

**USDA
NATURAL RESOURCES
CONSERVATION SERVICE**

**MARYLAND CONSERVATION
PRACTICE STANDARD**

BRUSH MANAGEMENT

**CODE 314
(Reported by Acre)**

DEFINITION

Removal, reduction, or manipulation of non-herbaceous plants.

PURPOSES

This practice may be applied for one or more of the following purposes:

1. To create or restore the desired plant community;
2. To reduce competition for space, moisture, and sunlight among desired species;
3. To control noxious and/or invasive woody plants;
4. To maintain or enhance wildlife habitat;
5. To improve forage accessibility, quality and quantity for livestock;
6. To improve visibility and access for handling livestock.

**CONDITIONS WHERE PRACTICE
APPLIES**

This practice may be applied on pastureland, wildlife habitat areas, riparian corridors, and other areas where removal or reduction of undesirable or excess woody (non-herbaceous) plants is desired.

This practice does not apply to controlling herbaceous weeds or other undesirable non-woody plants. (Refer to the conservation practice standard for Pest Management, Code 595.)

CONSIDERATIONS

Consider the long-term land use objectives of the client and how the implementation of this practice will affect those objectives.

Assess site conditions, including the potential for soil erosion if the method of control will involve soil disturbance.

Consider the species of brush to be controlled, the possible methods of control, and timing and duration of treatment needed to achieve the desired results. If replanting the area is planned, consider how these factors will affect establishing the desired species.

Consider state and federal regulatory requirements for herbicide treatments, including applicator licensing requirements and label restrictions.

Identify and evaluate other constraints such as management options, economic feasibility, access, or cost-share program requirements.

Consider the timing and sequence of brush management in a pasture system to ensure the availability, quality, and quantity of needed forage.

CRITERIA

General

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

Preference shall be given to the use of brush control methods having the lowest potential

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

hazard to humans, domestic animals, and the natural environment. Non-herbicide methods of brush management shall be used to the extent feasible.

Operations shall comply with all local, state, and federal laws and ordinances. All required permits and approvals shall be obtained before implementing brush management.

Success of the practice shall be determined by evaluating regrowth or reoccurrence of target species after sufficient time has passed to monitor the site and gather reliable data. Evaluation periods will depend on the methods and materials used.

Additional Criteria for Pastureland

Brush management shall be utilized in association with prescribed grazing to ensure the desired response from treatment.

Additional Criteria to Restore, Create, or Enhance Wildlife Habitat

Brush management shall be planned and applied to meet the habitat requirements of the desired wildlife species.

Note: Specific cost-sharing programs or other funding sources may impose management criteria in addition to, or more restrictive than, those specified in this standard.

Federal, state, and local regulations may significantly limit management activities in, or adjacent to, ponds, wetlands and other aquatic areas. Laws pertaining to protection of wetlands and water bodies, erosion and sediment control, and the use of herbicides may be applicable. Permits or approvals from federal, state, or local government agencies may be needed before any work is performed. Contact the county Soil Conservation District office for more information.

SPECIFICATIONS

General Requirements

Plans and specifications for brush management shall be prepared for each site or management unit accordance with this standard, and shall describe the requirements for applying the practice to achieve its intended purpose. The completed work shall be checked and documented to verify that this practice was completed according to the narrative statements, specification sheets, job sheets, maps, and drawings that were provided to the land user. Documentation shall be in accordance with the section "Supporting Data and Documentation" in this standard.

Mechanical Control

Mechanical control is most effective when plants are small and few in number. One or more of the following techniques may apply:

1. Cut or mow the main stems and sprouts using axes, power saws, rotary mowers, or similar equipment. Cut as close to the ground as possible.

This method is best used when stems are less than 6 inches diameter at breast height (dbh). Several cuttings may be necessary to kill the plants. It may also be desirable to chemically treat the stumps to prevent regrowth.

Timing: Late July to early August is preferable, when root reserves are low and leaf growth is at its maximum. Early spring is next best. It may be necessary to apply such treatment during both of these periods for species that are difficult to eradicate or where brush is dense.

2. Girdle the bark of larger woody plants by cutting a band 1 to 6 inches wide completely around the stem, through the bark and cambium layer. Girdle as close to the ground surface as practical.

Timing: Late fall to early spring.

3. Uproot, pull, or dig brush using bulldozers, power equipment, chains, and hand tools.

Timing: Any time of year.

