

Research Permits Report

2013 Annual Report



NYC Parks

City of New York
Parks and Recreation
Michael R. Bloomberg, Mayor
Veronica White, Commissioner

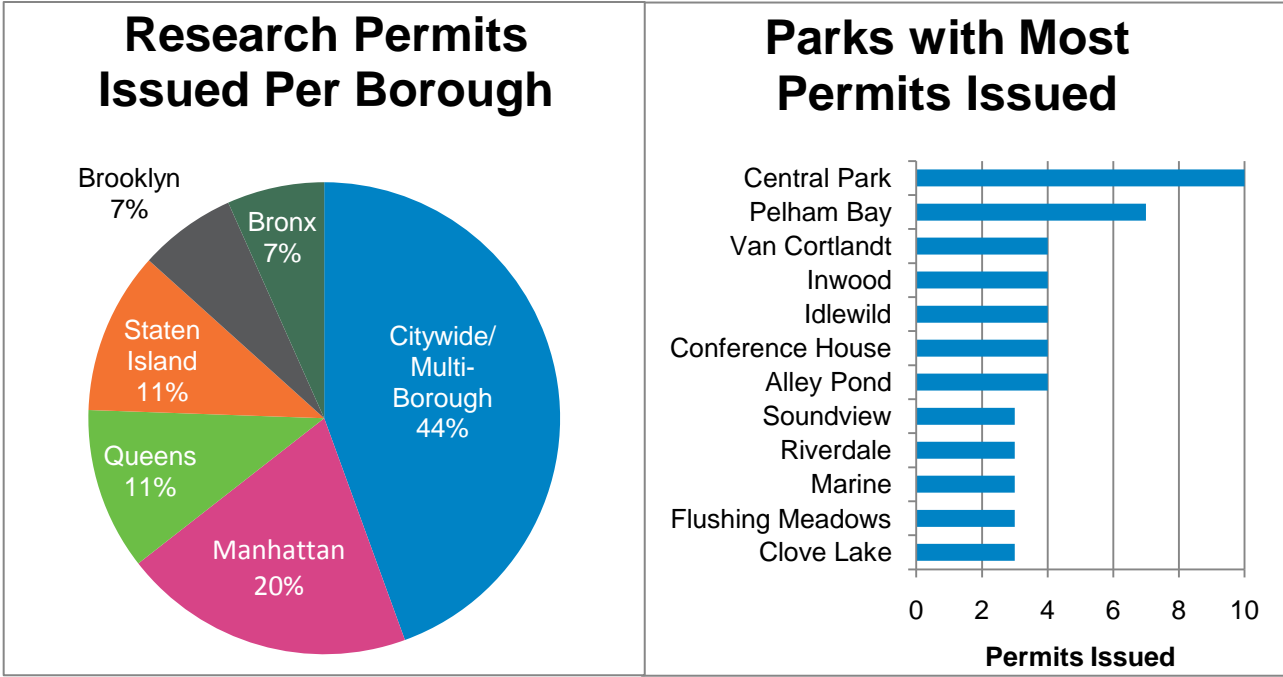
Introduction

The mission of the Natural Resources Group (NRG) is to protect, restore, expand, and manage New York City’s remnant and restored natural areas. This includes reviewing and issuing research permits to researchers interested in conducting scientific research on NYC parkland.

Overview

In 2013, 45 research permit applications were received and 44 permits were granted by the NYC Parks & Recreation Natural Resources Group. Out of the 44 permits granted, 23 were renewals of ongoing research projects. One permit was canceled by the researcher, and their information is not included in this report. Research was distributed throughout the five boroughs and spanned multiple parks, habitat types and taxa. Research applicants also spanned a range of organizations including public schools, universities, environmental organizations, government agencies, and other local organizations.

