FANTASTIC TREES AND WHERE TO PLANT THEM

The Tree Planter's Guide to Protecting Clean Water and Acting on Climate Change in the Great Lakes Region

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WHY PLANT TREES

Trees and the benefits they provide have supported communities in the Great Lakes region for thousands of years.

We depend on trees. Trees clean our air, cool our planet, reduce our energy needs, support our economy, and provide wood for building our communities. Along city streets or deep in the woods, trees keep rivers, lakes, and drinking water clean, reduce the risk of flooding, and sustain fish and wildlife populations.

However, the benefits that trees provide are not equally distributed. Due to racial disparities, communities of color have fewer trees, increased air and water pollution, and less resources to help plant and maintain trees.

While roughly half of the Great Lakes region is forested, we are lacking trees in critical areas. By strategically planting trees in areas like along coldwater streams and in cooperation with communities of color, we can harness their benefits for all people, water, and land.

TREES AS NATURAL SOLUTIONS

"Over 180 million Americans and 68,000 communities get their drinking water via surface water reservoirs and ground water wells supplied from forested lands" - U.S. Forest Service

To address the many impacts of the climate crisis, from more frequent and intense spring rain events to more severe summer drought, we need to identify both proven and emerging solutions and take bold actions. By strategically planting trees, growing new forests, and protecting and managing existing forests, we can harness their ability to capture and store carbon, reduce flooding, absorb pollution, mitigate drought, clean and buffer coldwater, and support more resilient neighborhoods and communities. While trees alone cannot solve the problem, they can play a critical role in the solution.

Along Rivers

Plant trees to create a buffer to act like a sponge for stormwater runoff, create fish habitat, reduce flooding, and prevent erosion of the banks of our prized rivers and streams. The wider the buffer, the better!

A healthy riparian buffer · An unhealthy riparian buffer
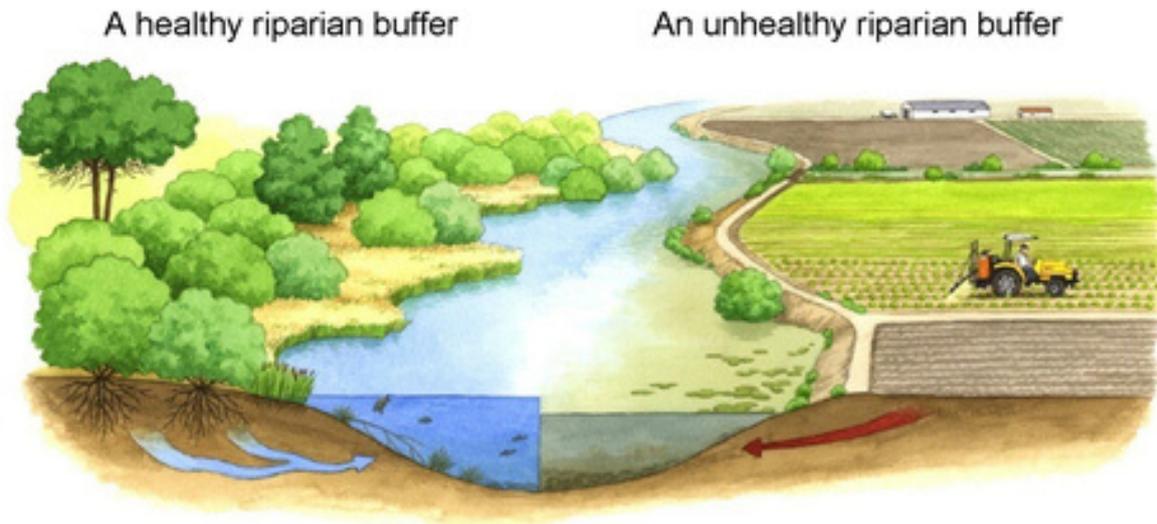
What to look for: 1. lawn, agriculture or bare soil near or along the water's edge, 2. areas where ash and elm trees have died or reed canary grass may dominate, 3. narrow strips of trees along waterways that could be expanded.

