

LAKESHORE COUNTIES GUIDE TO PLANTING TREES

COMMITMENT

It usually takes young trees 5 or more years to become well established. For those early years it is critical that the proper steps are taken to get your planting off to a good start. Like many things in life, putting in the effort to care for your planting early on will reap rewards later.

YOUR PLANTING OBJECTIVES

Determining your objective for planting trees will help guide your reforestation efforts. Most objectives fall into one of the following categories:

Windbreaks & Screens These plantings consist of relatively narrow strips of evergreen species strategically located to minimize the effects of prevailing winds or to create a visual barrier. They are usually one to five rows wide with a 12 to 15 foot tree spacing between and within the rows. Spruce, pine and cedar are the most commonly used species. At this spacing it will obviously take time for the windbreak/screen to be effective but the trees need adequate room to grow and retain lateral branches. More closely spaced trees will grow into each other sooner and will shade the bottom branches, which will eventually die due to a lack of light. If you choose to plant at a closer spacing you will need to thin some of the trees over time to give adequate space for those that remain. Windbreaks should be planted at least 65 feet from the area you want to protect on the west and north side.

Wildlife Plantings These plantings consist of a mixture of evergreens, hardwoods & shrubs planted in clumps or strips with a primary purpose of providing wildlife habitat. Strip plantings usually have a row or two of shrubs spaced 6 to 8 feet apart located on the strip's west and/or north side. A 30 foot gap is left and several rows of evergreens (spruce & pine) are planted at 10 to 15 foot spacing. A couple rows of taller hardwoods come next followed by a row or two of shorter hardwoods also planted at 10 to 15 foot spacing. A couple rows of shrubs complete the planting spaced 20 to 30 feet away from the last row of short hardwoods with 6 to 8 feet between the shrubs. Clump plantings usually consist of evergreens in the clump center with small hardwoods and shrubs planted toward the edges at the same spacing mentioned earlier.

Forest Plantings These larger scale plantings consist of evergreens and/or hardwoods planted to create a forest habitat for wildlife and timber products. Approximately 800 to 900 trees per acre are planted to fully utilize the site and encourage well formed trees. Once the planting reaches 25-30 years of age it will need periodic thinning to give remaining trees adequate growing space, as they grow larger. At full maturity (80-150 years of age) there may only be room for 20 to 30 trees per acre. These plantings are generally planted in rows for ease of planting, maintenance and thinning. Rows are usually spaced about 8 feet apart with trees 6 to 7 feet apart within the row. Over time the "row effect" will disappear as the planting is thinned. At certain stages of growth, forest plantings will benefit different groups of wildlife, from those that prefer grassy fields to those that prefer mature forests.

Enhancement Plantings These plantings are variable in size shape & density but tend to be smaller in scale. They are generally conducted to introduce species diversity onto a property, benefitting both wildlife habitat and aesthetics. They are highly dependent on landowner objectives and current cover on the property. The general goal is to augment naturally occurring vegetation on the property to meet specific landowner objectives.

PREPARING THE SITE

Preparing the site for planting is a critical element of planting success. Site preparation methods will vary somewhat depending on the planting site. Here are some common scenarios and recommendations.

Heavy sod, hay, clover, or alfalfa

This is a tough cover to start trees in and must be eliminated.

A preferred option is to rotate the hay into a grain crop (corn, soybeans, oats etc.) and delay tree planting one year.

If you decide to plant hay land to trees, mow the field during the summer, then allow at least 8 inches of new growth to occur in late summer and early fall. Apply a contact herbicide like Round-up or Accord (2 quarts per acre sprayed). If alfalfa is the main competition, you may also consider spraying 1 pint/acre of Transline (Stinger) or mix 4 ounces/acre of Banvel with the 2 quarts/acre of Round Up. Wait several weeks then plow and disk the field.

You have a few follow-up options to control annual weeds:

Option 1) Apply Simazine* at 2 pounds per acre mixed with Oust at $\frac{3}{4}$ Oust in Fall on tilled soil

Option 2) Plant 1.5 bushels of winter wheat per acre as a cover crop in spring before planting trees. It will help hold back annual weeds. Mow wheat between the tree rows.

Option 3) Band or broadcast spray Simazine at 4 pounds per acre immediately after planting before trees break dormancy. Follow up with mowing between rows as needed.

