

Choosing Landscape Evergreens

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Horticulture

Planting and caring for evergreens requires a considerable investment of time and money, and so it is important to make the right decisions when choosing landscape evergreens.

To choose wisely, you need two kinds of information. First, you need to know enough about each plant's size at maturity, shape, and year-round appearance to decide whether the plant will serve your purpose. Second, you must be sure that any species or variety you consider can grow vigorously in the climate and site conditions of the property you intend to develop. This publication provides guidelines to help you select evergreen trees and shrubs for Minnesota landscaping.

Learning about the habits and needs of evergreens is worth the effort. Nursery-grown evergreens of landscape grade are expensive. Years of care are required to produce well-shaped tops and ample root systems restricted enough for easy transplanting, whether balled and burlapped or container-grown. More years of care are required to develop evergreens to mature beauty in a new site. If you make the right choice at the beginning, not only will you save time and money, but your landscape evergreens will serve a useful purpose, be it to provide year-long beauty or to give shelter.

Evergreens As Design Materials

An obvious consideration in choosing evergreens is how they will look in the landscape. You need to take into account each plant's size at maturity, shape, color, texture, and contribution to a harmonious landscape design.

Size

Most Minnesotans admire and appreciate native evergreens in the state's forested lands. Pine, spruce, fir, and arborvitae, whether frosted with snow or tipped with new spring growth, symbolize the beauty of the north. As many vacationers can remember, these native species can be enormous trees at maturity. When spruce, fir, or arborvitae are grown in unrestricted spaces, they cover a

wider and wider circle over the ground as they develop, often reaching 30 feet across. Pines are also cone-shaped as young trees, but as they mature to an irregular shape they often lose lower branches, leaving open space beneath. They can reach 50 feet or more in height and their roots fill a large circle of soil under their foliage, making it difficult to grow turf and other plants. Most home properties have limited space for evergreen trees 40 to 50 feet high, occupying 30 feet at the base. One large evergreen tree with thick foliage touching the ground can shelter the northwest exposure of most town or suburban home properties, but it may be too large for a city lot. Where a group of evergreen trees might seem more effective than just one tree, a good choice would be the smaller upright junipers or columnar arborvitae because they are often more in scale with residential sites. These evergreens will mature at 20 to 30 feet, with a spread of 5 to 10 feet, depending on the variety.

Evergreen shrubs also require careful spacing, especially since they are so often planted at doorways or at the base or foundation of a house. Juniper shrubs with horizontal shapes can spread to five or six feet in a few years; heights vary considerably according to the cultivar (cultivated variety). An 18 inch-high Skandia Juniper is far more useful under a groundlevel window than its 5-foot relative, Savin Juniper. Japanese Yews are often pruned tightly to keep them at a desired height or width, but some selections will grow into 20-foot trees or very wide shrubs over time.

It is important to remember that plants for sale in nurseries are young--small enough to handle and offer at a price customers will pay. Differences in these evergreens are not apparent to customers unfamiliar with variety names. Do not make the mistake of expecting Welch Juniper or Pyramid Arborvitae to remain the dwarf shrubs they appear to be in the nursery sales lot. Check the catalogs, ask for fact sheets at your county extension office, consult with experienced nursery people, and study plantings in your own community. You need to know which tree or shrub best fits the space you want to fill with evergreen foliage.

Shape

Evergreen trees and shrubs are conspicuous and dominant in landscape designs because of their strong shapes, dense foliage, and dark, heavy effect. These qualities influence the way people respond to spaces landscaped with evergreens. Crowded, upright forms blocking windows can smother a building with oppressive foliage. Too many evergreens can make an outdoor space gloomy and depressing. On the other hand, a south-facing mass of pines can form a winter suntrap, reflecting light and pleasant warmth to a driveway, walk, or house beyond. The strong outline of a columnar evergreen can call attention to a view or emphasize a pathway. But such an exclamation point is not suitable for framing a garage door or calling attention to a power pole. A soft, horizontal line of spreading junipers or yews without any distraction of varying shapes or sizes can be a satisfying transition from house wall to ground level.

