NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

BRUSH MANAGEMENT

(Ac.)

CODE 314

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DEFINITION

The management or removal of woody (non-herbaceous or succulent) plants including those that are invasive and noxious.

Purpose

Create the desired plant community consistent with the ecological site.

Restore or release desired vegetative cover to protect soils, control erosion, reduce sediment, improve water quality or enhance stream flow.

Maintain, modify, or enhance fish and wildlife habitat.

Improve forage accessibility, quality and quantity for livestock and wildlife.

Manage fuel loads to achieve desired conditions.

CONDITIONS WHERE PRACTICE APPLIES

On all lands except active cropland where the removal, reduction, or manipulation of woody (non-herbaceous or succulent) plants is desired.

This practice does not apply to removal of woody vegetation by prescribed fire use Florida NRCS conservation practice standard Prescribed Burning, Code 338, or removal of woody vegetation to facilitate a land use change use Florida NRCS Land Clearing, Code 460.

CRITERIA

General Criteria Applicable to All Purposes

Impact to cultural resources, wetlands, and Federal and State protected species need to be avoided or minimized to the extent practical during planning, design and implementation of this conservation practice in accordance with established National and Florida NRCS policy; General Manual (GM) Title 420-Part 401, Title 450-Part 401, and Title 190-Part 410.22 and 410.26; National Planning Procedures Handbook (NPPH) FL Supplements to Parts 600.1 and 600.6; National Cultural Resources Procedures Handbook (NCRPH); and The National Environmental Compliance Handbook (NECH)

Brush management will be designed to achieve the desired plant community based on species composition, structure, density, and canopy (or foliar) 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, burning, or biological methods either alone or in combination. When prescribed burning is used as a method, the Florida NRCS Prescribed Burning standard, Code 338 will also be applied.

When the intent is to manage trees for silvicultural purposes, use Florida NRCS Forest Stand Improvement, Code 666.

NRCS, Florida
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NRCS will not develop biological or chemical treatment recommendations except for biological control utilizing grazing animals. In such cases, Florida NRCS Prescribed Grazing, code 528, is used to ensure desired results are achieved and maintained. NRCS may provide clients with acceptable biological and/or chemical control references.

Follow-up treatments may be necessary to achieve objectives.

Additional Criteria for Creating the Desired Plant Community Consistent with the Ecological Site

Use applicable Ecological Site Description (ESD) State and Transition models, to develop specifications that are ecologically sound and defensible. Treatments must be congruent with dynamics of the ecological site(s) and keyed to state and plant community phases that have the potential and capability to support the desired plant community. If an ESD is not available, base specifications on the best approximation of the desired plant community composition, structure, and function.

Additional Criteria for Restoring or Releasing Desired Vegetative Cover to Protect Soils, Control Erosion, Reduce Sediment, Improve Water Quality or Enhance Stream Flow

Choose a method of control that results in the least amount of soil disturbance if soil erosion potential is high and revegetation is slow or uncertain leaving the site vulnerable to long-term exposure to soil loss.

In conjunction with other conservation practices, the number, sequence and timing of soil disturbing operations shall be managed to maintain soil loss within acceptable levels using approved erosion prediction technology.

Additional Criteria to Maintain, Modify or Enhance Fish and Wildlife Habitat

Brush management will be planned and applied in a manner to meet the habitat requirements for wildlife species of concern as determined by an approved habitat evaluation procedure.

Conduct treatments during periods of the year that accommodate reproduction and other life-cycle requirements of target wildlife and pollinator species and in accordance with specifications developed for Florida NRCS Wetland Wildlife Habitat Management, Code 644 and Florida NRCS Upland Wildlife Habitat Management, Code 645.

Additional Criteria to Improve Forage Accessibility, Quality and Quantity for Livestock and Wildlife

Timing and sequence of brush management shall be planned in coordination with specifications developed for Florida NRCS Prescribed Grazing, Code 528.

Implement a prescribed grazing to ensure desired response from treatment. Plan the prescribed grazing system so that it is applied in accordance with FL NRCS Prescribed Grazing, Code 528 and other facilitating practices as needed.

A deferment of all livestock grazing as needed following treatment to allow desirable plants an opportunity to recover.

The length of the deferment period should be appropriate for the method of treatment applied. Table 1 provides guidance on the minimum length of the deferment period.

Deferment periods may be extended as necessary to ensure adequate recovery of desirable plants based on growing conditions.

Begin the deferment period immediately following treatment.

See Table 1 for Deferment Periods.

Additional Criteria to Manage Fuel Loads to Achieve Desired Conditions

Control undesirable woody plants in a manner that creates the desired plant community, including the desired fuel load, to reduce the risk of wildfire, facilitate the future application of prescribed fire.

Table 1: Deferment Periods

Treatment	Length of Deferment Period
Mechanical on rangeland or forestland	90 consecutive days during the period of June 1 through October 1, unless only spot treatment was applied.
Mechanical (Roller Chopping/Aeration) on pasture or hayland	30 consecutive days during the period of May 1 through October 1, unless only spot treatment was applied.
Mechanical (Mowing) on pasture or hayland	14 consecutive days during the period of May 1 through October 1, unless only spot treatment was applied.
Chemical on rangeland or forestland	Follow Label requirements and Instructions.
Chemical on pasture or hayland	Follow Label requirements and Instructions.
Biological	Deferment depends on treatment applied. Refer to Planning and Implementation Guidance document for additional guidance.

Additional Criteria to Manage Fuel Loads to Achieve Desired Conditions

Control undesirable woody plants in a manner that creates the desired plant community, including the desired fuel load, to reduce the risk of wildfire, facilitate the future application of prescribed fire.

CONSIDERATIONS

General Considerations Applicable to All Purposes:

Consider only applying to soils having the potential to produce the desired plant community.

Consider when brush invasion/infestation exceeds the treatment threshold (Refer to the "Brush Management Specifications Guide.

Consider appropriate grazing management and/or other maintenance measures needed to ensure success of the treatment.

Where treatment will not adversely affect habitat for threatened or endangered species.

Brush management **will not be applied** to sites:

Where removal of woody plants will result in sustained accelerated erosion.

Where benefits are not commensurate with the cost and objectives of the landowner.

Where removal of woody plants will adversely affect the long-term productivity or optimal uses of the land.

Where control of grazing/browsing animals is inadequate to prevent degradation of the plant community and other resources following treatment.

In wetlands, removal of woody stems and stumps may constitute a violation of the Food Security Act. However, for activities such as removal of exotic species, an exemption may apply (e.g., Minimal Effect Exemption). Refer to Section I of the FOTG (Laws-Food Security Act) and the National Food Security Act Manual (NFSAM) for guidance.

Where there will be a long-term negative impact to environmental, cultural, or landscape resources.

Consider using a combination of treatments to achieve the best results. A combination mechanical, biological, chemical, and/or prescribed burning often results in the greatest amount of control.

Consider using Florida NRCS Herbaceous Weed Control, Code 315 in support of brush management.

Consider the appropriate time period for treatment. Some brush management activities can be effective when applied within a single year; others may require multiple years of treatment(s) to achieve desired objectives.

Consider impacts and consequences to obligate species (species dependent on the target woody species) when significant changes are planned to existing and adjacent plant communities.

Consider impacts to wildlife food supplies, space, and cover availability when planning the method and amount of brush management.

As a general rule, mechanical treatments conducted during periods of drought will increase stress and mortality of non-target vegetation. This may require the deferment from grazing to be extended a full year or more.

Selection of the appropriate treatment needed to attain the desired result is dependent upon factors such as:

1. Kind of land (site), or land use;
2. Topography;
3. Species of woody plants - whether they are root-sprouters or non-sprouters;
4. Size, abundance, and distribution of woody plants;
5. Hazards of treatment, if any;
6. Objectives of the cooperator; and
7. Costs in relation to expected benefits.

Use of biological control agents may slow the spread of brush infestations. However, the use of goats and/or other browsing animals may have a significant negative impact on wildlife food and cover.

State issued licenses may be required when using chemical pesticide treatments.

For air quality purposes, consider using chemical methods of brush management that minimize chemical drift and excessive chemical usage and consider mechanical methods of brush management that minimize the entrainment of particulate matter.

PLANS AND SPECIFICATIONS

Plans and specifications for the treatment option(s) selected by the decision maker will be recorded for each field or management unit where brush management will be applied.

Prepare brush management plans and specifications that conform to all applicable federal, state, and local laws. These documents will contain the following data as a minimum:

For Mechanical Treatment Methods: Plans and specifications will include the following data as a minimum:

Goals and objectives clearly stated.

Pre-treatment cover or density of the target plant(s) and the planned post-treatment cover or density and desired efficacy.

Maps, drawings, and/or narratives detailing or identifying areas to be treated, pattern of treatment (if applicable), and areas that will not be disturbed.

1. A monitoring plan that identifies what should be measured (including timing and frequency) and that documents the changes in the plant community (compare with objectives) will be implemented.
2. Types of equipment and any modifications necessary to enable the equipment to adequately complete the job.
3. Dates of treatment to best effect control
4. Operating instructions (if applicable)
5. Techniques or procedures to be followed

For Chemical Treatment Methods: Plans and specifications will include the following data as a minimum:

Goals and objectives clearly stated.

