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Photo Credit: Joseph Eichers

WOODY COVER For Wildlife

A Guide To Planting For Wildlife



Photo Credit: iStock.com/brentawp

Photo Credit: Christopher Tall, Wisconsin DNR

LOCATION

Relationship To The Landscape

A planting will attract some form of wildlife during its lifetime; however, a greater benefit is realized if recognition is given to existing travel lanes, undisturbed nesting cover, proximity to wetlands or food and watering areas. Ideally, winter food such as a food plot should be located close to a cover planting and preferably downwind. This provides easy access to food with a minimum of exposure to predators and winter weather. Adjacent, undisturbed grassy or herbaceous cover will provide insect food and secure nesting. Consider providing habitat that is under-represented in the surrounding areas, such as conifer cover in a hardwood forest or nut-producing trees in open areas.

Also, consider the proximity to power lines, roads or utility corridors not just during establishment but as the planting develops and matures.

Exposure

A well-located cover planting offers relief from mid-winter winds. East, south and moderately sloping west facing sites are preferred: avoid severe north and west-facing slopes. Also, more sunlight stimulates flowering and fruit development.

Soils

Most tree and shrub species require well-drained, sandy loam to loamy soils for best development and growth. Extreme sites such as those with very shallow soils (6 inches or less to bedrock), very dry soils or low fertility soils (excessively wet or poorly drained soils) are a challenge to establish. Properly matching tree species to these sites is important; working with a forester to determine which species prior to planting will be helpful.



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Existing Cover

There may be opportunities to use planted trees and shrubs to enhance existing cover such as old farm groves, fence lines, shrub wetlands or other woody cover areas. However, some open grassland areas are better left unplanted. Consult with your local wildlife manager for recommendations.

When enhancing woody cover, some existing trees and shrubs limit the development of the planting if left unchecked. Small trees such as elm and box elder will grow faster and eventually shade out your planting, lowering the growth and vigor of your new trees. Unwanted trees and shrubs should be removed prior to planting. Most Wisconsin deciduous trees and shrubs are prolific sprouters and in one year can grow 3-5 feet from cut stumps. To prevent sprouting, it's best to treat the stump with a recommended herbicide.



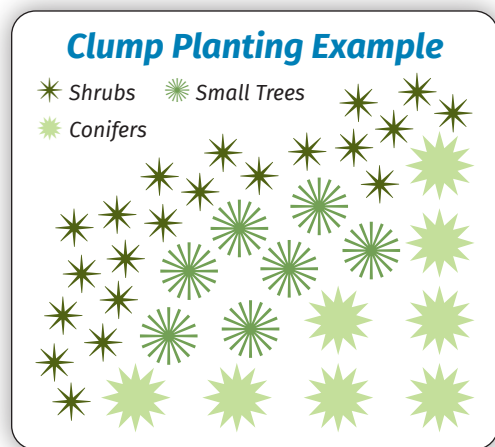
Photo Credit: Wisconsin DNR

A PLANTING PLAN

Once the location has been evaluated, species selection and arrangement can increase its attractiveness to wildlife.

Design

Planting in clumps is preferable over planting in narrow strips. A blocky shape will catch the snow on the north and west sides of the planting, with inner rows (usually conifers) providing shelter from weather and predators. Consider planting one or two rows of shrubs on the windward side of the planting to trap snow, and at least two rows on the downwind or protected side to provide resting or sunning areas.



Spacing

Adequate light is needed to encourage conifers to maintain lower branches and for shrubs or hardwoods to flower and produce fruit. Wider spacing will promote these branches and fruit.

Species Selection

Different species fill different needs for wildlife, including food and cover. The species descriptions in this publication provide more details on each species recommended for wildlife planting. Refer to these recommendations to enhance the wildlife needs on your property.

