

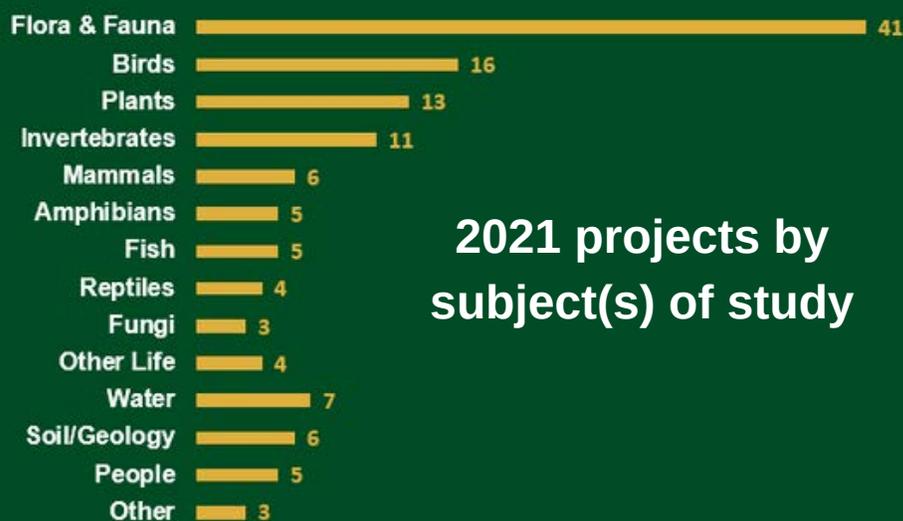
# CHICAGO PARK DISTRICT SCIENCE IN THE PARKS: 2021 ANNUAL REPORT



Scientific research and monitoring occurs all year round at the Chicago Park District. Studies are conducted by Chicago Park District staff, university staff and students, other research institutions, as well as thousands of community scientists annually through platforms like iNaturalist and eBird.

From exploring lawn alternatives to imperiled bird monitoring, there were a total of 50 active projects in 2021. A few are highlighted here.

Right: prairie smoke (*Geum triflorum*) at Jackson Park Natural Area



Above: New England aster (*Symphotrichum novae-angliae*) at Canal Origins Park Natural Area

Researchers obtain permission to conduct research and monitoring in the parks through the Chicago Park District's Research Permit program.

Apply at [www.chicagoparkdistrict.com](http://www.chicagoparkdistrict.com)

# 2021 on iNaturalist in the parks



Above: Mothing at Park 565

**2,080** community scientists

**34,020** observations

**1,419** species (Research Grade)

*"At age 11 I was sucked into the world of birds. I started using iNat to give myself an idea of what I was looking at in a bird's mouth ready to feed to young, or the tree that bird was sitting in, and that has now morphed into an all-out obsession where I take photos of everything I see."*

—iNaturalist user Simon Tolzmann (@brdnrd)



Left: A rare, vagrant painted bunting (*Passerina ciris*) photographed by Simon Tolzmann at Winnemac Park Natural Area

