



# *Natural Areas Initiative*

## What are Natural Areas?

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With over 8 million people and 1.8 million cars in residence, New York City is the ultimate urban environment. But the city is alive with life of all kinds, including hundreds of species of flora and fauna, and not just in window boxes and pet stores. The city's five boroughs provide habitat to over 350 species of birds and 170 species of fish, not to mention countless other plants and animals, including seabeach amaranth, persimmons, horseshoe crabs, red-tailed hawks, painted turtles, and

monarch butterflies. They reside in New York City's 12,000 acres of natural areas that include estuaries, forests, ponds, and other habitats.

Despite human-made alterations, natural areas are spaces that retain some degree of wild nature, native ecosystems and ecosystem processes.<sup>1</sup> While providing habitat for native plants and animals, natural areas afford a glimpse into the city's past, some providing us with a window to what the land looked like before the built environment existed.

## What is the Natural Areas Initiative?

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The Natural Areas Initiative (NAI) works towards the protection and effective management of New York City's natural areas. A joint program of New York City Audubon (NYC Audubon) and New Yorkers for Parks

(NY4P), the NAI promotes cooperation among non-profit groups, communities, and government agencies to protect natural areas and raise public awareness about the values of these open spaces.

# Why are Natural Areas important?

In the five boroughs, natural areas serve as important ecosystems, supporting a rich variety of plants and wildlife. These lands have significant ecological value and provide New Yorkers with an important reprieve from the intensity of city life.

The values of natural areas are as diverse as the city itself. Natural areas filter and purify air, improve water quality and act as flood control. They ameliorate high temperatures and decrease energy consumption, provide habitat for resident wildlife and migratory insects and birds, and create passive recreational opportunities for residents and visitors.

## Values of Natural Areas Quantified

**FLORA AND FAUNA DIVERSITY >>** NYC ecology plays an important role in our global ecosystem. Over 350 species of birds can be seen in NYC, including peregrine falcons and piping plovers, both New York State endangered species.

**HEALTH >>** Open spaces provide urban children with outdoor recreational opportunities that can lower the incidence of childhood obesity and diabetes.<sup>2</sup>

Additionally, according to the City Department of Health, NYC children are almost three times as likely to be hospitalized for asthma as children in the rest of the country. In fact, asthma is the leading cause of hospitalization, emergency room visits and missed school days among New York City children.<sup>3</sup>

Trees are well-documented filters of the many harmful, health-threatening pollutants in the NYC air.

**TEMPERATURE AND ENERGY USE >>** One study reports that the impact of the shade from trees resulted in room temperatures 20°F lower in non-insulated houses during hot summers, and a 50% reduction in cooling costs.<sup>4</sup>

**AIR QUALITY >>** Studies show that tree cover in a 530-acre urban park can remove 48 lbs of particulates, 9 lbs of nitrogen dioxide, 6 lbs of sulfur dioxide, and .5 lbs of carbon monoxide, daily. This makes for healthier cities and reduces pollution control costs.<sup>5</sup>

**WATER QUALITY AND FLOOD CONTROL >>** Natural areas, such as marshlands, are absorptive. They decrease pollution, urban runoff and sedimentation in our waterways.<sup>6</sup>

### CONY ISLAND CREEK PARK

"Coney Island Creek Park acts as a necessary filter and buffer for the rest of the Coney Island creek and the Graves End Bay area adjacent to the creek. Within that shallow tidal mud flat area teems a great deal of aquatic life and migratory waterfowl that inhabit the area and feed, stage, and nest in the surrounding trees."<sup>10</sup> As this picture illustrates, natural areas need maintenance and upkeep as much as other parts of the park system.



## The Natural Areas Database



At its inception in the summer of 2001, the NAI set out to define the universe of the City's natural resources by creating a publicly accessible database of natural areas. It includes site characteristics, special designations, ecological features and other data components for all identified sites. Now complete — though always a work in progress — the Database serves as a comprehensive portrait of the city's natural areas, allowing for the prioritization of certain sites for protection and restoration and providing an understanding of the challenges facing the city's natural areas as a whole.

