

1997

EC97-1760 Nebraska Conservation Tree Program

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Nebraska Conservation Tree Program

The Nebraska Natural Resource Districts distribute tree and shrub seedlings for windbreaks, erosion control, wood products, Christmas trees, wildlife habitat, and other conservation purposes. These trees are not to be used for ornamental purposes or resold with the roots attached.

This booklet contains color pictures and descriptions of most of the species distributed. *Table I* describes the different soil characteristics across Nebraska. *Table II* is a quick reference of species recommendations. This information will help rural landowners select the proper species for their particular plantings needs. You may also scan an index of the trees this booklet describes.

Ordering Information

You can order seedlings by contacting the Natural Resource District nearest you. If you do not know your Natural Resource District you may contact the Nebraska Association of Resource Districts, 601 South 12th Street, Lincoln, NE 68508 Phone: (402 471-7670 E-mail: nard@nrcdec.nrc.state.ne.us. The seedlings are usually shipped during late March and April.

Species Description

Eastern Redcedar

Eastern Redcedar (*Juniperus virginiana*) is native to Nebraska. It is highly adapted to a wide range of sites and has the highest survival rate of any conifer planted in Nebraska. Its deep roots and small leaf surface make it very drought resistant. The foliage turns a russet color in winter. It is the primary species in most windbreaks.

Two foliage diseases, *Cercospora* blight and

Phomopsis blight, can cause substantial defoliation and kill redcedar if not controlled. *Cercospora* blight is common and widespread. A third foliage disease, *Kabatina* blight, can kill branch tips but is not a serious concern. Spider mites occasionally cause damage, and young trees may require protection.

Seed source: Anselmo and Tecumseh, Nebraska. The Tecumseh source was selected for disease resistance primarily for eastern Nebraska.



Rocky Mountain Juniper

Rocky Mountain Juniper (*Juniperus scopulorum*) is native to northwest Nebraska. It is similar in appearance to eastern redcedar. It's drought resistant, prefers slightly alkaline soils, and retains a bluish-green color throughout winter. It is best used on the north and west outside rows in windbreaks.

Rocky Mountain juniper is subject to the same insect and disease problems as eastern redcedar. Rocky Mountain juniper is more susceptible than eastern redcedar to *Cercospora* blight, which is very common in eastern Nebraska. Rocky Mountain juniper is not recommended for planting in the eastern half of Nebraska.

Seed source: Wasta, South Dakota.



Ponderosa Pine

Ponderosa Pine (*Pinus ponderosa*) is native to northwest and northcentral Nebraska. Needles are grouped in threes, and sometimes pairs, 5 to 10 inches long. Cones are 3 to 6 inches long and each scale is armed with a sharp recurved spine. It can withstand prolonged drought and is the best pine to use on severe sites. It is best used in east and south inside rows of windbreaks.

Zimmerman pine moths and Sphaeropsis (Diplodia) blight can be serious problems and can kill or deform trees if not controlled. Pine tip moths can stunt growth by killing branch tips and Dothistroma needle blight can occasionally cause defoliation if not controlled.



Selected seed source: Valentine and Ainsworth, Nebraska and Rosebud, South Dakota were selected for fast growth.

Austrian Pine

Austrian Pine (*Pinus nigra*) has pairs of needles 4 to 6 inches long. The needles are generally stiff, with the ends being very sharp to the touch. Originally introduced from Europe as an ornamental, it has considerable value in windbreaks and as Christmas trees. Austrian pine is best used in east or south inside rows of windbreaks.

Austrian pine is very susceptible to Sphaeropsis (Diplodia) blight and Dothistroma needle blight and moderately susceptible to Zimmerman pine moths. Sphaeropsis blight and Zimmerman pine moths can seriously deform or kill trees if not controlled. Dothistroma needle blight can cause substantial defoliation in wet years or when trees are closely spaced if not controlled. Pine tip moths are occasionally a problem.

Selected seed source: Nebraska Forest Service seed orchard. Trees of Yugoslavian origin were selected for disease resistance.