Color and texture

The different colors and textures of foliage, bark, cones, or berries should also be considered in selecting evergreens. There are silvery blue juniper varieties (trees, shrubs, or ground covers) that are often effective as a contrast to redwood surfaces. Dark green Japanese Yew, the female plants bearing red berries in fall and winter, are handsome against many colors of brick. Scotch Pine's cinnamon-orange bark and bluish green needles are prettier in winter than the purplish brown Eastern Redcedars. Deep green spruce or Balsam Fir contrasted with Red Maples present a pleasing scene.

But color and texture variations must be carefully used. Soft foliated yellow-green arborvitae do not blend well with stiff Colorado Blue Spruce. Any closely planted mixture of textures and shades of green will appear not as a harmonious group but as a crowded collection of indi-



Globular. For accent in foundation plantings. Arborvitae - Globe; Juniper - Globe; Pine - Mugo.



Medium, spreading. For foundation plantings. Juniper - Pfitzer, Maney, Mint Julep; Yew - Japanese Spreading.



Upright, columnar. For individual or foundation plantings. Arborvitae - Pyramid, Techny; Juniper - Blue Haven, Sutherland; Yew - Upright.

vidual trees. Plant conspicuous evergreens only occasionally, when an eye-catching specimen is particularly needed.

Landscape design

Landscape plantings, whether for home properties or large public grounds, are most satisfying when a clear pattern is apparent to people using the space. Simplicity and serenity are important for outdoor design. Use the fewest possible varieties of evergreen plants and select them for an obvious purpose. For example, you may want them to provide four-season beauty and year-round privacy for outdoor living spaces or views from windows and glass walls. Or you may need protection from the elements. Massed evergreens block noise and provide shelter for people, buildings, gardens, and wildlife against strong winds and driving snow. Evergreen windbreaks and shelterbelts have long been used for Midwestern farmsteads, with resulting higher winter temperatures, lower wind velocities, and more convenient snow accumulations. Old mature pines can broaden to furnish shade, and their needles underfoot provide a quiet and soft surface. Large spruce and fir can be dramatic specimens in park-like spaces. Closely planted upright junipers or arborvitae can be impenetrable hedges, either for protection against trespassers or as a background and windscreen for flowers. Dwarf evergreens can give stability and substance to rock gardens, borders, and entrance plantings where strong shapes and year-round foliage are needed to complement softer flowers and deciduous shrubs.

Climate And Site Requirements

Cold hardiness is the first test a plant must pass to be considered suitable for Minnesota landscaping. The USDA plant hardiness map is a standard reference for approximate ranges of average annual minimum temperatures (see map). Minnesota is divided roughly in half between Zones 3 and 4,

