

TREE & SHRUB SELECTION GUIDE



Recommended Spacing for Shrubs

Minimum - 6' x 6'
Maximum - 8' x 10'

Recommended Spacing for Hardwoods and Reforestation

Minimum - 10' x 10'
Maximum - 20' x 20'

Number of Trees per Acre at Various Spacings

No. Trees	Spacing
1,210	6' x 6'
908	6' x 8'
889	7' x 7'
680	8' x 8'
544	8' x 10'
436	10' x 10'
109	20' x 20'

Windbreak/Screen

One Row:

Trees 6' - 20' in a row
Shrubs 3' - 8' in a row

Multiple Rows:

10' x 10' or 12' x 12'

Plantation Planting

Red Pine 6' x 8' or 7' x 7'
White Pine 8' x 8' or 10' x 10'
White Spruce 8' x 8' or 10' x 10'

Christmas Trees (all species) - 6' x 6', 7' x 7', 7' x 6'

Species	Hedgerow Planting		Clump Planting
	Single Row	Double Row	
Hazelnut	4' x 6'	6' x 8'	6' X 6'
Highbush Cranberry	4' x 6'	8' x 10'	8' x 10'
Nannyberry	4' x 6'	6' x 8'	8' x 10'
Crabapple	5' x 6'	6' x 10'	8' x 10'
Silky Dogwood	4' x 6'	6' x 10'	10' x 10'
Washington Hawthorn	6' x 8'	8' x 10'	12' x 12'
Christmas Trees (all species)	6' x 6'	7' x 7'	7' x 6'

Longevity:

Short-lived: less than 100 years
Moderately Short-lived: 100-150 years
Moderately Long-lived: 150-250 years
Long-lived: Over 250 years

Growth Rate:

Slowing-growing: Less than 1 foot/year
Moderately Slow-growing: 1-2 ft/year
Moderately Fast-growing: 2-3 ft/year
Fast-growing: Greater than 3ft/year

1. High species diversity is an integral part of a good wildlife landscaping plan. Food and cover are both important.

2. While some species will grow in shade almost all do better in full sun. Trees planted in the open will adopt a more bushy and less timber-type form.

3. A variety of species that provide food at different times of the year will attract the greatest number of wildlife. Fruits that may not be immediately desirable, but persist on trees or shrubs until they are needed as food, are extremely important for late winter survival.

Showy Flower Species

American Mountain-ash, Hawthorn, Highbush Cranberry, Black Elderberry, Silky Dogwood, Juneberry, Crabapple, Apple, Black Cherry, Ninebark, Red Elderberry, Pin Cherry, Thicket Creeper, Basswood, Chokecherry, Meadow-sweet, and Canada Plum.