Scotch Pine

Scotch Pine (*Pinus sylvestris*) a native of Europe, is widely planted as a Christmas tree. Older trees have orange-colored bark in the crown.

This species is not as drought resistant as ponderosa pine, Austrian pine or jack pine. It is best used in east or south inside rows in windbreaks. Sphaeropsis (Diplodia) blight, and the foliage diseases brown spot and Naemacyclus needle cast, can damage the tree severely if not controlled. It also is subject to pine tip moth and Zimmerman pine moth injury.

Selected seed source: Nebraska Forest Service seed orchard of selected individual trees. Individuals were selected for form and color.

Jack Pine



Jack Pine (*Pinus banksiana*) is native to Canada and the Lake States. Needles are in pairs 1 to 2 inches long and are usually twisted. Cones are 1 to 1 1/2 inches long and persistent for many years. It is drought resistant and can be planted on a wide variety of sites, but is not recommended for limestone soils. It is best used on inside rows of windbreaks in central and western Nebraska, or as outside rows in eastern Nebraska. The jack pine's general pyramidal form and persistent branches makes it a good substitute for eastern redcedar.

Jack pine has no serious diseases, but pine tip moths can be a problem.

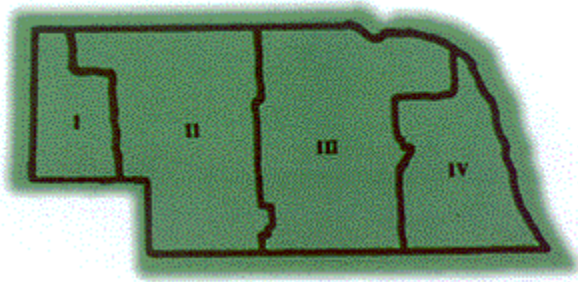
Selected seed source: Wisconsin. Selected for fast growth.





Nebraska Vegetative Zones

Figure 1. Nebraska Precipitation Zones



Annual precipitation has a direct influence on rate of growth, life span, and space requirements of trees. Nebraska is divided into four vegetative zones as indicated in *Figure 1*.

Table I. Conservation Tree/Shrub Soil Suitability Groups

Group 1
Soils in this group receive beneficial moisture from favorable landscape positions, flooding, runoff from adjacent land, or have a seasonal high water table during the spring.
High pH will have an effect on the selection of species on some soils in this group. Competition from grass and weeds is the principal concern in the establishment and management of trees and shrubs.
Group 2
Soils in this group are excessively wet or ponded during the spring or overflow periods.
The degree of wetness, pH, and drainage will have an effect on the selection of tree and shrub species in this group. Competition from grass and weeds is the principal concern in the establishment and management of trees and shrubs. Spring planting may be delayed because of wet conditions. Soil blowing is a concern on some of the sandy soils.
Group 3
Soils in this group are very deep to deep, well-drained loamy and silty soils with moderate to moderately slow permeability on uplands.
Competition from grass and weeds is the principal concern in the establishment and management of trees and shrubs on these soils. Water erosion is a concern on the gently sloping to moderately steep areas (slopes 17 percent or less).
Group 4
Soils in this group are very deep, deep, and moderately deep, loamy and clay soils with slow or very

slow permeability on uplands.

High clay content and drought tolerance have an effect on the selection of tree and shrub species for these soils. Competition from grass and weeds is the principal concern in the establishment and management of trees and shrubs. Water erosion is a concern on the gently sloping to moderately steep areas.

Group 5

Soils in this group are loamy and sandy soils that have moderately rapid permeability and moderate to high available water capacity.

Competition from grass and weeds and soil blowing are the principal concerns in the establishment and management of trees and shrubs on these soils (slopes dominantly less than 6 percent but range up to 17 percent).

Group 6

Soils in this group are well drained, loamy and silty soils that are moderately deep over sand gravel or bedrock. They have low or moderate available water capacity.

Drought tolerance will effect the selection of tree and shrub species for use on these soils. Competition from grass and weeds is the principal concern in the establishment and management of trees and shrubs. Water erosion is a concern on gently sloping to moderately steep areas.

