DEFINITION

Brush management is the management or removal of woody (non-herbaceous or succulent) plants. Invasive and noxious woody species are included as target species for management or removal.

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.
- Reduce risk of wildfire
- Improve forage accessibility, quality and quantity for livestock and wildlife.
- Manage fuel loads to achieve desired conditions.
- Manage noxious woody plants.

PLANNING REQUIREMENTS

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:

- 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.
- 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.

BRUSH MANAGEMENT METHODS

Mechanical Treatments, such as hand cutting or mowing, frilling, or girdling will be done at a time that is most critical to control the target brush species. In some cases, forage production may have to be sacrificed to control brush. In addition to items 1-4 above, include the following:

- Type of equipment and modifications to enable the job to be adequately completed.
- Dates of treatment to best effect control.
- Operating instructions (if applicable).
- Techniques or procedures to follow.

Chemical Treatment methods include 1-4 above and the following:

- Acceptable chemical treatment references for containment and management or control of target species
- Evaluation and interpretation of herbicide risks associated with selected treatment

» Acceptable dates or plant growth stage at application to best effect control and slow re-invasion

» Special mitigation, timing, or other factors such as soil texture and organic content that must be considered to ensure safety, effectiveness and

» Reference to product label instructions

Foliage Stem Spraying – Herbicide sprays are applied to the stem and foliage. This type of application is least effective on re-sprouting species. Application should be made from the time that leaves are fully expanded in the spring until fall color. Preventing drift to surrounding areas is more difficult with this method. Low pressure coarse spraying with drift reduction additives is recommended.

Basal Bark Application – Basal spraying is a technique to deaden small trees, shrubs and occasionally vines by spraying the green bark of the lower trunk (12 to 18 inches or 30 to 46 cm) with herbicide. Herbicides used for basal spraying are generally applied with oil carriers. The technique is **effective** on species less than four to six inches in diameter. Care must be taken when herbicide is applied to minimize the amount that runs into the soil.

Cut Stump Application – The chemical is applied to freshly cut stump surfaces. Treat before the cut surface dries (within two to three hours after cutting) for the optimum control. Stump treatment with the water-soluble herbicides must be done immediately after cutting the tree or vine in order to be effective. The critical area of the stump must be treated to prevent sprouting in the sapwood and bark of the stump's cut surface. Oil-based carrier herbicides do not move readily within the plant, but penetrate the bark. To be effective in suppressing stump sprouting, the entire stump, and particularly the bark and exposed roots, must be thoroughly sprayed. Treatment with an oil-based carrier herbicide is recommended in the spring when treating species that exhibit a spring "sap flow".

Frill, Hatchet, or Girdling Application – Frilling and girdling are methods of controlling standing trees and shrubs that may be done with or without a herbicide. The bark around the base of the trunk is cut and the herbicide is either applied as a separate step or injected simultaneously in the cambium area. These techniques require a considerable amount of time and labor to implement.

Tree Injection with Spaced Cuts Application – Tree injection involves introducing a herbicide into the undesirable species through spaced cuts made around the trunk of the woody plant with an axe, hatchet, or tree injector. The amount of herbicide to be placed in the cut is specified on the herbicide label. There are various tree injectors available such as "hypo-hatchet," which is a hatchet constructed to inject herbicide when it is struck into the tree.

Soil Application – This type of treatment includes pellets, beads, granules or concentrated liquids applied to the soil at the base of the plant within the dripline. Soil-applied herbicides usually remain active in the soil for several months or even years. Treatments can be made at any time of the year when the ground is not frozen, but control will only occur after sufficient rain has fallen. This method should only be used on non-erosive soils. Nearby trees may be injured or killed if their roots extend into the treated area.

Biological Treatment methods include biological agents, such as insects that feed on or disrupt the functions of the target species and the use of livestock trained or managed to graze and/or browse the target species. NRCS will only develop biological treatment plans utilizing grazing animals. The grazing animals may be livestock owned and managed by the landowner or trained herds/flocks leased by the landowner. To ensure an enduring desired response to brush management, the conservation plan will included Wisconsin NRCS Conservation Practice Standard, "Prescribed Grazing" (528).

OPERATION AND MAINTENANCE

» Evaluate the post-treatment regrowth of target species. Monitor over time. Site conditions will determine how much monitoring will be needed and is based on seed sources, and methods of control used.

» A safety plan for individuals exposed to chemicals will include phone numbers and addresses of emergency treatment centers, poison control centers, mixing and loading setbacks, signs defining label directions, restricted entry information.

» Dispose of herbicides and containers in accordance to all laws and label directions.

- Read and follow label directions
- Calibrate application equipment according to recommendations.
- Replace worn nozzle tips and defective hoses and faulty gauges on equipment.
- Maintain records of brush control for two years or more. Records will be according to USDA Agricultural Marketing Services Pesticide Record-keeping Program.
- Spot treat regrowth as needed while woody material is small.
- Update IPM plan with new technology.
- Respond to grazing management plans and plant population changes.
- Avoid plan resistance to herbicides by mechanical treatment to resistant species.

GENERAL INFORMATION

Client name: _____

County: _____ Acres to be treated: _____

Purpose and objectives for using brush management: _____

Target species to be controlled:_____

Species to be benefited: _____

BRUSH MANAGEMENT DESIGN SPECIFICATIONS

Brush canopy and/or species count or transect line locations and percent canopy or species numbers per acre of the target plant(s): _____ % canopy in current condition ***OR*** _____ (number) of _____ (species).