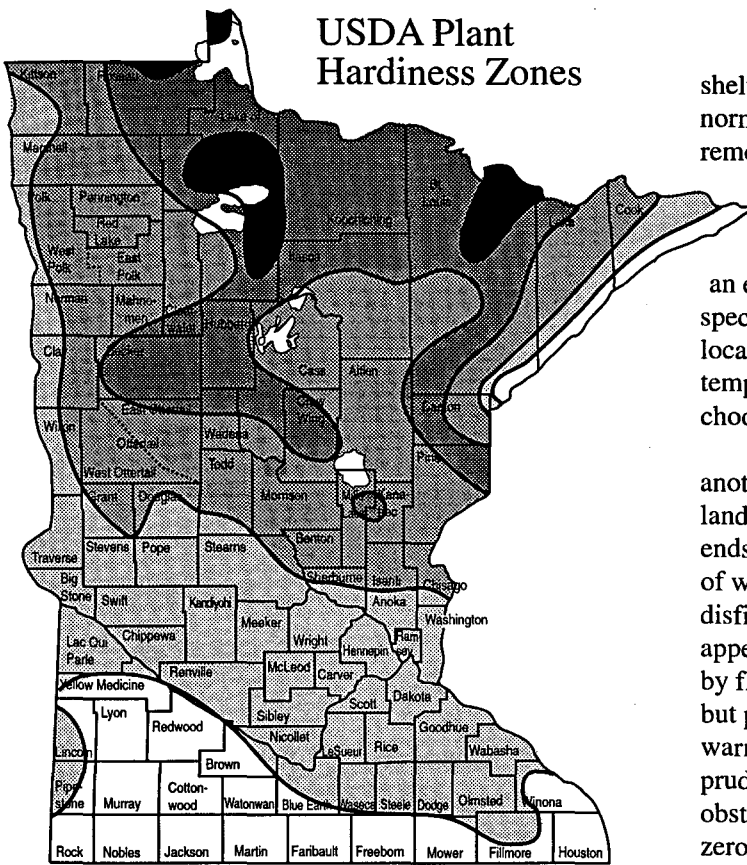


Large, upright. Recommended for specimen and accent planting. Pine - Austrian, Scotch; Spruce - Black Hills, Colorado; Fir - Douglas, Concolor.



Low growing. Recommended for ground cover. Juniper - Andorra, Arcadia, Buffalo, Hughes, Wilton Carpet.

USDA Plant Hardiness Zones



Average Annual Minimum Temperature

Temperature (C)	Zone	Temperature (F)
-40.0 to -42.7	2b	-40 to -45
-37.3 to -40.0	3a	-35 to -40
-34.5 to -37.2	3b	-30 to -35
-31.7 to -34.4	4a	-25 to -30
-28.9 to -31.6	4b	-20 to -25

with a strip of Zone 4's milder temperatures along the shores of Lake Superior and pockets of zone 2 in the far north.

The northern United States is not all in the same zone. The climate of the Pacific northwest or New England, for instance, is modified by ocean currents and mountain ranges, whereas Minnesota is exposed to winter blasts of Arctic air. Many plants listed in nursery catalogs as suitable for northern states or Canada do not survive in Minnesota. Reputable mail-order nursery firms identify zones of cold hardiness in their catalogs, and experienced Minnesota nursery people can offer firsthand information on winter survival of evergreen plants.

But the large-scale temperature zone divisions are sometimes not precise enough for choosing evergreens for long life and vigor. Plants may grow well in extreme southern Minnesota and freeze out in Minneapolis, although both are in Zone 4. Evergreens exposed to wind on hilltops or on the western sides and corners of buildings are stressed both by cold and drought. Plants in a

sheltered setting may grow in localities outside their normal hardiness zone, but an extremely cold winter may remove such exotics from the landscape. The term "microclimate" is used to describe these smaller-scaled differences in growing conditions. Thus, using a hardy plant such as Mugo Pine or Savin Juniper in an exposed location is safer than planting a less tolerant species. Black Hills Spruce will grow well in colder, dryer locations, but White Fir needs a moist, rich soil and milder temperatures. These differences may be important when choosing a specimen evergreen tree for your property.

In addition to survival, resistance to injury is another cold hardiness requirement for evergreens in a landscape. Tip-kill dieback of upper shoots and branch ends) and winter burn (browning of foliage) are symptoms of winter damage. Although the plants live, they are disfigured until pruning and new growth can improve their appearance. During some winters, evergreens are damaged by fluctuations in temperature that cannot be prevented, but planting evergreens in locations exposed to the warmth of the afternoon sun on bright winter days is not prudent. When the sun goes down, or moves behind an obstruction, the plant may suddenly be plunged into sub-zero cold, with resulting damage. If an evergreen is needed in such an exposed place, check with local nurseries and observe successful plantings in your own community before choosing a variety. Maney Juniper, for instance, seems to be more resistant to winter burn than Pfitzer Juniper or Japanese Yew. Welch Juniper is usually less affected by tip-kill than Spiny Greek or Irish Juniper, both sometimes attempted in Minnesota.

Soil and moisture requirements of evergreens hardy in Minnesota vary enough to allow selections for many different site conditions. Available moisture is as important as temperature for plant hardiness. Well-watered evergreens often survive when other plants fail, but those struggling through a dry summer in weakened condition are often dead after a cold winter. Dwarf junipers and Japanese Yew in foundation plantings close to house walls, or overhung by wide eaves, often die from this combination of drought and cold.

