



Chicago Wilderness

Oak Ecosystems Recovery Plan

EXECUTIVE SUMMARY

Funded by USDA Forest Service and US Fish & Wildlife Service

Lead collaborators: Lake County Forest Preserves • The Morton Arboretum



Karner Blue Butterfly
Lycaeides melissa samuelis



Chicken of the Woods
Laetiporus sulphureus



Red-headed Woodpecker
Melanerpes erythrocephalus

Chicago Wilderness is leading a coordinated recovery effort to preserve, restore, and expand oak ecosystems across the region.

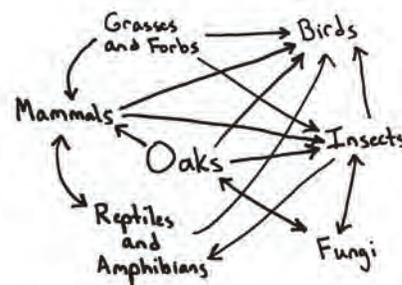
Oak trees are considered keystone species in the Chicago Wilderness Region, underpinning the biological diversity of some of our most crucial ecosystems. Despite their importance, we have lost more than 80% of oak ecosystems that occupied our region, and what remains is declining due to intense combined pressure from a number of threats.

By acting now, we can save our oaks and the many benefits they provide.

To help secure a future for oaks and their ecosystems, Chicago Wilderness members have created the ***Oak Ecosystems Recovery Plan: Sustaining our Oaks in the Chicago Wilderness Region*** to guide collective action in the years ahead. Like the ***Chicago Wilderness Biodiversity Recovery Plan***, this document outlines current conditions, a bold vision, goals, and the strategies needed to get us there.

an ecosystem is...

a biological community of interacting organisms and their physical environment;
an interconnected system



CRITTERS & PLANTS DEPEND ON OAKS... big-leaved asters • black-billed cuckoos • northern flickers • wood frogs • bats

WHY OAK ECOSYSTEMS MATTER

Oaks provide food and shelter for wildlife, perform valuable functions, and are a source of natural beauty for the enjoyment of the region's residents.

Oaks are important for so many reasons. Here are just a few...

[HABITAT]

Oak ecosystems contribute to vital biodiversity in the region. The open canopy of oak woodlands and savannas yields unique combinations of light levels, soil moisture, pH, and organic matter that support a wide range of plants and animals.

Oak trees support more than 600 species, providing critical food and habitat for:

- butterflies & moths
- nesting birds and bats
- mushrooms and microorganisms
- rare, threatened, and endangered species

[CLIMATE]

As a species, oaks are drought and heat tolerant, making them relatively well adapted to future climate impacts. Due to their longevity, large stature, and vast canopies, oaks also provide significant carbon storage, mitigate urban heat island effects, and reduce energy use in buildings.

[PEOPLE]

Beautiful in both form and function, oaks help keep our region healthy for generations to come. Viewed as iconic and majestic, oaks and their ecosystems capture the imagination, instill a sense of place and regional identity, and link us with our natural heritage. Oak woodlands and savannas help clean our air and water and provide stunning destinations for birding, hiking, and other outdoor recreation.



farm oak

[NATURE ECONOMICS]

Oak ecosystems provide valuable services. Due to their large size, oaks are some of the most significant contributors. A large oak can reduce 5,400 gallons of stormwater runoff and remove more than 1,000 lbs./yr of carbon dioxide from the atmosphere.

All told, our region's oak ecosystems provide over \$2 billion worth of flood control and other water management services (CMAP 2014).

.....
did you know?...

ink from oaks helped pen the Declaration of Independence, Bach's musical scores, and da Vinci's illustrations

- blue-spotted salamanders
- spicebushes
- more than 500 species of butterflies and moths...

WHAT WE KNOW

Scientists from The Morton Arboretum, Lake County Forest Preserves, and other conservation partners documented oak ecosystems in Northeast Illinois over the last 150 years.

Prior to Euro-American settlement, oak ecosystems were widespread across the Chicago Wilderness Region. By the 1930s, 30% of these original oak ecosystems remained, due to agriculture, settlement, and the burgeoning metropolis of Chicago. By 2010, only 17% remained, leaving a patchwork of small, fragmented, and unhealthy lands.