The Database is available online through the New York City Open Accessible Space Information System (OASIS), a one-stop, interactive mapping and NYC open space data analysis website ([www.OASISNYC.net](http://www.OASISNYC.net)). OASIS is a cooperative group of community organizations, academic institutions and governmental agencies working together to provide the public with easy to use, free information about NYC's "green" infrastructure.

The NAI aims to use the information amassed in the Database to preserve, balance and monitor the use of NYC's remaining natural spaces to protect the diversity of life that exists within them. If you have information to add about the natural areas in your community, please let us know. Also use this publication as a guide to advocate for natural areas in your community and citywide.

## Threats to Natural Areas

**INADEQUATE MAINTENANCE >>** Over 11,000 acres of New York City's 28,700 acres of parkland are categorized as natural areas. While there may be no grass to mow or benches to repaint, natural areas face a series of threats that require maintenance. Funding for New York City's Department of Parks and Recreation has been in steep decline for decades, and natural areas, although they constitute a large percentage of the public park system, do not receive necessary maintenance attention. There are merely 75 deployable Parks Enforcement Patrol (PEP) officers to patrol the city's 28,700 acres of parkland, leaving natural areas insufficiently monitored.<sup>7</sup> And the dearth of parks maintenance staff means that trails, essential to making these areas safe and accessible to visitors, are not maintained as well as they should be.

**ILLEGAL RECREATION >>** Natural areas are monitored less often than other areas in the city, making them susceptible to illegal activity, including use of all-terrain vehicles and mountain biking in unauthorized areas, dumping of trash and vehicles, poaching and paint ball. These activities undermine the ecological integrity of NYC's natural areas and render these areas unusable for all purposes.

**INVASIVE SPECIES >>** In part because New York City is a major port city and in part due to the introduction of non-native plant species for horticultural use, many invasive species impact the native ecosystem. For example, non-native tree species often out-compete resident oaks and hickories. Each year, more of the region's naturally



### BREEZY POINT DISTRICT

Breezy Point sits at the western end of the Rockaway Peninsula. Piping plover, a federally threatened species, nests there. Part of the Jamaica Bay Important Bird Area, it is a great place to watch the fall bird migration.

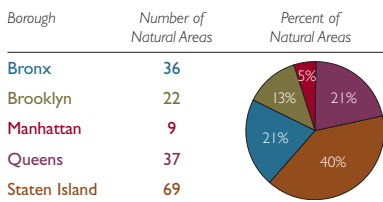
occurring vegetation is lost as invasives gain control, lowering plant and animal diversity. Constant restoration and maintenance is required to eradicate these species and preserve the integrity of natural areas.

**OVER-DEVELOPMENT >>** Unfortunately for natural areas, open and undeveloped spaces are often the places that attract development. Especially in our densely populated city, new developments often mean the destruction or fragmentation of natural habitat, increasing susceptibility to invasive species and hurting wildlife.

# Natural Areas Initiative

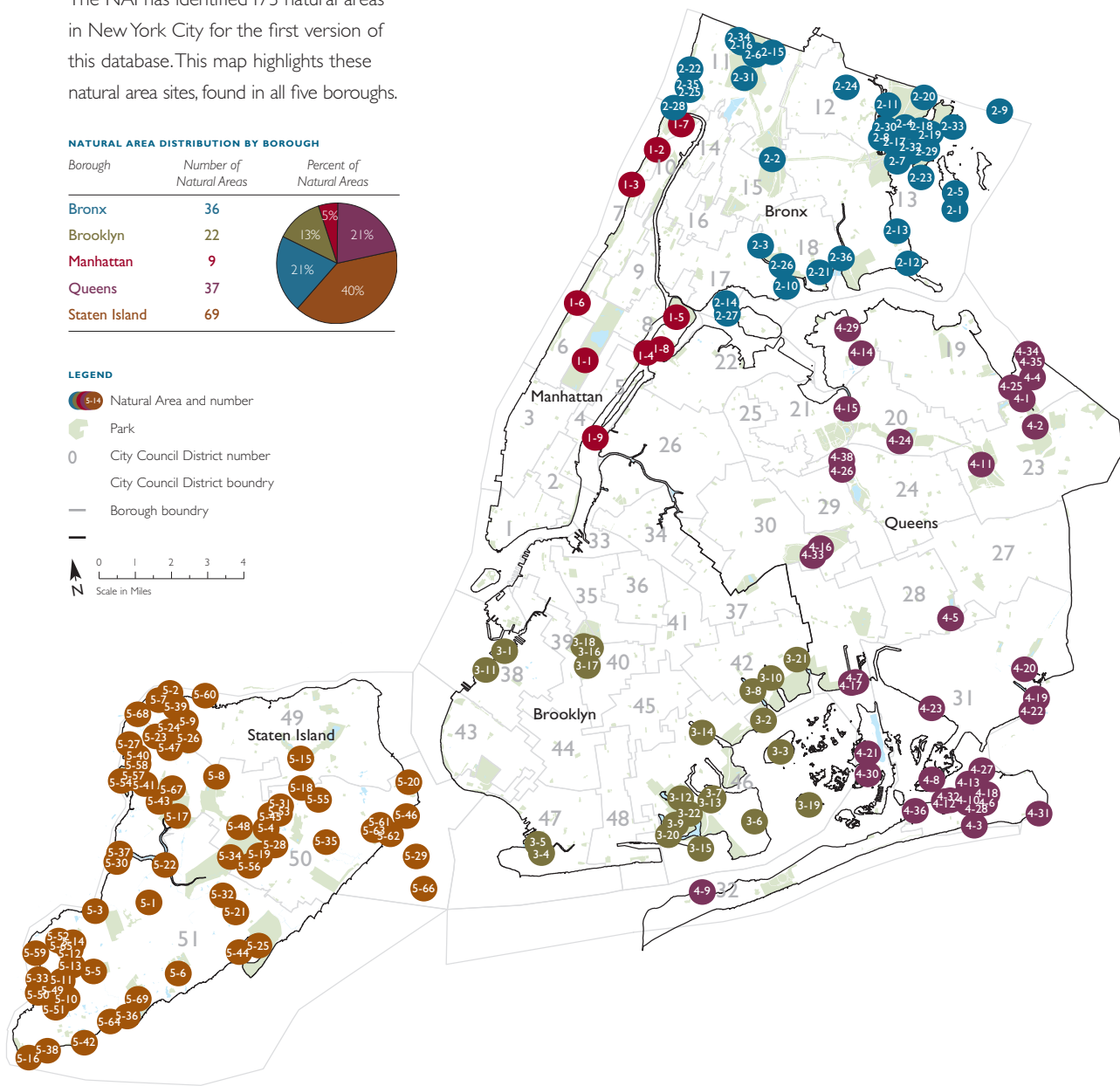
The NAI has identified 173 natural areas in New York City for the first version of this database. This map highlights these natural area sites, found in all five boroughs.

### NATURAL AREA DISTRIBUTION BY BOROUGH



### LEGEND

- Natural Area and number
  - Park
  - City Council District number
  - City Council District boundary
  - Borough boundary
- 0 1 2 3 4  
Scale in Miles



