Reducing Deer Browse Damage Job Sheet
Planning Guidelines

Natural Resources Conservation Service (NRCS) - Minnesota

Background
Deer have the potential to destroy a stand of newly planted woody seedlings to the detriment of the practice and conservation efforts. Failed practices not only harm environmental benefits they also waste scarce funding and resources.

Deer depredation creates gaps in windbreaks, slows the growth of plants for erosion control and reduces wildlife habitat quality. For the plants, deer depredation creates multiple leaders and weak branching, increases susceptibility to frost damage, insects and disease infestations, and causes slower growth and mortality.

Before initiating a deer browse control plan, make sure the damage is actually caused by deer depredation or the potential for deer browse damage has been assessed.

Purpose
Developing a deer browse control plan will monitor and measure deer depredation pressure before planting in a known troublesome area to help develop a system of techniques and methods to control deer herd movement and reduce browse pressure. It is important to understand deer feeding behavior to be able to develop an effective browse control plan.

If following a deer browse control plan reduces feeding pressure 30 to 50 percent and the newly planted stand meets practice standard requirements or program requirements, then success has been achieved. No system, method or technique will reduce deer depredation 100 percent.

Deer Feeding Behavior
Behavior that deer exhibit while feeding include tolerating bad taste or smells, colored strobe lights, sirens and loud noises. A motivated deer can jump up to 12 feet vertically or 30 feet horizontally, but not high and far at the same time. Deer are more likely to jump fences in woodland than in grasslands. They learn to pull off bud caps. They can crawl through holes as small as 7.5 inches in diameter.

Feeding behaviors that can be used to control depredation include: following customary paths to known food sources, and spending the least amount of energy looking for food.

Lack of food sources will cause extreme behaviors in looking for sustenance. The hungrier the deer the more vulnerable the plant, even if it is typically an undesirable food source. Drought, flood, deep snows, barriers to migration routes and over population or competition from other browsers are typical environmental stressors that may lead to severe browse damage particularly where newly planted seedlings or young saplings present a smorgasbord for stressed deer.

Where Used
Use this job sheet when designing a deer browse control plan for USDA cost-share programs as appropriate. Practices such as Tree/Shrub Establishment, Code 612 (protecting new stands of seedlings); Upland Wildlife Habitat Establishment, Code 645 (food plots); Hedgerow Planting; Code 422 (food, cover and corridors), Fence, Code 382 (exclusion) or Use Exclusion, Code 472 may be eligible for cost-share.

Deterrent Methods
There are basically 6 deterrent methods for controlling deer depredation: replanting, exclosures, avoidance, undesirability, availability and elimination. Each has its own advantages and disadvantages and most work best within a system. Rarely will one method or technique work well alone over a period of time. The level of protection depends on the value of the planting and the intensity of browse pressure. Contact the local MNDNR office to help measure and monitor deer depredation pressure.

Replanting
If a cost-shared program or practice planting fails, replanting is required. Replanting is most effective if the damaged area is small, there is overall low browse pressure and the plants are inexpensive. However, replanting, *by itself*, without supplementing with another technique, method or practice will again fail if the conditions for the deer browse continue to exist. Use NRCS Conservation Practice Standard Tree/Shrub Planting, Code 612 to replant failed practices.

Bud Caps

A lot of discussion surrounds the use of bud caps in Minnesota. In some locations they are effective and in others ineffective because the deer have learned to pull them off or eat them along with the terminal bud. Bud caps are used only in conifer plantings, only on the terminal bud. Use them in small areas where appearance is not a concern and browse pressure is low. They are most effective at the time of spring or fall migration where small herds are spending only a short time in any one location.

Individual Tree Shelters

Tree shelters include solid and vented tubes and other cylinders and associated accessories such as netting, stakes and ties. Because of the higher cost, tree shelters are used where deer browse pressure is moderate to high and the impacted area is relatively small. No more than ¼ to ⅓ of the plants are protected. The most effective technique is to cover more plants in the most exposed or outer-most rows in a planting and fewer in the middle rows. This method is most effective if complementary techniques such as food plots and corridors are established to keep the herd moving to ease browse pressure. Tree shelters are cost-shared under Tree/Shrub Establishment, Code 612 in the EQIP payment schedule.

Fences

If the value of the planting is high, a large area involved and deer feeding is heavy then the installation of fencing may be worth the expense. Fences can be temporary or permanent and they must be high enough to deter deer from jumping them, in the range of 6 to 12 feet high. Fencing materials include wire mesh, chain link, high-tensile, barbed wire, metal or wood posts with polytape or polyrope, (closed) gates, and electrical supplies such energizers, wires and batteries. Straight or angled fences may be more effective if electrified.

Use NRCS Conservation Practice Standard Fence, Code 382, to design an effective fence to exclude deer; or Use Exclusion, Code 472 to construct physical or other barriers. Give thought to the type of gate since this may be the only egress to allow captured deer to escape.

