



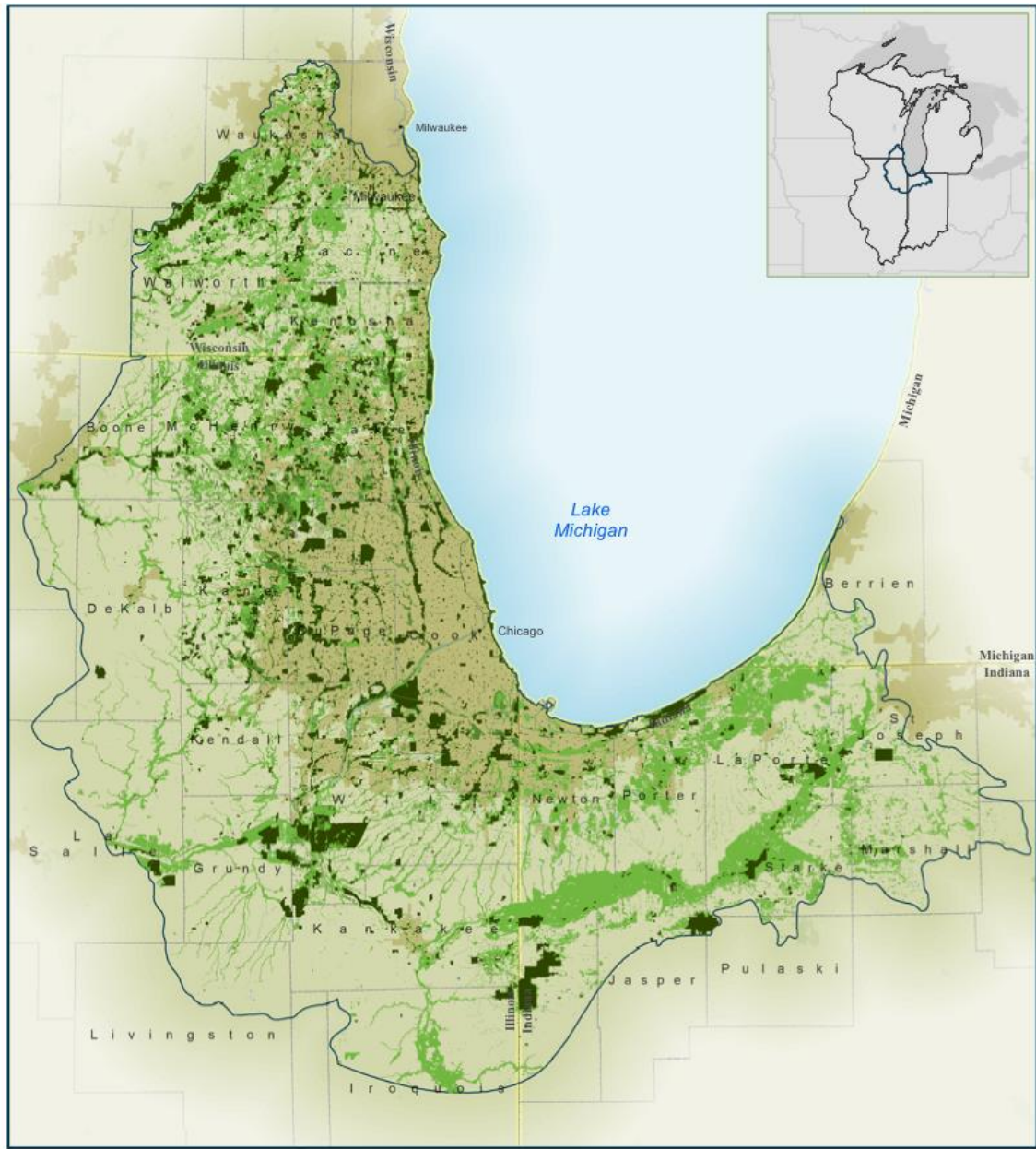
Climate Adaptation for Urban Nature

Abigail Derby Lewis
The Field Museum, Science Action Center
Chicago Wilderness



The **Field**
Museum







Chicago Wilderness Climate Action



Chicago
Wilderness



BIODIVERSITY RECOVERY PLAN

Climate Change Update

climate.chicagowilderness.org



Chicago Wilderness Climate Action





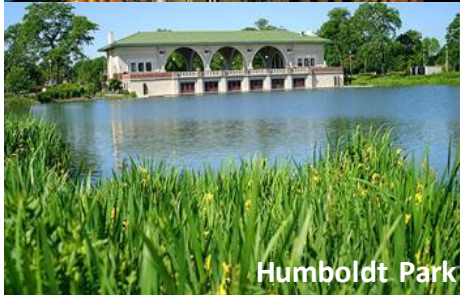
Lurie Garden



Northerly Island

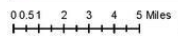
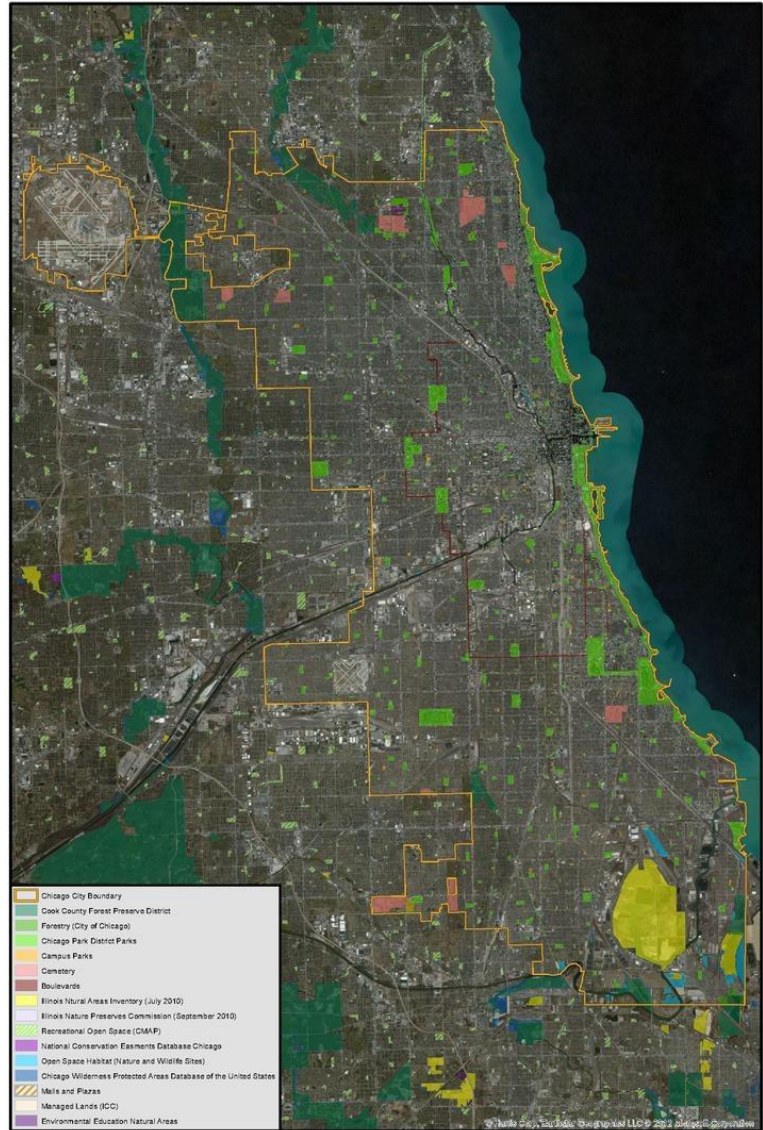


City Hall rooftop



Humboldt Park

Chicago Green Infrastructure



Sources: Various including City of Chicago former Department of the Environment, Cook County Protected Areas Database (PAD-US), Chicago Metropolitan Agency for Planning (CMAAP), Illinois Natural History Survey, National Conservation Easements Database





Urban Climate Action



- Convened based on need expressed by resource managers
- 27 people, 15 organizations, 9 City Departments (AKA “Climate Fellows”)
- 3 Climate Clinics

The screenshot shows the homepage of the Adaptation Collaboratory. The header features the logo 'COLLABORATORY for ADAPTATION to CLIMATE CHANGE' and a search bar. Below the header is a navigation menu with links: Home, myCollab, Resources, Members, Explore, About, Support, and Help. The main content area includes a large banner image of a lake with the text 'Welcome to the Collaboratory Informing adaptation to climate change' and a 'Learn more' link. To the right of the banner is a welcome message: 'Welcome to the Adaptation Collaboratory! This website is a resource for research, education, and collaboration in the area of adaptation and climate change. It is funded by the National Science Foundation and the University of Notre Dame. Our team at Notre Dame, and our outreach partners at The Nature Conservancy's Great Lakes Project, invite you to share your information needs, ideas, tools, and experiences in climate change adaptation. Click on a task in the slide show or choose an activity from the menus and start adapting! If you are new to our site, you might start with our Collaboratory Tutorial'. Below the banner are three columns: 'RESOURCES' with a search bar and popular tags like 'climate change', 'adaptation', 'Policy', 'Government', 'legal', 'Law', 'Adaptation Strategies', 'Government - State', 'regulation', 'Legislation', 'conservation planning', 'state governments', 'SWAPs', 'State Wildlife Action Plans', 'Comprehensive Wildlife Conservation Strategies', 'environmental health', 'environmental policy', and 'great lakes'; 'WHAT'S NEW IN RESOURCES' with a list of recent publications and webinars; and 'GET INVOLVED' with options like 'Upload Content', 'Form working groups', 'Take a Poll', 'Give us Feedback', and 'Contact Us'.



Urban Climate Action



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The screenshot shows a website page for the Chicago Adaptation Working Group. At the top is a navigation bar with links: Home, myCollab, Resources, Members, Explore, About, Support. Below the navigation bar is a breadcrumb trail: You are here > Groups > Chicago Adaptation Working Group. The main content area features a header image of a city skyline with yellow flowers in the foreground, captioned "Northerly Island". Below the image is a sidebar menu with the following items: Overview, Members, Wiki, Resources, Messages, Discussion, Blog, Wish List, and Calendar. The main content area has a title "Chicago Adaptation Working Group" and a sub-header "About the Group" with a "Show Public Description (+)" link. The text below describes the group's purpose: "This working group was created to promote collaboration among those interested in climate change adaptation that reduces risks to people and nature within the Chicago Region. The group began as a place to coordinate work on an initial set of guidance called 'Advancing Adaptation in the City of Chicago: Climate Considerations for Management of Natural Areas and Green Spaces,' an effort that represented collaboration between City of Chicago officials responsible for natural areas and greenspaces, and scientists at the Field Museum, The Nature Conservancy, and the University of Notre Dame. Over 20 'Climate Fellows' that manage or conduct research on natural resources in the Chicago Region helped us frame and develop the guidance. The goal of this group is to help keep this guidance up to date, and to facilitate adaptation decision making within the City. For more information, contact Abigail Derby Lewis at aderby@fieldmuseum.org. The report can be found on the resources page, or directly accessed here: <https://adapt.nd.edu/resources/1019>". Below the text is a thumbnail image of a report cover titled "CLIMATE CONSIDERATIONS" with the subtitle "AN MANAGEMENT OF NATURAL AREAS AND GREEN SPACES IN THE CITY OF CHICAGO". At the bottom of the page, there is a call to action: "Please visit the Discussion page if you: - Have feedback on the guide. - Are interested in sharing observations of climate impacts. - Have an example to share of how your organization has adapted. - Or would like to start your own discussion!"



Urban Climate Action



Identifying climate-sensitive decisions

What planning and management actions could reduce a site's vulnerability to specific climate-related impacts?

- Drought and heat stress
- Extreme storms (e.g., precipitation flashiness and flooding)
- Loss of key functional system or species

<https://adapt.nd.edu/resources/1019>



CLIMATE CONSIDERATIONS

for **MANAGEMENT** *of* **NATURAL
AREAS** *and* **GREEN SPACES** *in the
CITY of CHICAGO*





Urban Climate Action



Summer 2013: 4 undergrad interns, 6 pilot sites

Urban Developed Sites:

- The Field Museum
- Chicago Park District, 31st Street Beach
- Loyola University, Lakefront Campus

Urban Natural Areas:

- Loyola University, Retreat & Ecology Campus
- Cook County Forest Preserve, Eggers Woods
- The Nature Conservancy, Indian Boundary Prairies



Urban Climate Action



General Adaptation Issues

Urban Developed Sites and Natural Areas:

- Managing connectivity for migrating bird populations
- Seed mixes
- Invasive species management



Urban Climate Action



Challenges for Utility of Guidebook

- **Authority:** need to target high-level decision makers
- **Cost:** constrained by operations cost and annual budget; need:
 - *Biodiversity benefit* as starting point for discussion, and
 - *Actions cost-benefit* for long-term and short-term justification of changes



Urban Forest Adaptation



- ✧ Urban systems face specific challenges under climate change that differ from other landscapes
 - Social, Political, Ecological

- ✧ Developed **Strategies, Approaches, Tactics** adapting urban forests to climate change
 - Modeled on NIACS resource for NE forests

- ✧ Urban Forests defined as: all trees & tree-dominated ecosystems within a metropolitan region
 - Tactics in many cases were split into “Urban Developed Sites” and “Urban Natural Areas”

Forest Adaptation Resources: Climate Change Tools and Approaches for Land Managers

General Technical
Report NRS-87
2012

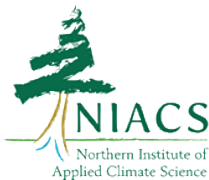











Urban Forest Adaptation



- Urban Forest Climate Adaptation Chapter - overview issues, strategies
- Vulnerability Assessment - help us identify key issues based on our regional and local forest
 - identify how climate change will impact us specifically
 - identify management strategies based on our own urban forest
- 4 Case Studies – implementation workbook



Climate Change Response Framework


	
Home Our Approach Projects Demos Products Partners Resources Contact	
	Central Appalachians
	Central Hardwoods
	Mid-Atlantic
	New England
	Northwoods
	Urban

Partnerships

Vulnerability Assessment

Forest Adaptation Resources

Demonstration Projects




Urban

Urban forests will experience local climate change impacts in the coming decades. To reduce these impacts, urban forest managers will need to adapt their management, but often lack the specialized knowledge and tools to do so.

The overall goal of this effort is to ensure that urban forests will continue to provide benefits to the people that live in urban communities as the climate changes. The Urban Forestry Framework project is in the beginning stages of planning and development. We are seeking urban forestry professionals from variety of organizations, both public and private, to work toward this goal by accomplishing the following objectives:

- Engage with communities across the Northeast, Mid-Atlantic, and Midwest that are interested in adapting their urban forest management to climate change.
- Work with these communities to assess the vulnerability of their urban forests to climate change.





Urban Forest Climate Response



Change over time

- How will climate change affect urban forests?
 - Changes in temperature
 - Changes in precipitation
 - Increased severe weather



Urban Forest Climate Response

Change over time

- Age structure
- Urban areas
- Natural areas
 - Forest succession
 - Future composition



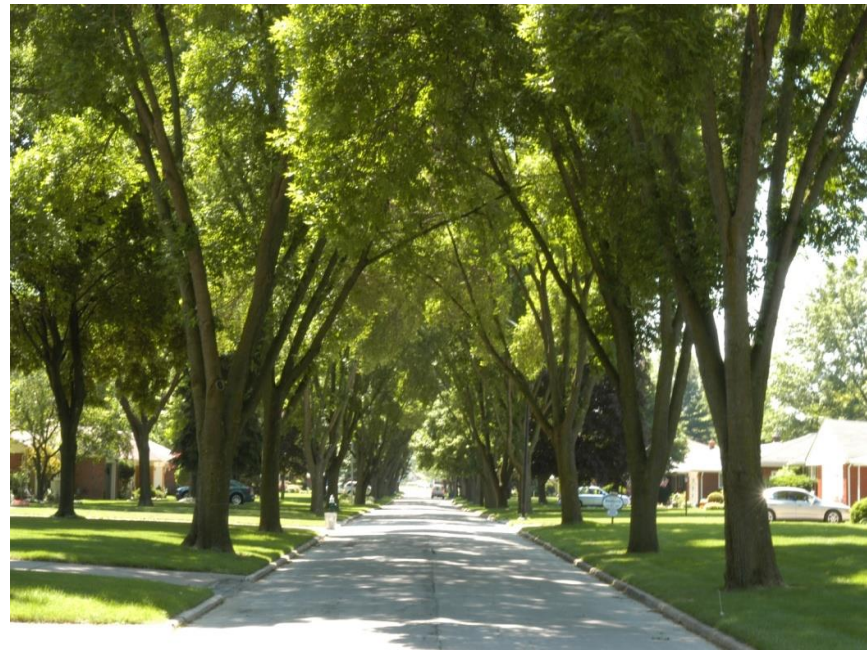


Urban Forest Climate Response



Change over time

- Age structure
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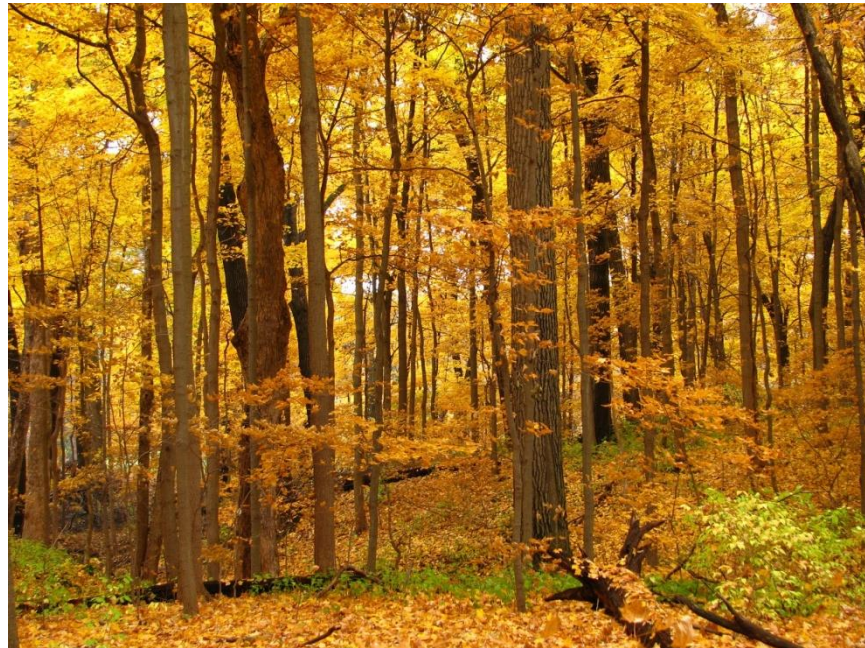


Urban Forest Climate Response



Change over time

- Age structure
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- Natural areas
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Urban Forest Climate Response

Change over time

- Age structure
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Urban Forest Climate Response



Development

- How will development decisions affect forests?
 - Fragmentation
 - Carbon storage
 - Stormwater management



Home » Tools » Tools for Learning



LEARN

Climate change refers to shifts in weather patterns over long periods of time. Use the tools below to LEARN about climate change and climate action as they relate to the Chicago region.

CHICAGO CLIMATE ACTION PLAN

The City of Chicago's roadmap to reducing greenhouse gas emissions to 80% below 1990 levels by 2050.

CLIMATE ACTION PLAN FOR NATURE

Regional plan created by the Chicago Wilderness alliance to help local nature adapt to climate change.



<http://climatechicago.fieldmuseum.org/>

CHICAGO COMMUNITY CLIMATE ACTION TOOLKIT

The Field Museum worked with partners in four Chicago neighborhoods to develop and implement community-led climate action projects.

Each project builds on research conducted by Museum anthropologists, which identified local strengths and concerns that can serve as springboards for engaging communities in the region's two climate action plans.



CHICAGO COMMUNITY CLIMATE ACTION TOOLKIT
 Image courtesy of The Field Museum, all rights reserved.
climatechicago.fieldmuseum.org



In Forest Glen, Boy Scout and Girl Scout troops are engaging homeowners in water conservation and promoting climate- and nature-friendly outdoor practices.

In Pilsen, community organizations are transforming a vacant lot into a native garden where children can play and families can learn about climate change.

In Bronzeville, community organizations are building on the neighborhood's African-American history to develop culturally meaningful gardens, healthy vegan cooking events, and green tours.

In South Chicago, youth organizations are creating a community-wide exhibit that celebrates local green practices and their community's vision for a green future.

CHICAGO COMMUNITY CLIMATE ACTION TOOLKIT
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climatechicago.fieldmuseum.org



Thank you!

Contact info:

Abigail Derby Lewis
aderby@fieldmuseum.org