Locations: Borough and Park

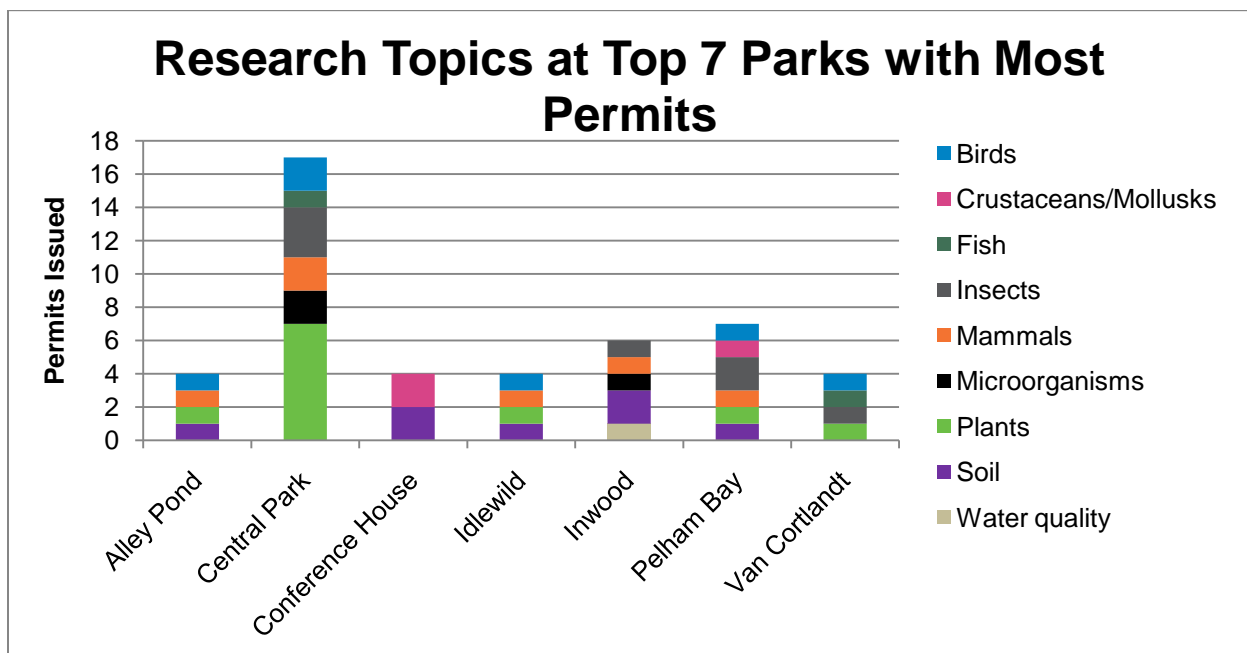
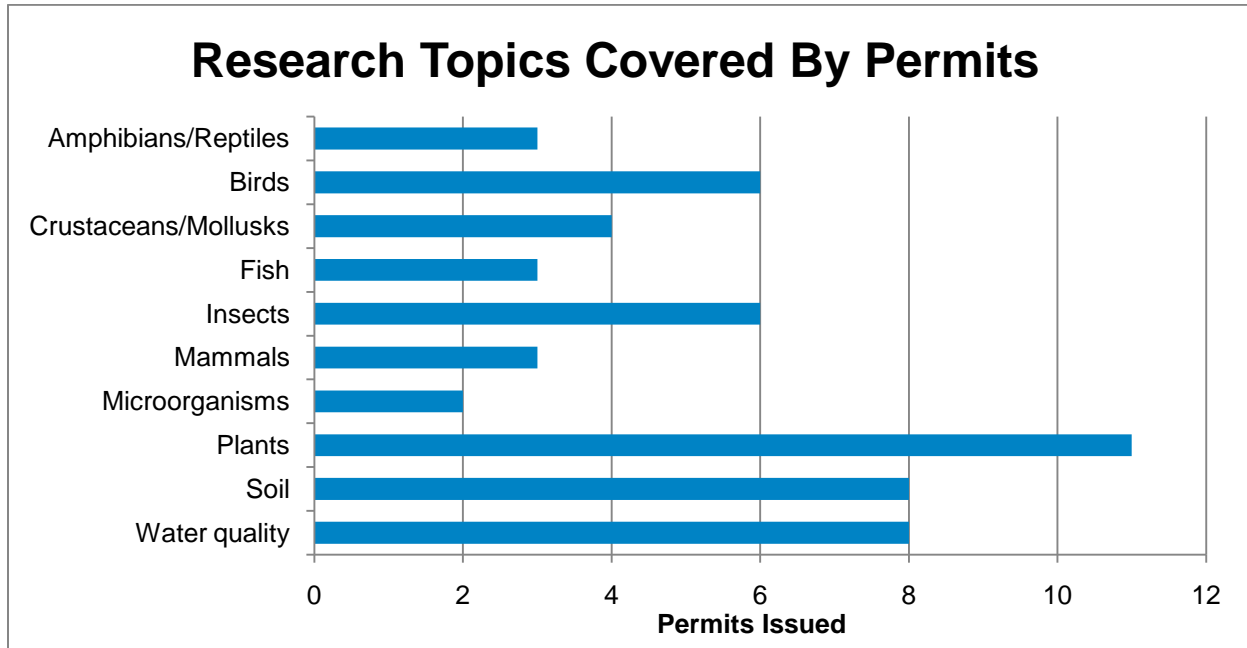


Most of the research permits issued were for citywide or multi-borough projects (20 permits). For single-borough projects, Manhattan had the most permits (9 permits) and the Bronx had the

fewest (3 permits). Out of all city parks, Central Park was the most frequently studied followed by Pelham Bay, Van Cortlandt, and Inwood.