# Natural Areas Initiative Sites

## Bronx

- 2-1 Bowery Bay
- 2-2 Bronx Park
- 2-3 Bronx River Corridor
- 2-4 Central Woodland in Pelham Bay Park
- 2-5 City Island Wetlands
- 2-6 Croton Woods
- 2-7 Eastchester Bay coastline
- 2-8 Goose Island
- 2-9 Huckleberry Island
- 2-10 Hunts Point, properties within
- 2-11 Hutchinson Riverway Woods
- 2-12 Locust Point Marina
- 2-13 Locust Point Wetlands
- 2-14 North Brother Island
- 2-15 NorthEast Forest in Van Cortlandt Park
- 2-16 NorthWest Forest in Van Cortlandt Park
- 2-17 Palmer Inlet
- 2-18 Pelham Bay Lagoon
- 2-19 Pelham Parkway Lot
- 2-20 Pelham Woods
- 2-21 Pugsley Creek Park
- 2-22 Riverdale Park
- 2-23 Rodman's Neck
- 2-24 Seton Falls Park
- 2-25 Seton Park
- 2-26 Soundview Park
- 2-27 South Brother Island
- 2-28 Spuyten Duyvil Shorefront Park
- 2-29 The Meadow in Pelham Bay Park
- 2-30 Thoman Pell Wildlife Refuge
- 2-31 Tibbetts Brook and Van Cortlandt Lake
- 2-32 Turtle Cove
- 2-33 Twin Islands
- 2-34 Vault Hill Cemetery in Van Cortlandt Park
- 2-35 Wallenberg Forest
- 2-36 Westchester Creek

## Brooklyn

- 3-1 Bush Terminal
- 3-2 Canarsie Beach
- 3-3 Canarsie Pol
- 3-4 Coney Island Creek
- 3-5 Drier Offerman Park
- 3-6 Floyd Bennett Field
- 3-7 Four Sparrow Marsh
- 3-8 Fresh Creek Nature Preserve
- 3-9 Gerritsen Creek Inlet
- 3-10 Hendrix Creek
- 3-11 Lower Bay Reef
- 3-12 Marine Park
- 3-13 Mill Basin
- 3-14 Paerdegat Basin Park Preserve
- 3-15 Plum Beach
- 3-16 Prospect Park Forest Area
- 3-17 Prospect Park Lake
- 3-18 Prospect Park Ravine
- 3-19 Ruffle Bar
- 3-20 Shelbank Basin
- 3-21 Spring Creek Park
- 3-22 White Island

## Manhattan

- 1-1 Central Park (North Woods, The Ramble, Hallett Nature Sanctuary)
- 1-2 Fort Tryon Park
- 1-3 Fort Washington Park
- 1-4 Mill Rock Park
- 1-5 Randalls Island
- 1-6 Riverside Park
- 1-7 Shorakapok/Inwood Hill Park
- 1-8 Ward Island
- 1-9 UThant Island

## Queens

- 4-1 Alley Creek Marsh
- 4-2 Alley Pond Park
- 4-3 Arverne Urban Renewal Area
- 4-4 Aurora Pond in Udalls Cove Wildlife Preserve
- 4-5 Baisley Pond
- 4-6 Bayswater Point State Park
- 4-7 Bergen Basin
- 4-8 Brant Point
- 4-9 Breezy Point
- 4-10 Conch Basin
- 4-11 Cunningham Park
- 4-12 Dubos Point Wildlife Sanctuary
- 4-13 Edgemere
- 4-14 Flushing Airport
- 4-15 Flushing Creek
- 4-16 Forest Park
- 4-17 Hawtree Basin
- 4-18 Healy Avenue
- 4-19 Hook Creek Marsh

- 4-20 Idlewild Park
- 4-21 Jamaica Bay Wildlife Refuge
- 4-22 JFK airport in Jamaica Bay, eastern-most portion
- 4-23 JFK shoreline
- 4-24 Kissena Park
- 4-25 Little Neck Bay/Alley Creek Marsh/Oakland Lake Ravine
- 4-26 Meadow Lake
- 4-27 Mott Peninsula/Mott Basin
- 4-28 Norton Peninsula
- 4-29 Powell's Cove Park
- 4-30 Rockaway Reef
- 4-31 Sea Girt Avenue Wetlands
- 4-32 Somerville Basin
- 4-33 Twin Ballfields
- 4-34 Udall's Park Preserve
- 4-35 Udall's Park Preserve, adjacent properties
- 4-36 Vernam Barbadoes Park
- 4-37 Willow Lake Natural Area

