



ADDITIONAL RESOURCES

Instructions on how to properly plant a containerized, bareroot, or balled and burlapped tree:
www.dnr.state.mn.us/treecare/residential_plant.html

Diseases, pests, and “what’s wrong with my tree?” diagnostic resources:

- Deciduous trees:
apps.extension.umn.edu/garden/diagnose/plant/deciduous/

- Coniferous/evergreen trees:
apps.extension.umn.edu/garden/diagnose/plant/evergreen/

Access FAMP trainings and resources for climate forward growers:
www.climatesmarttrees.com/general-resources-fact-sheets

Caring for Your Climate Forward Tree Seedling



Forest Assisted Migration Project

Thank you for purchasing a climate forward tree!

Use this booklet for tree descriptions, care tips, educational activities, and additional resources.

[Climatesmarttrees.com](http://climatesmarttrees.com)
farmforestgrowers@gmail.com

What is the Forest Assisted Migration Project?

Minnesota's Northwoods is experiencing dramatic climate change. Many northern tree species that thrive in cold weather are now dying because of the increasing temperatures.

Without any intervention, researchers predict the landscape in northeastern Minnesota will become mostly open grasslands within the next 50 years. If this happens, our regional economy, wildlife, culture, and everything that depends on the forest will be changed forever.

The Forest Assisted Migration Project (FAMP) works to address and adapt to these environmental changes by reestablishing a resilient northern forest while also bolstering the regional economy.

We are doing this by:

- 1. Collecting seeds** from tree species and populations that are predicted to thrive in the future climate.
- 2. Forming the Farm and Forest Growers**, a network of farms and nurseries that plant and grow these climate forward seeds, then sell the seedlings to reforestation agencies and the public.
- 3. Establishing partnerships and purchase agreements** with reforestation agencies, forestry departments, and soil and water conservation districts

The Gathering Spot—Activity

The Gathering Spot

Spending time outside is critical to becoming a lover of nature. Get to know your tree, the ground it is planted in, the sky above it, the creatures who call it home. Here are a few things you can do with people of any age.

Lie on the ground under the tree with a cozy blanket and pillow and watch the sky above it.

Look at clouds during the day and stars at night.

Feel the wind and listen to the sound it makes in your tree.

Listen for and watch birds and other animals.

Get to know the creatures who live in, on, and around your tree.

Smell the ground, the tree, the air.

Host a book club that meets under your tree.



Name your tree! - Activity

Name your Tree!

Young trees require a lot of care, and getting kids involved can help them develop their love for nature. Invite the kids in your life to name the newly planted trees in your yard and together, create Name Ribbons for them.

Ahead of Time: Get fabric ribbon in a variety of colors, and paint pens or sharpies

Gather and Share: Share stories about your favorite trees. Maybe they are in your yard, your neighborhood, or someplace else entirely. What does your tree look like? Why do you like it? Maybe it provided a shady spot to rest? A place for birds to nest? A haven for bunnies and squirrels? Looks lovely in autumn or adorned in lights during the holidays?

Go Time! Decorate a fabric ribbon with the name of the tree and the date it was planted. Carefully tie the ribbon to the trunk or a branch of the tree.

Wrap Up: Stand near the newly named tree and capture the moment with a selfie to share on social media! Plan on gathering around the tree to celebrate birthdays, the anniversary of the tree's planting, and any other milestone you want to celebrate.

What is a "climate forward" tree?

A **climate forward tree** is a tree that can survive and thrive in the approaching environmental conditions caused by climate change.

Researchers have found that increasing the genetic diversity of trees in a particular forest as well as planting seedlings that are used to growing in warmer climates can help a forest adapt to the rapidly changing temperatures and growing conditions.

That means trees planted from seeds collected in southern Minnesota, where it is warmer, are now better suited to grow in the warming northern climate than trees native to the Northwoods.

Though climate change will transform the look of the Northwoods as we know it, planting climate forward trees will help ensure robust forests remain and thrive.



Tree care and reference chart

	Oaks
Type	<p>Red Oak: Quercus rubra Ht: 65-100' Fast growing</p> <p>Bur Oak: Quercus macrocarpa Ht: 80-130' Slow growing Broad spreading</p>
Sun/ shade	<p>Red Oak: Full sun to partial shade</p> <p>Bur Oak: Full sun to partial shade</p>
Water/ soil	<p>Red Oak: Moderately moist soils</p> <p>Bur Oak: Moist, well drained soil. Can withstand occasional flooding yet has good drought tolerance</p>
Pests & Diseases	<p>Oak wilt Bur oak blight Spongy moth</p>
Seasonal care	<p>Mulch and fertilize each spring</p> <p>To prevent spread of Oak Wilt, do not prune April-July; Winter pruning recommended</p>
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Bucket Brigade - TLC for Trees

Bucket Brigade - TLC for Trees

Newly planted trees need lots of water, and a regular watering plan is a must. Make it fun in the summertime and have a family or neighborhood Bucket Brigade! Make sure to wear splash-ready clothing like swim suits, puddle boots, etc..