Coniferous Trees

1. **Jack Pine** (*Pinus banksiana*) - A medium-sized often scrubby tree reaching heights of 50 feet. Shade-intolerant. Moist to dry sand and loam soils. Characteristic of excessively drained, dry, sterile, acidic soils but found on heavier soils. Important pioneer species in building up depleted sites.
2. **Eastern White Pine** (*Pinus strobus*) - A long-lived fast-growing tree which reaches heights of 80-100 feet. Moderately shade-tolerant. Seedlings grow best when placed in partial shade. Best adapted to moist sandy loam soils but will grow on a variety of sites from swamp to dry sand. Tall straight-stemmed picturesque tree that is valuable for its lumber as well as for the cover and food it provides wildlife.
3. **Red Pine** (*Pinus resinosa*) - Fast-growing, long-lived tree to 80 feet. Shade-intolerant. It grows best on well-drained sandy loam soil. Does not tolerate a high water table. Excellent tree for reforestation on poor sandy sites. Important timber tree with distinctive reddish bark.
4. **Hemlock** (*Tsuga canadensis*) - Very long-lived, very slow-growing large tree to 90 feet. Highly shade-tolerant. Usually found on cool moist sites. Open-grown trees are graceful in form and provide excellent backdrop for maples. Mature trees are not always windfirm. Abundance of seed every 2-3 years provides winter food for small mammals and songbirds like redpolls.
5. **Balsam Fir** (*Abies balsamea*) - Medium-sized tree that attains heights of 60 feet. Slow-growing; short-lived; highly shade-tolerant. Prefers wet to moist sand and loam soils and also well-drained organic soils. Popular Christmas and wreath tree since the needles persist longer than the spruces.
6. **White Cedar** (*Thuja occidentalis*) - Small to medium-sized tree to 60 feet. Very slow-growing. Shade-tolerant but does best in full or partial sun. Prefers moist, deep, rich organic soil, but will inhabit dry upland sites. Not found in upland acidic soils. Adapted to clay and sand soils. Wood is commercially valuable due to its variety of uses. Favorite deer shelter and food.
7. **White Spruce** (*Picea glauca*) - Medium-sized to large tree reaching heights of 80 feet. Moderately shade-tolerant but grows best in full sun. Found on clay, sand and loam soils where moisture conditions may vary from moist to dry. Prefers well-drained sandy loams. Resistant to drought. Straight-stemmed and narrow-crowned.
8. **Tamarack** (*Larix laricina*) - Fast-growing, medium-sized tree to 70 feet. Short-lived; shade-intolerant. Tolerates both acid and basic lowlands - it grows slowly in swamps. Will grow on well-drained or poorly drained soils, but prefers soils with a high organic content. Found on drier sites where there isn't too much competition. Delicate needles turn golden yellow in autumn before dropping. Hard, strong, durable wood.

Vines

Thicket Creeper (*Parthenocissus inserta*) - High climbing or trailing perennial woody vine to 30 feet. Moderately shade-tolerant. Moist to dry soils - will inhabit a broad range of soil types. Attractive foliage make this an excellent ornamental for fence, trellis or can be allowed to climb trees. Fruit ripens in September or October and is much sought after by game birds, songbirds and small mammals.

Deciduous Trees

1. **Black Cherry** (*Prunus serotina*) - A moderately fast-growing, moderately long-lived tree to 60 ft. Shade-tolerant in youth, becoming intolerant as it matures. Does best on rich moist loams. Will not tolerate poorly drained soils. Purple black fruit which ripens in late summer makes an excellent jelly and is relished by grouse, songbirds and a variety of mammals. Prized for its beautiful wood.

2. **Juneberry** (*Amelanchier arborea/canadensis*) - Slow-growing, moderately long-lived small tree to 30 feet. Best growth in full sun but will tolerate some shading. Grows on variety of sites but not wet soils. Numerous white flowers announce the end of winter. Edible fruit juicy and tasty and relished by grouse, songbirds, and small mammals.

3. **Beech** (*Fagus grandifolia*) - Slow-growing, long-lived tree to 80 feet. Very shade-tolerant. Will tolerate a variety of soils but does best on rich, moist, well-drained loam. Highly prized shade and landscape tree. Beechnuts, of which there are good crops only every few years, are a favored wildlife food and also provide an edible nut for the patient human.

4. **Chestnut** (*Castanea dentata*) - Prized ornamental and lumber tree attaining heights of 90 feet. Shade-intolerant. Fertile sand or sandy loam soils. Not for clay soils. Although we are north of its native range, it is hoped that isolated plantings will survive the chestnut blight.

5. **White Birch** (*Betula papyrifera*) - Familiar and handsome shade and ornamental tree to 80 ft. Fast-growing and shade-intolerant. Found on a great variety of soils but prefers moist sandy loams in a pH range of 5.0 to 8.0. Well-drained to somewhat poorly drained soils. Grouse utilize buds.

6. **American Mountain-ash** (*Sorbus americana*) - Attractive small tree to 30 feet. Slow-growing; short-lived. Moderately shade-tolerant - it grows best in full sunlight. Tolerates highly acidic, purely organic soils. Characteristic of moist to wet areas. Showy floral display in late spring is followed by bright red berries in September to October. Berries are favored by grouse and songbirds and persist on the tree through winter.

