



# Prescribed Grazing (528) - Habitat Management for Greater Sage-grouse Conservation Practice Specifications

ID-528-WLFW-SPEC

Natural Resources Conservation Service, Idaho

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## Plans and Specifications

The following procedures and technical information provide guidance and supplement the requirements for carrying out selected criteria and considerations of Conservation Practice 528-Prescribed Grazing for the management of sage-grouse habitat. This practice will be planned in conjunction with 645-Upland Wildlife Habitat Management to reduce threats and to create or improve sage-grouse breeding, nesting, early and late brood rearing or winter habitat. All facilitating practices used to implement prescribed grazing will be in accordance with the Conference Report for the NRCS SGI Initiative.

**Prescribed Grazing** – Prescribed grazing, developed as a sustainable grazing plan that addresses wildlife habitat concerns identified during the conservation planning process, 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 habitat improvement on grazing lands for sage-grouse. Objectives should be specific, measurable, and achievable with a given time. Resource inventory and analysis will 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 field 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 and US Fish and Wildlife Service databases)
- Locations of sage-grouse lek, core, important, and general habitat

### Cultural Resources

- Location of known sites and culturally significant areas

**Forage/Habitat 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.
- 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
- ID-CPA-020 – Pasture Grazing Systems Calculation
- ID-CPA-021 – Ocular Estimates

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%             |

**Sage-Grouse Habitat Types / Inventory** - Sage-grouse are a landscape-scale bird found in large interconnected expanses of sagebrush-steppe communities mixed with grasslands, shrubs, upland meadows, and riparian areas. On an annual basis, migratory sage-grouse populations may occupy an area that exceeds 1,000 square miles to meet their seasonal needs. Their existence is tied to functioning sagebrush-steppe habitats and the presence of sagebrush. To assess habitat condition for grouse, an initial inventory of existing ecological sites and plant communities must be made. This baseline inventory is necessary to assist the client with making sound decisions on existing condition and whether or not to transition to a different plant community. As a general rule on a landscape scale, it is desirable, as closely as possible, to mimic the Reference State as defined in the NRCS

Ecological Site Descriptions (ESD) for all ecological sites. The planner should evaluate all of the ecological sites in the area of concern to evaluate the potential to meet the seasonal needs (lekking/courtship, nesting, brood-rearing, and winter habitat) of grouse.

**Lekking/Courtship Habitat** - (Approximately late February through May): Leks are usually natural or man-made openings within sagebrush. The sagebrush surrounding the lek site (typically within 0.6 miles) is used for feeding, resting and cover when birds are not on the lek. During this time, adult diets shift from sagebrush to available forbs and insects. The presence of early green-up forbs for improved hen nutrition is beneficial during this pre-laying period for nest initiation, hatching success, and early chick survival.

**Nesting Habitat** - (Approximately April 1<sup>st</sup> through June 15<sup>th</sup>): Sagebrush and perennial understory grass and forb cover are key components of sage-grouse nesting with a majority of hens nesting within 2 to 3 miles of the lek site. Sagebrush canopy cover of 15 to 25 percent with sagebrush that is 12 to 31 inches tall generally provides suitable nesting cover for protection from aerial predators. In addition, residual herbaceous plant cover along with current year live growth of grass and forbs is very important for nesting success and early chick survival. Herbaceous cover helps hide sage-grouse nests from ground-level predators. A minimum height of 7 inches of herbaceous cover is preferred. The average canopy cover of current year's growth of perennial grasses and forbs should be a minimum of 15 percent. It would be ideal for 80 percent of an area thought to be suitable nesting habitat to meet, or exceed (in the case of residual and current year grass and forb growth) the vegetative factors stated above. Areas used for nesting can also provide brood-rearing and winter habitat depending location and conditions.

**Early Brood-Rearing Habitat** - (Approximately mid-April through June): A diverse mosaic of vegetation is needed is needed for early brood-rearing. This habitat type generally occurs within 1 mile of nest sites and is typically interspersed with nesting habitat. Optimum early brood-rearing habitat is similar to that of nesting, but usually has a little lower canopy cover of sagebrush and a greater herbaceous understory of grass and forbs. Patches with 10 to 15 percent canopy cover of sagebrush within the denser sagebrush canopy of nesting habitat contain more forbs and insects and are used for foraging. The denser patches of sagebrush are used for nesting provide protection from predators and weather during early brood-rearing. Almost 90 percent of chick loss occurs prior to their being capable of strong flight around 5 weeks of age. Chick survival is tied to an abundance of insects such as ants, beetles, and grasshoppers, which are associated with more open patches containing a higher amount of herbaceous cover and forbs. Introduced species of sod-forming grasses are undesirable in early brood-rearing habitat. This is because sod is difficult for small chicks to walk through and find the insects they need to eat. Introduced sod-forming grasses also spread aggressively, reducing the diversity of vegetation that in turn attracts a variety of insects. Early brood-rearing habitat need only be found on 40 percent of the area associated with nesting.

