

# USDA BRUSH MANAGEMENT

Conservation Practice Jobsheet

314

Natural Resources Conservation Service (NRCS)

May 2009

Landowner \_\_\_\_\_



## WHAT IS BRUSH MANGEMENT

Brush management is the removal, reduction or manipulation of non-herbaceous plants

## PURPOSE

Brush management may be applied as part of a conservation management system to accomplish one or more of the following objectives:

- Restore natural plant community balance
- Create the desired plant community
- Restore desired vegetative cover to protect soils, control erosion, reduce sediment, improve water quality and enhance stream flow
- Maintain or enhance wildlife habitat including that associated with threatened and endangered species
- Improve forage accessibility, quality and quantity for livestock
- Protect life and property from wildfire hazards

## WHERE THE PRACTICE APPLIES

Brush management is applicable on rangeland, grazed forests, native or naturalized pasture, pasture and hay lands where removal or reduction of excessive woody (non-herbaceous) plants is desired.

## GENERAL CRITERIA AND CONSIDERATIONS

Brush management will be designed to achieve the desired plant community in woody plant density, canopy cover or height.

Brush management will be applied in a manner to achieve the desired control of the target woody species and protection of desired species. This will be accomplished by mechanical, chemical, biological, prescribed burning or a combination of these methods.

Brush management will be planned and applied in a manner to meet the habitat requirements of the wildlife of concern and will not adversely

NRCS, LA  
MAY 2009

affect threatened or endangered species or their habitats.

Brush management will be applied in a manner that creates the desired plant community which reduces wildfire hazard conditions.

Brush management will be applied in coordination with a grazing management plan. Prescribed grazing will be applied to ensure desired response from treatments.

Brush management will be applied only to sites with soils having the potential to produce the desired plant community

Brush canopy and/or species count, transect line locations and percent canopy and/or species present per acre of the target plant(s) will be identified.

**Mechanical.** Plans and specifications will include types of equipment and any modifications necessary to enable the equipment to adequately complete the job.

**Chemical.** Plans and specifications will include herbicide name, rate of application or spray volume, acceptable dates of application, mixing instructions, and reference to label instructions.

**Biological.** Plans and specifications will include kind of biological agent or grazing animal to be used, timing and duration of grazing or browsing, and special precautions or requirements when using insects or plants as control agents.

#### **Biological Brush Control Using Small**

**Ruminants.** Grazing animals can be used to reduce weed and brush abundance. Goats are the species of choice for controlling brush in pastures and/or rangeland. Managed defoliation of brush by goats has resulted in substantial increases in vegetative cover of desirable grasses and legumes while reducing or eliminating undesirable shrub species.

By itself, grazing may not give complete eradication of a particular species but can reduce it to a manageable or economic level. However, when biological control such as grazing is combined with other control methods such as herbicides, mowing or burning, elimination may be possible and less expensive than by one of these methods alone. Use of

goats may be increasingly important in areas where herbicides can not be used, where other means of control are too expensive or where producers desire biological control methods.

Planning -The specific brush species of concern and the desirable plant community will determine the number and species of grazing animals as well as the duration and frequency of grazing. A site specific grazing plan should be developed that lists:

- Target species for control
- Desired degree of use for effective control of target species
- Number and type of grazing animal to be used
- Frequency and duration of grazing

The grazing plan should also contain a contingency plan to adjust the stocking rates as browse/forage availability becomes limited. This would include provisions for the goats during the "off season" when forage and/or browse are not available.

If wildlife is a consideration, the objective of prescribed grazing should be to maintain the needed amount of brush for wildlife. If the brush is too tall for the goats, they will eat out the understory, leaving no forage for grazing. Goats may use vegetation up to 7 feet tall.

The past browsing experience of the goats will influence their choice of forages and browse. If the targeted species is novel forage, there may be a conditioning period before the goats will consume the desired forage. Goats that have prior experience will more readily begin browsing the targeted plant.

Best results will be obtained when the following conditions are met:

- The target plant species are known to be consumed by animals
- Animals are not forced to consume toxic plants
- The target plant species are accessible to the animals
- The preferred non-target plants are not available to animals in quantities that will significantly reduce consumption of the target plants
- The area is stocked with sufficient animals to ensure that animal demand for food exceeds the target plants regrowth rate

- The animals are allowed sufficient time to completely defoliate the target plants.

**OPERATION AND MAINTENANCE**

**Operation** - Brush management practices shall be applied using approved materials and procedures. Operations will comply with all local, state, and federal laws and ordinances. Success of the practice shall be determined by evaluating regrowth or reoccurrence of target species after

sufficient time has passed to monitor the situation and gather reliable data.

**Maintenance** - Following initial application, some regrowth, resprouting, or reoccurrence of brush should be expected. Spot treatment of individual plants or areas needing retreatment should be done as needed.