WHERE TO PLANT

In Cities, Yards and Across the Open Landscape

Plant empty areas to filter stormwater runoff and reduce flooding, cool urban areas and reduce energy needs, provide habitat and sequester carbon, and build natural corridors that are critical to species migration in fragmented landscapes.

What to look for: 1. unused and/or wet lawn area, 2. lack of shade, 3. abandoned fields that are dominated by non-native grasses and weeds.

What to watch out for: Oak savannas are imperiled ecosystems that can be degraded by adding trees. There may be clues that can help you identify these areas such as dry sandy soils, certain understory plants called indicator species and the presence of large oak trees with expansive crowns and large limbs. Work with community partners or consult the help of a professional as these sites could be enhanced by reintroducing fire and planting native wildflowers and grasses for biodiversity.
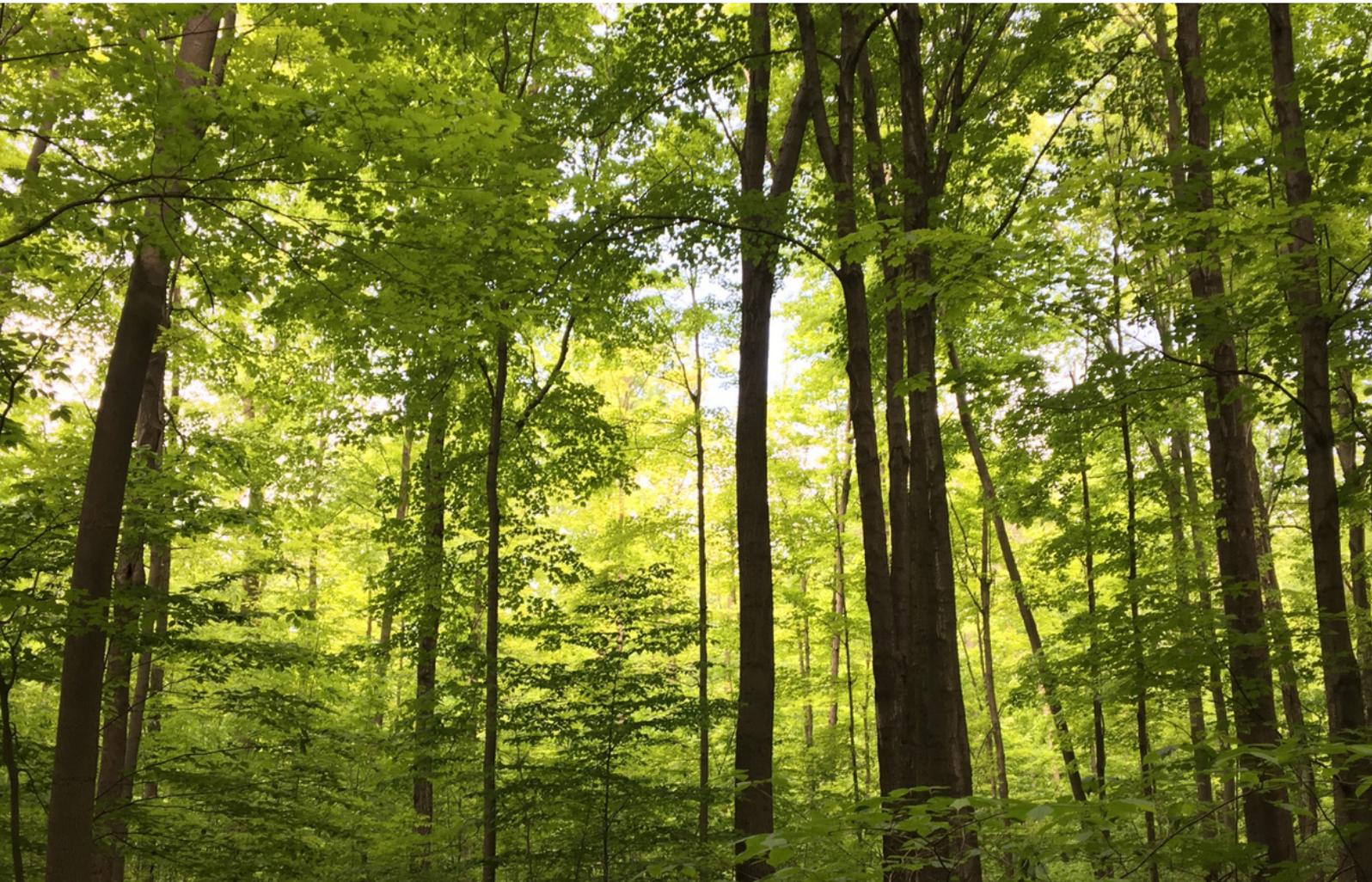
WHERE TO PLANT