## Staten Island

- 5-1 Arden Heights Woods
- 5-2 Arlington Marsh
- 5-3 Blazing Star
- 5-4 Blood Root Valley
- 5-5 Bloomingdale Woods Park
- 5-6 Blue Heron Park Preserve
- 5-7 Bridge Creek Marsh
- 5-8 Buck's Hollow
- 5-9 Cable Avenue Woods
- 5-10 Canada Hill Woods
- 5-11 Charleston Woods/Kreischer Hill
- 5-12 Clay Pit Ponds State Park Preserve
- 5-13 Clay Pit Ponds State Park Preserve Additions: Englewood Boundary Tract
- 5-14 Clay Pit Ponds State Park Preserve Additions: Northeastern Woodland
- 5-15 Clove Lakes Park
- 5-16 Conference House Park
- 5-17 Davis Wildlife Refuge
- 5-18 Deer Park
- 5-19 Egberville Ravine
- 5-20 Eib's Pond Park
- 5-21 Evergreen Park
- 5-22 Fresh Kills Park
- 5-23 Garcon Property
- 5-24 Goethals Bridge Pond
- 5-25 Great Kills Harbor Park
- 5-26 Graniteville Swamp Woods Park
- 5-27 Gulfport Marsh and Uplands
- 5-28 High Rock Park
- 5-29 Hoffman Island
- 5-30 Isle of Meadows
- 5-31 Kaufman Camp
- 5-32 Kingfisher Park
- 5-33 Kreischer's Cove
- 5-34 La Tourette Park
- 5-35 Last Chance Pond
- 5-36 Lemon Creek Park
- 5-37 Little Fresh Kills
- 5-38 Long Pond Park
- 5-39 Mariner's Marsh Park
- 5-40 Merrill's Creek
- 5-41 Mill Creek Wetlands
- 5-42 Mt. Loretto Woods
- 5-43 Neck Creek Marshes
- 5-44 Nelson Avenue Waterfront Addition
- 5-45 Northern Seaview
- 5-46 Ocean Breeze Park
- 5-47 Old Place Creek
- 5-48 Open Fields at Farm Colony
- 5-49 Outerbridge Ponds and Woodland
- 5-50 Outerbridge Shorelands
- 5-51 Page Avenue Site
- 5-52 Port Mobil Swamp Forest
- 5-53 Pouch Camp
- 5-54 Prall's Island
- 5-55 Reed's Basket Willow Swamp
- 5-56 Richmond Creek Easements
- 5-57 Saw Mill Creek Marsh Park
- 5-58 Saw Mill Creek
- 5-59 Sharrott's Road Shorelands
- 5-60 Shooters Island
- 5-61 South Beach Northern Wetlands
- 5-62 South Beach Park
- 5-63 South Beach Southern Wetlands
- 5-64 St. Francis Woodlands
- 5-65 Sutton Woods
- 5-66 Swinburne Island
- 5-67 Teleport Magnolia Forest
- 5-68 Wilpon Pond at Old Place Creek
- 5-69 Wolfe's Pond Park

