



**Natural Resources Conservation Service**  
**CONSERVATION PRACTICE STANDARD**  
**HERBACEOUS WEED TREATMENT**

**CODE 315**

**(Ac.)**

**DEFINITION**

The removal or control of herbaceous weeds including invasive, noxious, and prohibited plants.

**PURPOSE**

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

- Enhance accessibility, quantity, and/or quality of forage and/or browse;
- Restore or release native or create desired plant communities and wildlife habitats consistent with the site potential;
- Protect soil and control erosion;
- Reduce fine fuel loads and wildfire hazard;
- Control pervasive plant species to a desired level of treatment that will ultimately contribute to creation or maintenance of an ecological site description “steady state,” addressing the need for forage, wildlife habitat, and/or water quality.

**CONDITIONS WHERE PRACTICE APPLIES**

On all lands except active cropland where removal, reduction, or manipulation of herbaceous vegetation is desired.

This practice does not apply to removal of herbaceous vegetation by prescribed fire (refer to the Maryland conservation practice standard for Prescribed Burning, 338) or removal of herbaceous vegetation to facilitate a land use change.

**CRITERIA**

**General Criteria Applicable to All Purposes**

Apply herbaceous weed management in a manner to achieve the desired control of the target species and protection of desired species. This will be accomplished by mechanical, chemical, or biological methods, either alone or in combination.

NRCS will not develop biological or chemical treatment recommendations except for biological control utilizing grazing animals. In such cases, use the Maryland conservation practice standard for Prescribed Grazing (528) in addition to this practice to ensure that desired results are achieved and maintained.

NRCS may provide clients with acceptable biological and/or chemical control references.

When herbicides are used, environmental hazards and site-specific application criteria listed on pesticide labels, and contained in extension service and other approved pest management references, must be followed. Refer to University of Maryland recommendations for the species being treated when selecting the appropriate method, timing, and management to achieve the desired results.

Refer to the NRCS lists of *Invasive Terrestrial Plants and Difficult to Control Plants in Maryland* to identify target species in the State.

Where insufficient desirable vegetation exists to recolonize the site, use another conservation practice such as Conservation Cover (327) or Tree/Shrub Establishment (612) to achieve desired results.

Control livestock and human access to treated areas based on management methods applied and restrictions as listed on the chemical labels.

Herbaceous weed treatment will include post-treatment measures as needed to achieve resource management objectives.

Manage and/or dispose of treated weed species in a manner that will prevent the spread of herbaceous weeds to new sites.

#### **Additional Criteria to Enhance Accessibility, Quantity, and Quality of Forage and/or Browse**

Apply herbaceous weed treatment in a manner to minimize negative impact to forage and/or other nontargeted plants. Plan the timing and sequence of control in coordination with specifications developed for the Maryland conservation practice standard Prescribed Grazing (528) or Forage Harvest Management (511).

#### **Additional Criteria to Restore or Release Native or Create Desired Plant Communities and Wildlife Habitats Consistent with the Site Potential**

Apply herbaceous weed treatment in a manner to protect the health and vigor of native or desired plant species.

Use applicable ecological site descriptions (ESD), vegetation community classifications, or reference plant communities to develop specifications that are ecologically sound and defensible. Treatments must be compatible with dynamics of the ecological site and keyed to state and plant community phases that have the potential and capability to support the desired plant community functions and resiliency.

Conduct treatments during periods of the year when weed species are most vulnerable and treatments will promote restoration of the native or desired plant communities.

Apply herbaceous weed treatment in a manner that maintains or enhances important wildlife habitat components, such as plant community composition and structure, and accommodates reproduction and other life cycle requirements of desired wildlife and pollinator species.

#### **Additional Criteria to Protect Soil and Control Erosion**

Apply herbaceous weed treatment in a manner that minimizes soil disturbance and soil erosion. Apply additional conservation practices as needed to protect soil and prevent erosion.

### **Additional Criteria to Reduce Fine Fuel Loads and Wildfire Hazard**

Treat weed species in a manner that creates a native or desired plant community that reduces the potential for accumulating excessive fuel loads and increased wildfire hazards.

Apply treatment methods in a manner that minimizes the potential for unintended impacts (e.g., dust, chemical drift, etc.) to air resources.