In Forests

Enhance and restore our forests that have been impacted by poor logging practices, climate stress and invasive forest pests like emerald ash borer and hemlock woolly adelgid.

What to look for: gaps in the forest canopy where natural regeneration has failed or non-native plants have "captured the gap" or where other problems are identified with the help of a professional consulting forester.

What to watch out for: 1. deer, rabbits and other hungry creatures that eat young trees (may need tree protection) 2. competing invasive plant species, 3. invasive insects and diseases.

Looking for more information about where to plant?
Check out the <u>Reforestation Hub</u> by The Nature Conservancy and American Forests

WHAT TO PLANT

There is a lot to ponder when it comes to planting trees that will thrive in your area. Here are some key considerations:

- Plant a diversity of native species which have evolved with, and provide better food options to, local pollinators and wildlife

- Avoid planting species that are already abundant

- Explore the soils, sunlight availability, and moisture of the site being considered for planting

- Use fencing or tubes to protect young trees from browsing deer or plant trees that are less preferred for browsing
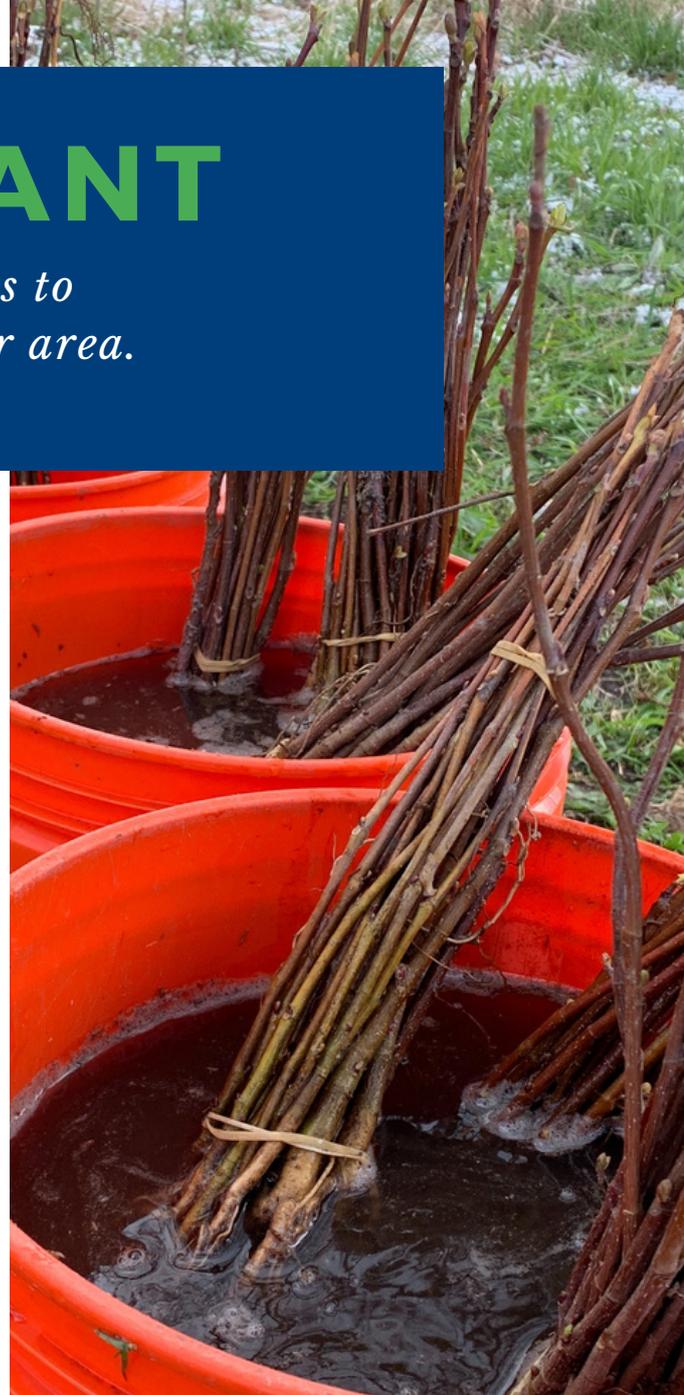
- Explore anticipated heights and be mindful of utilities and other structures

