

Seedling Tree Program

Selecting the right plant for your site

Colorado State University

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The CSFS Nursery Grows Over 50 Species of Trees and Shrubs



- Seedlings are available as:
 - Bare root (25/species)
 - Small Tube (30/species)
 - Large Tube (30/species)
 - Tray (50/species)
 - Extra Large Potted (5/species)

Bare root Seedlings –

Deciduous: 10-30” top height * Conifer: 5-12” top height



- Lots of 25 per species
- 1–2 years old, depending on species
- Seedlings are wrapped in plastic, filled with sawdust
- Keep moist by pouring water into the wrapped bundle
- Do not open bundle until ready to plant or heel-in

Large Tube - Potted Seedlings:

5-12" top height * 2.0"x 7" tube



- Lots of 30 per species
- 1-2 years old
- Potted seedlings do well if you can provide adequate water
 - Received plenty of water at the nursery
- These seedlings do well because the roots are not disturbed when planting

Small Tube Potted Seedlings:

3-6" top height * 1.5"x 8" tube



- Lots of 30 per species
- 1-2 years old
- Seedlings are smaller due to the smaller container they are grown in
- Have less root volume than regular potted



Tray Potted Seedlings:

5-12" top height * 2.0"x 6" cell



- Lots of 50 per species
- 2-3 years old
- Potted seedlings do well if you can provide adequate water
 - Received plenty of water at the nursery



Extra Large Potted Seedlings:

10-12" top height * 6"x7" pot



- 5 per species
- 2-3 years old
- Potted seedlings do well if you can provide adequate water
- Received plenty of water at the nursery



Seedling Pick Up Tips



Right Plant, Right Place

Create a Plan to Increase Seedling Survival

- Objectives for the planting
- Limiting factors of your site
- Species best suited for your project
- Site preparation and seedling handling
 - Correct planting procedures
 - Amount of water for the seedlings
- Control of competing vegetation and wildlife

Objectives and Long-term Expectations

- What are your expectations from the planting?
- Answer this question prior to seedling species selection.
- Choose species whose characteristics meet the expectations.
- Choose species that can handle your site limitations
- Example Characteristics:
 - Fast growing
 - Dense habit
 - Long living
 - Fruit producing

Limiting Factors

- Every site has factors that can limit a seedling's potential
 - Soil nutrient levels
 - Soil pH - soil acidity affects nutrient uptake
 - Light intensity
 - Space availability
- You **must** determine the limiting factors before species selection
- If any of these factors are not compatible with the species you chose, seedling mortality can occur

Water

In Order To Have A
Successful Planting You

Weeds

Must Deal With These
Three Factors!

Wildlife

Water: How will water be available to the trees?

Weeds: How will competing vegetation be controlled?

Wildlife: How will you prevent / discourage wildlife?

Species Selection

- This is one of the most important investment decisions for the homeowner
- Must consider your Limiting Site Factors
- Match the Limiting Factors with the plant characteristics
- Choosing the right species can make the difference between a successful planting and an unsuccessful one
- The right species may not be your preferred species but is based on the site

Trees for Conservation



a buyer's guide

Colorado
State
UNIVERSITY

- The Buyer's Guide is available on the Internet

Species Characteristics:

- Elevational Range
- Drought Resistance
- Cold Hardiness
- Growth Form
- Size
- Soil Conditions
- Insect/Disease issues
- Wildlife Value
- Seasonal Color

<http://static.colostate.edu/client-files/csfs/pdfs/08byrgd-www.pdf>

Objectives for Planting Trees



Do you need a Windbreak?

To create Wildlife Habitat?

*Plant Diversity *Erosion Control *Reforestation

*Visual Screen *Noise Barriers *Christmas Trees

Use at High Altitude / Cold Hardiness

To live thru cold temperatures

- Think about where they naturally grow
- Struggle in the wrong place
- Not recommended in the valleys
- Douglas-fir
- Aspen
- Lodgepole Pine
- Engelmann Spruce
- White Fir
- Refer to guide for more..