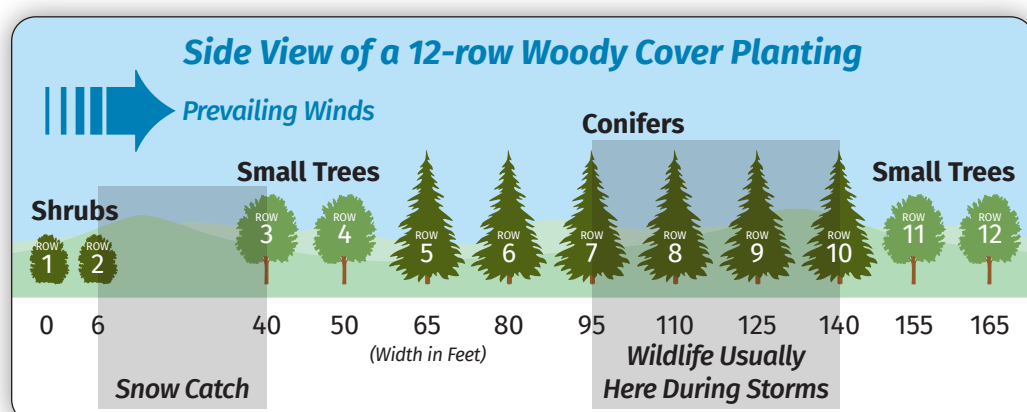


Photo Credit: Wisconsin DNR

SITE PREPARATION

Young seedlings need to be protected from existing vegetation after planting. Established grasses, broadleaf plants and woody vegetation can out-compete new seedlings for light, water and soil nutrients. Some can even produce a natural chemical that inhibits tree and shrub growth. Without some control efforts, even moderate vegetative competition can impact the success of tree survival and development.



Photo Credit: Timothy Hansel Nature Photography

Mechanical Site Preparation

You can set back grass competition in a planting site with a heavy sod by rototilling, fall plowing and/or discing in 6-foot-wide strips leaving undisturbed sod between rows. By minimizing the amount of soil you disturb, you reduce the threat of soil erosion and weed seed invasion by plants such as Canada thistle. Spring plowing is discouraged, as it will introduce air into the soil which can lead to desiccation (drying) of the roots of newly planted stock.

Chemical Site Preparation

Weed and grass competition can be controlled with selective herbicide use. Effective control depends on four factors:

- timing of application
- herbicide selected
- weather conditions
- application rate

Heavy sod can be controlled by a fall application of a post-emergent herbicide in the year before planting or after "green up" occurs in the spring before planting. Alternatively, a pre-emergent herbicide can be applied in the spring just after the trees are planted and before the existing grass cover has "greened up." Herbicides should not be allowed to come in contact with the tree roots. Prior to applying any chemicals to your planting, make sure to read the product label and follow the manufacturer's recommendations.

Planting a mixture of trees and shrubs on your property will attract a variety of different wildlife species. Shrubs, especially dogwoods and hazelnut, provide browse and cover for white-tailed deer. Shrub and hardwood flowers provide an important food source for a variety of insect pollinators. The fruit from prairie crab, American plum, highbush cranberry, juneberry and cockspur hawthorn are excellent sources for birds and small mammals. Conifers, such as white spruce or white pine, can be nesting and roosting areas, concealment for small mammals and a windbreak for cold protection in winter. Large hardwoods such as oaks, black cherry, hickory and aspen provide a food source consumed by many wildlife species.

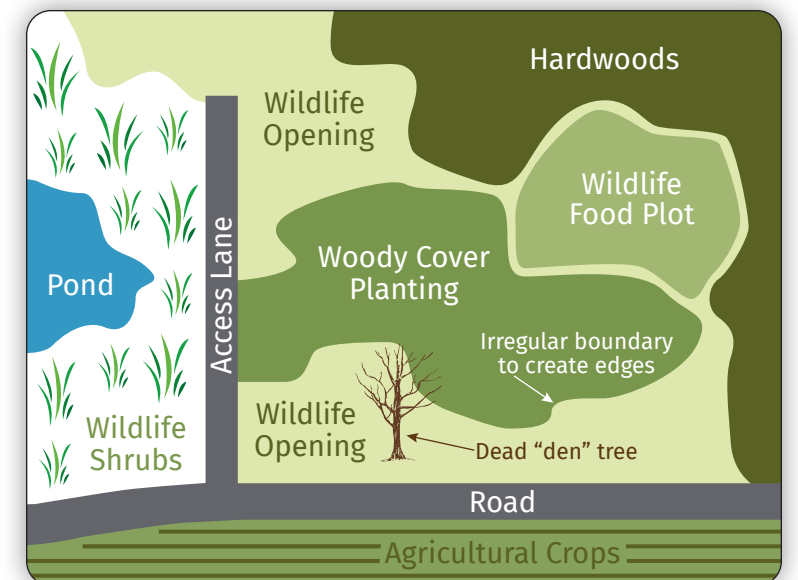
Planting a mixture of shrubs, conifers and hardwoods provide a diverse habitat, from food to shelter, that will attract and hold wildlife. Establishing different types of woody vegetation can be a rewarding and challenging undertaking; successfully establishing wildlife habitat on your land will create a legacy for the future.