- Select trees with adaptive characteristics that may thrive in your location in the future

- Compare the scale, costs, and maintenance needs of large saplings vs. small seedlings

HOW TO PLANT

There are several helpful videos and resources online. Check out ReLeaf Michigan, the Arbor Day Foundation, Michigan Department of Natural Resources and Michigan State University Extension.

Searching for more information about different kinds of trees? Browse tree information from The Morton Arboretum

HOW TO PLAN FOR A CHANGING CLIMATE

The trees growing naturally in your neck of the woods are descendants of trees that migrated here over thousands of years since the last ice age - as seeds blown on the wind or carried by wildlife. These trees include some species that are on the northern end of their current natural range and some on the southern end of their current natural range. Like wildlife, trees have preferences and habitat needs. Scientific models predict that the rate of climate change will outpace the natural ability of many trees to migrate. This threat is exacerbated by the lack of natural corridors that allows for species migration across a landscape. Planting trees that are predicted to gain suitable habitat here in the future may help assist their migration and establish forests that are more resilient to the effects of climate change like drought, milder winters, and pest outbreaks.

Here are some examples of regionally native species that may gain suitable habitat in the Great Lakes region and may be infrequently or less severely browsed by deer. Contact your County's Conservation District for seedlings and tailored advice.

Tree Species	Site Preferences (Upland or Riparian)	Shade Tolerance Level	Street (S), Yard (Y), Wild (W), Raingarden (R)
Tulip Poplar	Both	Partial	Y, W
Black Gum	Both	Partial	Y, W, R
Eastern Red Cedar	Both	Shade Intolerant	Y, W
Northern Hackberry	Both	Partial	S, Y, W
Pawpaw	Riparian	Shade Tolerant	W, R
Sycamore	Riparian	Shade Intolerant	Y, W, R
Shagbark Hickory	Upland	Partial	W
Sugarberry	Both	Partial	S, Y, W, R
Common Persimmon	Both	Partial	W, R
Eastern Redbud	Upland	Partial	Y, W

Looking for more climate resources? Check out the Climate Change Projections for Tree Species in the Northwoods by the Northern Institute of Applied Climate Science

KEEPING FORESTS AS FORESTS

If your family owns land, one of the most important exercises you can do is explore legacy planning to keep your forest intact and in your family. Landowner incentives like the Michigan Qualified Forest Program or Wisconsin Managed Forest Law may help you keep taxes low and tools like Conservation Easements through your local land trust can offer permanent protection for your forest from development and deforestation, as well as other potential tax benefits. Programs also exist to provide advice and financial assistance for planning forest management, controlling invasive species, climate adaptation actions, planting trees, and more through your County's Conservation District and the USDA-Natural Resources Conservation Service. Certifying your family forest through the American Tree Farm System can help you voluntarily meet internationally recognized sustainability standards and connect you with foresters, resources, and other landowners who care deeply for their forests.

Wood is potentially the greenest raw material when forests are managed responsibly by an informed public with the help of qualified and ethical foresters and loggers, and when timber goals are balanced with other societal goals like carbon storage, recreation, spiritual needs, biodiversity, and clean water.

The benefits of trees are vast and there are many opportunities across the Great Lakes to plant, manage, and care for them in a strategic, cooperative, and equitable way for the good of all communities and the land and water that sustains us.

ACKNOWLEDGEMENTS

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FORESTS FOR FISH

Great Lakes RESTORATION

Land Conservancy OF WEST MICHIGAN

FOREST SERVICE US DEPARTMENT OF AGRICULTURE

For additional resources,
please contact Trout Unlimited Great Lakes Staff