



MICHIGAN ARBOR DAY ALLIANCE  
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## How To Tips on Tree Planting and Care Michigan Arbor Day Alliance

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## Selecting a site

One of the most important parts of tree planting is the selection of a good site. A number of factors should be taken into consideration when a site is selected.

- ◆ What species of tree(s) are you planning to plant?
- ◆ What type of soil does the site have?
- ◆ Has the soil pH been tested?
- ◆ How much light does the site provide?
- ◆ What type of light conditions (i.e. shade, full sun, etc.) does your tree species need?
- ◆ Are there any utilities or other objects that may be interfered with once your trees are mature?



Taking these factors into consideration can help create good conditions for your trees/plants to grow.

## Site Preparation

The next step after site selection is site preparation. This should be done before you pick-up your plants. The purpose of site preparation is to ensure tree/plant survivability by reducing competition. Site preparation can be accomplished either through mechanical treatment or herbicide treatment. These methods may need to be repeated several times over the next 2-3 years to control competing vegetation.

**HERBICIDE TREATMENT** requires the use of herbicide to control competing vegetation. Use pre-emergent or post-emergent herbicides (like Simazine and Roundup). Refer to the MSU Extension Bulletin that lists herbicides for tree planting. Use only herbicides labeled for the species of tree being used and the intended use of the tree.

- ◆ Spot or band treat an area a minimum of 3 feet around tree planting area.
- ◆ Timing: Apply herbicide



before planting to reduce damage to trees/plants.

**MECHANICAL TREATMENT** managing competing plants using methods such as plowing and tilling. This method is best used for medium and heavy existing vegetation, on light vegetation no ground preparation is necessary.

Medium vegetation: till or plow within 3 feet of tree site prior to planting.

Heavy vegetation: remove sod layer within 3 feet of tree site with till or plow in fall before tree planting.



# Handling Bare Root Trees



You have now properly selected your site and prepared it for the arrival of your trees.

The next step is picking them up. If you have bought bare root trees there are a few things that you need to know.

- ◆ Check to make sure roots are moist, water them after picking them up and every other day after that. One of the leading causes of seedling death is root dry out.
- ◆ Do not store trees in buckets of water because it can remove soil particles and cause rapid root dry out.
- ◆ Store bare root trees in a cool location where they are protected from sun, wind and freezing temperatures.
- ◆ If you have chosen dormant seedlings place them in cold storage. They can be kept in cold storage up to 10 weeks at 32-40 degrees Fahrenheit and high humidity.
- ◆ For all trees not kept in cold storage (dormant or not) they should be **planted within 3 weeks of pick up.**
- ◆ If all trees cannot be planted during that growing season, dig a hole at a slant, place seedlings in hole and cover with soil. Next planting season dig up and plant. (See page 4)

# Soil, Moisture and Light Requirements for Selected Plants

| <u>SPECIES</u>             | <u>SOIL</u> | <u>MOISTURE</u> | <u>LIGHT</u> |
|----------------------------|-------------|-----------------|--------------|
| Crabapples                 | S-L-C-M     | D-M             | S            |
| Hawthorn                   | L-C         | D-M-W           | S- S,Sh      |
| Dogwood                    | L-C-M       | M-W             | S- S,Sh      |
| Cranberry                  | L-C-M       | M-W             | S- S,Sh      |
| Nannyberry                 | L-C-M       | M-W             | S- S,Sh      |
| Elderberry                 | L-C-M       | D-M-W           | S- S,Sh      |
| White Spruce               | S-L-C       | D-M             | S- S,Sh      |
| Blue Spruce                | S-L-C       | D-M             | S- S,Sh      |
| Norway Spruce              | L-C-M       | M-W             | S- S,Sh      |
| White Pine                 | S-L         | D-M             | S            |
| White Cedar                | S-L         | M-W             | S- S,Sh      |
| Tamarack (E. Larch)        | S-L         | M-W             | S- S,Sh      |
| Red Pine                   | S-L         | D-M             | S            |
| Scotch Pine                | S-L         | D-M             | S            |
| Balsam Fir                 |             |                 |              |
| River Birch                | S-L-C-M     | M-W             | S- S,Sh      |
| Black Cherry               | S-L         | D-M             | S- S,Sh      |
| Black Walnut               | S-L-C       | D-M             | S- S,Sh      |
| Red Oak                    | S-L         | D-M             | S- S,Sh      |
| White Oak                  | S-L         | D-M             | S- S,Sh      |
| Sugar Maple                | S-L         | D-M             | S- S,Sh      |
| Big Blue/Little Blue Grass | S-L         | D-M             | S            |
| Indian Grass               | S-L         | D-M             | S            |
| Switch Grass               | S-L-C       | D-W             | S            |