Recommended Species And Spacing For Woody Cover Wildlife Plantings

Shrubs: Space plants 4 feet apart in rows and 6 feet apart between rows • American hazelnut, American highbush cranberry, dogwoods and ninebark

Small Trees: Space plants 8 feet apart in rows and 10 feet apart between rows • hawthorn, juneberry, prairie crabapple and wild plum

Conifers/Hardwoods: Space plants 12 feet apart in rows and 15 feet apart between rows • American basswood, aspen, spruce, white cedar, white oak and white pine



PLANTING TIME AND TECHNIQUE

Tree planting time in Wisconsin is April and May. Plant after the frost has left the ground, but before bud break and shoot elongation (late May). Before planting, it is best to mark the rows as a reminder of where the trees are planted for future weed control.

During planting, keep the roots moist. However, do not soak them in a bucket of water. A wet gunny sack laid over the roots in a tub or bucket is sufficient. In Wisconsin, tree planting machines are available (at a nominal fee) in most counties from the County Land Conservation Department or the Wisconsin DNR. These planters have a large plow-like shoe that penetrates the soil

and forms a narrow trench. The roots are placed in the trench and as the trench closes, the tree is held firm by packing wheels. It usually takes a 40-50 h.p. tractor to pull these planters, plus a three-person crew. The great advantage is that this system can plant 500-800 trees per hour.

Hand planting can be accomplished using a spade, #2 round shovel or planting bar. The planting hole should be deep enough to keep the roots from curling and the tree should be planted at the same depth as it was growing in the nursery. Pack the soil firmly so that there is no air space around the roots.



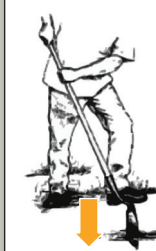
Photo Credit: Wisconsin DNR

CARE OF NURSERY STOCK PRIOR TO PLANTING

Once removed from the ground and packaged at the nursery, bare-root seedlings are a very perishable product. Care is needed to avoid drying out the root system and the buildup of high temperatures that can damage seedlings. Tree and shrub seedlings are shipped in bags or wax boxes. No root wrapping material is added. Therefore, air entering the bag or box will dry out the roots quickly. Ideally, seedlings should be kept in a cooler at 34-38°F until planting. Otherwise, short-term storage in a cool cellar is acceptable.

It is not recommended that the seedlings be taken out of the bag and heeled in. The more you handle these bare-root seedlings, the more damage is done to the hair-like root structures. The bags can be opened to inspect the seedlings for temperature buildup or dryness. If a temperature of greater than 60°F is observed, the seedlings should be removed from their container, cooled with cold water, repacked in the container, and then either planted soon after or stored in a cooler location.

Planting With A Spade



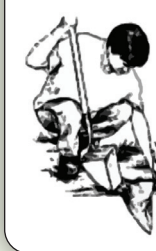
1. Insert a spade vertically into soil.



2. Insert spade at an angle to create a wedge of soil.



3. Lift out the wedge of soil.



4. Place seedling against vertical side of hole. Replace soil wedge, then step on wedge to firm.

Planting With A Planting Bar



1. Insert planting bar at an angle, then push forward to an upright position.



2. Place seedling at correct depth. Vertically insert bar 2 inches from seedling. Pull bar back, firming soil at bottom of hole.



3. Push bar forward, firming the remainder of the hole.



4. Fill remaining hold. Step on soil around seedling to firm.

POST-PLANTING MAINTENANCE

Woody cover plantings require nurturing and maintenance, especially in the early years. Protect your planting from livestock and fire. These young plants are especially attractive to cattle. Your investment of time and money is worth protecting with a fence.

Weed control in the first three years after establishment is very important. Within the first year, invading grasses and weeds can threaten a young planting. This weed control is best accomplished with herbicides, but cultivation, mowing,

mulches and hand weeding are all effective alternatives.