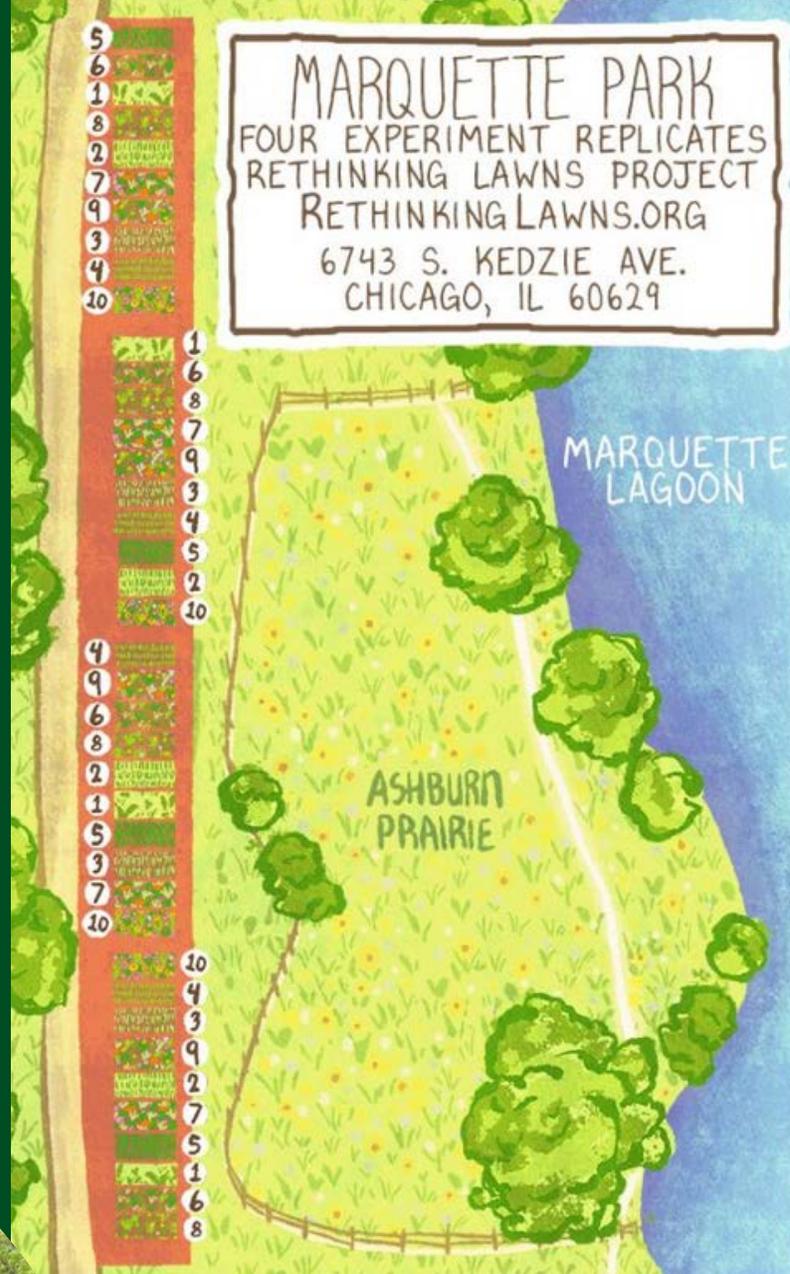
Below: Stiff goldenrod (*Solidago rigida*) at Park 566



Experts from the Chicago Park District, Chicago Botanic Garden, University of Michigan-Flint, and University of Wisconsin-Madison are rethinking lawns by studying native plant alternatives. Lawns are the largest irrigated crop in the U.S. at 63,000 square miles, or three times the area used to grow corn! Between mowing, watering, weeding, and the flooding it increases, lawns are expensive.

This experiment assesses different mixes of native prairie flowers, grasses, and sedges and compares them to typical non-native Eurasian turf. Lawns planted with native plants may provide more food for wildlife, capture more stormwater, and store more carbon.

Check out the plots at Marquette Park (east of Kedzie) and Marian R. Byrnes Park (north of 103rd). Learn more about the project at [rethinkinglawns.org](http://rethinkinglawns.org)



Above & bottom right: Experimental plots; illustrations by Liz Anna Kozik

Left: An oak sedge (*Carex pensylvanica*) meadow at Jackson Park, part of the Chicago Park District's early explorations of alternatives to traditional lawns



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. From April 30–May 3, 2021, hundreds of cities worldwide participated to see who could make the most observations, find the most species, and get the most people participating.

People take part by sharing their photos of plants, animals, and fungi on iNaturalist, joining an organized event, or helping other people with identification. Not restricted to Chicago, this regional event includes the entire metro region.