S= Sand    M= Muck    D= Dry    S= Sun

# Spacing and Planting Guides for Bare Root Trees

The rates and spacing below will allow for enough room for the plants to grow, as well as, allowing for maximum usage of the land. \* Shrubs can be planted in bands, clumps or patches.

| SPECIES                     | IN ROWS | BETWEEN ROWS | NEEDED PER ACRE | IN RATE PER ACRE |
|-----------------------------|---------|--------------|-----------------|------------------|
| Spruce                      | 6'      | 9'           | 725             | 600-800          |
| Red & White Pine            | 7'      | 8'           | 900             | 800-1000         |
| Hardwood Trees and E. Larch | 10'     | 10'          | 435             | 400-500          |
| Black Walnut                | 10'     | 12'          | 350             | 300-400          |
| Hardwood Shrubs             | 4'      | *6'          | 1800            | 1500-2000        |

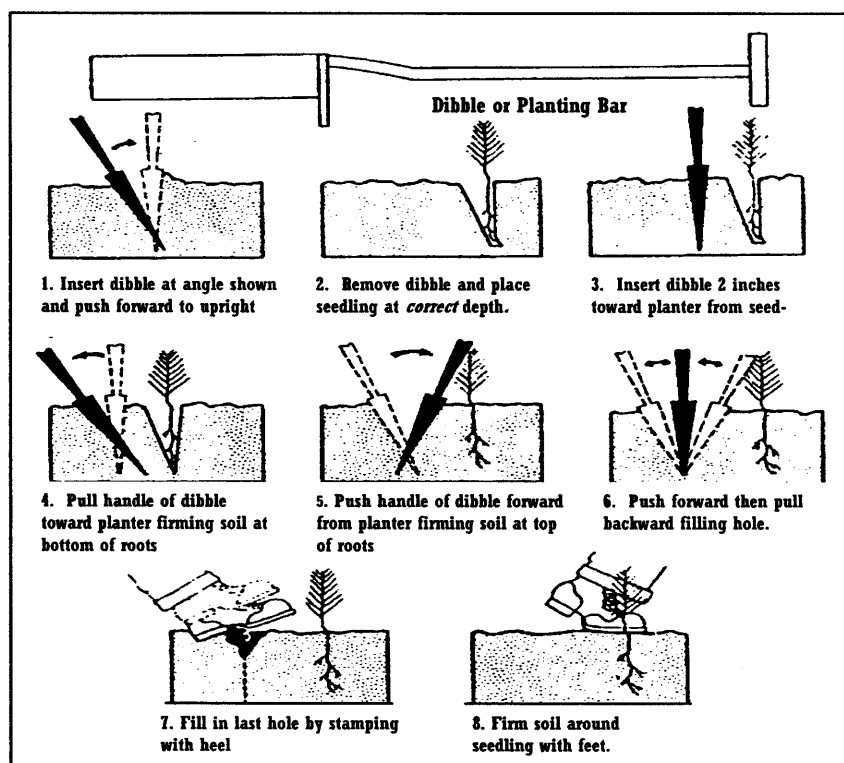
## Spacing for Windbreaks, Wildlife and Visual Screens

| SPECIES            | IN ROWS | BETWEEN ROWS |
|--------------------|---------|--------------|
| Spruce             | 7'      | 9'           |
| Red & White Pine   | 8'      | 9'           |
| Hardwoods/E. Larch | 10'     | 12'          |
| Black Walnut       | 10'     | 10'          |
| Shrubs             | 5'      | 7'           |

Need help with the number of trees in your windbreak?  
 Take the number of feet and divide it by the spacing required for the particular tree.  
 Example: I have a 63 foot row & want to plant Spruce.  
 $63' / 9'$  (spacing between each tree) = 7 trees.  
 Planting 2 rows? Multiply 7 times 2 and you get 14 trees.