Photopoint picture taken as documentation? ☐ Yes ☐ No | _____%planned control of target species.

Treated and untreated areas are designated on: ☐ Map

Map or sketch included in client folder? ☐ Yes

Year and season of planned treatment(s): _____
(date treatment should be planned to achieve best control by selected method)

Treatment method:
☐ Chemical* ☐ Mechanical
☐ Biological ☐ Prescribed Burning (338) required

(mark all that apply)

**Chemical treatment - any herbicide used to control woody species must be federally and locally registered and must be applied strictly in accordance with registered uses, direction on the label, and other federal or state policies and requirements. The safety measures for the user must be adhered to at all times.*

Planned application method:
☐ Foliage Stem ☐ Basal Bark
☐ Cut Stump ☐ Girdling/Frill with Herbicide
☐ Tree/Shrub Injection ☐ Soil

Evaluation & interpretation of herbicide risk:
WINPST attached; discussed with landowner? ☐ Yes ☐ No

Chemical treatment reference(s) (list all or attach):_____

_____

_____

Chemical product label reference(s) (list all or attach): _____

_____

_____

Acceptable planned date ranges or growth stages for application:_____

Any special mitigation, timing considerations, or other factors that must be considered to ensure the safest, most effective application of herbicide (drift reduction, soil texture and organic matter, for example):_____

_____

MECHANICAL TREATMENT

Planned treatment date listed above is selected as the opportune time for best control of target species:

_____

Planned application method:

- ☐ Girdling. Equipment needed: _____
- ☐ Hand cutting. Equipment needed: _____
- ☐ Brush-hog mowing
- ☐ Flail mowing
- ☐ Dozer/Backhoe/Bucket
- ☐ Other, as described: _____

Operating instruction, as applicable: _____

BIOLOGICAL TREATMENT

Grazing plans will be include periods of targeted grazing to achieve planned utilization of target species. Temporary fencing may be required to limit access to other forage. There should be enough livestock to completely defoliate (100%) the brush within 3-5 days. Multiple (more than 3) defoliations are generally necessary the first year, with fewer needed each year thereafter.

Planned application method: ☐ Targeted grazing with livestock.
Describe kind of livestock: _____

Time, frequency, duration and intensity of grazing and/or browsing:_____

Planned utilization of target species _____ %

Maximum allowable utilization of desirable non-target species: _____

Special mitigation, precautions, or requirements associated with the selected treatment: _____

_____

Year and season of planned treatment(s): _____
(date of treatment should be planned to achieve best control by selected method)

Name: _____ Phone Number: _____

- ☐ National Pesticide Information Center: 1-800-858-7384
- ☐ National Chemical Transportation Emergency Center (CHEMTRAC): 1-800-424-9300

Follow label requirements for mixing/loading setbacks from wells, intermittent streams and rivers, natural or impounded ponds, lakes, and reservoirs.

Post signs according to label directions and/or federal, state, tribal or local laws, around fields that have been treated. Follow restricted entry intervals.

Dispose of herbicide 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.

Calibrate application equipment according to manufacturer's 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 2 years. Records shall be in accordance with USDA AMS Pesticide Record-keeping Program and Wisconsin Department of Agriculture requirements.

DESIGN APPROVAL

I certify that this practice has been designed with specifications to meet Wisconsin NRCS Conservation Practice Standard, Brush Management (314), and that the client has been advised of installation and layout elements and given a completed job sheet 314.

NRCS or TSP* (print) (sign) Date

MONITORING PLAN

Target species and protected desirable species will be monitored during the growing season each year. When grazing and/or browsing animals are used as a biological treatment method, monitoring will occur at least once per week during the growing season.

Records will be kept. Document treatment effects with photopoint snapshots of the treatment area before and after treatment.

Measure and document:

- ☐ Target species, weekly
- ☐ Target species monthly
- ☐ Other, describe:_____
- ☐ Evaluate post-treatment regrowth of the target species: _____
- ☐ Record forms completed for each treatment application
- ☐ Photopoint monitoring pictures submitted

OPERATIONS AND MAINTENANCE

Brush management practices shall be applied using approved materials and procedures.

Operations will comply with all local, state, and federal laws and ordinances.

Evaluation of practice success is an on-going operation.

Spot treatment of individual plant or areas needed re-treatment should be completed as needed while woody vegetation is small and most vulnerable to treatment effects.

- ☐ Chemical Safety Plan
- ☐ Emergency Services: 911
- ☐ Local hospital emergency number:
- ☐ Local police or sheriff:
- ☐ Ambulance:
- ☐ In case of emergency, notify:

REVIEW AND UPDATE PLAN PERIODICALLY

- ☐ Incorporate new IPM technology
- ☐ Respond to grazing management and complex plant population changes
- ☐ Avoid the development of plant resistance to herbicide chemicals

INSTALLATION CERTIFICATION

The Brush Management (314) Practice has been installed according to the Wisconsin NRCS Practice Standard as specified above, and meets the minimum removal rate of _____ percent (target is 95% kill). A site visit was conducted and results verified.

- ☐ Site map is red lined, verifying treatment location(s)
- ☐ Photos were taken in the field and include:
  - » Who took the photo
  - » When the photo was taken
  - » What is pictured
- ☐ Actual date of treatment:
- ☐ Treatment acres match planned acres?

Practice Certification (NRCS USE ONLY)

I certify that the practice as installed is complete and meets the applicable Wisconsin NRCS Conservation Practice Standard and all applicable practice specifications. Any changes to the original practice design have been approved and are documented on the original practice design "as installed."

Certified Planner (print) (sign) Date