

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE SPECIFICATION  
**Prescribed Grazing – Annual Rangeland  
(Acre)  
Code 528A**

### Scope

The work shall consist of managing grazing or browsing animals to achieve specified objective(s) within management units as shown on the conservation plan map. Prescribed grazing will address resource concerns identified during the planning process and to meet the goals and objectives of the land manager.

Facilitating practices such as fencing and water developments will be installed as needed to implement prescribed grazing.

### Plans and Specifications

This specification is for annual rangelands in California, where non-native (naturalized) annual species dominate the site. The following procedures and technical information provide guidance and supplements the requirements for carrying out Conservation Practice Standard 528, Prescribed Grazing for this vegetation type.



### Prescribed Grazing

Prescribed grazing plans will be developed for all management units where livestock use is planned. Design of the grazing plan will be based on resource concerns identified during development of a conservation plan. Prescribed grazing plans are to be practical and provide flexibility to accommodate such variables as year-to-year climatic fluctuations, variations in forage production, and potential for change in livestock water availability. Frequency of harvest and season of use will be based on management objectives, soil condition, rate of plant growth, as well as the physiological needs of forage plants and grazing/browsing animals and the needs of fish and wildlife. Timing, duration, and intensity of grazing will be adjusted based on desired plant health and expected productivity of key forage species to meet management unit objectives. Forage utilization levels or stubble-height targets following livestock harvest are a tool used to help ensure that resource sustainability and producer objectives are being met.

The prescribed 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 within a given time. Resource inventory and analysis will need to be completed with the landowner/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/Grazing 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 (if they are completed), shown on map.
- All known areas of resource concern properly identified and shown. For example poisonous plants, noxious weeds, heavy use areas by wildlife etc. that may affect grazing management.
- North Arrow properly shown
- Title block that includes ranch name, county, state, approximate acres, name of preparer and date
- Map legend
- Scale bar, with a 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 for Residual Dry Matter (RDM) and/or 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

#### **Cultural Resources**

- Location of known 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:

- **CA-528-Spec Tool** – Forage/Animal Inventory or Range/Pasture Computation Worksheet for all grazed areas included in the plan.
  - Rangeland Health Evaluation, where appropriate
  - Photo monitoring and notes describing any resource concerns
  - Range Inventory Worksheet

The forage inventory should identify the quantity of forage in each management unit expressed in terms of Animal Unit Months (AUM), Pounds per Acre, Acres/AUM or other quantitative value used by the land manager. The production in each management unit should be determined based on upon values obtained from the field, soil survey or ecological site information. Production of each response unit (ecological site or improved pasture yield) 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

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

<b>Percent Slope</b>	<b>Percent Adjustment</b>
<b>0-15</b>	<b>100%</b>
<b>15-30</b>	<b>70%</b>
<b>31-60</b>	<b>40%</b>
<b>&gt;60</b>	<b>0%</b>

**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:

- **Rangeland Health Evaluation (Annual Grassland Version)**
- **Browse Resource Evaluation** (including palatable species for livestock & wildlife i.e. willow, oak, etc.)
- **Soil Survey**
- **Ecological Site Descriptions**, if present

- **Photo Documentation & Notes** of any resource concerns on the landscape.

**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.

**-528 Spec Tool** – 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.

**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, wildlife 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 on annual rangeland include the following:

**Continuous Season-long** is a system in which all available fields are grazed during the green period (fall – spring) with non-use during the dry (dormant) season (late spring – fall). This allows livestock free access to all forage during the peak forage quality season. No rotational grazing is employed with this system.

**Alternate Rotation Grazing** is a system in which two pastures are alternately rested and grazed. The grazed and rested portions are reversed each year. Rest periods are based on plant growth where rest period are short during the peak growth period (late February – April) and long during the slow growth period (October – mid-February). 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.

**Deferred Rotation Grazing** is a system where seasonal deferment is rotated among pastures each year to allow for habitat features to develop on the landscape such as ground nesting periods, pastures with riparian areas or rest of certain plant species to allow for flowering or seeding.

**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. In the annual grasslands this system can be used for targeted grazing on noxious weeds, for recruitment of native perennial grasses or during the peak growth phase when short graze periods will allow for re-growth during the green phase, prior to seed-set.

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

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, fire, 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 Residual Dry Matter Guidelines on Annual Rangelands** (Tabular RDM guidelines from the [University of California Division of Agriculture and Natural Resources \(ANR\) publication #8092](#))

**Table 1. Minimum residual dry matter (RDM) guidelines for dry annual grassland. (Less than 12” average annual precipitation.)**

Percent Woody Cover	Percent Slope			
	0-10%	10-20%	20-40%	>40%
0-25	300	400	500	600
25-50	300	400	500	600
50-75	N/A	N/A	N/A	N/A
75-100	N/A	N/A	N/A	N/A

**Table 2. Minimum residual dry matter (RDM) guidelines for annual grassland/hardwood range. (12-40” average annual precipitation.)**

Percent Woody Cover	Percent Slope			
	0-10%	10-20%	20-40%	>40%
0-25	500	600	700	800
25-50	400	500	600	700
50-75	200	300	400	500
75-100	100	200	250	300

**Table 3. Minimum residual dry matter (RDM) guidelines for the coastal prairie. (Average annual precipitation varies.)**

Percent Woody Cover	Percent Slope			
	0-10%	10-20%	20-40%	>40%
0-25	1,200	1,500	1,800	2,100
25-50	800	1,000	1,200	1,400
50-75	400	500	600	700
75-100	200	250	300	350

## Herbaceous Utilization on Annual Grasslands

Herbaceous utilization on annual grasslands is targeted at leaving a sufficient amount of residual dry matter (RDM) to protect the soil from erosion and provide organic matter and thermal cover for a microclimate suitable for germination with adequate fall rains. Annual grasses only reproduce from seed so leaving vegetative material is not necessary for root reserves as it is on a perennial grass.