Although the purpose is wildlife habitat, some protection of the newly planted trees is needed for survival. The reduction of heavy grass buildup around the plants also reduces habitat for mice and voles. Perch poles can be used to encourage raptors that will feed on voles and mice. Deer damage may also be a concern in the early years; repellents, bud caps, fencing, tree shelters and hunting are options for limiting this damage.

Replace dead trees and shrubs every spring until you have 100 percent survival (especially when using the recommended spacing). Normally, replacement is made the following season and requires hand planting.

Newly planted wildlife plantings are subject to invasion by many undesirable species such as willow, box elder, elm, honeysuckle and buckthorn. Hand removal in the seedling stage with a sharp grub hoe is the most efficient way to remove them.



Photo Credit: Wisconsin DNR



Photo Credit: iStock.com/fpbirdman

SHRUBS



American Hazelnut

Completely winter-hardy throughout Wisconsin; prefers full sun. Grows in clumps, to 8 feet tall, at a medium growth rate. Individual clones gradually become very dense with closely packed stems. Nuts are readily eaten by deer, squirrels, jays, hairy woodpeckers and pheasants. Catskins are an important food for ruffed grouse.

Site Preference: Grows well on a variety of soils, but prefers loams.



American Highbush Cranberry

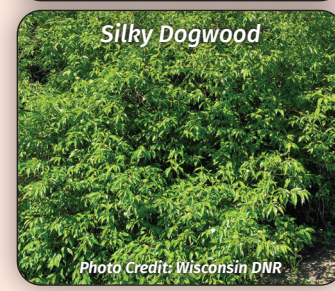
This moderately growing shrub is 10 to 13 feet tall at maturity. It produces attractive white flower clusters in May and bright orange-red fruits in September. Prefers full sun to partial shade. The persistence of the fruit throughout the winter suggests it is not very palatable to most birds. However, the fact that it is persistent makes it a valuable emergency food source in severe winters.

Site Preference: Grows well on a variety of soils, but prefers moist conditions.



Red-osier Dogwood

Photo Credit: Wisconsin DNR



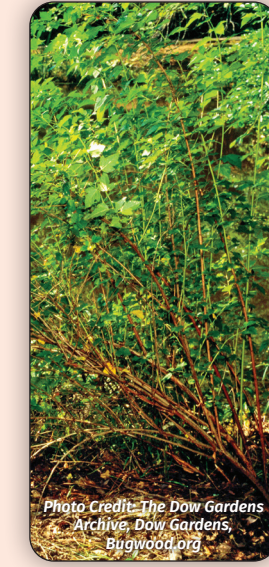
Silky Dogwood

Photo Credit: Wisconsin DNR

Dogwood (Red-osier & Silky)

These shrubs are winter-hardy throughout Wisconsin. They are multiple-stemmed, upright, fast-growing shrubs reaching 8 to 10 feet. Ample flowers in May provide insects a great source of nectar and pollen, while the fruit that follows after pollination produces small white berries (red-osier), and blue berries (silky) in August. Heavily browsed by deer. A preferred food of turkey, grouse, quail and a host of songbirds.

Site Preference: Grows well in most soils. Red-osier prefers wetter conditions; silky more well-drained.



Ninebark

Ninebark develops into a multi-stemmed, arching shrub about 10 feet tall at maturity. This moderately growing shrub exists statewide and can grow in full sun to shade. The bark peels into papery strips. The numerous clusters of white flowers attract pollinators in late May. The seed capsules that form in September feed songbirds while the ruffed grouse feeds on the buds.

Site Preference: Grows well on a variety of sites. One of the few shrubs that will tolerate very wet and very dry conditions.

SHRUBS

SMALL TREES



Prairie Crabapple

A hardy southern Wisconsin tree that prefers full sun. It grows to 10 to 20 feet in height. The tree is likely to have thorns with pink flowers. Its fruit is utilized by many species of birds and animals.

Site Preference: Grows well in well-drained, loamy soils.



Hawthorn

A small tree, growing up to 24 feet tall. They prefer full sun. The white flowers appear in May and the orange/red fruits mature in September. The branches can be covered heavily in sharp thorns. Ruffed grouse and numerous songbirds are attracted to the fruit.

Site Preference: Prefers well-drained, loam soils.