**Late Brood-Rearing Habitat** - (Approximately July through August): As the weather becomes warm and dry and herbaceous plants mature, hens usually move their broods to more mesic sites where succulent vegetation remains available. The diet of grouse chicks shifts from primarily insects to include more forbs during this period. Examples of late brood-rearing habitats include riparian areas along streams, springs, seeps, wet meadows, and hay/alfalfa fields adjacent to sagebrush habitats. Where available, hens may move their broods to higher elevations to take advantage of more succulent vegetation in mountain sagebrush sites and associated riparian areas. Sagebrush stands closely associated with these foraging areas provide important cover for escape from predators. Productive late brood-rearing habitat in sagebrush communities is similar to that for nesting and early brood-rearing and may be the same as nesting and early brood-rearing where there is enough summer rain to maintain the forbs. Riparian areas and wet meadows located in deep canyons may not be used by grouse. Preferred late brood-rearing habitat in sagebrush includes sagebrush canopy cover of 10 to 25 percent that is 12 to 31 inches tall and a minimum of 15 percent canopy cover of grass and forbs interspersed within the sage. Late brood-rearing habitat need only be found on about 40 percent of the area.

**Winter Habitat** - (Approximately November to February): During the winter, grouse need sagebrush exposed above the snow for food and cover. Winter habitat may be separate and distinct or it may overlap with the other seasonal habitats. Unlike nesting and brood-rearing habitat, the amount of grass and forbs has little significance because the diet of grouse is almost exclusively sagebrush. Sagebrush on flatter land with south to west facing slopes, or windswept ridges commonly provides suitable winter habitat. However, all aspects may be used depending on local conditions. During deep snow periods, steeper drainages and tall sagebrush sites may be the only areas with exposed sagebrush. Exposed sagebrush canopy cover of 10 to 30 percent with heights of 10 to 14 inches above the snow is needed by grouse in the winter.

Data should be collected that will allow planner to assess habitat values for sage-grouse by season of use. The following forms and methods may be used.

- **ID-CPA-006** – Similarity Index
- **ID-CPA-012** – Rangeland Trend
- **ID-CPA-011** – Rangeland Health Evaluation
- **ID-CPA-007** – Browse Resource Evaluation
- **ID-CPA-017** – Line Intercept
- **ID-CPA-018** – Gap Intercept
- **ID-CPA-019** – Plant Height
- **ID-CPA-021** – Ocular Estimates
- **Idaho Biology Tech Note 19** – Wildlife Habitat Appraisal Guide
- **Idaho Biology Tech Note 32 -SHE-Sage-Grouse** - Species Habitat Evaluation for Greater Sage-grouse
- **Sage-grouse Threat Checklist**
- **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 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 - 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 to improve habitat values for Greater Sage-grouse

**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. A deferred rotation system facilitates improvements in health and vigor of vegetation and can be managed to provide suitable nesting and brood rearing habitat for sage-grouse with annual adjustments to timing, frequency and intensity of grazing.

**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 through increased vigor and production. 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. This system provides the greatest opportunity to provide suitable nesting habitat for sage-grouse. Residual cover for nesting birds is generally improved and health and vigor of vegetation improves through use of longer rest periods.

**-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 for maintaining or improving sage-grouse habitat. 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 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 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 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 inventory methods 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 percent 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 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.) 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) – Habitat Management for Greater Sage-grouse

The following are minimum guidelines for documentation of Prescribed Grazing (528) - Habitat Management for Greater Sage-grouse.

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

**Resource Inventory** - Combination of maps and narrative summary of data collected. See 528-WLFW 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-WLFW 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** - 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 and seeded grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows.

- **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-011 Rangeland Health** – All sites in planned area should be evaluated
- **ID-CPA-012 Range Trend** - All sites in planned area should be evaluated
- **ID-CPA-021 Ocular Estimates** – Should be used for sites where ID-CPA-006 is not collected
- **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
- **ID-CPA-021 Ocular Estimates** – Optional , Can be used to document Pasture composition by species

**Other Grazing lands** – Forested lands, Naturalized Pasture 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** - Should be completed for at least one key area in each grazing unit to determine reconstructed present weight. Plant production portion may be used to obtain data for ID-CPA-013

- **ID-CPA-021 Ocular Estimates** – Should be used for sites where ID-CPA-006 is not collected
- **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

**All Grazing Lands** – All lands within the conservation plan developed to maintain or improve habitat for greater sage-grouse will be evaluated using:

- **Biology Tech Note 19** – Wildlife Habitat Appraisal Guide if landowner has general wildlife objective in addition to sage-grouse
- **Biology Tech Note 32** – SHE for Greater Sage-grouse
- **Sage-Grouse Threat Checklist**

**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-528-JS-01** will serve as cover sheet and outline for the development of the Prescribed Grazing Plan and should be signed by landowner.

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

**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** – 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 will be established in Key areas and areas of concern.

For reporting purposes each conservation plan folder will also include:

- Signed **ID-528-JS-01 Prescribed Grazing Job Sheet** – Cover sheet for Prescribed Grazing Plan
- Signed and initialed **ID-CPA-014 Proper Grazing Use** – for each year of prescribed grazing in plan