Group 7

Soils in this group are very deep to deep, somewhat excessively drained to excessively drained, sandy soils with low or very low available water capacity. Soils in this group include coarse loamy soils on 9 to 17 percent slopes.

Drought conditions and soil blowing are the principal concerns in the establishment and management of trees and shrubs on these soils. Specialized site preparation and specialized planting methods are needed to establish the trees and shrubs. Only coniferous species are recommended for planting.

Group 8

Soils in this group are calcareous at or near the surface (excludes mollisols and soils having sandy particle size control sections). They do not receive beneficial moisture from run-in, flooding or seasonal high water table.

High calcium content and competition from grass and weeds are the principal concerns in the establishment and management of trees and shrubs on these soils. Water erosion is a concern on gently sloping to moderately steep areas (slopes 17 percent or less).

Group 9

Soils in this group are affected by salinity and/or alkalinity.

Concentrations of salt will severely affect the establishment, vigor and growth of trees and shrubs on these soils.



Figure I. Nebraska Precipitation Zones

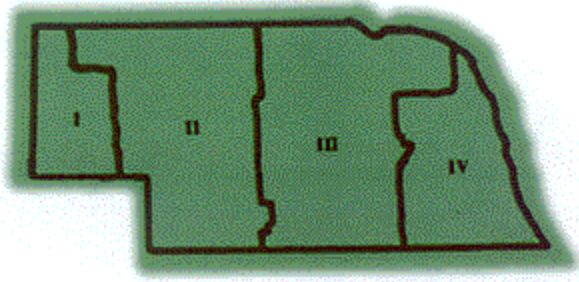


Table II. Species Recommendations (Adapted from USDA NRCS Field Guide for Nebraska)

Species	Nebraska Vegetative Zone ¹	Native to Vegetative Zone ¹	Height (Ft) at Age		Suggested Spacing (Ft)		Soil Suitability Group
			20 Yr.	Maturity	Within Rows ²	Between Rows ³	
Eastern Redcedar	I	Yes	10-20	20-25	6-12	14-24	13456789
	II	Yes	10-22	20-25	6-12	12-24	13456789
	III	Yes	12-24	25-35	6-12	12-24	13456789
	IV	Yes	15-25	30-40	6-12	12-24	13456789
Rocky Mountain Juniper	I	Yes	10-20	15-25	6-12	14-24	13456789
	II	Yes	10-20	15-25	6-12	12-24	13456789
	III		Not Recommended in this zone				

IV

Not Recommended in this zone

Ponderosa Pine	I	Yes	14-24	30-50	10-14	14-24	13456789
	II	Yes	16-28	30-55	10-14	12-24	13456789
	III	Yes	18-30	35-55	10-16	12-24	13456789
	IV	No	20-34	40-60	10-16	12-24	13456789
Austrian Pine	I	No	14-24	30-50	10-14	14-24	13567
	II	No	16-28	30-55	10-14	12-24	134567
	III	No	18-30	35-55	10-16	12-24	134567
	IV	No	20-34	40-60	10-16	12-24	134567
Scotch Pine	I	No	12-22	25-35	10-14	14-24	135
	II	No	16-26	30-40	10-14	12-24	1357
	III	No	18-30	35-45	10-16	12-24	13457
	IV	No	20-32	40-50	10-16	12-24	13457
Jack Pine	I	No	15-17	30-40	10-14	14-24	1357
	II	No	18-20	35-45	10-14	12-24	13457
	III	No	18-30	35-45	10-16	12-24	13457
	IV	No	20-32	40-50	10-16	12-24	13457
Colorado Blue Spruce	I	No	15-17	25-35	8-20	14-24	1