In the 4-day monitoring period in the early spring, over 1,000 participants shared about 12,000 observations of 1,500 different species of organisms. About 2,000 observations were made within the Chicago Parks.

In 2021, the most-observed animal, fungus, and plant species were the red-winged blackbird (*Agelaius phoeniceus*), the dryad's saddle (*Cerioporus squamosus*), and the prairie trillium (*Trillium recurvatum*).

**City Nature Challenge 2021: Chicago Metro**

Between April 30th and May 3rd, 2021:

- >12,000 observations
- >1,000 observers
- >1,500 species
- >500 identifiers

**Most-observed:**

- ANIMAL:** red-winged blackbird (*Agelaius phoeniceus*)  
photo by @greenoutdoors
- FUNGUS:** dryad's saddle (*Cerioporus squamosus*)  
photo by @atheko
- PLANT:** prairie trillium (*Trillium recurvatum*)  
photo by @marensr

**MOST SURPRISING:** broad-billed hummingbird (*Cynanthus latirostris*)  
photo by @benzermie

**City Nature Challenge 2021**

Powered by iNaturalist

All photos CC BY-NC, graphic by cassi saari (CC BY-NC)  
See everything we found at [bit.ly/cncchi2021](https://bit.ly/cncchi2021)

The 2022 City Nature Challenge takes place April 29th–May 2nd

Learn more at <https://bit.ly/cnc2022>

City Nature Challenge: Chicago Metro is organized by:



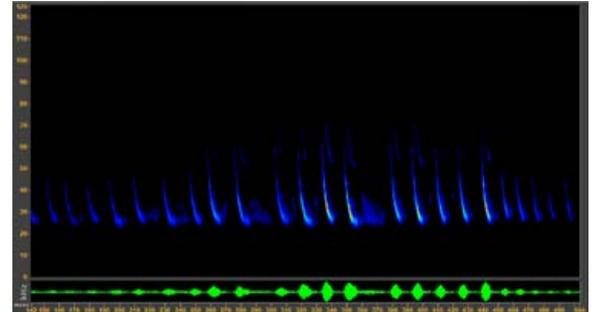
For 11 years, researchers at the **Lincoln Park Zoo's Urban Wildlife Institute** have been collecting wildlife photos with remote cameras at over 160 Chicago region parks, cemeteries, and other green spaces, including many in Chicago Park District sites. Their goals are to better understand how the distribution of mammal species along an urban-rural gradient is driven by landscape connectivity, socioeconomic variables, and other factors. This effort is part of a 43-city network of partners using the same methods to study urban mammal populations, the Urban Wildlife Information Network.



Above: Coyote with raccoon head at Bill Jarvis Migratory Bird Sanctuary in October 2021 (Lincoln Park Zoo)

Since the project began, 15 publications have been published, including 3 in 2021 that assessed the ability to monitor wildlife health (like mange in coyotes, Murray et al. 2021 in *Journal of Animal Ecology*), and how wealth and urbanization shape mammal distribution in 20 different cities (Magle et al. 2021 in *Global Change Biology*).

Below: Spectrogram of a big brown bat at Northerly Island (Lincoln Park Zoo)



The Urban Wildlife Institute has several other research projects within the parks, including studying urban stressors on birds, as well as distribution studies for ticks and bats.

Below: Bat species heard during passive acoustic sampling at Chicago Parks in 2021. Species: **Labo**: Eastern red bats (*Lasiurus borealis*), **Laci**: Hoary bats (*Lasiurus cinereus*), **Nyhu**: Evening bats (*Nycticeius humeralis*), **Epfu**: Big brown bats (*Eptesicus fuscus*), **Lano**: Silver-haired bats (*Lasionycteris noctivagans*)