Research Topics

The breadth of research that was conducted on park land spanned multiple taxa, habitats, and disciplines. The majority of research being done in the parks is focused on plants, soil, and water quality, and many permits covered multiple research topics. Within the 7 parks that were most frequently studied, research projects also spanned multiple taxa, habitats and disciplines.



Affiliations of Researchers

Various institutions and organizations conducted research on parkland, and the majority of researchers were affiliated with universities. Many of the projects involved collaborations between multiple organizations, which have been color coded (see below).

Environmental/Ecological Organizations

Biodiversity Research Institute
Central Park Conservancy
Hudson River Foundation
Lower East Side Ecology Center
Mianus River Gorge Preserve
Nature Conservancy on Long Island
NYC Audubon
NY/NJ Baykeeper
Seeing Green
Wildlife Conservation Society

Federal/State/City Government

NYC DEP
NYC EDC
NYS DEC
USDA Forest Service
USDA Natural Resources Conservation Service

K-12 Schools

Bard High School Early College
Brooklyn Technical High School
Friends of Staten Island Green Charter School
Hostos-Lincoln Academy
New York Harbor School
Trinity School
Yeshivah of Flatbush

Other Organizations

American Museum of Natural History
Cold Spring Harbor Laboratory
Great Ecology Consulting
Henningson, Durham, & Richardson Architecture
and Engineering
New York Botanical Garden
Staten Island Museum

Universities

Barnard College
Bronx Community College
College of Staten Island
Columbia University
Cornell University
CUNY City College
CUNY Grad Center
CUNY – Macaulay Honors College
Drexel University
Fordham University
Kingsborough Community College
Marymount Manhattan College
The New School
Queens College
Rockefeller University
Rutgers University
SUNY-ESF
University of Wyoming
Yale University

Brief Descriptions of All Research Projects

ONGOING PROJECTS

As a part of the ongoing Urban Barcode Project, Ayse Aydemir and her students at **Bard High School Early College** partnered with **Cold Spring Harbor Laboratory** and the **Lower East Side Ecology Center** to use DNA fingerprinting methods to identify invertebrates in soil samples from East River Park.

Barbara Barnes and her colleagues at **Great Ecology** continued their research on the Flushing Creek Hydrological Study. Her work is part of a long-term study of the flow rates, direction and water elevation changes within Flushing Creek.

Mark Botton at **Fordham University** along with Christina Colon at **Kingsborough Community College** continued their research on horseshoe crabs at Plumb Beach. They are interested in

the spawning activity, egg deposition, and juvenile habitat use by horseshoe crabs in response to beach nourishment.

Tom Brown and his colleagues, Richard Veit and Shaibal Mitra, at the **College of Staten Island** continued their research on breeding and migratory birds in Willowbrook Park. The majority of the birds studied were passerines and occasionally sharp-shinned hawks and cooper's hawks.

Melissa Cohen at **NYS DEC** used electrofishing to conduct a fisheries survey in Harlem Meer and Central Park Lake in Central Park, Baisley Pond in Baisley Pond Park, Van Cortlandt Lake in Van Cortlandt Park, Kissena Lake at Kissena Park, Martling's Pond at Clove Lakes Park, and Meadow Lake and Willow Lake at Flushing Meadows Corona Park. Her work is part of a long-term study of fish populations in NYC water bodies.

Jennifer Costello at the **College of Staten Island** continued her research on the effects of habitat degradation on green frogs. Her research took place in Mariners Marsh Park, High Rock Park, and Willowbrook Park.

Susan Elbin and her colleagues at **NYC Audubon** continued their research on breeding birds at Mill Rock, South Brother Island, North Brother Island, Prall's Island, Shooters Island, Isle of Meadows, and Canarsie Pol. They are interested in herrings, American oystercatchers, egrets, ibis, cormorants, and passerines.

Erik Fecteau of **Seeing Green** continued his research on the storm water management potential of two urban farms: Brooklyn Grange and the Five Boro Greenroof. He continued to monitor storm water flows through both farms using lysimeters and rain gauges.

Jason Grabosky at **Rutgers University** together with collaborators at **Cornell University** did a census of trees along Lorimer Street between Driggs and Bayard. This is their 9th data collection in the past 16 years, and they collected information on common tree health metrics such as tree DBH (diameter at breast height), tree height, and twig growth.

