed. The grazed and rested portions are reversed each year. The minimum rest period is 30 days and may be as long as one year on rangeland and non-irrigated pastures. On irrigated pastures with adequate water the minimum rest period is 20 days and should not exceed 40 days during the growing season.

**Deferred Rotation Grazing** is a system where seasonal deferment is rotated among pastures each year and the system will need to follow through a complete cycle where each pasture receives a full growing season deferment on the key species a minimum of once every three years.

**Rest Rotation Grazing** is a system where the stocking rate is based on that part of the range that is grazed each year rather than on the whole unit as with other grazing systems. This results in lower initial stocking rates until enough improvement is obtained to offset this loss. This type of grazing system has the most applicability where grazing is limited primarily to the growing season due to kind or class of livestock used or climatic limitations.

**Short Duration Grazing** is a system usually consisting of eight or more pastures in a very intensively managed scheme. Grazing periods are short (from about 1 to 10 days) and rest/recovery periods ranging from 30 to 90 days or longer. The length of the rest period is determined on the rate of plant growth and associated climate. During fast growth the rest period is about 30 days. During slow growth the rest period ranges from 60 to 90 days and in very dry or drought conditions the rest period is longer. The success of this system is based on the rest period needed by the plants to replenish carbohydrate reserves and produce new growth available for grazing by livestock. When properly applied, this system will normally remove only 25% to 30% of the available forage during a single grazing event during the rapid growth stage.

For additional examples of grazing schedules refer to the National Range and Pasture Handbook.

**-ID-CPA-010A or 10B** – Prescribed Grazing Schedule can be used to document the grazing schedule. The schedule should be planned for minimum of three years and adjusted annually based upon monitoring and actual use records.

**Contingency Plan-** A contingency plan will be developed that details potential problems (i.e., severe drought, flooding) and serves as a guide for adjusting the grazing prescription to ensure resource management and economic feasibility without resource degradation. Flexibility is needed in any grazing management plan to adjust for changes in forage production, availability of water for livestock, drought, fire, flooding, and other natural events. A contingency plan describes how decisions will be made regarding changes in livestock numbers, the grazing periods in each pasture, supplemental feeding and other management decisions if water or forage for livestock becomes limited in quantity or distribution, or more forage becomes available during above normal production years.

**Monitoring Plan** – A monitoring plan will be developed with appropriate records to assess whether the grazing strategy is meeting objectives. A monitoring plan should provide enough information to assist the land manager with decisions concerning the grazing schedule and stocking rates. A combination of short and long term monitoring methods should be incorporated into the plan.

The monitoring plan will also include repeatable photo points for each key grazing area and areas of special concern identified in the planning process.

### **Establishing Key Areas and Species on Rangelands**

Identification of key areas and key plants that the manager should evaluate in making grazing management decisions should be documented for each grazing unit.

- Key grazing areas will be selected within a pasture that are representative of that unit, and can be used to prescribe and monitor grazing use. A key grazing area must provide a significant amount of the available forage in the pasture, and contain the key plant species to be managed. Key grazing areas and key species should be identified according to management objectives, resource concerns, and characteristics, which influence the pattern of grazing distribution in each pasture. It is assumed that if the key area is properly grazed, the pasture as a whole will not be excessively used. Due to the variability of grazing preference values of different range sites, there may need to be more than one key area per pasture
- Key plant species (one or more) will be selected that are important to management objectives, and will comprise more than 15 percent of the available forage by species or groups of species. Other species may be selected based on specific management considerations, such as for stabilizing stream banks, competing with noxious weeds, or wildlife habitat.
- Key areas should consist of a single ecological site or grouped into ecological sites with the same grazing preferences and distribution patterns. Upland and bottomland ecological sites generally should not be grouped together as one key area as they tend to have drastically different grazing preference values. Areas of animal concentration, such as stream crossings, watering points, fence lines, or gate areas, should not be selected as key areas, as they are not representative of the whole unit. These might be considered critical areas, which may be chosen to monitor for a specific management reason.
- Key areas will serve as monitoring sites used to evaluate management. Management checks should be made prior to grazing, throughout the grazing period, and during rest periods to determine the degree of use and other resource conditions, to make needed adjustments in grazing management.
- Key areas may need to be reselected when significant changes in grazing management occurs, such as changing the season of use, adding structural improvements that influence livestock distribution, or changing the kind and/or class of grazing animal.

For a more detailed discussion of selecting key areas and key species refer to the NRPH.

## Herbaceous Utilization

Utilization target levels are used to help ensure that resource objectives are met. Attaining a specified use level of key species is not an objective, but serves as a reference point to evaluate the grazing system and its effect on the desired plant communities. Range inventory methods which include similarity index, rangeland health, and trend estimations or measurements for at least three years or at least two rotations through the grazing system. These are more meaningful indicators of the effectiveness of the grazing management than is the degree of utilization. Target utilization levels should be planned by considering current and planned resource conditions, scheduled rest periods, and grazing tolerance of key species. Utilization tolerance of native species varies by the physiology and morphology of the plant, season of use, soil, climate, vigor and health of plants, and competition with other species.

In general, during the growing season, plant health is affected by grazing when use levels exceed 50 percent of total current year's aboveground production by reducing or stopping root growth. In the dormant season, plant health is affected by grazing when use levels exceed 65% by reducing thermal cover of remaining stems, removing carbohydrate storage sites, damaging crown buds, etc. Planned use levels must ensure the plant has adequate leaf area and growth for photosynthesis and recovery following grazing.