More rainfall and snowmelt usually occur in eastern Minnesota than in the west, but within each area there are soils that differ in their ability to hold moisture for plant growth. Sandy soils are droughty, while silts and clays may be so poorly drained that some plant roots lack sufficient oxygen. Well drained loams are ideal for most evergreens, but pines and junipers are more tolerant of sandy, dry conditions than spruce, fir, and arborvitae. Heavy soils, if drained, grow magnificent White Fir at Worthington and Colorado Spruce at Slayton, both in southwestern Minnesota. Arborvitae and Black Spruce

Evergreens for Problem Sites

Clay soil	Arborvitae, Austrian Pine, Ponderosa Pine, White Fir, Colorado Spruce
Sandy soil	Jack Pine, Mugo Pine, Norway Pine, Scotch Pine, Junipers
Wet soil	American Arborvitae, Balsam Fir, Black Spruce
High pH	Arborvitae, Black Hills Spruce, Colorado Spruce, Mugo Pine, Ponderosa Pine, Junipers
Windy, exposed	Black Hills Spruce, Jack Pine, Mugo Pine, Pine, Ponderosa Pine, Rocky Mountain Juniper, Savin Juniper, Eastern Redcedar
Partial sun Shade	Arborvitae, Balsam Fir, Douglas Fir, Canada Hemlock, Canada Yew, Japanese Yew

will grow in the wet soils of ditch banks, low-lying spots, pond edges, and lake shores, where other evergreens fail. Balsam Fir grows well in locations that are damp for part of the year.

Most Minnesota soils are fertile and acid enough for evergreens suited to existing temperature and moisture conditions. However, soils of western Minnesota, and other places where limestone is the underlying rock, may have a high pH¹. This condition may cause a tie-up of soil iron, stunting the plant and yellowing the foliage. Arborvitae, junipers, Ponderosa Pine, and White and Colorado Spruce are generally tolerant of the higher pH soils in Minnesota.

One way to improve your chances of growing healthy evergreens even without an ideal microclimate is to copy forest conditions. Evergreens in nature are mulched by their own fallen needles and other forest litter. Soils are usually moist, modified with rotting organic matter, and protected against sudden temperature changes.

If your landscape design can include mulched planting areas to improve soil-moisture relationships and prevent competition from weeds and grass, your evergreens will grow better. Extra watering will still be needed in dry weeks during the growing season, but plants will not be stressed as much as those growing over bare ground or mowed lawn.

Light requirements for healthy evergreen growth must be accommodated by selecting the appropriate plant for each location. Canada Hemlock, Japanese Yew, and Canada Yew will grow in shade in Minnesota. However, Canada Hemlock requires shelter from wind and a moist soil. Canada Yew is not usually available in commercial nurseries. Several successful cultivars of Japanese Yew are offered by Minnesota nurseries, but moisture and protection from winter sun are usually advised for these plants. American Arborvitae varieties will tolerate partial shade, but develop more vigorously in open sunlight. They may need early replacement if grown in dark places. If other conditions are suitable, Balsam Fir, White Pine, and Douglas Fir will grow where light may be filtered for part of the day. Junipers, spruce, and all other pines need full sunlight. Shape, growth rate, color, and pest tolerance are all diminished by planting these species under other trees or in the shadow of buildings.

Disease and Insect Problems

Pest resistance is another topic worth studying before choosing landscape evergreens. No tree or shrub is completely immune to insect or disease attack, but experience with evergreens commonly grown in Minnesota has proved some to be less susceptible than others. Proper location and good cultural practices are often extremely useful in minimizing pest damage. However, investigating the probability, symptoms, and necessary control measures of frequent pests can help you select evergreens to fit your maintenance plans. Consult your local Minnesota Extension Service office, the Minnesota Landscape Arboretum, or local nurseries about pest problems with any evergreen tree or shrub you are considering.

¹ pH is a measure of acid-alkaline conditions on a scale of 1 to 10, with 7 being neutral and 5 to 6.5 (acid to slightly acid) best for evergreen growth.

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