Utilization target levels are used to help ensure that (RDM) guidelines are followed and resource objectives are met. Within annual grasslands there may be objectives such as oak recruitment, native perennial grass maintenance or recruitment or riparian areas that will guide season of use and utilization levels in each of those target plant communities. Target grazing levels should be planned by considering current and planned resource conditions, scheduled rest periods, and grazing tolerance of plant communities you are managing for.

## Browse Utilization

When designing a grazing strategy with the objective to maintain or restore woody species, such as oaks in the annual grasslands, 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 when designing the grazing system, 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.

## Riparian Area Grazing

Riparian areas are a special kind of native rangeland that occur adjacent to streams or open water bodies where vegetation is strongly influenced by the presence of water. Grazing management strategies for riparian areas need to be tailored to the site-specific resource conditions, soil and vegetation capabilities, water quality requirements, fish and wildlife needs and management objectives. Where improvement of a riparian area is the goal, management objectives and grazing management plans should be focused specifically to riparian zone features while considering the needs of the entire watershed. Major considerations for establishing management objectives in riparian areas include:

- Kind and amount of vegetation required to trap and hold sediment deposits during runoff events
- Maintenance of streambank/shoreline stability and elimination of bank shearing by hoof action
- Maintenance of stream channel, streambank, and floodplain conditions required for proper functioning of riparian area
- Importance of riparian area to riparian-dependent wildlife and upland wildlife species that are periodically attracted to riparian areas
- Restoration/maintenance and enhancement of aquatic and/or waterfowl habitat.

Grazing management of riparian areas is to provide for adequate cover and height of vegetation on streambanks and floodplains to support natural stream functions (sediment filtering, bank building and water storage). Timing of grazing shall be managed to minimize damage to streambanks when most vulnerable to trampling. Grazing guidelines should address the kind and amount of vegetation needed on streambanks to minimize erosion effects, including the minimum stubble height of vegetation following grazing; the regrowth period for key forage species within the grazed riparian area; and critical growth and establishment periods for key riparian browse species.

Documentation of prescribed grazing will include the following:

- **CA-CPA-01** – Residual Dry Matter Clipped Plots
- **CA-CPA-007** – Browse Resource Evaluation, (if browse species are identified as concern)
- **Permanent Photo Points** – Established at target plant communities (if they exist on the grazing 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.

## Best Management Practices for Basic Prescribed Grazing Plans - 528

Best Management Practices (BMP's) are strategies for managing the use of a resource (such as grazing land) in a manner that protects the resource and promotes ecological and economic sustainability. They include practical ideas like placing salt block in strategic sites to better distribute livestock. Using BMP's are an easy set of guidelines that a landowner can implement to promote soil health, maintain or improve streams, riparian areas and water quality and promote the health and vigor of selected plant communities. BMP's should be used with and incorporated into any Prescribed Grazing Plan. Prescribed Grazing is defined as managing the controlled harvest of vegetation with grazing animals, with the intent to achieve a specific objective.

The following are grazing BMP's for **annual grasslands including oak woodlands and vernal pools**:

1. Adequate residual dry matter (RDM) will be left on the land for erosion control and sustained forage production.
2. Manage the frequency, duration, season of use, and intensity of grazing to promote desirable plant communities and the optimal productivity of key forage species (oaks, desirable shrubs, riparian areas, native perennial grasses, native forbs and legumes).
3. Manage livestock to protect stream banks from trampling and erosion. Distribute livestock to promote the dispersion and decomposition of manure and to prevent the delivery of manure to water sources.
4. Rotation of grazing among grazing units will be based on plant development, degree of use or residual dry matter and not on calendar dates.
5. Grazing when soils are wet will be avoided when possible, especially with finer textured soils to minimize soil compaction and other adverse effects.
6. Grazing in riparian areas should be controlled by season of use to promote water quality and riparian plant recruitment.
7. Grazing shall be deferred for one or more growing season on all grazing land where soils have been exposed and erosion risk is increased due fire or where plantings require protection during establishment.
8. Promote an effective water cycle to properly managing upland range and riparian resources.
9. When evaluating livestock grazing and distribution patterns, it is important to manage the grazing unit as a whole, considering both upland and riparian distribution patterns. Identify areas that are heavily grazed as well as those that receive less than full use.
10. Periodically rotate supplement sites (mineral, salt or feed) to reduce livestock concentration areas and associated resource degradation.
11. Place salt and minerals away from water sources, 1/4 mile away in large grazing units, to better distribute grazing. This will help encourage use of upland feed. Do not place salt or mineral supplement in riparian areas or meadows.
12. Place salt and minerals in tubs or troughs to prevent contamination of soil surface.
13. Use livestock to control (graze) excessive herbaceous growth in vernal pools, including invasive species to promote native forbs within the vernal pool plant community.