Ahead of Time: Invite friends and neighbors to join you in the Bucket Brigade and ask everyone to bring a couple of buckets to the event.

Gather and Share: Roots provide a tree with everything it needs to live. New seedlings don't have enough roots for the first couple years, so extra watering is important and ensures that the roots that are there can feed the seedling well.

Go Time! Line up evenly spaced between the water source and the tree(s). Fill a bucket with water and pass it from person to person until the last person dumps the water on the tree. Then start over!

Wrap Up: Gather for a summery drink or frozen treat. Give thanks for enough water to grow!



Superhero Tree Planting Party

Superhero Tree Planting Party

Dress up as your favorite superhero and set out on a tree-planting adventure to save the forest! Follow these easy steps.

Ahead of Time: Invite friends and neighbors to join you, and acquire the number of trees you will need for your group.

Gather and Share: Forest Assisted Migration is helping trees move to a new, safer place to live, because they cannot walk themselves.

Go Time! Distribute trees, planting supplies, and instructions for planting, then plant the trees!

Wrap Up: Gather after planting and share stories of your superhero adventures. Give prizes for the best costumes, have a tree-themed snack (tree shaped cookies or cakes), watch a movie or documentary about climate change, and give thanks for superhero tree planters!



Tree care and reference chart

Birches	Links
<p>Yellow Birch: <i>Betula alleghaniensis</i> Ht: 60-75' Slow to intermediate growth</p> <p>River Birch: <i>Betula nigra</i> Ht: 50-80+' Medium/fast growth</p>	<p>https://www.dnr.state.mn.us/treecare</p>
<p>Yellow Birch: Intermediate shade tolerance</p> <p>River Birch: Full sun/ Intolerant of shade</p>	<p>https://extension.umn.edu/find-plants/trees-and-shrubs</p>
<p>Yellow Birch: Grows well over a range of soil pH. Prefers acidic soils but will tolerate alkaline soils.</p> <p>River Birch: Acidic, moist, well-drained and clay soils</p>	<p>https://trees.umn.edu/plant-database</p>
<p>Leaf spots, cankers, birch leaf miners</p> <p>Yellow Birch: Some resistance to Bronze Birch Borer</p> <p>River Birch: Tolerant of black walnut toxicity and road salt, resistant to bronze birch borer</p>	<p>https://www.dnr.state.mn.us/treecare/diseasespests.html</p>
<p>Mulch and fertilize each spring;</p> <p>Prune late spring/early summer</p>	<p>https://www.dnr.state.mn.us/treecare/caring-pruning.html</p>
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Tree care and reference chart

	Pines
Type	<p>Eastern White Pine: Pinus Strobus Ht: 50-80 feet Fast growing</p> <p>Red Pine: Pinus Resinosa Ht: 60-80 feet Medium growt</p>
Sun/ shade	<p>Eastern White Pine: Full sun to partial shade</p> <p>Red Pine: Full sun to partial shade</p>
Water/ soil	<p>Eastern White Pine: Grows in acidic moist, well drained and dry soils.</p> <p>Red Pine: Grows well on sandy loam or dry rocky ridges</p>
Pests & Diseases	<p>White Pine: Is sensitive to air pollu- tion, road salt, and soil compaction.</p> <p>Red Pine: Diplodia</p>
Seasonal care	<p>Mulch and fertilize each spring</p> <p>Prune: Fall and winter</p>
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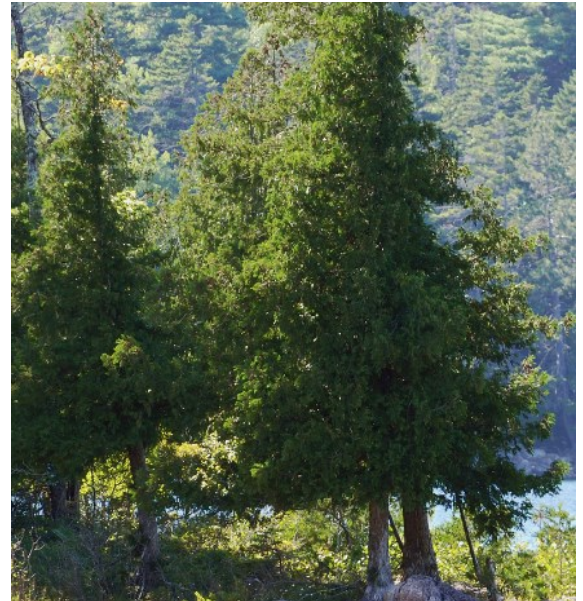
Species summary and care tips

Cedars

White cedars are a type of evergreen that typically grow in a narrow, pyramid shape. They provide excellent windbreaks and privacy barriers. White Cedars grow best in moist to wet soils. These trees will grow to between 30-40 feet high.