### **Additional Criteria to Control Pervasive Plant Species to a Desired Level of Treatment**

Establish treatment targets and schedules that will result in an ecological “steady state”, where desired plant communities will persist without long-term intensive treatment. Plan and apply multiple treatments to achieve treatment level targets

*Note: Specific programs may dictate criteria in addition to, or more restrictive than, those specified in this standard, including limits on the number of treatments that may be applied.*

### **CONSIDERATIONS**

Consider using the Maryland conservation practice standard for Integrated Pest Management (595) in support of herbaceous weed control and weed management. Consider soil erosion potential and the difficulty of vegetation establishment when choosing a method of control that causes soil disturbance.

Consider the species of weeds to be controlled, the possible methods of control, and timing and duration of treatment needed to achieve the desired results. Some herbaceous weed 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 to wildlife species, food supplies, space, and cover availability when planning the method and amount of herbaceous weed treatment. When practical, implement treatments over a period of time to maintain viable habitat for desired species. In general, treatments that create a mosaic pattern may be the most desirable.

In a pasture system, consider the timing and sequence of weed treatment to ensure the availability, quality, and quantity of needed forage.

For air quality purposes, consider using chemical methods of herbaceous weed treatment that minimize chemical drift and excessive chemical usage. State-issued licenses may be required when using chemical pesticide treatments.

Consider mechanical methods of herbaceous weed treatment that minimize the dispersal of particulate matter into the air.

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

### **PLANS AND SPECIFICATIONS**

Plans and specifications for this practice shall be prepared in accordance with the previously listed criteria. Plans and specifications shall contain sufficient detail to ensure successful implementation of this practice, and may be recorded in narrative form, on Implementation Requirements (IR) sheets, on fact sheets, or other approved forms.

The appropriate fact sheet(s) and completed 315 IR sheet can serve as the plan and specifications for this practice. The following items shall be addressed, as appropriate:

- Purpose(s) of herbaceous weed treatment;
- Method(s) to be used and herbaceous weed species to be controlled;
- Pre-treatment cover or density of the target plant(s), and the planned post-treatment cover or density (goal);
- Maps, drawings, and/or narratives identifying areas to be treated, pattern of treatment (if applicable), and areas that will not be disturbed;
- A monitoring plan that identifies what will be measured, including timing and frequency, and the changes in the plant community that will be achieved.

### **Mechanical Treatment Methods**

In addition, the following components shall be included in a plan for mechanical treatment:

- Types of equipment needed;
- Dates for effective treatment;
- Operating instructions (if applicable);
- Techniques and procedures to be followed.

### **Chemical Treatment Methods**

In addition, the following components shall be included in a plan for chemical treatment:

- Acceptable chemical treatment references for containment and management of target species;
- Evaluation and interpretation of herbicide risks associated with the selected treatment(s) using WIN-PST or other approved tools;
- Techniques to be used, planned dates, and rates of application;
- 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;
- Reference to product label instructions.

### **Biological Treatment Methods**

In addition, the following components shall be included in a plan for biological treatment:

- Acceptable biological treatment references for the selected biological agent used to contain and manage the target species;
- Document release date, kind, and number of agents;
- Timing, frequency, duration, and intensity of grazing or browsing, if used;
- Desired degree of grazing or browsing use for effective management of target species;
- Maximum allowable degree of use on desirable non-target species;
- Special mitigation, precautions, or requirements associated with the selected treatment(s).

### **Supporting Data and Documentation**

The following is a list of the minimum data and documentation to be recorded in the case file:

- Location of the practice on the conservation plan map;
- Assistance notes. The notes shall include dates of site visits, name or initials of the person who made the visit, specifics as to alternatives discussed, decisions made, and by whom;
- For chemical treatment, WIN-PST risk assessment and documentation of mitigation practices. The website for the WIN-PST, Windows Pesticide Screening Tool is located at:  
<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/quality/?cid=stelprdb1044769>
- Completed IR sheet, and copy of the appropriate fact sheet(s) or other specifications and management plans.

### **OPERATION AND MAINTENANCE**

An Operation and Management (O&M) plan shall be prepared and is the responsibility of the client to implement. The appropriate fact sheet(s) and IR sheet may serve as the management plan, as well as supporting documentation, and shall be reviewed with and provided to the client.