# Types of Natural Areas in New York City

Type of area	# of Areas	% of Sites
<b>PLANT AND ANIMAL DIVERSITY</b>		
Sites with Known Rare, Threatened or Endangered Species		
Endangered Species	21	12
<b>RESTORATION EFFORTS</b>		
Non-point source pollution reduction/restoration	11	6
Forest Restoration	5	3
Wetland Restoration Efforts	15	9
Ongoing Salt Marsh Restoration	27	15
<b>NYC AUDUBON SPECIAL DESIGNATIONS</b>		
Islanded Nature (IN)	36	21
Important Bird Area (IBA)	13	7
Buffer the Bay Revisited (BBR)	13	7
<b>LAYERS OF PROTECTION</b>		
NYSDEC Natural Heritage Program	4	2
Landmark Status	3	2
NYSDCP Special Natural Waterfront Area	5	3
USFWS Significant Land/Water Habitat Complex	18	10
NYSDOS Significant Coastal Fish & Wildlife Habitat	20	11
NYSDEC Tidal Wetland	14	8
NYSDEC Freshwater Wetland	22	13
HEP Priority Restoration Site	68	39
HEP Priority Acquisition Sites	13	7
NYC Land Protection Priority-Open Space Conservation Plan	33	19
<b>HABITATS</b>		
Marine/aquatic Natural	13	7
Marine/aquatic cultural	1	1
Tidal Wetland/Salt Marsh	64	37
Freshwater Wetland	43	25
Forested Wetland	14	8
Natural/Cultural River or stream	7	4
Natural/Cultural Pond or Lake	14	8
Uplands/Maritime Dune	19	11
Grasslands and Meadows	16	9
Forest	47	27

All numbers subject to change as data is added to the database. NYSDEC—NY State Department of Environmental Conservation; NYCDCP—NY City Department of City Planning; USFWS—US Fish and Wildlife Service; NYSDOS—NY State Department of Sanitation; HEP—Harbor Estuary Program



## IDLEWILD PARK PRESERVE

Idlewild Park, adjacent to JFK Airport, is primarily made up of salt marsh that functions as a natural filtration system. The salt marsh traps pollutants, preventing contamination of Jamaica Bay and improving water quality. This photograph shows illegal use of Idlewild Park. Illegal biking and all-terrain vehicles can disturb wildlife, degrade habitat, and compromise restoration efforts.



## HARBOR HERONS

NYC Audubon's Harbor Herons Project monitors nesting patterns on 13 uninhabited islands off Staten Island, Bronx, Manhattan and Queens. The data collected have been fundamental in assessing the health of the harbor.



## BROOKVILLE PARK

Brookville Park is a rest stop for many migrating birds. This photograph shows a stand of *Phragmites australis*, an invasive plant species that is quite common throughout the Northeast. Dense stands of *Phragmites* in North America decrease the diversity of food sources and the quality of wetland habitat, particularly for migrating waders and waterfowl species.<sup>9</sup>



## HIGH ROCK PARK

High Rock Park is a 90-acre preserve in the Staten Island Greenbelt. The park consists of hardwood forest, swamp and glacial ponds, and has been designated a National Environmental Education Landmark by the U.S. Department of the Interior.

# Tools for Action

**HAVE FUN IN A NATURAL AREA >>** Go for a walk, smell the flowers, see the birds! There are dozens of trails throughout the five boroughs that you can explore — try canoeing down the Bronx River, rock climbing in Manhattan, fishing in Brooklyn, snowshoeing in Queens and birding in Staten Island.

**CALL YOUR ELECTED OFFICIALS >>** Tell them that natural areas are an important part of your city!

- Mayor Michael Bloomberg — Call 311
- Find contact information for your NYC Council and Community Board Representative. Visit [www.cmap.nypirg.org](http://www.cmap.nypirg.org) to find out who represents you.

**CONTACT US! >>** Tell us what is going on in the natural area that you are involved with or find out more about natural areas resources:

- NY4P: (212) 838-9410 — [www.NY4P.org](http://www.NY4P.org)
- NYC Audubon: (212) 691-7483 — [www.nycas.org](http://www.nycas.org)

**JOIN OR FORM A STEWARDSHIP GROUP >>**  
Call Partnerships for Parks at (212) 360-1310.

**OTHER NATURAL AREA RESOURCES >>**

- National Park Service: [www.nps.gov](http://www.nps.gov)
- New York State Department of Environmental Conservation: [www.dec.state.ny.us](http://www.dec.state.ny.us)
- City of New York Parks and Recreation: [www.nycgovparks.org](http://www.nycgovparks.org)
- NY-NJ Harbor Estuary Program: [www.harborestuary.org](http://www.harborestuary.org)
- New York State Office of Parks, Recreation and Historic Preservation: [www.nysparks.state.ny.us](http://www.nysparks.state.ny.us)
- *The New York City Audubon Society Guide to Finding Birds in the Metropolitan Area* by Marcia T. Fowle and Paul Kerlinger (Cornell University Press, 2001).  
For details visit: [www.nycas.org](http://www.nycas.org).