Care summary:

Ideal growing condition is in full sun. They should be planted 10-15' apart.



Species summary and care tips

Pines

Pine trees are tall, hardy, and valuable trees. They are typically found in the northern hemisphere. Pine trees are used heavily for lumber. When grown at home they provide excellent windbreaks and privacy barriers. Many species of birds and other wild life find this tree as a source of nutrients, including humans because we eat pine nuts. They range greatly in size depending on which pine tree you choose. They can get as tall as 260 feet but typically will be between 50 - 150 feet high.

Care summary:

Pines prefer either full sun or partial shade. They need a minimum of four hours of direct sunlight per day. After planting keep the trees well watered, especially when they are young trees. If trimming is needed do so in late fall, winter or early spring.



Tree care and reference chart

Cedars	Links
White Cedar: Thuja occidentalis Ht: 30-40 feet Slow growing Eastern Red Cedar: Juniperus Virginiana Ht: 40-50 feet Medium growth	https://www.dnr.state.mn.us/trecare
White Cedar: Full Sun Eastern Red Cedar: Full Sun	https://extension.umn.edu/find-plants/trees-and-shrubs
White Cedar: Well drained soils but can adapt to adverse soil conditions. Eastern Red Cedar: Can withstand occasional flooding yet has good drought tolerance	https://trees.umn.edu/plant-database
White Cedar: Seasonal needle loss Eastern Red Cedar: Do not plant next to apple trees due to cedar-apple rust.	https://www.dnr.state.mn.us/trecare/diseasespests.html
Mulch and fertilize each spring Prune: Late winter or early spring	https://www.dnr.state.mn.us/trecare/caring-pruning.html
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Species summary and care tips

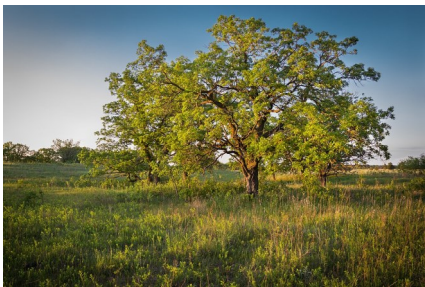
Oaks

The Oak family has many different varieties that can grow up to 80 to 100 feet tall and 30 to 60 feet wide! Young oak trees have smooth, dark gray/brown bark, with older trees having thick, ridged brown/gray bark. Deeply lobed leaves are rounded or have points. Oak varieties provide shade as well as habitat and a winter food source for songbirds, wild turkeys, squirrels, deer, and small mammals.

Fun Fact: Many oak species provide the "bonus" of acorns and fallen leaves. This may make for more autumn chores, however, shredded leaves will decompose into a rich form of organic matter (humus) that can insulate the soil, help to suppress weeds, and retain water in the garden.

Care summary:

Oaks are tolerant of drought conditions and occasional flooding. Water regularly, especially in the hot summer months. Mulching at the base of the tree to maintain moisture and add winter insulation. To avoid oak wilt, only prune in winter and remember to regularly check for pests like the spongy moth, and diseases like oak wilt and bur oak blight. Oaks are generally a long-lived tree. Avoid planting this tree if you live in an area of oak blight.



Justin Meissen from St Paul, United States, CC BY-SA 2.0 <<https://creativecommons.org/licenses/by-sa/2.0/>>, via Wikimedia Commons

Species summary and care tips

Birches

The Birch family has many different varieties which can grow up to 80 feet tall and 35 - 40 feet wide and tolerate many different growing conditions. Birch bark can peel or curl, varies in color, with leaves of golden yellow fall color. Birch trees may be single stemmed or a clump of 3-4 trunks. Birch varieties provide interest year-round as well as habitat and food for migrating songbirds, game birds, insect pollinators, and small mammals.

Fun Fact: Crushed leaves and twigs of yellow birch emit a wintergreen aroma.

Care summary:

Birch prefer six hour of full sun, acidic soils; may tolerate alkaline conditions. Some species are resistant to the Bronze Birch Borer. Water regularly in summer, mulch at the base of the tree. Prune in summer and regularly check for pests and disease, like leaf spot, cankers, and birch leaf miners.



River Birch, Univ. of MN Extension