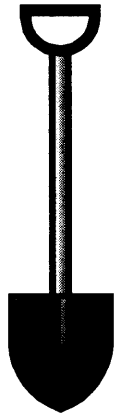
## How to Use a Dibble (or Planting Bar)

**IMPORTANT:** When using a dibble bar do not move it back and forth in the soil. This creates an air pocket at the bottom of the hole and also may make it difficult to backfill.



# Planting Bare Root Trees

Avoid planting trees when the ground is hard, frozen, dry or when excessively wet and sticky. It just makes the job harder on you and the trees! Here are some other tips to keep in mind when planting bare root seedlings.



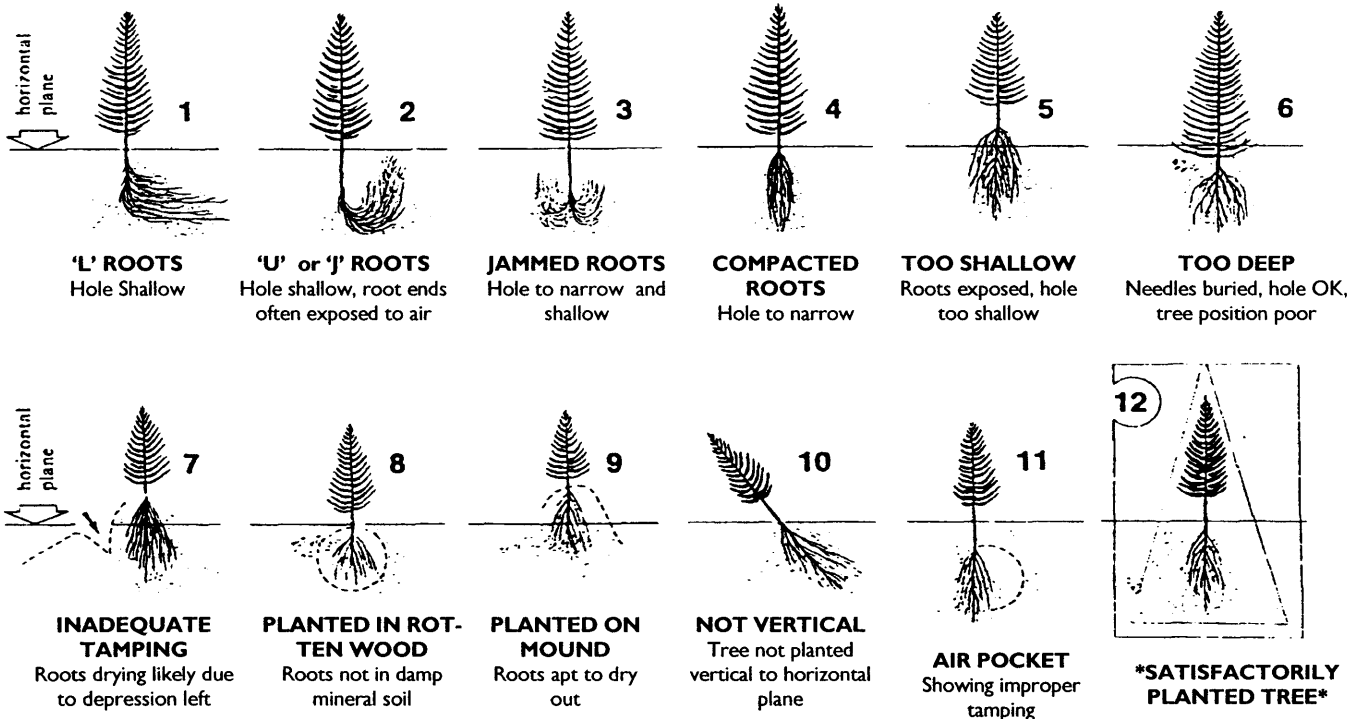
- ◆ If seedlings have froze, allow them to thaw naturally in bundles before attempting to separate.
- ◆ When planting bare root stock, keep seedlings not being planted in a

protective container or bag to protect from exposure to sun and air. Remove only one seedling from protective container at a time.

- ◆ Place seedlings in hole so that roots are properly aligned in hole (see below)
- ◆ Check spacing between trees to ensure that you are planting the proper number of trees per acre.
- ◆ When machine planting be sure tractor speed is matched to that of planter. Tractor

speed should not exceed 3 miles /acre.