## A Natural Areas Advocacy Agenda

Enhanced care and increased attention is urgently needed for NYC's natural areas. Important first steps towards well-maintained natural areas are:

**INCREASED FUNDING >>**

- Capital Funding is needed for the acquisition and restoration of remaining natural areas.
- Maintenance and Operations Funding is needed to ensure adequate management of natural areas. Natural areas are not self-sustaining and require adequate maintenance to ensure their ecological health and to guarantee that they are attractive to visitors.

**ENHANCED INTERAGENCY COORDINATION >>**

Currently, the jurisdiction over natural areas differs between sites and there is little coordination. Managing agencies, including the NYC Department of Environmental Protection, NYC Department of Transportation, NYS Department of Environmental Conservation, NYS Office of Parks, Recreation & Historic Preservation, National Park Service and NYC Department of Parks and Recreation, should coordinate efforts to manage NYC's natural areas as a whole.

*Natural areas are important ecologically, socially and economically. Taking action to increase the quality of NYC's natural areas will increase NYC's quality of life!*

<sup>1</sup> Cronon, William. *Nature's Metropolis: Chicago and the Great West*. 1st ed. New York: W. W. Norton, 1991. <sup>2</sup> "Quantifiable Urban Forest Benefits and Costs; Current Findings and Future Research." Consolidating and Communicating Urban Forest Benefits. Davey Resource Group, Kent, OH. 1993. <sup>3</sup> New York League of Conservation Voters ([www.nylcv.org](http://www.nylcv.org)) <sup>4</sup> Coder, Kim. Identified Benefits of Community Trees and Forests. Warnell School of Forest Resources, 1996. <sup>5</sup> Coder, Kim. Identified Benefits of Community Trees and Forests. Warnell School of Forest Resources, 1996. <sup>6</sup> The Trust for Public Land, "Safeguarding the Environment", The Economic Benefits of Open Space, May 21, 1999. <sup>7</sup> Personal Communication. Department of Parks and Recreation; February 11, 2004. <sup>8</sup> U.S. Fish & Wildlife Service, 1996. From *An Islanded Nature*; The Trust for Public Land and The New York City Audubon Society, 2001. <sup>9</sup> Cornell University, Invasive Plants website: [www.invasiveplants.net/phragmites/phrag](http://www.invasiveplants.net/phragmites/phrag). <sup>10</sup> Dennis Bader. E-mail communication to Stephanie Elson, NY4P Research Associate. July 25, 2003

Photos: Ron Borque and Don Riepe for NYC Audubon; Tobin Russell for NY4P; U.S. Army Corps of Engineers. Maps: Community Mapping Assistance Project ()

**NEW YORKERS FOR PARKS (NY4P) >>**

is an independent advocacy organization that serves as a watchdog for the people of New York and their parks — committed to attaining a higher level of park services in every community. NY4P raises awareness about the importance of parks as a vital public service, and serves as the only independent, citywide watchdog working to ensure a more equitable and efficient park and recreational system for all New Yorkers.

**NEW YORK CITY AUDUBON (NYC AUDUBON) >>**

was founded in 1979 to celebrate, protect, and conserve birds and their habitat in the five boroughs. With over 8,000 member-households, NYC Audubon is a lead advocate in New York City natural area protection and restoration efforts, and is a resource for all residents interested in learning about the city from a bird's eye view.