As a part of the ongoing Urban Barcode Project, Allison Granberry and her students at **Hostos-Lincoln Academy** partnered with **Cold Spring Harbor Laboratory** to use DNA fingerprinting methods to identify ants and other insects in El Flamboyant Community Garden, Isla Verde Community Garden, and St. Mary's Park in the Bronx.

Matthew Hare at **Cornell University** in collaboration with **Hudson River Foundation** continued his research on the population genetics of oysters in pilot oyster reefs that are part of the Oyster Restoration Research Partnership (ORRP) at Hastings on the Hudson and Soundview. They're also collecting information on larval settlement at dispersed **NY/NJ Baykeeper** oyster gardening sites around the New York Harbor Estuary.

Kerstin Kalchmayr and her colleagues at **NY/NJ Baykeeper** continued their Oyster Gardening Program where local residents took care of small cages of oysters and collected growth and mortality measurements.

Alison Kocek at **SUNY-ESF** continued her research on saltmarsh sparrows and their habitat at Sawmill Creek, Four Sparrow Marsh, Idlewild Park, Marine Park, Alley Pond Park, Pugsley Creek, and Pelham Bay Park. She is interested in how sea-level rise and tidal saltmarsh loss influence saltmarsh sparrow populations.

As a part of the ongoing Urban Barcode Project, Victoria Majorali and her students at **Brooklyn Technical High School** partnered with **Cold Spring Harbor Laboratory** to use DNA fingerprinting methods to identify lichens, mosses, trees and fungi in Flushing Meadows Corona Park, Brooklyn Bridge Park, Central Park, Fort Greene Park, Newtown Creek Park, and Forest Park.

Wade McGillis at **Columbia University** continued his research on water quality near several Combined Sewer Overflows (CSOs) located on the Hudson River near Harlem Piers Park. He is interested in water temperature, specific conductivity, salinity, pH, turbidity, dissolved oxygen, and background levels of bacteria.

Krista McGuire at **Barnard College** continued her research on microbial communities on green roofs and parks. Her research was conducted at Jackie Robinson Recreation Center, Jackie Robinson Park, Lyons Swimming Pool, Thompkins Square Park, Chelsea Recreation Center, Chelsea Park, and the Five Boro Greenroof. She is especially interested in heavy metal resistant microbes.

John McLaughlin at **NYC DEP** continued to collect data from water quality meters installed at Gerritsen Creek, Brandt Point and Fresh Creek Park in the Jamaica Bay watershed.

Franco Montalto at **Drexel University** continued his research on the hydrology of green infrastructure in the city. His research sites are in Alley Pond Park and greenstreets in Queens and the Bronx.

Sanpisa Sritairat, Timon McPhearson and their colleagues at **The New School** continued their research on plant health and soil properties of MillionTreesNYC planting sites in Marine Park, Canarsie, Alley Pond Park, Fort Totten Park, Clearview Park, Roy Wilkins Park, Pelham Bay Park, Clove Lakes Park, and Conference House Park.

Emily Stevenson, Alex Felson, and Mark Bradford at **Yale University** continued their research on woody species that colonized MillionTreesNYC planting sites at Kissena Corridor Park.

Mark Weckel at the **American Museum of Natural History** and his collaborators Chris Nagy at the **Mianus River Gorge Preserve**, Jason Mushi-South at **Fordham College**, Scott Silver at the **Wildlife Conservation Society**, and Suzanne Clemente at **Pace University** continued their research on the coyote population distribution in New York City.

Seth Wollney at the **Staten Island Museum** and his collaborators at **Cornell University**'s NYS Horseshoe Crab Monitoring Network continued their research on horseshoe crabs spawning at Conference House Park. He and his collaborators at **CUNY Grad Center** also continued their research on turtles and their diet; this research was conducted in Long Pond Park, North Mount Loretta State Forest, La Tourette Golf Course, William T. David Wildlife Refuge, and Richmond Creek.

Elsa Youngsteadt and her collaborators at **North Carolina State University** continued their research on arthropod populations around red maple street trees. They are interested in whether urban warming influences arthropod abundance and diversity.

David Yozzo and Nicholas Wood at **Henningson, Durham, and Richardson Architecture and Engineering** continued their aquatic survey of Springfield Lake using electrofishing and fish traps.

NEW PROJECTS

Vadim Acosta at **Bronx Community College** partnered with **CUNY City College** and **Queens College** and led a six-week summer course for community college students as a part of the Summer Institute for Field Investigations program. This course combined research training with environmental field sampling and involved students collecting water and soil samples from nine locations along the waterways of the Bronx and Harlem Rivers: Matthiessen Park, Inwood Hill Park, Roberto Clemente State Park, Randalls Island Park, Parkway Oval Park, Bronx Park, and Soundview Park.