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

- Apply herbaceous weed treatment practices using approved materials and procedures. Comply with all local, state, and federal laws and ordinances;
- Inspect the area after treatment to assess the effectiveness of weed treatment, and then at least annually thereafter, to the extent feasible. Following initial treatment, some regrowth, resprouting, or reoccurrence of weeds may be expected. As needed, use spot treatment of individual plants or areas needing re-treatment when undesirable plants are most vulnerable to treatment procedures;
- When chemical treatment is used:
  - 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/>;
  - 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, and local regulations;
  - 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 weed treatment for at least 2 years. Herbicide application records shall be in accordance with USDA Agricultural Marketing Service's Pesticide Recordkeeping Program and state-specific requirements;
  - Develop an emergency response 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: 1-800-858-7384, Monday to Friday, 6:30 a.m. to 4:30 p.m. Pacific Time. The national Chemical Transportation Emergency Center (CHEMTRAC) telephone number is: 1-800-424-9300.

## REFERENCES

Cornell University, Department of Animal Science. *Plants Poisonous to Livestock and Other Animals*. <http://www.ansci.cornell.edu/plants/>.

Gundlach, A.M. 2009. *Invasive Species Guidebook for Department of Defense Installations in the Chesapeake Bay Watershed: Identification, Control, and Restoration*. Wildlife Habitat Council. Silver Spring, Maryland. Prepared for the Department of Defense Legacy Resource Management Program, Project 06-328. <http://www.dtic.mil/dtic/tr/fulltext/u2/a534604.pdf>

Hill, Steven R. and Peggy K. Duke. *100 Poisonous Plants of Maryland*. Extension Bulletin 314, University of Maryland Extension. [http://extension.umd.edu/sites/default/files/docs/programs/woodland-steward/EB314\\_PoisonousPlantsMD.pdf](http://extension.umd.edu/sites/default/files/docs/programs/woodland-steward/EB314_PoisonousPlantsMD.pdf)

Johnson, Quintin, Mark VanGessel, Richard W. Taylor. 2015. *Pasture and Hay Weed Management Guide*. University of Delaware, Cooperative Extension. <https://s3.amazonaws.com/udextension/ag/files/2015/01/PHWeedguide.pdf>

Peischel, A. and D.D. Henry, Jr., 2006. *Targeted Grazing: A Natural Approach to Vegetation Management and Landscape Enhancement*. American Sheep Industry Association.

Penn State Extension, in cooperation with the University of Delaware, University of Maryland, Virginia Tech, and West Virginia University. *2016 Mid-Atlantic Field Crop Weed Management Guide*. <http://extension.psu.edu/publications/agrs-136>

Swearingen, J., B. Slattery, K. Reshetiloff, and S. Swicker. 2010. *Plant Invaders of Mid-Atlantic Natural Areas, 4<sup>th</sup> ed*. National Park Service and U.S. Fish and Wildlife Service, Washington, DC. 168pp. <https://www.nps.gov/plants/alien/pubs/midatlantic/>

Tu, M., C. Hurd, and J.M. Randall. 2001. *Weed Control Methods Handbook*. The Nature Conservancy. 219pp. <https://www.invasive.org/gist/handbook.html>

USDA, Natural Resources Conservation Service. *Conservation Practice Standards*. Maryland Field Office Technical Guide, Section IV.

USDA, Natural Resources Conservation Service. 2008. *General Manual: Title 190 – Ecological Sciences: Part 404 – Pest Management*. Washington, DC.

USDA, Natural Resources Conservation Service. 2017. *Invasive Terrestrial Plants and Difficult to Control Plants in Maryland*. Maryland Field Office Technical Guide, Section II-G.

USDA, Natural Resources Conservation Service. 2005. *Prescribed Grazing with Goats*. Conservation Practice Information Sheet, NRCS, Missouri. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs144p2\\_010401.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_010401.pdf)

Virginia Cooperative Extension. 2017. *Pest Management Guide*. Virginia Tech, Pub. No. 456- 016 and 456-017. <http://pubs.ext.vt.edu/456/456-018/456-018.html>