High Altitude / Cold Hardiness

- Douglas-fir



Picture by Susan Carter

- Prefers shade when young. Does best growing on a North facing slope. Very cold tolerant and adapted to soils.
- Has very showy cones with “mouse tails”.
- Issues: Tussock moth

For High Salt and Alkaline Soils

To survive in these conditions

- Alkaline soils are soils with a pH between 7.5 and 8.3. Higher than that is hard to manage.
- Salt content is measured by the amount of electric conductivity in the soil. It varies from 0 - 30 in Colorado. Source of salt can vary.
- Managing Saline Soils
- <http://extension.colostate.edu/topic-areas/agriculture/managing-saline-soils-0-503/>

Use in Areas of High Salt and Alkaline Tolerant Plants

To survive in these conditions



- Golden Willow is tolerant of alkaline (pH 8) and salt in the soil. Good wildlife value.
- Moist Soils.



- Siberian Peashrub- adaptable soils, but well-drained.
- Low maintenance.
- Seed eaten by upland game.

Use in Areas with Clay Soils

To survive in these conditions

- Compost amendment helps to break up the clay.
- Ensure there is drainage and plant so your plant isn't sitting in a bathtub.
- Planting high helps to provide more oxygen.
- Polymer is not recommended.
- **Avoid** Mountain Mahogany and plants needing well-drained soil

Plants for Clay Soils

- Clay soils tend to be alkaline so look for plants that tolerate alkaline or adaptable for soils.
- Some perennials tolerate it: Coneflower, gayfeather & Black-eyed Susan
- Avoid if it requires **Well Drained** soil or if states not for clay, like the Red-osier Dogwood.
- Fremont Cottonwood would be a tree option.



Grow a Hedge or Dense Row

To Reduce Wind

- Junipers
 - Eastern Redcedar
 - Lilac
 - Nanking Cherry
 - Cotoneaster
- See windbreak information
 - <http://www.ext.colostate.edu/sam/windbreaks.html>
 - Hedge Factsheet:
 - <http://extension.colostate.edu/topic-areas/yard-garden/hedges-7-208/>



Windbreak

Block wind year round



- Junipers and Redcedars make great windbreaks
- Plant Characteristics
 - Retain foliage all year and to the ground
 - Grow slowly
 - No distinct flowers or fruit

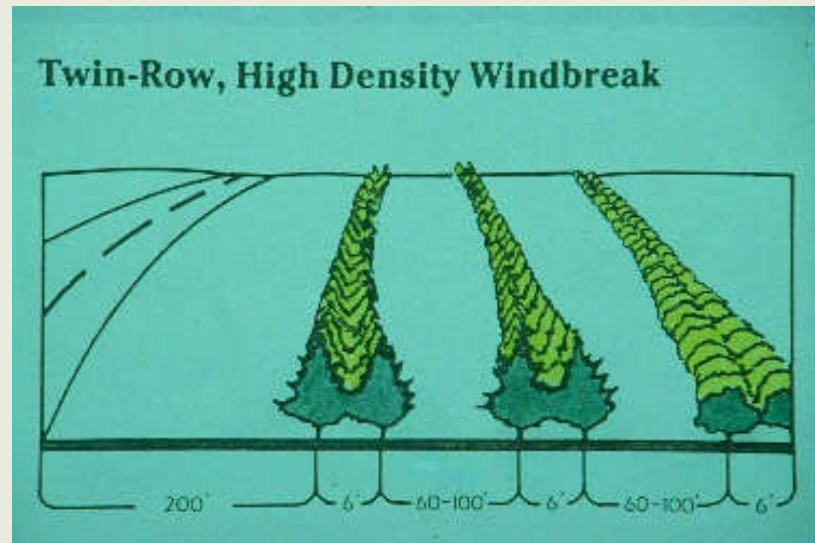
Snow Fence

Protect road from snow

- Type of Windbreak used to capture and control blowing snow
 - What species will meet your expectations and site limits?



Wind Direction



Wind Direction



Grow Edible Plants

To eat them!

- Mostly for Jams and Jellies.
- Always know what you are eating and at what time is it ready.
- When canning, follow current approved methods.
- Wild Plum
- Woods Rose
- Golden Currant
- Buffaloberry- to flavor buffalo meat
- Nanking Cherry

Grow Edible Plants

Eat them!