Pre-treatment cover or density of the target plant(s) and the planned post-treatment cover or density and desired efficacy.

Maps, drawings, and/or narratives detailing or identifying areas to be treated, pattern of treatment (if applicable), and areas that will not be disturbed.

1. A monitoring plan that identifies what should be measured (including timing and frequency) and that documents the changes in the plant community (compare with objectives) will be implemented.

2. Acceptable chemical treatment references for containment and management or control of target species
3. Evaluation and interpretation of herbicide risks associated with the selected treatment(s)
4. Acceptable dates or plant growth stage at application to best effect control and dampen reinvasion
5. Any special mitigation, timing considerations or other factors (such as soil texture and organic matter content) that must be considered to ensure the safest, most effective application of the herbicide
6. Reference to product label instructions

For Biological Treatment Methods: Plans and specifications will include the following data as a minimum:

Goals and objectives clearly stated.

Pre-treatment cover or density of the target plant(s) and the planned post-treatment cover or density and desired efficacy.

Maps, drawings, and/or narratives detailing or identifying areas to be treated, pattern of treatment (if applicable), and areas that will not be disturbed.

1. A monitoring plan that identifies what should be measured (including timing and frequency) and that documents the changes in the plant community (compare with objectives) will be implemented.
2. Acceptable biological treatment references for containment and management or control of target species
3. Kind of grazing animal to be used, if applicable
4. Timing, frequency, duration and intensity of grazing or browsing
5. Desired degree of grazing or browsing use for effective control of target species
6. Maximum allowable degree of use on desirable non-target species
7. Special mitigation, precautions, or requirements associated with the selected treatment(s)

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 post-treatment regrowth of target species after sufficient time has passed to monitor the situation and gather reliable data. Length of evaluation periods will depend on the woody species being monitored, proximity of propagules (seeds, branches, and roots) to the site, transport mode of seeds (wind or animals) and methods and materials used.

The operator will develop a safety plan for individuals exposed to chemicals, including telephone numbers and addresses of emergency treatment centers and the telephone number for the nearest poison control center. The National Pesticide Information Center (NPIC) telephone number in Corvallis, Oregon, may also be given for non-emergency information: **1-800-858-7378** Monday to Friday, 6:30 a.m. to 4:30 p.m. Pacific Time

http://npic.orst.edu/contactus.html

The national Chemical Transportation Emergency Center (CHEMTREC) telephone number is: 1-800-262-8200.

http://www.chemtrec.com/

http://www.chemtrec.com/pages/CustomerService.aspx

- Follow label requirements for mixing/loading setbacks from wells, intermittent streams and rivers, natural or impounded ponds and lakes, and reservoirs.
- Post signs, according to label directions and/or federal, state, tribal, and local laws, around fields that have been treated. Follow restricted entry intervals.
- Dispose of herbicides and herbicide containers in accordance with label

directions and adhere to federal, state, tribal, and local regulations.

- Read and follow label directions and maintain appropriate Material Safety Data Sheets (MSDS). MSDS and pesticide labels may be accessed on the Internet at: http://www.greenbook.net/
- Calibrate application equipment according to recommendations before each seasonal use and with each major chemical and site change.
- Replace worn nozzle tips, cracked hoses, and faulty gauges on spray equipment.
- Maintain records of Brush/shrub control for at least two years. Herbicide application records shall be in accordance with USDA Agricultural Marketing Service's Pesticide Recordkeeping Program and state-specific requirements.

Maintenance: Following initial application, some regrowth, resprouting, or reoccurrence of brush may be expected. Spot treatment of individual plants or areas needing re-treatment should be completed as needed while woody vegetation is small and most vulnerable to desired treatment procedures.

Review and update the plan periodically in order to:

- incorporate new IPM technology;
- respond to grazing management and complex plant population changes; and
- avoid the development of plant resistance to herbicide chemicals.

REFERENCES

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NRCS Conservation Practice standards:

Forest Stand Improvement, Code 666

Integrated Pest Management, Code 595

Prescribed Burning, Code 338

Upland Wildlife Habitat Management, Code 645.

Wetland Wildlife Habitat Management, Code 644

General Manual (GM) Title 420-Part 401, Title 450-Part 401, and Title 190-Part 410.22 and 410.26;

National Planning Procedures Handbook (NPPH) FL Supplements to Parts 600.1 and 600.6;

National Cultural Resources Procedures Handbook (NCRPH); and

The National Environmental Compliance Handbook (NECH)

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