American Plum

Wild plum is a large shrub or small tree that frequently attains a height of 15 feet or more. It forms dense thickets, making it very valuable for bird nesting. Produces dense clusters of white flowers in May. One-inch globe-shaped red-orange to blue plums mature in August. American plum has spine-tipped twigs.

Site Preference: Grows well in well-drained, silt loam soils.



Juneberry/Serviceberry

Juneberry occurs throughout the state. It is a multi-stemmed small tree, growing 20 to 30 feet in height. The flowers have bright white petals opening in May or early June, and producing numerous red or purple fleshy fruits. High-quality plant for wildlife cover and food. Stems, twigs and leaves are browsed by deer, and fruits are eaten by a variety of birds.

Site Preference: Grows best along stream banks, lakeshores or in a variety of moist, loamy soils.

SMALL TREES

CONIFERS



White Pine

White pine grows statewide, and requires full sun to partial shade. The moderate growth reaches 70 to 100 feet in height. Songbirds and small mammals eat eastern white pine seeds. Snowshoe hares, white-tailed deer and cottontail rabbits browse the foliage; the bark is eaten by various mammals. Turkeys use these trees as roost sites.

Site Preference: Prefers well-drained, sandy loam soils, but will grow on almost any well-drained site.



White Cedar

Cedar grows throughout the state and can be planted in full sun to partial shade. This moderately growing tree can reach 50 to 60 feet in height. Northern white cedar provides food and shelter for wildlife. White-tailed deer, snowshoe hares and porcupines heavily browse the foliage.

Site Preference: Prefers moist conditions in low areas, but will grow well in uplands with heavier soils.



Black Spruce



White Spruce

Spruce (Black & White)

Found in northern Wisconsin, black spruce produces short blue-green needles with sharp points. Cones are two inches long and fall soon after they ripen in autumn. Except in dense forests, crowns extend well down the trunk, forming excellent escape cover for birds and mammals. White spruce occurs throughout the state and is slightly faster growing than black. White spruce provide good nesting sites, and seeds are eaten by some songbirds.

Site Preference: White spruce prefers cool, moist soils with good drainage. Black spruce prefers cool, lowland areas with wetter soils.

CONIFERS

HARDWOOD TREES



Aspen

Found in all parts of Wisconsin; one of the first species to appear after cutting or fire. A fast-growing, short-lived, small to medium-sized tree; may reach 60 to 70 feet tall. Bark, buds and new sprouts are all wildlife foods. Thick aspen stands are excellent cover, and best achieved by frequent cutting that stimulates thick re-sprouting. **Aspen is highly intolerant of shade.**

Site Preference: Prefers well-drained, sandy loam to loam soils, but is able to grow in rocky or sandy sites.



American Basswood

A large, fast-growing tree that inhabits a variety of sites. In May it produces an abundance of flowers for pollinators. The small, marble-like seeds provide food for many small mammals. Deer browse on its twigs when young and like to rub their antlers on it as it gets larger. A soft wooded, but long-lived tree that will often provide hollows within its trunk for many cavity-nesting birds and mammals.

Site Preference: Prefers well-drained, fertile, and moist sites.



Red Oak

Grows throughout Wisconsin on the better sites. Large, bitter acorns mature in the second year, are 1 to 1½ inches long with a blunt top and flat base. Acorns are an important winter food source for squirrels, deer, wild turkeys and several songbirds. Deer are very attracted to new plantings of red oak, so care will be needed to minimize browse damage. It is moderately shade-tolerant and fast-growing. Red oaks are very susceptible to oak wilt fungus.

Site Preference: Prefers well-drained, fertile and loamy sites, but can grow in sandy soils.



White Oak

Common on the better soils in the southern half of the state. When grown in the forest it is tall and straight, but when grown in the open it is short, with a wide-spreading, rounded crown. The acorn matures the first year, is ¾ to 1 inch long and is about ¼ enclosed in its cap. Acorns are a valuable fall food source for deer and many other wildlife with the white oak acorn one of the most highly sought.

Site Preference: Best growth on loamy, well-drained soil.

HARDWOOD TREES

Good luck with your woody cover planting. Enjoy the wildlife that you will surely see using it in the years to come.

For additional information on the importance of woody cover plantings for wildlife, contact your local Wisconsin DNR forester or wildlife manager, or visit bit.ly/PlantForWildlifeHabitat.

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