Cropland with harvest residue (oats, corn, beans, peas, wheat)

Option 1) Till the field & plant 1.5 bushels of winter wheat per acre in spring. Plant trees and band spray Simazine over the tree row at a rate of 3 to 4 pounds per acre sprayed. Periodically mow wheat between the rows as needed.

Option 2) Broadcast spray Simazine at 2 pounds per acre mixed with Oust at $\frac{3}{4}$ ounce per acre in fall after killing frosts but before the ground is frozen. Plant trees the following spring.

Option 3) Band or broadcast spray Simazine at 2 pounds per acre mixed with Oust at $\frac{3}{4}$ ounce per acre immediately after planting before trees break dormancy. Mow between rows as needed.

Shallow soil with sparse weed cover

Option 1) Broadcast spray Simazine at 2 pounds per acre mixed with Oust at $\frac{3}{4}$ ounce per acre in fall after killing frosts but before the ground is frozen. Plant trees the following spring.

Option 2) Band or broadcast spray Simazine at 2 pounds per acre mixed with Oust at $\frac{3}{4}$ ounce per acre immediately after planting before trees break dormancy. Mow between rows as needed.

Orchard conversion

Cut apple or cherry trees and pile the brush (preferably a year ahead of planting). If piles are to be burned do it prior to tree planting. Stumps can be left intact.

Option 1) Broadcast spray Simazine at 2 pounds per acre mixed with Oust at $\frac{3}{4}$ ounce per acre in fall after killing frosts but before the ground is frozen

Option 2) Band or broadcast spray Simazine at 2 pounds per acre mixed with Oust at $\frac{3}{4}$ ounce per acre immediately after planting before trees break dormancy. Mow between rows as needed.

*NOTE Simazine cannot be applied on Managed Forest Law certified lands

Always check and follow label directions when applying herbicides.

NURSERY STOCK

Matching the right species to your planting site is very important. Soil type and drainage will determine your species options. The attached chart summarizes common soils and species options for Door County. Generally speaking, evergreens are easier to establish in field plantings than hardwoods. Hardwoods are more susceptible to animal damage and weed competition. Seek the advice of your local DNR forester on species selection.

Nursery stock can be purchased through both private and DNR nurseries. Trees are typically ordered in the fall and planted in the spring. If ordering from DNR nurseries, ordering early (usually the end of September) will increase your chances of obtaining the stock you want. Some species may sell out within days. Most reforestation stock is shipped as bare-root seedlings or transplants. Cost will vary by age, species & quantity ordered. DNR stock is sold at the cost of production. It cannot be resold or used for landscaping, Christmas trees or ornamental planting. Preferred ages to order in DNR stock are 3-year-old evergreens and 2-year-old hardwoods for our area. Listing of private nurseries can be obtained from your local DNR forester. Private stock is not subject to planting restrictions.

SHIPPING & STORAGE

You may choose to have DNR nursery stock direct shipped from the DNR nursery to a local county distribution point or pick it up at the nursery. Stock is shipped from mid April to early May. Orders are distributed on the Saturday following shipment. Trees should be kept cool and moist and planted as soon as possible. If you have questions in regard to shipping or storage, call your local DNR forester.

PLANTING

Small-scale plantings can be hand planted using a shovel, planting bar or auger. Larger scale plantings are planted with a mechanical tree planter pulled by a medium sized tractor. The Door County Soil & Water Conservation Dept. (SWCD) and Kewaunee County Land Conservation Dept. own planting machines that can be rented by landowners. Landowners furnish the tractor and labor. Another option for planting is to hire a custom tree planter to do the planting job for you. A list of custom tree planters for hire is available from your local DNR forester.

MAINTENANCE

Once trees are in the ground your job is not over. The planting will need maintenance for several years as trees become established. Periodic mowing is recommended to:

- 1) reduce rodent cover
- 2) increase sunlight reaching the trees
- 3) prevent tall weeds and grass from lodging over and smothering trees.

It is important to mow early enough in the summer to mark your tree rows before the grass/weeds get too high. Timing of mowing during the growing season will depend on weed growth. Mowing late in the growing season will help reduce mouse and vole habitat under the snow.

Follow up herbicide treatment may also be needed to control competing vegetation. This can be done by spot, band or broadcast application. It is a good idea to monitor weed growth annually and consult your DNR forester for follow up maintenance needs.