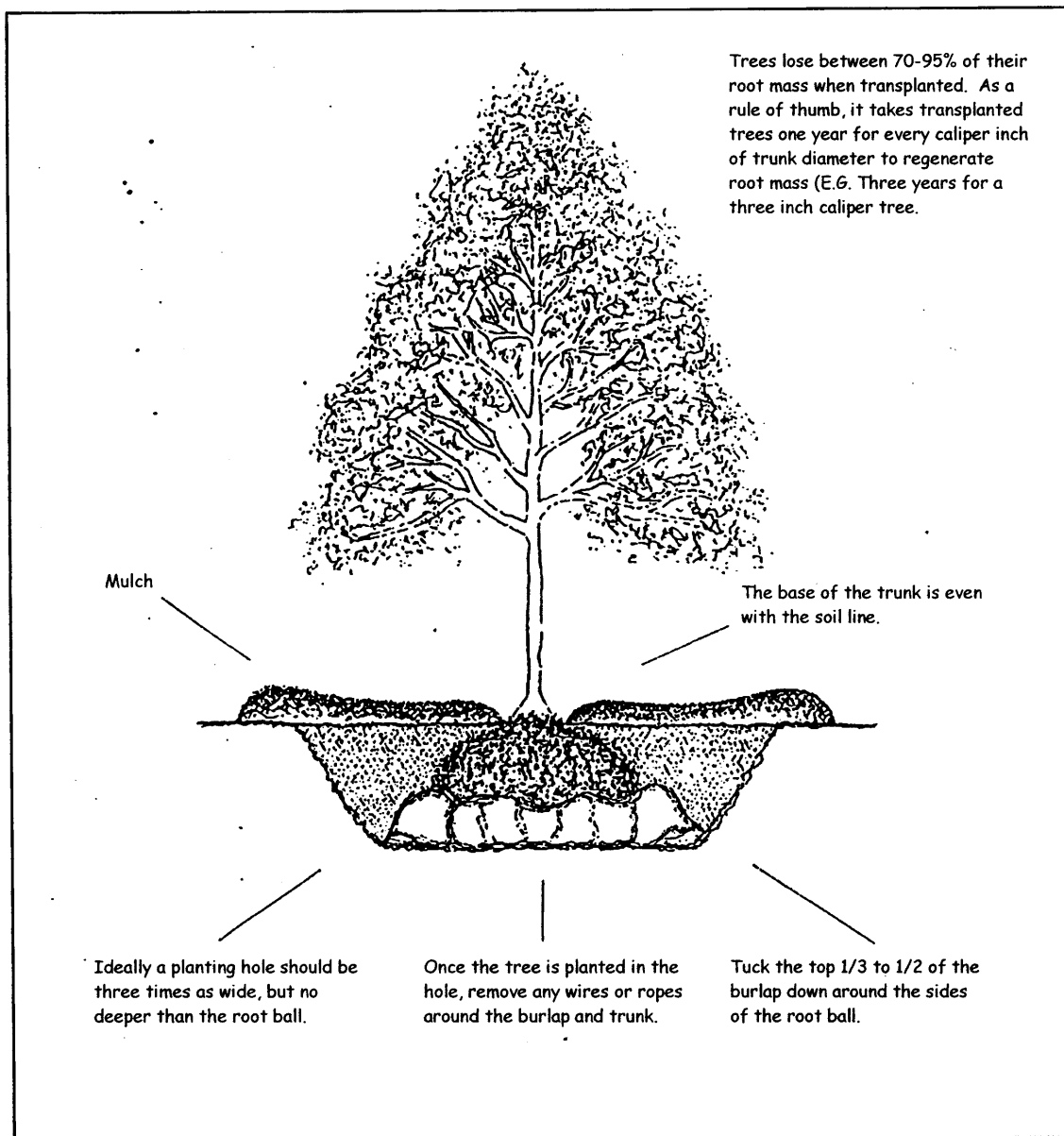
- ◆ Check furrow depth when machine planting, or dibble length and depth of planting hole when hand planting to provide for full length of root when straight.
- ◆ To check soil packing firmness, grasp four top needles of a pine seedling and pull upward; if the tree pulls out of ground it was not firmly packed, if the needles pull off it was sufficiently packed.