	II	No	16-20	30-40	8-20	12-24	134
	III	No	18-26	30-45	8-20	12-24	1345
	IV	No	18-30	40-60	8-20	12-24	1345
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Siberian Elm	I	No	14-32	16-34	10-14	20-30	1345689
	II	No	16-36	18-38	14-20	20-30	1345689
	III	No	24-40	26-42	14-20	20-30	1345689
	IV	No	26-40	55-60	14-20	20-30	1345689
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Hackberry	I	Yes	16-22	30-40	10-14	14-24	134568
	II	Yes	20-26	40-50	14-20	16-24	134568
	III	Yes	22-28	45-55	14-20	16-24	134568
	IV	Yes	22-30	50-60	14-20	16-24	134568
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Honeylocust	I	No	16-26	30-40	10-14	14-24	134568
	II	No	20-28	30-40	14-20	16-24	134568
	III	Yes	24-32	35-45	14-20	16-24	134568
	IV	Yes	25-34	40-50	14-20	16-24	134568
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Cottonwood	I	Yes	30-55	60-80	12-16	20-30	129*
	II	Yes	30-55	65-85	16-20	20-30	129*
	III	Yes	45-55	65-85	16-20	20-30	12349*
			48-				

	IV	Yes	60	70-90	16-20	20-30	12349*
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Silver Maple	I	No	24-30	30-40	12-16	20-30	12
	II	No	26-30	35-45	16-20	20-30	123
	III	Yes	30-34	40-50	16-20	20-30	1234
	IV	Yes	34-38	50-60	16-20	20-30	1234
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Black Walnut	I	No	20-24	26-30	12-16	16-24	1
	II	No	20-24	30-40	16-20	16-24	1
	III	Yes	20-26	40-50	16-20	16-24	134
	IV	Yes	26-30	40-60	16-20	16-24	134
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Green Ash	I	Yes	14-22	25-35	10-16	16-24	12345689
	II	Yes	18-26	30-40	16-20	16-24	12345689
	III	Yes	22-28	35-45	16-20	16-24	12345689
	IV	Yes	24-32	40-50	16-20	16-24	12345689
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Russian Olive	I	No	12-18	12-18	8-12	12-16	12345689
	II	No	14-18	14-18	8-12	12-18	12345689
	III	No	14-18	14-18	8-12	12-18	12345689
	IV	No	16-18	16-18	8-12	12-18	12345689
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Red Oak	I	Not Recommended in this zone					
	II	No	16-	35-50	14-20	16-24	1

			20				
	III	No	20-26	40-50	14-20	16-24	134
	IV	Yes	24-26	40-50	14-20	16-24	134
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Bur Oak	I	Yes	14-20	25-35	12-14	14-24	13
	II	Yes	18-24	30-40	14-20	16-24	1345
	III	Yes	20-26	35-45	14-20	16-24	134568
	IV	Yes	24-28	40-50	14-20	16-24	134568
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Swamp White Oak	I		Not Recommended in this zone				
	II		Not Recommended in this zone				
	III	No	16-26	30-45	14-20	16-24	1345
	IV	No	24-28	40-50	14-20	16-24	1345
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Black Cherry	I		Not Recommended in this zone				
	II		Not Recommended in this zone				
	III	No	18-20	35-40	14-20	16-24	134
	IV	Yes	20-30	30-50	14-20	16-24	134
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Cotoneaster	I	No	4-5	4-5	3-6	12-16	13456
	II	No	5-6	5-6	3-6	12-16	13456
	III	No	5-8	5-8	3-6	12-16	13456
	IV	No	5-10	5-10	3-6	12-16	13456
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Lilac	I	No	5-6	5-6	3-6	12-18	134589
	II	No	5-6	5-6	3-6	12-18	1345689
	III	No	5-8	5-8	3-6	12-18	1345689
	IV	No	6-10	6-10	3-6	12-18	1345689