Katie Axt at **NYC EDC** conducted a hydrologic site assessment of Saw Mill Creek as a part of the Mitigation and Restoration Strategies for Habitat and Ecological Sustainability (MARSHES) project. She and her collaborators collected soil samples, water samples and installed tide gauges along the tidal creek.

Chelsea Butcher at **Fordham University** worked with Jason Aloisio and James Lewis at **Fordham University** and Matthew Palmer at **Columbia University** to determine the genetics of colonizing plants on green roofs. They are interested in the diversity and plant population dynamics of green roofs spread out across the city.

Liv Dillon and Joseph Gessert at the **NY Harbor School** examined populations of Atlantic oysters, eelgrass, and Atlantic Bay scallops in Jamaica Bay. They conducted underwater visual surveys with photographic backup and collected specimens for genetic testing.

Jennifer Donovan, John Taylor, and their students at **Trinity School** worked with collaborators at the **University of Wyoming** to do a comparative study of the biodiversity of different biomes and to familiarize both students and teachers with scientific research methods. They conducted photographic surveys of insects, birds, plants, and amphibians in Central Park and compared their findings with surveys from Napo Province in Ecuador, Ohio, Alas, and Wyoming.

Susan Elbin at **NYC Audubon** conducted a study of ant species in the Libra Triangle Greenstreet.

Nancy Falxa-Raymond, Rich Hallett, and David Nowak at the **USDA Forest Service** conducted a citywide study of the ecosystem services provided by urban trees. They used a methodology that is similar to the one used in 1997 to assess ecosystem services provided by the NYC urban forest and that has been used to assess the urban forest in many cities around the world.

Shinichi Fukuoka at **Rockefeller University** studied swallowtail butterfly populations in Central Park.

David Geliebter at the **Yeshivah of Flatbush** studied the effectiveness of using student volunteers to regularly hand pull Japanese knotweed from a knotweed patch north of Plumb Beach.

Troy Hill at **Yale University** conducted a study on salt marsh accretion rates in Jamaica Bay by collecting sediment cores and determining the age of different sediment layers. His study sites included Spring Creek Park, Dubos Point Wildlife Sanctuary, and Idlewild Park.

Eunsoo Kim and Mike Levandowsky at the **American Museum of Natural History** examined algal and protozoan diversity in water bodies of Central Park using next-generation DNA sequencing methods.

Gal Lavid at the **Central Park Conservancy** and collaborators from **CUNY – Macaulay Honors College**, **NYC Audubon**, and **New York Botanical Garden** conducted a bioblitz, or a complete inventory of different species, in Central Park. They surveyed plants, arthropods, turtles, mollusks, bats, birds, fish, and mammals. This survey was a replication and extension of a 2003 wildlife survey of Central Park.

Nicole Maher at **The Nature Conservancy on Long Island** and collaborators from **Biodiversity Research Institute** examined songbird mercury exposure. They collected data from Pelham Bay Park and plan to compare their results to previously collected data from the Adirondacks, Catskill Mountains, and Long Island.

Terry Morley and his students at **Marymount Manhattan College** are surveying vegetation and water quality in Central Park as a part of his ecology course on general survey techniques and sampling procedures. He is also working on a smartphone application that will provide natural history information as users walk through Central Park.

Jason Munshi-South at **Fordham University** studied the genomics of rats in New York City. He sampled rats from all parks throughout Manhattan and used both DNA and RNA techniques to examine their population genetics structure.

Chris Nagy at the **Mianus River Gorge Preserve** examined the population dynamics and diet of eastern screech owls. His study sites included Inwood, Riverdale, and Van Cortlandt Parks.

Carole Reiss and her collaborators at **Friends of Staten Island Green Charter School** brought elementary school students to Clove Lake Park, Graniteville Quarry, and Silver Lake to teach them about water quality. Students used water analysis kits to compare water from the streams and lakes, tap water and bottled water.

Rich Shaw, Edwin Muñiz, and Michael Wilson at the **USDA Natural Resources Conservation Service**, along with Joshua Cheng and Theodore Muth at **Brooklyn College**, examined the microbial communities and physical, chemical and mineralogical properties of soils in Inwood Hill, the Staten Island Greenbelt, Corporate Park Woods, Blue Heron Park, and Conference House.

Christine Zolnik at **Fordham University** examined the density of blacklegged ticks along a 120-mile urban-to-rural gradient starting from New York City and extending northwards. She collected data from Pelham Bay Park and Van Cortlandt Park.

For More Information

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