17%

of our original oak ecosystems remain

LEGEND

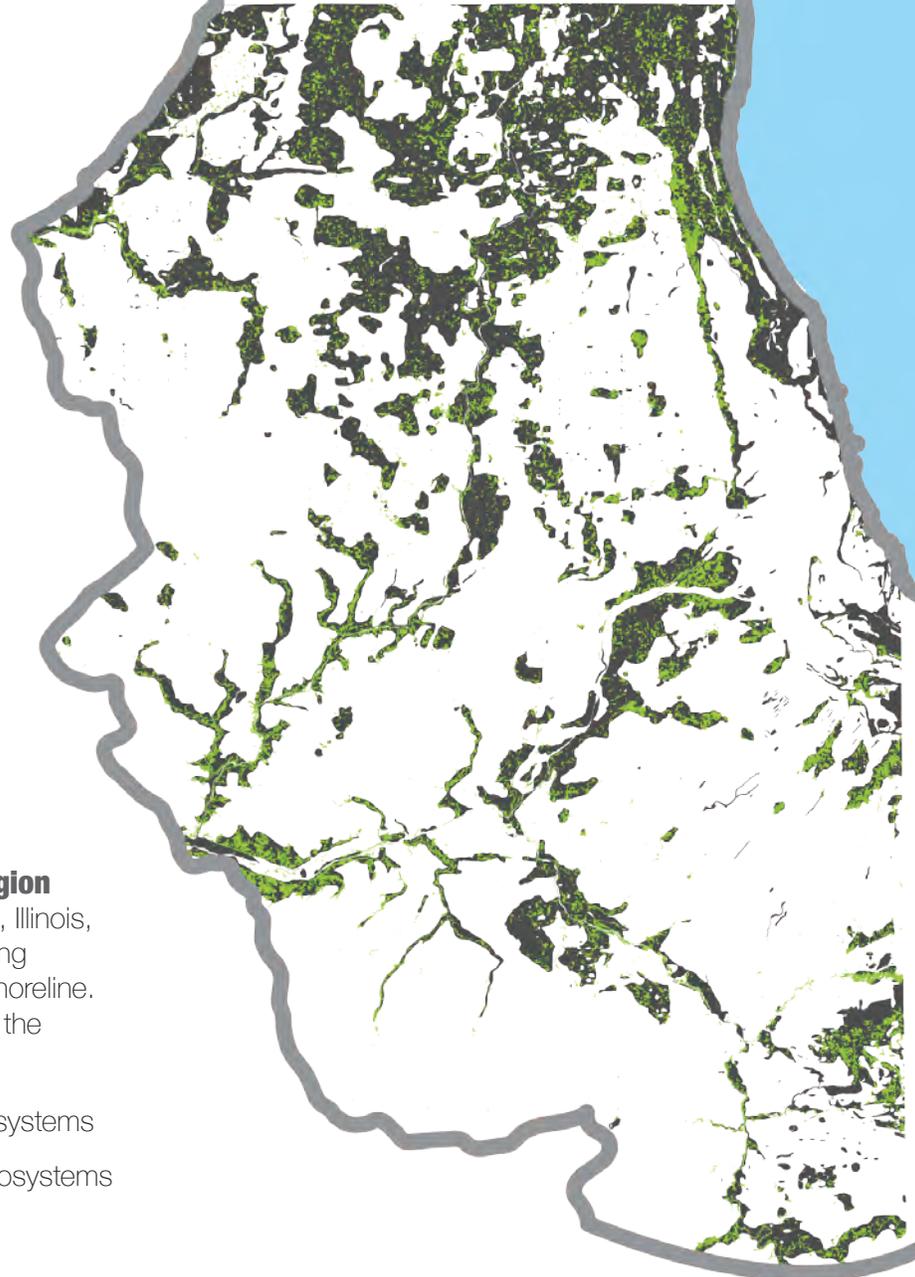
The Chicago Wilderness Region

comprises parts of Wisconsin, Illinois, Indiana, and Michigan, including 225 miles of Lake Michigan shoreline. Oaks are currently mapped in the Illinois portion only.