## Browse Utilization

When designing a grazing strategy with the objective to maintain or restore woody species, the timing of grazing and recovery must consider the phenology and needs of the woody plants themselves.

Utilization of woody species will not exceed 50 percent of annual leaf and twig growth within reach of animals, unless a grazing system is implemented which has a high rest to grazing period ratio which allows for adequate recovery following heavier use. Wildlife use of woody browse must be considered, as it may pose special management concerns. Other factors to consider in evaluating grazing effects on woody species are: age and size classes of key browse species; evidence of severe hedging; grazing use of plant growth older than one year; evidence of browse lines; presence of dead or dying plants; use of low preference species; and amount of reproduction of key species. Where woody browse utilization becomes excessive, it may be an indicator that overall forage quality or quantity are not adequate to meet animal nutritional needs. Season of use, length of grazing periods, and stocking levels should be evaluated and adjusted if browse utilization exceeds planned levels.

Documentation of prescribed grazing will include the following:

- **ID-CPA-014** – Proper Grazing Use
- **ID-CPA-007** – Browse Resource Evaluation, if browse species are identified as concern
- **Permanent Photo Points** – Established at each Key area
- **Actual Use** – Records of livestock numbers and dates in each management unit provided by landowner.

## Operation and Maintenance

**Operation:** Prescribed Grazing will be applied on a continuing basis throughout the occupation period of all 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 ensure that objectives are being met. All facilitating practices (i.e., fence, watering facilities, etc.) that are needed to effect adequate grazing distribution as planned by this practice standard will be maintained in good working order.

## Additional Guidance For Documentation of Prescribed Grazing - 528

Prescribed Grazing is defined as managing the controlled harvest of vegetation with grazing animals, with the intent to achieve a specific objective. Guidance for the development of a prescribed grazing plan can be found in the Conservation Practice Standard, Specifications, and Job Sheet located in Section IV of the Field Office Tech Guide <http://www.nrcs.usda.gov/technical/efotg/>

The following are minimum guidelines for documentation of Practice Standard 528 – Prescribed Grazing in Idaho.

**Goals and Objectives** - Clearly stated in narrative format

**Resource Inventory** - Combination of maps and narrative summary of data collected. See 528 Specifications

**Forage Inventory and Analysis Of Resource Conditions** – Minimum documentation for Forage Inventory and Analysis of Resource Conditions will depend upon type of land and land use in conjunction with landowner's goals and objectives. The following forms are required for a minimum of one key area in each grazing unit. See 528 Specification for additional guidance. To obtain forms for documentation go to [http://www.id.nrcs.usda.gov/technical/cons\\_forms.html](http://www.id.nrcs.usda.gov/technical/cons_forms.html)

**Rangeland (Primarily Native Species)** - Land on which the historic climax plant community is predominantly

grasses, grass-like plants, forbs, or shrubs. Includes lands re-vegetated naturally when routine management of that vegetation is accomplished mainly through manipulation of grazing. Rangelands include natural grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows.

- **ID-CPA-006 Similarity Index**
- **ID-CPA-011 Rangeland Health**
- **ID-CPA-012 Range Trend**
- **ID-CPA-016 Line-Point Intercept** – Not required but may provide additional data necessary to develop resource goals and objectives, provide baseline data for monitoring plan, or data required to plan brush management

**Pasture** - Grazing lands comprised of introduced or domesticated native forage species that are used primarily for the production of livestock. They receive periodic renovation and/or cultural treatments such as tillage, fertilization, mowing, weed control, and may be irrigated. They are not in rotation with crops.

- **ID-CPA-015 Pasture Condition Score Sheet**
- **ID-CPA-013 Stocking Rate and Forage Value Rating** – Optional ,may provide additional data necessary to develop resource goals and objectives or baseline data for monitoring plan
- **ID-CPA-006 Similarity Index** - Optional , plant production portion may be used to obtain data for ID-CPA-013

**Other Grazing lands** – This would include Rangelands with greater than 50% introduced species, Forested lands, and lands which do not fall under rangeland or pasture by definition

- **ID-CPA-013 Stocking Rate and Forage Value Rating**
- **ID-CPA-012 Range Trend**
- **ID-CPA-006 Similarity Index** - Optional , plant production portion may be used to obtain data for ID-CPA-013
- **ID-CPA-016 Line-Point Intercept** – Not required but may provide additional data necessary to develop resource goals and objectives, provide baseline data for monitoring plan, or data required to plan brush management

**Forage-Animal Balance** – Requires completion of **ID-CPA-009 Livestock Forage and Feed Balance** or ID-CPA-020 Pasture Grazing System Calculations.

**Grazing Plan** - Narrative plan developed for the producer that identifies periods of grazing, rest, and other treatment activities for each management unit for a period of three years.

- **ID-CPA-010 Prescribed Grazing Planning and Documentation Chart** - Optional, provides visual representation of planned grazing and rest periods.

**Contingency plan** – Narrative statement developed that details potential problems (i.e., severe drought, flooding) and serves as a guide for adjusting the grazing prescription to ensure resource management and economic feasibility without resource degradation.

**Monitoring plan** – Narrative Plan developed with appropriate records to assess whether the grazing strategy is meeting objectives. Identify the key areas and key plants that the manager should evaluate in making grazing management. Actual use records are required from the landowner. Repeatable photo points should be established in Key areas and areas of concern

For reporting purposes each conservation plan folder will also include:

- Signed **ID-528-JS-02 Prescribed Grazing Job Sheet** -
- Signed and initialed **ID-CPA-014 Proper Grazing Use** – for each year of prescribed grazing in plan