- Golden Currant
 - Drought tolerant
 - Grows 6-8 ft x8-10 ft
 - Large berries go from red to black
- Nanking Cherry
 - 6-8 ft x6-8 ft
 - Blooms early spring
 - ½ in. red tart berries w/ large pit
 - Songbirds



Grow Plants for Wildlife

Provide wildlife with habitat

- Browse
 - Cover
 - Small Game
 - Nesting
 - Edible Fruit
- Examples:
 - Serviceberry (is available)
 - Chokecherry
 - Hackberry- songbirds and small mammals
 - Pinyon Pine- nuts



Photo by Charles Maurer, CSU NPM

Grow Plants for Wildlife

Provide wildlife with habitat

- Serviceberry- *Amelanchier alnifolia*
- Drought, cold, and alkaline tolerant.
- Shrubby cover for nesting & roosting.
- Songbirds, gamebirds, bears, squirrels & rodents eat the fruit.
- Twigs extensively browsed by elk and deer (whitetail & mule).



Grow Plants for Wildlife

Provide wildlife with habitat

- Chokecherry – *Prunus virginiana*
 - Elongated white clusters of flowers; almost black fruit.
 - All parts of the plant benefit some type of wildlife.
 - Many wildlife species love the fruit: sharp-tailed grouse, songbirds, small mammals, bears and deer.
 - This thick shrub is used for loafing, bedding, nesting and roosting.



Animals eating your Plants?

Grow Wildlife “Resistant” Plants

- Exclusion is the best method of avoiding animal damage.
- Know what animals are in the area:
Rabbits, gopher, deer, elk
- Most avoid fragrant or hairy plants
- New tender seedlings that are nursery grown attract animals.
- Low wildlife value; not of high interest
 - Lilac
 - Honeylocust
 - Lanceleaf Cottonwood
 - Sub-alpine Fir

Plants to avoid in Pastures

- Kentucky Coffeetree
 - Fourwing Saltbrush
 - Gambel Oak
 - Ponderosa Pine
 - Mt. Mahogany
 - Serviceberry
 - Milkweed
- Contact Livestock Agent Doug Dean for details



Grow Low Water Plants

Provide minimal water to plants

- Only after establishment. Even a newly planted cactus needs water.
 - Need water a couple of years to establish
 - Vigor is dependent on moisture level.
- Pinyon Pine
 - Sumac
 - New Mexico Privet
 - Mt. Mahogany
 - Four wing saltbush



Plant in Riparian Zones

Grow plants that like more water

- Poplars- see poplar slides
- Colorado Spruce
- Red-osier Dogwood
- Willows- Golden and Coyote
- Riparian does not mean they are underwater all season
- May naturally grow near streams
- Usually not tolerant of drought
- For areas with higher moisture levels



Poplars

- Pro- Quick Growing
- Con- but quick means weak wood so don't plant near the house.
- Most get big, so plan accordingly.
- Con- Roots can run at the surface of the ground. Maybe not the best lawn tree.
- Pro- provide great shade.
- Bark, twigs & foliage eaten by rodents, rabbits, deer, beaver, & porcupine. Browse for deer and elk. Nesting and roosting habitat.

Poplars



- Narrowleaf-
- needs moisture, weak wood, native 6-9,000', male and females on different plants.

- Kremmling and Narrowleaf- will go the highest in altitude



- Plains rarely produces plant suckers



- Fremont- native locally and good bird habitat



Things to Consider

- Don't purchase more than you can Plant, Water and Maintain, especially, if this is your first time planting!
- Pick the right plant for your site
- Site preparation is important and can increase your seedling survival rate
- Take your time when planting. Make sure each seedling is properly planted.
- Have a maintenance plan that covers Watering, Weeding and Replacement

For More Information Check Out Our Websites:

CSFS Homepage:

- <http://csfs.colostate.edu>

Grand Junction Field Office:

- <https://csfs.colostate.edu/grand-junction/gj-seedling-trees/>

CSFS Nursery:

- <https://csfs.colostate.edu/seedling-tree-nursery/>

Seedling Nursery Inventory List:

- <https://csfs.colostate.edu/seedling-tree-nursery/seedling-nursery-inventory/>

Questions?



- Set your objectives and observe your site before selecting your trees.
- Contact your local CSFS Forester or CSU Extension Horticulture Agent for recommendations.