2017 Seedling Tree Program

Selecting the right plant for your site

Presented By:
- Susan Carter, Horticulture Agent, CSU Extension, Tri River Area
- Kamie Long, District Forester, Colorado State Forest Service
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
In Order To Have A Successful Planting You Must Deal With These Three Factors!

**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
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

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

- 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

Picture by Susan Carter
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/](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?
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).
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.

- Plains rarely produces plant suckers

- Kremmling and Narrowleaf- will go the highest in altitude

- 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 District:
• http://csfs.colostate.edu/districts/grandjunction-district/
  • Will post this PowerPoint on the website in the Seedling Tree Program section

CSFS Nursery:
• http://csfs.colostate.edu/seedling-tree-nursery/

Seedling Nursery Inventory List:
• http://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 Horticulture Agent for recommendations.