ANIMAL DAMAGE

The maintenance measures mentioned above will help reduce habitat for mice, voles and rabbits which can cause browse damage to young seedlings. Deer can also cause browse damage particularly on hardwood species. In addition to good control of competing vegetation, use of repellents, bud caps, tree barriers or fencing may be needed to get young seedlings to a size and age where animal damage is minimal.

CONSIDER THESE COSTS WHEN PLANNING YOUR PLANTING PROJECT:

Contact herbicide (Roundup, Accord) per acre

Pre-emergent herbicide (simazine/Oust) per acre

Tillage per acre

Mowing per acres

DNR Seedling Cost Counted Stock 100-400 Counted stock 500-2900 Counted stock 3000+ Bulk Stock 3000+
(Price per 100 decreases the more ordered.)

Nursery Stock shipping

Planter Rental Rates (Available from Manitowoc, Door, and Kewaunee Counties, rates vary)

Custom Tree planting

COST SHARING INCENTIVE PROGRAMS

There may be an opportunity to offset planting expenses through state or federally funded reforestation incentive programs. If interested contact your local DNR forester for eligibility requirements and available funding.

PATIENCE & PERSEVERENCE

One of the most limiting factors on new tree plantings is adequate rainfall. During dry conditions supplemental watering may increase success on small-scale plantings. This is not very practical on larger plantings so they will rely heavily on natural precipitation. Losses from severe drought may require replanting to reach your planting objectives. Assuming you have done everything needed to get your planting started off correctly and the weather cooperates; it will still take several years for most species to put on a significant amount of top growth. Don't be disappointed. Early in the plantings life, the trees and shrubs are busy growing underground to reestablish a good root system. Once this occurs you will notice an increase in above ground growth that should continue until maturity.

SUITABLE DNR NURSERY TREES AND SHRUBS

Soil Type	Soil Series	Trees	Shrubs
Sands & Loamy Sands	Ad-Allendale loamy sand Br-Boyer loamy sand Me-Manistee loamy sand Ro-Rousseau fine sand	White Pine Red Pine	Red Oak White Oak Ninebark Hazelnut
Well Drained Loams	Cc-Casco sandy loam Em-Emmet sandy loam Km-Kiva sandy loam Lo-Longrie loam Om-Omena sandy loam Sn-Sisson fine sandy loam	White Pine Red Pine Norway Spruce White Cedar	Red Oak White Oak Basswood Bur Oak White Birch White Spruce Black Cherry Sugar Maple Butternut Aspen Ninebark Hazelnut Mixed Crabs Highbush Cranberry Wild Grape Hawthorn Wild Plum Silky & Gray Dogwood
Shallow Well Drained Loams	Na- Namur loam Sv- Summerville loam The plantings on these shallow soils may be affected by factors such as drought.	White Pine Red Pine White Cedar	Red Oak White Birch Red Maple Aspen Ninebark Hazelnut Silky & Gray Dogwood
Well Drained Silt Loams	Kh-Kewaunee silt loam Ko-Kolberg silt loam Oz-Omro silt loam	White Pine White Spruce Norway Spruce White Cedar	Red Oak White Oak Basswood White birch Bur Oak Yellow birch Black Cherry White Ash Sugar Maple Aspen Butternut Mixed Crabs Highbush Cranberry Wild Grape Hawthorn Mountain Ash Wild Plum Silky & Gray Dogwood
Poorly Drained Soils	*Ax-Angelica loam Bn-Bonduel loam De-Deford loamy fine sand Fa-Fabius silt loam Mc-Manawa silt loam Pn-Pinconning loamy fine sand Po-Poygan silty clay loam So-Solona loam Wa-Wainola loamy fine sand Ya-Yahara fine sandy loam	White Cedar Tamarack Black Spruce	Silver Maple Swamp White oak Bur oak Basswood Cottonwood Willow Highbush Cranberry Red Osier Dogwood Winterberry

* Soils that border between poorly drained and somewhat poorly drained. White pine and red oak may be suitable on the better drained areas of these sites.

Lakeshore Counties have soils with pockets of elevated alkalinity that adversely affect tree growth (particularly white pine). Size and location of these areas is difficult to predict and sometimes do not become evident until several years after planting.