Drawings 1-11 show how **NOT** to plant bare root trees. Drawing 12 shows an ideal planting.

## How to Plant a Balled Burlapped Tree

Balled and burlapped (B & B) trees have become one of the most common ways to transplant young trees. The tree roots are dug out of the ground with a ball of soil and then wrapped in burlap. Care should be taken with both balled and burlapped, as well as, potted plants to ensure that the roots are not girdling the plant. If they are, roots should be straightened out or cut back before planting. Girdling roots can eventually kill a tree. The diagram below shows the proper way to plant a B&B tree.

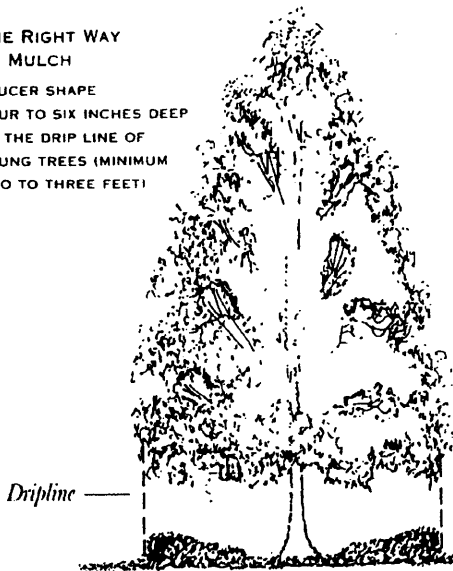


## How to Mulch Around a Tree

Below is a detail showing how to correctly and incorrectly apply mulch to the base of a tree. The left detail shows the **correct** method, leaving a well around the trunk of the tree. The detail on the right shows how to **incorrectly** apply mulch, by mounding it at the base of the tree. Mounding mulch on the trunk of the tree does not allow moisture to percolate down to the roots, it can also cause girdling roots at the trunk of the tree and trunk rot.

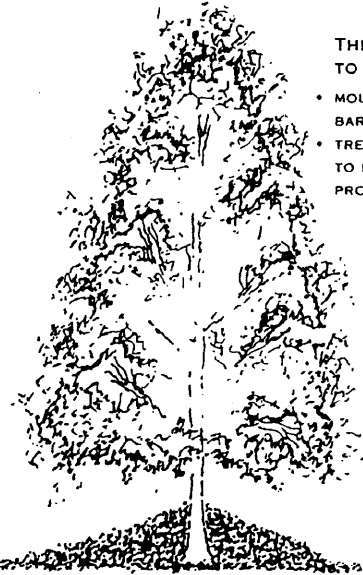
### THE RIGHT WAY TO MULCH

SAUCER SHAPE  
FOUR TO SIX INCHES DEEP  
TO THE DRIP LINE OF  
YOUNG TREES (MINIMUM  
TWO TO THREE FEET)



### THE WRONG WAY TO MULCH

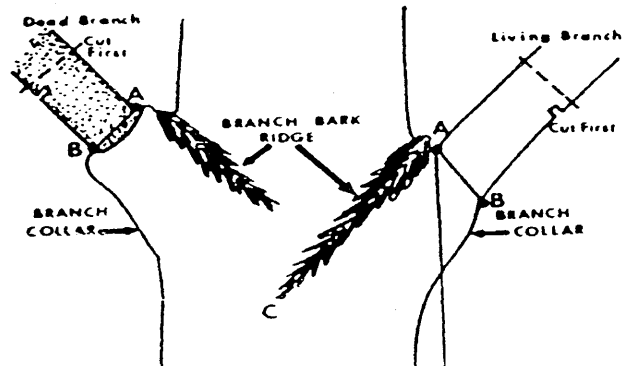
- MOUNDED MULCH CAUSES BARK ROT
- TREE BECOMES VULNERABLE TO DISEASE AND INSECT PROBLEMS



## How to Prune a Tree

Once your trees have begun to grow, it may become necessary to prune some branches. Pruning is done for several reasons, to help the tree achieve proper form, to remove diseased or damaged limbs or to remove branches that are interfering with an object (i.e. wires, windows, street signs, etc.). The detail on the right shows the proper method of pruning a tree.