Honeysuckle	I	No	5-7	5-7	3-6	12-18	13
	II	No	5-8	5-8	3-6	12-18	13456
	III	No	5-8	5-8	3-6	12-18	13456
	IV	No	5-10	5-10	3-6	12-18	13456
Chokecherry	I	Yes	5-8	5-8	3-6	12-18	13456
	II	Yes	6-12	6-12	3-6	12-18	13456
	III	Yes	6-12	6-12	3-6	12-18	13456
	IV	Yes	8-14	8-14	3-6	12-18	13456
Nanking Cherry	I	Not Recommended in this zone					
	II	Not Recommended in this zone					
	III	No	4-5	4-5	3-6	12-18	12345
	IV	No	5-7	5-7	3-6	12-18	12345
American Plum	I	Yes	5-7	5-7	3-6	12-16	13456
	II	Yes	5-8	5-8	3-6	12-16	13456
	III	Yes	5-8	5-8	3-6	12-16	13456
	IV	Yes	6-10	6-10	3-6	12-16	134568
Skunkbush Sumac	I	Yes	3-5	3-5	3-6	12-16	1345689
	II	Yes	4-6	4-6	3-6	12-16	1345689
	III	Yes	4-6	4-6	3-6	12-16	1345689
	IV	Yes	4-8	4-8	3-6	12-16	1345689
Sand Cherry	I	Yes	2-3	2-3	3-6	12-16	156
	II	Yes	2-3	2-3	3-6	12-16	156
	III	Yes	2-4	2-4	3-6	12-16	156
	IV	Yes	3-6	3-6	3-6	12-16	156
Caragana	I	No	6-8	6-8	3-6	12-16	1345689
	II	No	6-8	6-8	3-6	12-16	1345689
	III	No	8-10	8-10	3-6	12-16	1345689
	IV	No	8-10	8-10	3-6	12-16	1345689

Silver Buffaloberry	I	Yes	5-8	5-8	3-6	12-16	1345689
	II	Yes	10-12	10-12	3-6	12-16	1345689
	III	Yes	10-12	10-12	3-6	12-16	1345689
	IV	Yes	10-12	10-12	3-6	12-16	1345689

Elderberry	I	Not Recommended in this zone					
	II	No	4-6	4-6	3-6	12-16	12345
	III	Yes	4-6	4-6	3-6	12-16	12345
	IV	Yes	4-8	4-8	3-6	12-16	12345

American Hazel	I	Not Recommended in this zone					
	II	Not Recommended in this zone					
	III	Yes	6-8	6-8	3-6	12-16	1345
	IV	Yes	6-8	6-8	3-6	12-16	1345

Midwest Crabapple	I	Not Recommended in this zone					
	II	No	10-16	10-16	8-12	12-16	1345
	III	No	12-16	12-16	8-12	12-16	1345
	IV	No	14-18	14-18	8-12	12-16	1345

Washington Hawthorn	I	No	15-20	15-20	8-12	12-16	1
	II	No	15-20	15-20	8-12	12-18	1
	III	No	12-16	12-16	8-12	12-18	1345
	IV	No	14-18	14-18	8-12	12-18	1345

Amur Maple	I	No	10-14	10-14	8-12	14-18	1
			12-				

	II	No	16	12-16	8-12	12-18	13
	III	No	16-20	16-20	8-12	12-18	1345
	IV	No	16-20	16-20	8-12	12-18	1345
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Golden Currant	I	No	2-4	2-4	3-6	14-16	134567
	II	No	2-4	2-4	3-6	12-16	134567
	III	No	4-6	4-6	3-6	12-16	134567
	IV	No	4-6	4-6	3-6	12-16	134567
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Manchurian Apricot	I	Not Recommended in this zone					
	II	Not Recommended in this zone					
	III	No	12-16	12-16	8-12	14-18	13456
	IV	No	12-18	12-18	8-12	12-18	13456
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Winterberry Euonymus	I	No	6-10	6-10	3-6	14-16	1
	II	No	6-12	6-12	3-6	12-16	13
	III	No	8-14	8-14	3-6	12-16	1345
	IV	No	8-14	8-14	3-6	12-16	1345
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*Wet Sites Only

¹Nebraska vegetative zones (*Figure 1*) are based on the USDA Natural Resources Conservation Service vegetative zones.

²Exterior rows use the closer spacing, interior rows use the wider recommended spacing. Closer spacing may require thinning or removal as trees grow.

³Between row spacing can be adjusted to accommodate equipment used for maintenance.