- 1830s - original oak ecosystems
- 2010 - remaining oak ecosystems

missing link

mapping oak ecosystems in remaining areas of our region (parts of Wisconsin, Indiana, and Michigan) is a high priority





Middlefork Savanna in Lake County, Illinois

ISSUES & THREATS

Remnant oak ecosystems and future oak populations face serious threats ranging in scale from individual trees to entire landscapes.

oaks are vital contributors
to our connected landscapes

Lack of oak regeneration is paramount to the challenges that oak ecosystems face. Without age diversity in our oak population, we run the risk of losing this vital regional resource.

Related critical challenges include:

- conversion to lower quality forests
- destruction and fragmentation
- invasive plants, diseases, and pests
- wildlife populations out of balance
- pollution
- climate change

LAKE MICHIGAN

we need more and larger parcels of land
for oak ecosystems

70%

of remaining oak ecosystems exist on privately owned lands

This underscores the importance of engaging diverse landowners

.....
did you know?...

The mighty oak is our national tree for its strength, diversity, and beauty. Some say oaks save us from boredom.

one region
one vision
one voice





volunteers rescue a 400-year-old white oak in McHenry County, Illinois

A BOLD LOOK AHEAD

Success will require collaboration and commitment around aligned regional action. Our vision...

Protected, healthy, and expanded oak ecosystems are providing improved habitat and quality of life.

- **Priority best management practices** are implemented in concert with public and private landowners.
- **Specific threats**, such as invasive plants and pests, are proactively managed.
- **Forecasts and effects of climate change** are guiding protection and management decisions.

.....
Coordinated action is needed across a variety of landowners to ensure a thriving future for oak ecosystems.

The mighty oak reclaims its position as an integral part of our regional story and cultural heritage.

- **Environmental, economic, cultural, and social benefits** of oak ecosystems are quantified and promoted.

A sustained stewardship network advocates and cares for our region's oak ecosystems.

- **Nursery and landscape industries** are prioritizing oak production and planting based on an increased demand across the region.
- **A robust and region-wide monitoring and research network** is active.
- **Diverse landowners are engaged.**

WHAT'S NEXT?

To achieve the vision and goals of oak ecosystem recovery across the Chicago Wilderness region, we are excited to build momentum through these strategic activities.

[MAPPING]

Building upon our existing dataset documenting the historic and current extent of oak ecosystems across Northeast Illinois, we will map the rest of the Chicago Wilderness region (parts of Wisconsin, Indiana, and Michigan). Additionally, we will prioritize specific areas in greatest need of intervention, taking into account such factors as presence of engaged landowners, landscape connectivity, priority species, environmental risks, etc.

[LANDOWNER RELATIONSHIPS]

With more than 70% of remaining oak ecosystems on private lands, partnerships with landowners will be essential to the success of this plan. We will leverage existing outreach programs, such as *Conservation@Home*, *Project Quercus*, and *TreeKeepers*, to build the foundation for long-term relationships around priority areas.

[OUTREACH]

Outreach to stakeholders is critical.

The Chicago Region Trees Initiative will engage with government, business, civic, and community organizations to further partnerships and bring immediate feedback to guide our work.

[RESTORATION & MANAGEMENT]

The survival of oak woodlands and savannas across the region depends on active restoration and management. The threats are significant and resources will always be limited. For maximum impact, we will identify, promote, and coordinate the highest priority management activities to ensure the resiliency of oak ecosystems across the region.

[RESEARCH]

Our actions must be grounded in the best available science. We will need to assess existing studies and critical knowledge gaps to inform a long-term research agenda for oak ecosystems in the region.

[RESOURCES]

Accomplishing this work will require access to new technical and financial resources.

By demonstrating relevance and impact and forging innovative partnerships, Chicago Wilderness will build the capacity of its members and other stakeholders to secure necessary support for this important work.



protected oak seedling



grandmother oak

one region
one vision
one voice





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Lead collaborators:

The Morton Arboretum
Lake County Forest Preserves

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Illinois Department of Natural Resources
Kane County Development Department
Kendall County Forest Preserve District
The Land Conservancy of McHenry County
McHenry County Conservation District
Openlands

The concept for this plan was inspired by:

Ed Collins of the McHenry County Conservation District and his project to map remnant oak communities for McHenry County in 2005.

This document is an executive summary of the *Oak Ecosystems Recovery Plan: Sustaining our Oaks in the Chicago Wilderness Region*.

Photos courtesy of:

Carol Freeman
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Wisconsin Department of Natural Resources
WRD Environmental

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