4. Use a moldboard plow or heavy disk to control brush up to 1 inch dbh.

Timing: Any time when the ground is dry enough to plow.

Chemical Control

Apply herbicides specific for the woody species to be controlled. One or more of the following herbicide application techniques may be used:

1. Use a foliar spray for widespread general control. Completely wet the foliage. This method is most effective on plants that are less than 4 inches dbh.

Timing: Apply when the plant is actively growing and leaves are reaching full size. Application between mid-April and mid-June is preferable, with specific timing dependent on the local growing season. Mid-June to the end of September is next best.

2. Use a basal spray for selective treatment. Drench the entire tree or shrub base to the point of runoff, from the ground line up the stem for a distance of 15 to 24 inches, depending on the recommendations of the herbicide label. This technique is most effective on plants that are less than 3 inches dbh.

Timing: Any time of year.

3. Use a stump spray for treatment of cut stems. Completely saturate freshly cut areas and bark to ground level.

Timing: Any time during the growing season.

4. Use a soil application of herbicide when chemicals can be absorbed through the roots of the plant. Apply to the soil in the area under the plant canopy.

Timing: Any time when the ground is not frozen.

***Important:** Follow the directions and heed all of the precautions on the herbicide container label. Observe all applicable federal and state laws pertaining to the use of herbicides. If herbicides are handled or applied improperly, or if unused portions are not disposed of safely, they may injure humans, domestic animals, desirable plants, wildlife, and fish, and may contaminate nearby crops and other vegetation. Herbicides shall not be used over or directly adjacent to ponds, lakes, streams, wetlands, or other waterbodies unless so labeled.*

For specific herbicide recommendations, contact the appropriate specialist from the Maryland Cooperative Extension Service; the Maryland Department of Agriculture, Weed Control Program; or the Maryland Department of Natural Resources, Forest Service.

Debris Disposal

Brush shall be disposed of in a manner consistent with maintaining a quality environment, based on the site conditions and the objectives of the land user. Disposal of brush shall not interfere with the establishment of desired plants and future maintenance of the area.

Acceptable disposal methods may include:

1. Burning, if conducted in compliance with local ordinances and permit requirements;
2. Piling, especially if providing wildlife habitat (brush piles) is an objective of the land user. One brush pile per acre can provide effective wildlife cover. Place larger material on the bottom of the pile, and make the pile at least 10 feet in diameter, and 6 feet high;
3. Chipping, shredding, or mulching;
4. Removal to other areas.

OPERATION AND MAINTENANCE

An operation and maintenance (O&M) plan shall be prepared for each site or management unit. Appropriate Job Sheet(s) may be used to serve as the management plan as well as supporting documentation, and shall be provided to the land user.

Following the initial treatment, some regrowth, resprouting, or reoccurrence of brush should be expected. Plans should include recommendations for periodic inspections, and for spot treatment of individual plants or areas, as needed.

At a minimum, the following components shall be addressed in the O&M plan, as applicable:

1. Mechanical control - include the following information:
 - a. Brush species to be controlled;
 - b. Types of equipment needed;
 - c. Techniques or procedures to be followed;
 - d. Dates of treatment.
2. Chemical control - include the following information:
 - a. Brush species to be controlled;
 - b. Herbicide name;
 - c. Rate of application or spray volume;
 - d. Acceptable dates of application;
 - e. Mixing instructions (if applicable);
 - f. Any special application techniques, timing considerations, or other factors that must be considered to ensure the safest, most effective application of the herbicide;
 - g. Reference to label instructions.
3. Biological control - include the following information:
 - a. Brush species to be controlled;
 - b. Kind of biological agent or grazing animal to be used;

- c. Timing, duration, and intensity of browsing or grazing;
- d. Desired degree of browsing or grazing use for effective control of the target species;
- e. Maximum allowable degree of use on desirable non-target species;
- f. Special precautions or requirements when using insects or plants as control agents.

**SUPPORTING DATA AND
DOCUMENTATION**

1. Field location and extent of the brush management area, and assistance notes. Also note the location of the brush management area on the conservation plan map. Assistance notes shall include dates of site inspections, name or initials of the person who made the inspections, specifics as to what was inspected, alternatives discussed, decisions made, and by whom;
2. Operation and Maintenance plan, or completed job sheet(s).

REFERENCES

1. USDA, Natural Resources Conservation Service. *Conservation Practice Standard for Pest Management, Code 595*. Maryland Field Office Technical Guide, Section IV.