

Planting Trees & Measuring Survival in a Warming Door County

Perched at the southernmost edge of boreal forest habitats, Door County's unique geography and geology make it especially vulnerable to climate change. Rising temperatures threaten to shift the balance of tree species from boreal varieties like spruce, fir, and paper birch to more temperate species, such as oak and maple.

The Climate Change Coalition of Door County (CCDC), a partner of Lakeshore Natural Resource Partnership (LNRP), is thrilled to collaborate with The Ridges Sanctuary on the **Boreal and Temperate Mesic Forest Climate Survivability Project**, a new reforestation science research initiative supported by a grant from the Daybreak Fund. Together, our two organizations will initiate tree planting and ecosystem monitoring research to accelerate the success of reforestation in Door County, Wisconsin – an effort with global ecosystem resiliency implications.

The project seeks to answer fundamental questions relating to Door County's ecosystem health:

1. How will our forests change when climate changes?
2. Which trees will "win"... and which will not?
3. Will the boreal lower boundary move north?
4. What will be the larger environmental impact?
5. As conservation leaders and concerned community members, how should we respond?

PROTECTING DOOR COUNTY'S FORESTS FOR THE FUTURE

Door County, and particularly the lands of The Ridges Sanctuary, is an ecologically unique community, containing North America's southernmost boreal forest at its elevation, as well as bordering temperate forests (both northern wet temperate mesic and northern dry temperate mesic forested habitat).

As the climate warms, increasing challenges, including irregular rainfall, heat stress, new invasive species, and larger fire disturbances, have been witnessed and are progressively expected in Door County and beyond. These new climate patterns threaten the survivability of newly planted trees and more established forested ecosystems.

This three-year initiative, in partnership with The Ridges Sanctuary, CCDC, and LNRP, will study the adaptability of trees and other species in various habitats. Observations will be used to ensure the long-term success of reforestation efforts to increase climate mitigation, climate resilience, carbon sequestration, water protection, and biodiversity. The project will be guided and informed by the University of Minnesota's Center for Forest Ecology, and work in tandem with the Door County Big Plant and conservation-leader partners.

This project will take advantage of the ecology and environmental research culture in Door County to pilot a study on the survivability of trees over time. Five half-acre test plots will be planted on land owned and conserved by The Ridges Sanctuary, each with a respective control group. These sites (two boreal, two temperate mesic dry upland, and one temperate mesic wet lowland) were chosen to represent different forested ecosystems found in the Door Peninsula.

Site-specific native trees will be systematically and progressively planted over three years, based on carbon sequestration, survivability, and climate resilience. The study will utilize genetically unique tree varieties, including conifers (pines, spruces, firs, cedars, hemlocks) and deciduous trees (birches, maples, oaks, black cherry). At each of the test planting sites, soil condition, tree survivorship, tree growth, and flora and fauna ecosystem biodiversity data will be collected.

By monitoring tree growth, soil conditions, climate variables, mammal and other species, the project will identify tree species and genetically unique varieties that can thrive under changing climate conditions, and best help forest health and reforestation efforts for the next decade. To accelerate regional learning and ecosystem growth, the project team will continuously communicate data and best practices to the public, Door County Big Plant partners, and regional conservation partners.



Appel's Bluff Plot Work

2025 FIRST-YEAR TIMELINE AND WORK PLAN

SPRING	SUMMER	FALL	WINTER
<ul style="list-style-type: none"> • Baseline data • Initial site prep • Tree planting • Establish monitoring of various species 	<ul style="list-style-type: none"> • Baseline data • Establish monitoring of various species 	<ul style="list-style-type: none"> • Baseline data • Tree survivorship • Additional tree planting • Establish monitoring of various species 	<ul style="list-style-type: none"> • Baseline data • Share, present data with partners • Establish monitoring of various species

BUILDING ON THE SUCCESS OF THE BIG PLANT

This project builds on CCCDC's ongoing climate mission and the success of the county-wide Big Plant, launched in 2021. Conservation leaders - Crossroads at Big Creek, Door County Land Trust, Lakeshore Natural Resource Partnership, The Ridges Sanctuary, and Climate Change Coalition of Door County – along with over 50 other organizations, have planted 46,000 trees across Door County. The new grant with additional trees, data collection, and data sharing will ensure these efforts continue to evolve, improve, and grow.

Existing community-building Big Plant partnerships and methods will be utilized and expanded upon. In 2024, 13,900 trees were distributed and planted by 37 different organizations and 135 individual landowners. The current network includes environmental conservation partners, civic clubs, Friends groups, schools, LNRP partner groups, churches, DNR Green Tier communities, municipalities, business associations, and individual tree-planting partners.

The project and its data will directly lead to better tree survivability, carbon sequestration, and forest resiliency.

And most significantly, the project will lead to better tree planting practices and methods for a wider public audience, ready to more effectively build resilient ecological and human communities throughout the region.

Jeff Lutsey, Executive Director, Climate Change Coalition of Door County

Call to Action

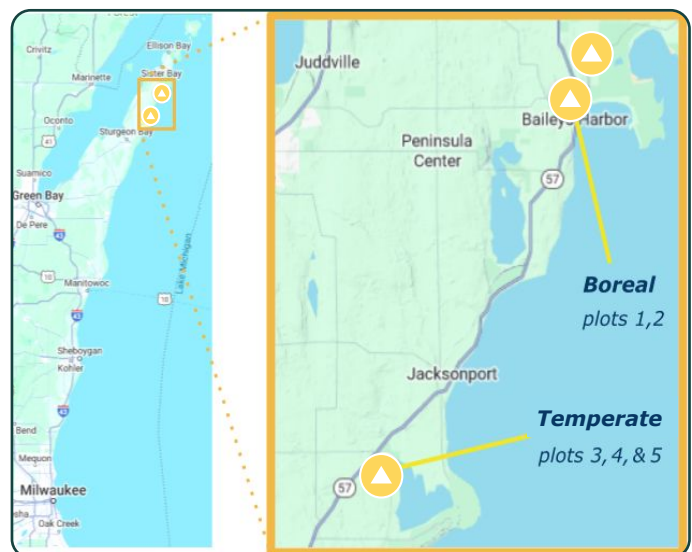
We are on a mission to significantly accelerate existing public tree-planting efforts and are actively seeking assistance from community members and citizen scientists to help with a number of important tasks, including:

- Site preparation this spring
- Tree planting in spring and fall, “tree-angel” monitoring, watering, and stewardship caring through the summer
- Species counting and monitoring (mammals, birds, amphibians, flora, etc.) over the seasons and years

If you want to make a difference and get involved, reach out to Tony Kiszonas, Director of Research, at tony@ridgessanctuary.org.



Boreal Test Plots, Appel's Bluff, Baileys Harbor



Boreal and Temperate Forest Climate Survivability Project Sites