## BRUSH MANAGEMENT – SPECIFICATIONS SHEET

Landowner/Cooperator \_\_\_\_\_

Field Office \_\_\_\_\_

Plan Number \_\_\_\_\_ Location \_\_\_\_\_

Purpose/Objective of the Practice (Check all that apply)	
	Restore natural plant community balance
	Create the desired plant community
	Restore desired vegetative cover to protect soils, control erosion, reduce sediment, improve water quality and enhance stream flow
	Maintain or enhance wildlife habitat including that associated with threatened and endangered species
	Improve forage accessibility, quality and quantity for livestock
	Protect life and property from wildfire hazards
	Other: _____

### Site Conditions

This practice will be used to reduce the density and/or canopy cover of the following woody species:

Land Use	Before Treatment (% Canopy Cover <sup>1</sup> )	After Treatment (% Canopy Cover <sup>1</sup> )	Before Treatment (Plants per Acre <sup>2</sup> )	After Treatment (Plants per Acre <sup>2</sup> )

#### <sup>1</sup>% Canopy Cover

1. % canopy will be determined along a 100 – 300 foot transect line. The line can be paced or a tape of sufficient length used.
2. The number of transects will be sufficient to determine an average for the field or site in question.
3. If using tape method (100 ft. tape)
  - Lay out tape along a line through area where canopy is to be determined.
  - Count the number of foot markers that have canopy above them.
  - The number of points is the % canopy
  - Example: Line established using 100 ft. tape. Brush canopy is counted over 35 of the 1 foot markers. Brush canopy is 35%.
4. If using paced method.
  - Determine a line to pace by selecting a point in the distance to walk toward.
  - Place a flag at beginning point and pace toward selected point for 100 paces (approx. 300 feet)
  - Turn around and walk back towards flag, counting the number of paces in which canopy is above the point of each foot.
  - Example: 100 paces are made along the predetermined line. 27 steps are intercepted with brush canopy above tip of foot. Brush canopy is 27 %.

#### <sup>2</sup>Plants per Acre

1. Mark off area 66 feet by 66 feet (1/10 of an acre). This can be done with tape or paced (approx. 22 paces)
  - Count number of targeted species in marked off area and multiply by 10
  - Example: 23 trees counted in the marked off area. Plants per acre is 230.
2. Transect Method (Belt Transect)
  - Determine transect line as for canopy determinations
  - Tape or pace 300 feet (approx. 100 paces)
  - Walk back toward starting point along transect, counting number of targeted species within 6 feet on both sides of tape (total of 12 feet)
  - Multiply number of plants counted by 12 to get number of plants per acre.
  - Example: Number of trees counted along the line, 6 feet on both sides is 25. Number of plants per acre is (25x12) 300.

## Plants per Acre Infestation

	Light – Woody brush stocking less than 100 stems per acre or height less than 12 inches
	Medium – Woody brush stocking less than 100-300 stems per acres or height 12-24 inches
	Heavy – Woody brush stocking greater than 300 stems per acre or height greater than 24 inches

**Planned Treatment Type or Method**

	Chemical
	Mechanical
	Biological
	Prescribed Burning

## Chemical Treatment (Chemical application will be according to label)

Herbicide Planned	Rate/Volume Planned	Total Acres Planned	Date Planned	Herbicide Applied	Rate/Volume Applied	Acres Applied	Date Applied

## WIN-PST Completed?

	Attached
	In Case File
	Not Applicable

Mechanical Treatment – Equipment used for mechanical brush management is designed to remove either the top growth or the entire plant. Methods that remove only top growth generally provide short-term woody plant control because most species will resprout. Methods that effectively remove part of the root system with the top provide longer term control. Areas disturbed by mechanical treatment will be re-seeded unless it is determined that natural re-vegetation with desirable species will occur within a reasonable period. Follow-up treatments are usually required within three (3) to five (5) years after initial treatment. For best results, mechanical treatments should be used in conjunction with other conservation practices such as prescribed burning, pest management or biological brush management.

Type of Equipment Planned	Date of Planned Treatment	Total Acres	Type of Equipment Applied	Acres Applied	Date Applied

Areas disturbed by mechanical treatments will be re-seeded unless it is determined that natural re-vegetation with desirable species will occur within a reasonable period. When the existing perennial community is not reasonably expected to respond to the treatment; treatments should not be conducted unless seeding is agreed upon with the client.

Follow-up Action Needed to Ensure Success (Check all that apply)	
<input type="checkbox"/>	Stacking
<input type="checkbox"/>	Windrowing
<input type="checkbox"/>	Burning
<input type="checkbox"/>	Individual Plant Chemical Treatment
<input type="checkbox"/>	Shredding
<input type="checkbox"/>	Chipping

**Operation and Maintenance**

**Grazing Deferment:** Grazing animals shall not be allowed in the treatment area until the non-target vegetation has been allowed time to recover from stress of treatment. Multi-species stocking is best used to suppress woody vegetation. Attention must be given to ensure the proper stocking rate is maintained.

**Wildlife Considerations:** Brush management will be planned and applied in a manner to meet the habitat requirements of the wildlife of concern.

**Additional Specifications and Notes**

---



---



---

**Practice Design Certification (To be completed after jobsheet is complete and before practice installation)**

By signing below, I certify that:

- the site specific requirements for the installation, operation, and maintenance of the practice on the client's treatment unit, as recorded in this jobsheet, have been prepared in accordance with the 314 Brush Management Standard and the guidance in the 314 Brush Management Practice Specification

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Practice Installation Certification (To be completed after practice installation and check out)**

By signing below, I certify that:

- The practice has been installed according to the site specific installation requirements

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**This practice requires a current Louisiana One Call Dottie Confirmation Number.**

**Call before you dig**, wait 48 hours for the site to be marked, observe the marks and dig with care. The service is free. It's the law! Civil Penalties range up to \$25,000 for violations of the "Dig" law.



**Failure to notify Louisiana One Call before installing this practice may result in the loss of NRCS assistance.**

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

**NRCS, LA  
MAY 2009**