Chemical Repellents

An increasingly popular method to repel deer is the use of commercial and non-commercial chemical repellents. These come in the form of sprays, pellets, scent packets or capsules. Chemical repellents are used for temporary protection during herd migration where depredation pressure is low to moderate and of a limited time. It works best when there is an easily accessible alternate forage area nearby. Topical applications, such as sprays, were most effective when tested by independent means. Plantskydd and Deer Away Big Game Repellent (powder form) consistently reduced deer depredation more effectively than any other tested product and are the only two chemical repellents cost-shared for deer browse control under the Pest Management Practice, Code 595 in the EQIP payment schedule. Mention of specific products does not confer endorsement for the products by USDA.

Forage Availability

Where possible, supply an alternate foraging area for deer to feed when protecting newly planted seedlings. Wildlife food plots, cover and safe travel corridors are relatively inexpensive yet very effective in distracting deer away from conservation project areas. Deer will use the least amount of energy to get to known food sources. Using barriers such as bud caps, shelters, repellents, fences and planting undesirable plants where possible while providing safe feeding areas creates a deer management system that will effectively and efficiently reduce deer browse damage.

Use NRCS Conservation Practice Standard Hedgerow Planting, Code 422; or Upland Wildlife Habitat Management, Code 645, to establish wildlife food plots, cover and/or travel corridors.

Elimination

Although eliminating antlerless, troublesome or lead deer through hunting is very effective, it is the least desirable method, is not cost-shared, and is difficult to obtain the permissions required. Developing a system of deer browse control using barriers and alternate forage areas will not only protect the project area, it will also protect deer herds.

Operation and Maintenance

Areas where browse control measures have been taken will be monitored annually for detection of continuing severe browse damage. It may take a couple of different techniques at different times of the year to create an effective system of browse control. Damage reductions of 30 to 50 percent are reasonable and should result in meeting practice standard and program requirements for establishment of trees and/or shrubs.

Landowner:	**Tract Name/Number(s):**	
	Field Name/Number(s):	
Acres Treated:	**Prepared by:**	**Date:**

Objectives:

Objectives of deer browse control plan:

Goals:

Goals of plan:

Assessment:

Describe the severity and quantity of deer browse damage. Include size of area affected, cost of damage, visual sightings, bite characteristics, tracks, feces and trails as much as possible.

Are only deer causing browse damage? Yes ☐ No ☐
Describe (as above):

Population size and density of deer (may need to contact DNR).

Describe travel routes in and out of damaged area.

Seasonal food preferences (be as specific as possible).
Summer:
Winter:

Proximity to alternative available food (potential or actual).

Techniques

Replant (should not be a stand alone practice for controlling predatory deer).
Practice: ☐ Tree/Shrub Establishment, Code 612
Method Tree Shelters (must be included in a conservation or stewardship plan).
Location of shelters in planting (provide map or drawing).
Number of shelters to be used:

Exclosure
Practice: ☐ Fence, Code 382
☐ Wire ☐ Chain link ☐ Mesh ☐ Polytape ☐ Polyrope
☐ Other (Describe):
Slanted? No ☐ Yes ☐
Electrified? No ☐ Yes ☐
Attractant/repellent (used on fence)? No ☐ Yes ☐ Type:
Type of gate:
Practice: ☐ Tree/Shrub Establishment, Code 612
Method ☐ Bud Caps (must be included in a conservation or stewardship plan).
Practice: ☐ Hedgerow Planting, Code 422
Practice: ☐ Use Exclusion, Code 472

Availability

Practice: ☐ Upland Wildlife Habitat Management, Code 645
Method Establish food plots for alternative feeding areas
Practice: ☐ Hedgerow Planting, Code 422
Method Provide alternative food, and cover or corridors

Avoidance/Undesirability

Practice: ☐ Pest Management, Code 595
Method ☐ Repellent
Chose One: ☐ Plantskydd
☐ Deer Away (powder)
☐ Other (Explain):
Practice: ☐ Tree/Shrub Establishment, Code 612
Method Plant less desirable woody species
List proposed species:

Elimination

Contact DNR
Explain:

Possible outcomes

For each method used above, explain the possible outcomes or consequences both positive and negative including risk to non-target species.

Considerations

Ecological:

Economic:

Social:

Implementation Strategy

Sequence of application and timing of each practice/method (may substitute conservation/stewardship plan):

List of materials, equipment, amounts, permits (may substitute practice standard or specifications)

Results

Monitor effectiveness
Plant condition ☐ Less browse damage ☐ No change ☐ More browse damage
% reduction: % increase:
Deer population ☐ Lower ☐ No change ☐ Higher

Off-site Effects (Ecological Impacts):

Deer Browse Control Plan

Please attach an aerial view, or, if needed, an aerial photo showing the treated acres or planned treatment areas.

Additional Specifications and Notes or Drawing: