CHICAGO PARK DISTRICT

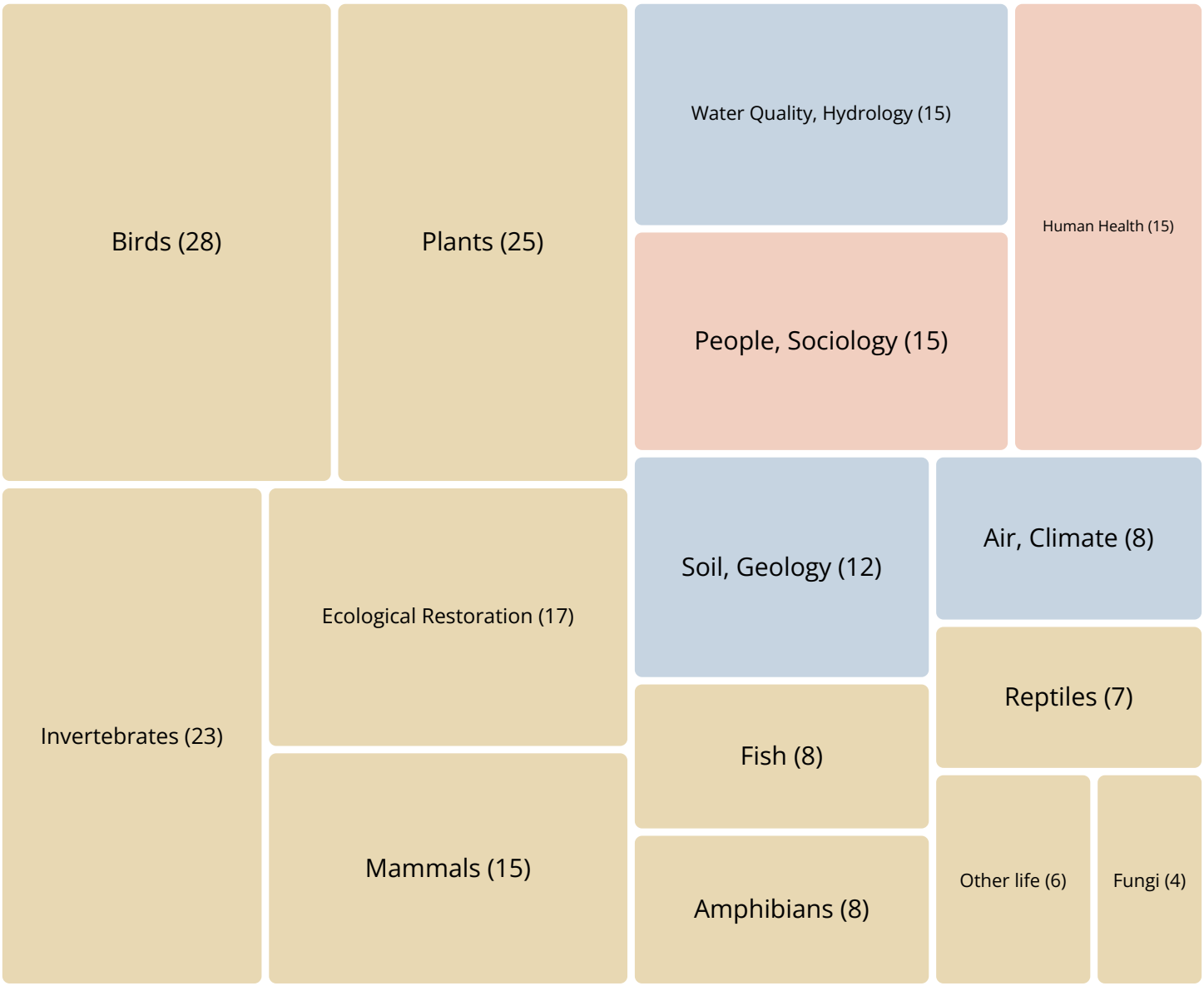
SCIENCE IN THE PARKS: 2024 ANNUAL REPORT

Red-winged blackbird by Ben Beranek in Lincoln Park

Scientific research in the parks is conducted by Chicago Park District staff, local university staff and students, other research institutions, as well as thousands of Chicago residents and visitors annually through community science projects. This report highlights several examples of research and monitoring projects conducted in 2024, showcasing the wide-ranging scientific efforts taking place in Chicago's parks.

With **107 active projects in 2024**, the number of research and monitoring projects occurring throughout the parks has **more than doubled since 2019**.

2024 PROJECTS BY STUDY SUBJECTS



2024 RESEARCH ORGANIZATIONS IN CHICAGO PARKS

Alliance for the Great Lakes
Argonne National Laboratory
Audubon Great Lakes
Bird Conservation Network
California Academy of Sciences
CAPA Strategies
Center for Regenerative Solutions
Chicago Botanic Garden
Chicago Ornithological Society
Chicago State University
ChronoLog
City of Chicago Department of Public Health
Cornell
CrowdHydrology
DePaul University
Duke University
Field Museum of Natural History
Forest Preserves of Cook County
Friends of the Chicago River
Geographic Society of Chicago
Great Lakes Observing System
Great Lakes Phragmites Collaborative
Illinois Department of Natural Resources
Illinois Institute of Technology
Illinois Natural History Survey
Illinois Ornithological Society
Illinois State Geological Survey
iNaturalist
Institute for Bird Populations
Lincoln Park Zoo - Urban Wildlife Institute
Loyola University
Max McGraw Wildlife Foundation
Michigan State University
Morton Arboretum
National Great Rivers Research and Education Center
Natural Areas Conservancy
Natural History Museum of Los Angeles County
Natural Resources Canada
North Park University
Northeastern Illinois University
Northwestern University
Ohio State University
Peggy Notebaert Nature Museum
Purple Martin Conservation Association
Shedd Aquarium
Singing Insects Monitoring Program
The Morton Arboretum
The Nature Conservancy
TinyEarth
U.S. Fish and Wildlife Service
U.S. Geological Survey
University of Chicago
University of Illinois Chicago
University of Illinois Urbana-Champaign
University of Michigan-Flint
USDA-APHIS Wildlife Services
Wheaton College
Windy City Bird Lab

+ thousands of Chicago residents and visitors annually who contribute to community science projects and platforms

Thank you!

Researchers obtain permission to conduct research and monitoring through the Chicago Park District's Research Permit program. Apply at www.chicagoparkdistrict.com.

February 2024
Community Science and Research Summit at Big Marsh Park

Plant monitoring for **Native Lawn Alternatives** study

TreeKeepers learn how to use **iNaturalist** at Washington Park

WEIGHING IN ON NATIVE PLANTINGS AT MUSEUM CAMPUS

Between 2022 and 2024, the Chicago Park District, Field Museum, and Living Habitats, with support from the City of Chicago, Shedd Aquarium, and Adler Planetarium, collaborated to conduct **research to better understand resident and visitor use of and vision for the Museum Campus in Grant Park**. The study included a variety of survey types: passive (on posted signage) and intercept (short interviews), with a goal of understanding attitudes around native plants in urban landscaping.

One of the major findings from both surveys was that **the existing Museum Campus native plantings are widely valued, liked, and considered an asset**. According to the passive surveys, over 98% of the 271 respondents had a positive attitude toward native plantings like those seen in the Museum Campus gardens. Most people responded positively to adding more native plantings to areas that are presently lawn.

Respondents generally liked the mixed use (picnicking/sitting, dog walking, reading interpretive signs, observing nature) and the mixed elements of the landscaping (native plant gardens, trees, planters, and lawn).

Some statements signaled that the native plantings around the campus have inspired people to take their own conservation action. For example, one participant wrote, ***"Gardens such as the ones at Field Museum inspired me to start the process to install a community garden near where I live."***

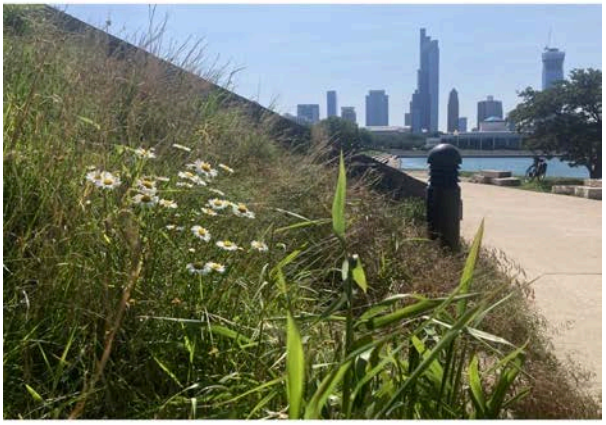
Other findings include that respondents valued and enjoyed observing the wildlife that was attracted to Museum Campus. Trees were noted as providing shade and being important. Shade was specifically mentioned as an asset of the landscaping on Museum Campus that is used and/or lacking.

Seating and benches were valued and several respondents noted a desire for more seating options. The views, especially of Lake Michigan, were sometimes identified as an asset and the sculptures on campus appear to be valued as well.

While Museum Campus hosts many visitors, South Loop residents are frequent users of Museum Campus and are using it as their local park, whether to participate in health or leisure activities, spend time with families, or walk their dogs. One South Loop resident and regular patron of Museum Campus stated in an intercept survey: *"I do love the native plants, something that could have been here before. I like the signage about the plants. The plants bring hummingbirds and butterflies. I love the lawn and the planters, but the native plants are my favorite."*

Passive survey sign (with QR code and survey URL) posted at Museum Campus

Finally, observations of dog walkers and some requests in both survey types indicated that Museum Campus is a dog-friendly area and that there is a desire for the campus to remain open to dogs.



Example photos of native landscapes on passive survey, supplementing the question: *"The Museum Campus has a number of areas that feature native plants (perennial plants that are native to this region and have a more natural appearance) such as those pictured below. What do you generally think about these types of plantings?"*

Willing to share more about your visit today? Please share your additional comments below, we'd love to hear them!

Word cloud generated from passive survey responses

Monarch feeding on common milkweed at Museum Campus, photos provided by Nicole Machuca, Field Museum

iNaturalist IN THE PARKS

iNaturalist is an app and website that helps people identify plants, animals, and other organisms while also generating data for science and conservation, including in Chicago parks. Through iNaturalist, Chicago residents and visitors can connect with a community of scientists and naturalists who help each other learn about nature!

In 2024, over 2,600 people submitted nearly 40,000 nature observations within Chicago parks, representing at least 1,500 different species of wild organisms. These observations help park district land managers identify invasive species locations, track rare species of conservation concern, and help us all better understand urban nature. For example, **dozens of species of fungi were documented in the parks for the first time** on iNaturalist in 2024!

Right: Eastern gray squirrel (*Sciurus carolinensis*) by Ben Zerante in Lincoln Park

IN 2024

2,646 community scientists

39,366 observations

1,563 species

(community-identified/"Research Grade")

Many photos iNaturalist community members captured in 2024 are included in this report. Explore everything the community has found at:
https://www.inaturalist.org/observations?place_id=153032

Silver-haired bats (*Lasionycteris noctivagans*)
by Dan Lory at Park 566

Red-winged blackbird (*Agelaius phoeniceus*)
by Robert Loerzel in Lincoln Park

Peppered jumping spider (*Pelegrina galathea*)
by Gray Rothkopf at West Ridge Nature Park

A dictyopharid planthopper (genus *Scolops*)
by Maureen Murphy at Horner Park

Butterfly milkweed (*Asclepias tuberosa*)
by casteensb in Lincoln Park

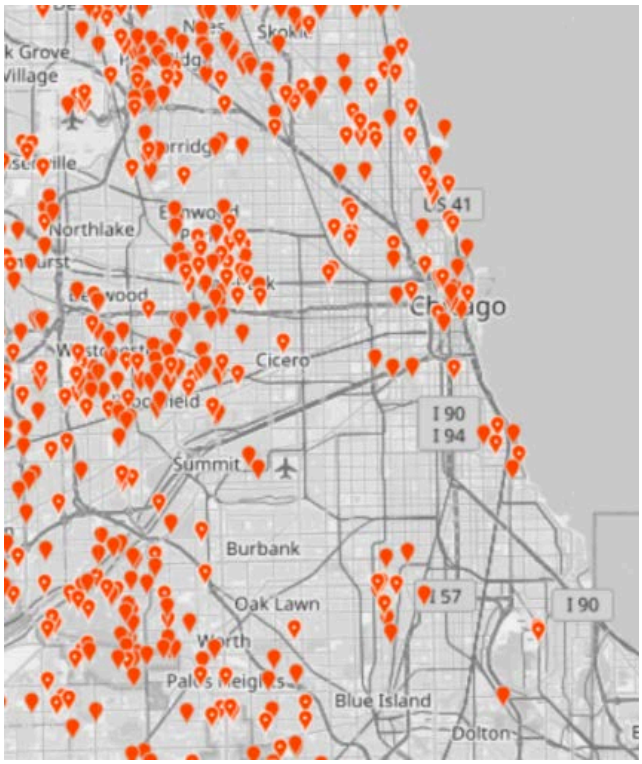
Periodical cicada found at Horner Park
by @arjpurple

Periodical cicada found at Clark Park
by @clt74

THE 2024 EMERGENCE OF 17-YEAR CICADAS

In 2024, Chicagoland experienced the **emergence of Brood XIII periodical cicadas**, a natural event that occurs only once every 17 years. These small insects of the genus *Magicicada* have black bodies, orange wings, and bright red eyes. For a few weeks in the summer, **the deafening buzz of their mating chorus filled the air** in parks, preserves, and other areas with mature trees. After mating, female cicadas laid eggs inside small branches of trees and shrubs. Newly hatched cicadas then burrowed underground and will stay there for 17 years!

Trained cicada monitors **documented the presence or absence of the cicadas through the Magicicada Soundmap Project** so scientists can better understand their populations and natural history.



Chicago-area periodical cicada observations shared on iNaturalist in 2024

AQUATIC LITTER MONITORING AT MONTROSE HARBOR, LINCOLN PARK

Litter in parks and urban waterways is both unsightly and negatively impacts Chicago wildlife and ecosystems. In the spring of 2024, the Chicago Park District installed several **"marina trash skimmers" along the lakefront to collect and remove trash from the water**. Researchers and students from Loyola University, in partnership with Chicago Harbors, began a **pilot project to study the amount and type of litter collected by one of the skimmers at Montrose Harbor.**

Gavin Gillespie and others at Chicago Harbors emptied the skimmer on a weekly basis. Between August and October in 2024, Loyola University professor Tim Hoellein and students **collected the trash for weighing, drying, and classifying.**

Students participating in this work were Caitlin Hyatt, Aana Shanai, Thomas Botsford-Rhodes, Tristan Petersen, Andrew Conover, and Angelica Topor.

Data analysis is underway, but initial results show a highly variable weight and amount of trash per weekly sample, with an average of 249 trash items per week (example collection shown above). Loyola students will be conducting a more in-depth analysis of the collected data in early 2025. **Results of this study aim to help inform litter prevention strategies and policies.**

Marina trash skimmer at Montrose Harbor, photos provided by Tim Hoellein

249

Average number of trash items collected in skimmer per week during the pilot project at Montrose Harbor

WINGS OVER THE WINDY CITY

University of Illinois Urbana-Champaign biologist Benjamin Van Doren received a three-year, $300,000 Biota Grant from the Walder Foundation to support his Migration Biology Lab's research on bird migration through Chicago. In partnership with other organizations such as Windy City Bird Lab, **the project aims to study the risks that migratory birds face while traveling through the city each spring and fall** by: 1) showing how they use aerial habitat, 2) characterizing the value of urban green spaces, and 3) identifying the most important factors that drive bird-building collisions. The researchers' goals are to **"develop data-driven tools for use by advocates and policymakers and engage and educate the public about the inspiring phenomenon of bird migration and what they can do to help"**.

At North Park Village Nature Center, Northerly Island Park, Big Marsh Park, and many other Chicagoland sites, **custom-designed acoustic monitors have been installed to listen to the nocturnal flight calls of birds**. Using a machine learning model called Nighthawk, the calls can be automatically identified to specific bird species.

The project is still in its early stages and the data are being processed and refined. Initial results found that in the fall of 2024 at Northerly Island Park, over 71,000 bird calls were detected. Killdeer was the most frequently detected species, followed by Swainson's thrush, gray-cheeked thrush, American tree sparrow, and white-throated sparrow.

Killdeer by Alexander Viduetsky

71,000

Number of nocturnal flight calls detected at Northerly Island Park in fall 2024

LEARNING ABOUT URBAN NATURE WITH THE CITY NATURE CHALLENGE

The **City Nature Challenge** is an annual event where city residents and visitors document local nature and to help all of us **better understand urban biodiversity**. In the Chicagoland Region, **1,000 participants documented 11,100 nature observations** during the four-day challenge in late April 2024. Globally there were over 83,000 participants in 690 cities!

City Nature Challenge

Chicagoland Region

City Nature Challenge 2024: Chicagoland Region was organized by:

Chicago Park District · Hortus in Urbe · Organized 1934

Chicago Wilderness Alliance

Forest Preserve District Will County

ISC Illinois Science Council

Chicago Ornithological Society

Lincoln Park Zoo. For Wildlife. For All.

The Nature Conservancy

CITY NATURE CHALLENGE IS ORGANIZED BY

California Academy of Sciences

Natural History Museum Los Angeles County

The 2025 City Nature Challenge takes place
April 25th through April 28th:

learn more at https://bit.ly/cncchi2025

TRACKING THE ANNUAL MIGRATIONS OF PURPLE MARTINS

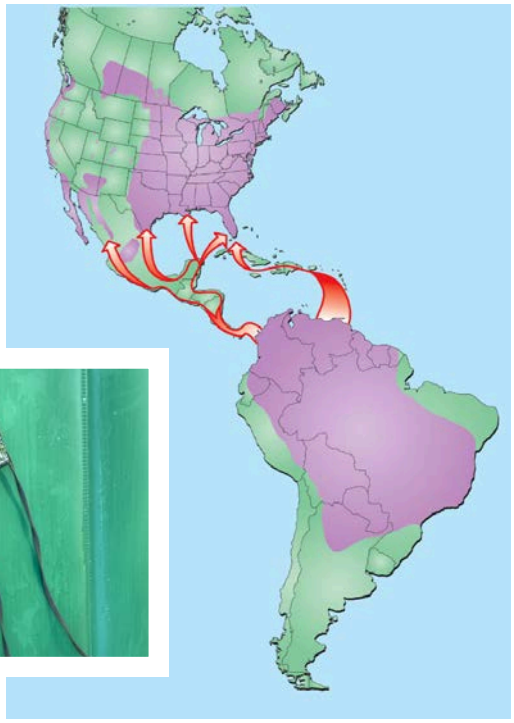
For over 20 years, teams of volunteers have helped maintain bird nesting structures for purple martins, with active colonies currently at three parks: Jackson, Lincoln, and South Shore Cultural Center.

This summer, Joe Siegrist of the Purple Martin Conservation Association (PMCA), along with several Field Museum staff and volunteers, **equipped several Chicago purple martins with tiny geolocator tags**. The goal of their research is to learn more about the migration and ecology of purple martins to better protect the species. **Previous research has found the birds can travel over 300 miles per day**, with some navigating across the Gulf of Mexico (500-600 miles) in non-stop flight.

The martins have not been found to travel or overwinter with their offspring or other birds from their nesting colony. In South America, they rely on small islands in the Amazon River system for night roosting.

Purple martins fly **over 5,000 miles** between South America and North America every spring and fall

Careful collection of a purple martin (left) for fitting with a geolocator (center)



Spring migration of purple martins (PMCA)

Northern map turtle (*Graptemys geographica*)
by Em De Blas in a north side park

Twelve-spotted skimmer (*Libellula pulchella*)
by Robert Andrews at South Shore Cultural Center Park

American barn swallows (*Hirundo rustica*)
by Jing-Yi Lu at Jackson Park

Common raccoon (*Procyon lotor*)
by @ejgejg in Jackson Park

American marram grass (*Calamagrostics breviligulata*)
by cassi saari in Lincoln Park