Tree pruning should only be done on branches that can be reached easily from the ground. Pruning on very large trees or branches that cannot be reached from the ground should be done by a professional certified arborist. You can locate them in the phone book by looking next to the company's name for the International Soci-



### NATURAL PRUNING STEPS

1. Locate the branch bark ridge
2. Find Target A— outside of branch bark ridge
3. Find Target B— swelling where branch meets branch collar
4. If B is hard to find – drop a line at AX.  
Angle XAC = to Angle XAB
5. Stub branch to be pruned

## Landscaping with Native Plants

Native plants are those plants species grown in a certain geographic area in North America prior to its settlement by the Europeans. These plant species have adapted and acclimated to the environmental conditions and are well established to the area.

Native plants provide a number of important benefits.

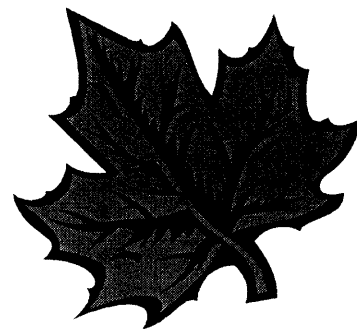
- ◆ Adapted to the areas climate and soil which makes them less prone to stress associated with the

temperature fluctuations or excessive moisture or drought.

- ◆ More resistant to insect and diseases which reduces the need of using pesticides and fertilizers.
- ◆ Provide cover, food and nesting sites for many species of wildlife.
- ◆ Increase soil stability and fertility.

Landscaping with native plants requires a little more patience because they take more time

to establish in an area. By landscaping with native plants, you are in preserving a piece of Michigan's natural heritage.



## What to Plant under Walnut Trees?

Many landowners have the problem of trying to decide what to plant under Walnut trees. When Walnut roots come in contact with a susceptible plant it damages the xylem (water conducting vessel) of that plant.

Below we have listed plants susceptible and not susceptible to walnut toxicity.

### **PLANTS SUSCEPTIBLE:**

#### **Trees:**

White Birch, Michigan

Holly, Saucer Magnolia, Apples, Red Pine, White Pine, Common Elderberry.

#### **Shrubs:**

Red Chokeberry, Blue False Indigo, Lilac, Highbush Cranberry

#### **Perennials**

Wild Columbine, All trumpet and large flowered flat cupped narcissus, Peony, Fairy Rose, Tulip

### **PLANTS RESISTANT:**

#### **Trees:**

Dogwood (Alternate, Flowering and Gray),

American Barberry, American Elm, Beech, Bittersweet, Black Birch, Black Cherry, Hawthorn, Hazelnut, Hickory, Maple-leaved Viburnum, Papaw, Red/White Oak, Sassafras, Staghorn Sumac, Sugar Maple, Sycamore, Tulip Tree, Common Catalpa, Redbud, Red Cedar, Canadian Hemlock.

#### **Shrubs:**

Spice Bush, Rose of Sharon, Virginia Creeper, Rhododendron

#### **Perennials:**

Wild geranium, Siberian Iris, Beebalm, Sensitive Fern, Cinnamon Fern, Garden Phlox, Jacob's Ladder, Blood Root, Spider Wort, Trillium grandiflora, Canada violet.