7. **Red Oak** (*Quercus rubra*) - Moderately fast-growing large tree that thrives on rich, moist soils but also grows on sandy sites. Long-lived, it reaches heights of 70 feet and does best in full sun or light shade. Desirable street and lawn tree as it is tolerant of salt. Acorns taken by grouse, squirrels, deer and other wildlife.

8. **Bur Oak** (*Quercus macrocarpa*) - Slow-growing, long-lived tree to 80 feet. Highly drought tolerant. It prefers full sun on a moist site but is moderately shade-tolerant and does grow on a broad range of soils. It is found on wet clay soils and also those that are inundated in spring. Somewhat rough appearance makes it less desirable as an ornamental but the acorn is sweet and edible and is much prized by wildlife.

9. **Sugar Maple** (*Acer saccharum*) - Slow-growing, long-lived tree to 90 feet. Very shade-tolerant. Thrives on a diversity of soils but rarely in swamp habitats. Prefers a moist well-drained clay or loam, but will grow on sandy sites. The upland maple of the sugar bush, it is widely planted as an ornamental and shade tree.

10. **Red Maple** (*Acer rubrum*) - Fast-growing and moderately long-lived tree reaching heights of 70 feet. Shade-tolerant. Found in all sorts of woods, it prefers a wet to moist poorly drained sand or loam soil. This is a well named tree as the flowers, young fruit and autumn foliage are a brilliant red. Often planted as a shade tree.
11. **Basswood** (*Tilia americana*) - Moderately slow-growing large tree to 80 feet. Shade-tolerant but should be planted in full or partial sun. Adaptable to sites that vary from well-drained to somewhat poorly drained. Prefers moist nutrient-rich sand to loam soils. Blossoms are especially attractive to bees. Fruits mature in September or October and persist, providing food for grouse and squirrels. Plant 2 or more for pollination.
12. **White Ash** (*Fraxinus americana*) - Fast-growing and moderately shade-tolerant tree that attains heights of 80 feet and diameters of 2-3 feet. Moderately long-lived. Grows on upland sites in a variety of soils. Does not tolerate poorly drained sites. A valuable timber tree partially due to the unique qualities of the wood.
13. **Green Ash** (*Fraxinus pennsylvanica*) - Medium-sized tree to 45 feet. Shade-intolerant and fast-growing; moderately long-lived. Characteristic of sites that are poorly drained or flooded during the spring or that have periodically high water tables. More branchy than white ash and widely planted as shade, ornamental and shelterbelt tree.

Shrubs

1. **Canada Plum** (*Prunus nigra*) - Relatively slow-growing; relatively short-lived; shade-intolerant. Shrub or small tree that reaches heights of 18 feet. Suckers to form thickets. Moist to dry sites on well-drained sand or loam. Prefers rich soils. Showy flowers in May or June. Sour but edible fruit at one time much prized for jellies and preserves. Thorny branches provide shelter for small mammals and birds, both of which enjoy the fruits. Similar to American plum but this is the more northern species.
2. **Washington Hawthorn** (*Crataegus phaenopyrum*) - Low wide-spreading tree or shrub to 20 feet. Shade-intolerant. Adapted to a broad range of soil types including clay soils. Will grow on sites water-logged in spring. Conspicuous flowers appear in May or June. Compact crowns and thorns provide nesting cover. Red fruits consumed by upland game birds, songbirds, fur and game animals, deer and cattle. Fruit availability is fall-winter.
3. **Meadow-sweet** (*Spiraea alba*) - Shade-intolerant. Wet meadows, swamps and shores. Flowers in July to August. Flowers persist through winter. Excellent butterfly and bee plant.
4. **Highbush Cranberry** (*Viburnum trilobum*) - Attractive shrub growing to heights of 15 feet that will tolerate a high degree of shade once established. Tolerates a broad range of soil types including wet clay sites. Prefers a moist site in the open or in partial shade. Produces handsome clusters of white flowers. The bright scarlet berries are winter food for ruffed grouse.
5. **Nannyberry** (*Viburnum lentago*) - Attractive fast-growing tall shrubs to 25 feet. Will sucker to form thickets and provide wildlife cover. Moderately shade-tolerant. Grows on a broad range of soil types. Produces creamy white flowers in showy clusters in May or June. Fruit ripens in September and will persist into winter but is usually taken sooner by wildlife.
6. **Silky Dogwood** (*Cornus amomum*) - Short multi-stemmed shrub to eight feet. Shade-intolerant. Very versatile shrub that tolerates poor soil conditions and poor drainage. Clone forming. Useful for streambank stabilization. Fruit utilized by ruffed grouse, songbirds and wood ducks.