Site	Labo	Laci	Nyhu	Epfu	Lano	Total
Columbus Park	1	12		184	19	216
Garfield Park Conservatory	195	49	9	1159	55	1467
Jackson Park	10	60	48	238	192	548
LeClaire Park	88	89	46	243	298	764
McKinley Park	42	533	92	623	142	1432
Northerly Island	5	546	2	7	180	740
North Park Village Nature Center	32	109	25	1324	363	1853
606		1			3	4
Steelworkers Park	4	138	7	124	90	363
<b>Total</b>	<b>377</b>	<b>1537</b>	<b>229</b>	<b>3902</b>	<b>1342</b>	<b>7387</b>

The year 2021 marked another successful and dramatic year for **Monty and Rose, two federally Endangered Great Lakes piping plovers** who nested at Montrose Beach Dunes for the third year in a row. Following the destruction of their first nest of the year by a hungry skunk, the pair were able to create a second nest hatch four chicks, which were banded by a team of researchers in July (right).

Piping plover habitat management and monitoring is a major group effort, with staff from the Illinois Department of Natural Resources, U.S. Fish and Wildlife Service, USDA APHIS Wildlife Services, University of Minnesota, Chicago Park District and contractors, as well as a dedicated team of volunteers helping in many different capacities throughout the season.

In 2021, with a total of 124 fledged wild chicks, Great Lakes piping plovers achieved a fledge rate of 1.68 chicks per nesting pair, ahead of the recovery goal of 1.50. Both Monty and Rose were spotted in 2022 at their separate wintering grounds, in Texas and Florida respectively.



In an 18-year analysis of **Calling Frog Survey data**, **Peggy Notebaert Nature Museum herpetologist Allison Sacerdote-Velat** found the proportion of sites with American bullfrogs and green frogs was increasing while those with American toads were slightly decreasing. Sacerdote-Velat: "Because of their use of permanent water bodies and [...] large body size, bullfrogs and green frogs can make use of many artificial or highly modified water bodies such as detention basins, golf course ponds, and lagoons in city parks." Learn more about regional trends at <https://frogsurvey.org>



Above: A calling American toad (*Anaxyrus americanus*)

A 2022 study published by **Austin Happel (Shedd Aquarium)** and **Dustin Gallagher (Metropolitan Water Reclamation District)** found that the number of fish species in Chicago Area Waterways gradually increased from 5 to 12 species between 1985 and 2019. Improvements to water quality from efforts such as reducing discharges of untreated wastewater, increasing storage capacity in the "Deep Tunnel" system, and decreasing wastewater contaminants were likely contributors to the increase in species. However, increased rainfall (subsequent sewage discharges) and salting of roadways are threats to this progress.

*"As one of the most altered waterways in the world, these results show that continued improvements to infrastructure can improve urban ecosystems"*

Below: River Park Natural Area





Left: Recent Earlham University graduate Sam Russo assists with snake survey at Big Marsh Park

Below: American bluehearts (*Buchnera americana*)



Above: Wetland flora at Park 565

Below: Spring birding at Montrose Point Bird Sanctuary in Lincoln Park



# 2021 Research & Monitoring in Chicago Parks

Audubon Great Lakes  
Bird Conservation Network  
Chicago Audubon Society  
Chicago Botanic Garden  
Chicago Ornithological Society  
Concordia University  
CrowdHydrology  
eBird (Cornell University)  
Field Museum  
Friends of the Chicago River  
Illinois Department of Natural Resources  
Illinois Natural History Survey  
Illinois Ornithological Society  
iNaturalist (California Academy of Sciences + National Geographic)  
Lincoln Park Zoo  
Metropolitan Water Reclamation District  
North Park University  
Northeastern Illinois University  
Northwestern University  
Peggy Notebaert Nature Museum  
Shedd Aquarium  
The Nature Conservancy  
The Wetlands Initiative  
U.S. Geological Survey  
University of Chicago  
University of Illinois  
University of Michigan-Flint  
University of Wisconsin-Madison  
USDA-Wildlife Services

**+ thousands of community members who contribute  
to platforms like iNaturalist & eBird**

All photos by cassi saari (Chicago Park District) unless otherwise indicated.