# Trees, Shrubs and Vines Native to Michigan



## Native Trees

| <u>Common Name</u>      | <u>Scientific Name</u>       |
|-------------------------|------------------------------|
| American Beech          | <i>Fagus granifolia</i>      |
| Balsam Fir              | <i>Abies balsamea</i>        |
| Basswood                | <i>Tilia americana</i>       |
| Birch, Yellow           | <i>Betula alleghaniensis</i> |
| Black Cherry            | <i>Prunus serotina</i>       |
| Blackgum                | <i>Nyssa sylvatica</i>       |
| Black Maple             | <i>Acer nigrum</i>           |
| Black Oak               | <i>Quercus velutina</i>      |
| Black Walnut            | <i>Juglans nigra</i>         |
| Bur Oak                 | <i>Quercus macrocarpa</i>    |
| Butternut Hickory       | <i>Juglans cinerea</i>       |
| Eastern Red Cedar       | <i>Juniperus virginiana</i>  |
| Flowering Dogwood       | <i>Cornus florida</i>        |
| Hackberry               | <i>Celtis occidentalis</i>   |
| Hawthorn                | <i>Crataegus spp.</i>        |
| Ironwood (Hop-hornbeam) | <i>Ostrya virginiana</i>     |
| Musclewood (Blue Beech) | <i>Carpinus caroliniana</i>  |
| Northern Pin Oak        | <i>Quercus palustris</i>     |
| Northern White Cedar    | <i>Thuja occidentalis</i>    |
| Red Maple               | <i>Acer rubrum</i>           |
| Red Oak                 | <i>Quercus rubra</i>         |
| Red Pine                | <i>Pinus resinosa</i>        |
| Redbud                  | <i>Cercis canadensis</i>     |
| Sand Dune Willow        | <i>Salix cordata</i>         |
| Sassafras               | <i>Sassafras albidum</i>     |
| Silver Maple            | <i>Acer saccharinum</i>      |
| Sugar Maple             | <i>Acer saccharum</i>        |
| Swamp White Oak         | <i>Quercus bicolor</i>       |
| Sycamore                | <i>Platanus occidentalis</i> |
| White Ash               | <i>Fraxinus americana</i>    |
| White Fir               | <i>Abies concolor</i>        |
| White Pine              | <i>Pinus strobus</i>         |
| White Oak               | <i>Quercus alba</i>          |
| White Spruce            | <i>Picea glauca</i>          |



## Native Shrubs

| <u>Common Name</u>       | <u>Scientific Name</u>           |
|--------------------------|----------------------------------|
| Alternate-leaf Dogwood   | <i>Cornus alternifolia</i>       |
| Allegheny Serviceberry   | <i>Amelanchier laevis</i>        |
| American Bladdernut      | <i>Staphylea trifolia</i>        |
| American Elderberry      | <i>Sambucus canadensis</i>       |
| American Hazelnut        | <i>Corylus americana</i>         |
| Buttonbush               | <i>Cephalanthus occidentalis</i> |
| Black Raspberry          | <i>Rubus occidentalis</i>        |
| Chokeberry               | <i>Aronia melanocarpa</i>        |
| Choke Cherry             | <i>Prunus virginiana</i>         |
| Creeping Strawberry Bush | <i>Euonymus obovata</i>          |
| Gooseberry               | <i>Ribes cynosbati</i>           |
| Gray Dogwood             | <i>Cornus foemina</i>            |
| Ground Juniper           | <i>Juniperus communis</i>        |
| Highbush Blackberry      | <i>Rubus allegheniensis</i>      |
| Leatherwood              | <i>Dirca palustris</i>           |
| Maple Leaf Viburnum      | <i>Viburnum acerifolium</i>      |
| Meadow-sweet             | <i>Spiraea alba</i>              |
| Michigan Holly           | <i>Ilex verticillata</i>         |
| Nannyberry               | <i>Viburnum lentago</i>          |
| New Jersey Tea           | <i>Ceanothus americanus</i>      |
| Ninebark                 | <i>Physocarpus opulifolius</i>   |
| Northern Dewberry        | <i>Rubus flagellaris</i>         |
| Pasture Rose             | <i>Rosa carolina</i>             |
| Prickly Ash              | <i>Zanthoxylum americanum</i>    |
| Red-osier Dogwood        | <i>Cornus stolonifera</i>        |
| Red-berried Elder        | <i>Sambucus pubens</i>           |
| Roundleaf Dogwood        | <i>Cornus rugosa</i>             |
| Shadblow Serviceberry    | <i>Amelanchier arborea</i>       |
| Silky Dogwood            | <i>Cornus amomum</i>             |
| Speckled Alder           | <i>Alnus rugosa</i>              |
| Spicebush                | <i>Lindera benzoin</i>           |
| Staghorn Sumac           | <i>Rhus typhina</i>              |
| Wild Rose                | <i>Rosa blanda</i>               |
| Winged Sumac             | <i>Rhus copallina</i>            |

## Native Vines

|                    |                             |
|--------------------|-----------------------------|
| Witchhazel         | <i>Hamamelis virginiana</i> |
| Moonseed           | <i>Menispermum villosa</i>  |
| Prickly Greenbriar | <i>Smilax tamnoides</i>     |
| Riverbank Grape    | <i>Vitis riparia</i>        |
| Virgin's Bower     | <i>Clematis virginiana</i>  |
| Virginia Creeper   | <i>Parthenocissus</i>       |