7. **Beaked Hazelnut** (*Corylus cornuta*) - Erect bushy shrub to 12 feet. Growth favored by ample light and moderate moisture on light soils such as sandy loams and loams. Male catkins provide a rich protein source for ruffed and sharp-tailed grouse. The nut is edible if you can beat the chipmunks to them. It's a smaller version of the commercially grown filbert. Plant two or more for pollination. Common hazelnut (*Corylus americana*) is very similar in appearance, but lacks the tubular "beak" surrounding the clusters of 2-4 nuts.
8. **Chokecherry** (*Prunus virginiana*) - Tall shrub that reaches heights of 12-25 feet. Grows best in rich and well-drained moist soil with full sunlight but also found in shade on poor dry soils. Sandy loam is best but found almost anywhere except wet ground. Abundant flowers; fruit in July to September. Will spread by suckering to form nesting thickets and is used by many species for food and cover. Well named as its fruits are extremely bitter although the juice mixed with apple or other sources of pectin makes a fine jelly.
9. **Ninebark** (*Physocarpus opulifolius*) – Small, much branched shrub to 10 feet. Shade-intolerant. Banks of streams, shores and in swamps and swales farther from borders of water. Showy flowers but because of coarse winter appearance usually used as borders and screens. Handsome when in flower. Fruit in August to September, persisting into winter.
10. **Black Elderberry** (*Sambucus canadensis*) - Fast-growing shrub to 12 feet. Will reproduce vegetatively and produce excellent nesting cover. Grows in full sun or partial shade. Best growth in well-drained soils but does tolerate saturated soils. Rarely found on dry upland sites. One of the best wildlife shrubs as at least 80 species of birds and mammals relish the fruit. Better as a background shrub since it often has an unkempt irregular crown. Fruits ripen from August to September and are used in pies, jams and wine.
11. **Red Elderberry** (*Sambucus pubens*) - Erect shrubs to 12 feet. Fast-growing in full sunlight; slow-growing in shade. Less adapted to wet soils than black elderberry; more tolerant of dry sites and less apt to form thickets. Small red fruit used in jellies, wines and by wildlife.
12. **Pin Cherry** (*Prunus pennsylvanica*) - Shade-intolerant small tree to 30 feet. Fast-growing; short-lived. Usually found in open disturbed uplands. White flowers in May or early June. Sour fruit widely utilized by game and other animals. Grows on many upland soils including infertile sand. Will sprout from roots to form small clones.

Apple Trees

1. **Apples** (*Malus sp.*) - Height from 18-30 feet. Moderately shade-tolerant but should be planted in full sun. Slow growing; moderately long-lived. Does best on a light fertile soil that is well-drained. Will not grow in wet heavy clay or pure sand soils. Fruits, buds, and flowers utilized by a variety of wildlife.
2. **Crabapples** (*Malus sp.*) - Height from 12-30 feet. Best planted in full sunlight. Varieties like Manchurian able to tolerate clay soils. Some like Dolgo or Chestnut produce a fruit suitable for eating or jelly while others such as Siberian produce a small fruit more suitable for grouse and songbirds.