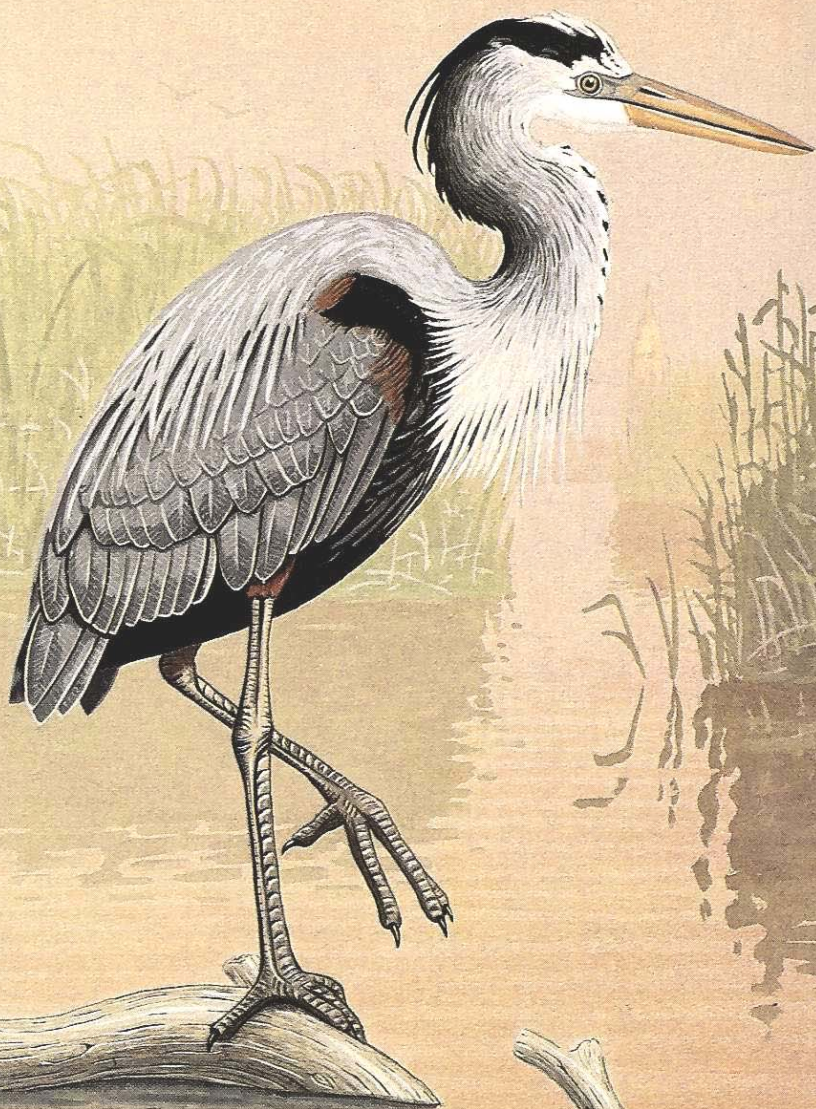


Salt Marshes of New York City





Map of parks containing salt marshes, highlighted in this brochure. Many more salt marshes exist around the City than are discussed here.

Please note: Legend for maps can be found on page 17.

Cover:
The great blue heron is our largest wading bird. When it takes to flight, the slow flapping of its wings—six feet from tip to tip—is an inspiring sight.



Salt Marshes of New York City

Among New York City's least known and most valuable natural resources are its salt marshes. Salt marshes are transitional zones: they lie at the border of land and sea, between the ocean's waves and freshwater rivers and streams. Salt marshes flourish behind barriers of beach and sand, in the shelter of coves, lagoons, and bays, and along the banks of estuaries. Without these protective barriers, salt marshes would be rapidly destroyed by the pounding surf and shifting ocean currents.

These wetlands support a great variety of wildlife. They provide food for diverse species, ranging from microscopic plankton to mudsnails, killifish, clams, mussels, fiddler crabs, great blue herons, and snowy egrets. Their survival depends, in large part, on the conservation of salt marshes.

Habitat destruction has already placed the future of a great many saltmarsh plants and animals in jeopardy. Vast tracts of wetlands once surrounded the City's shores and stretched along the entire East Coast from Canada to Florida, forming a broad fringe of green at the water's edge. Today, the destruction of salt marshes proceeds at a rate of approximately 20,000 acres per year, mainly as a result of human intervention as direct as land-filling and coastal development, or as indirect as changes in the flow of rivers that have been dammed or diverted.


Salt marshes play a critical role in the support of human life. They are our landscape's kidneys. Salt marshes are natural filtration systems which trap pollutants from combined sewers and leaching septic fields that would

otherwise contaminate our bays and oceans. They have a self-cleansing ability to absorb fertilizers, and improve water quality. They reduce erosion. The land and water interface, including upland buffer areas, are among the richest wildlife habitats. This brochure will introduce you to the history, wildlife, and natural treasures of salt marshes, the green frontier of our city.

Natural History

Some 50,000 to 75,000 years ago, a massive ice sheet moved southeast across Canada and the United States. As the glacier advanced, it scoured the earth, pushing before it rocks, gravel, sand, and silt. This debris, called glacial till, gathered along the glacier's leading edge that stretched clear across the continent. The backbone of Long Island — the hills that run from Bay Ridge in Brooklyn to the east end of the island at Montauk — is a small part of this ridge, known as the terminal moraine.

When the global climate warmed 15,000 to 30,000 years ago, glacial meltwaters deposited more sand, silt, and gravel below the terminal moraine in a gradually sloping plain. Continent-sized ice sheets melted, releasing torrents of water and raising sea levels. By 7,000 years ago, sea levels had risen to about their present levels. Sediments washed from the land, and borne by the tides, were deposited offshore in narrow sandy strips, forming long islands parallel to the shoreline. These barrier beaches received the pounding surf on their



ocean side, but had calm, protected bays behind their landward shores.

Jamaica Bay is protected by the Rockaway Peninsula, a barrier beach. The lower Hudson River, which was flooded with salt water as the ocean level rose, is protected by both Rockaway and Sandy Hook, a barrier beach off New Jersey.

Jamaica Bay and the lower Hudson were calm enough for vegetation to take root, but few plants could survive in the presence of salt water. One species, however, saltmarsh cordgrass (*Spartina alterniflora*), was able to colonize the flat expanses of sand and silt, which were covered twice a day by the ocean's tides. As this specialized grass spread, forming dense stands, its stems trapped floating debris. Sediments and particles of decaying plant and animal matter slowly built up in the intertidal area, forming a nutrient-rich mud.

At the end of each season the *Spartina* died back and its dead stems created a spongy peat. Each year's peat layer raised the surface of the marsh enabling *Spartina* plants to colonize new territory along the shoreward edge of the marsh. A variety of plants—less salt tolerant than saltmarsh cordgrass—colonized the peat, out of the range of most high tides; this part of the marsh was flooded only a few times a month. These two plant communities—the intertidal (low) marsh, and the high marsh (salt meadow)—now form the basic components of our City's salt marshes.

Local History

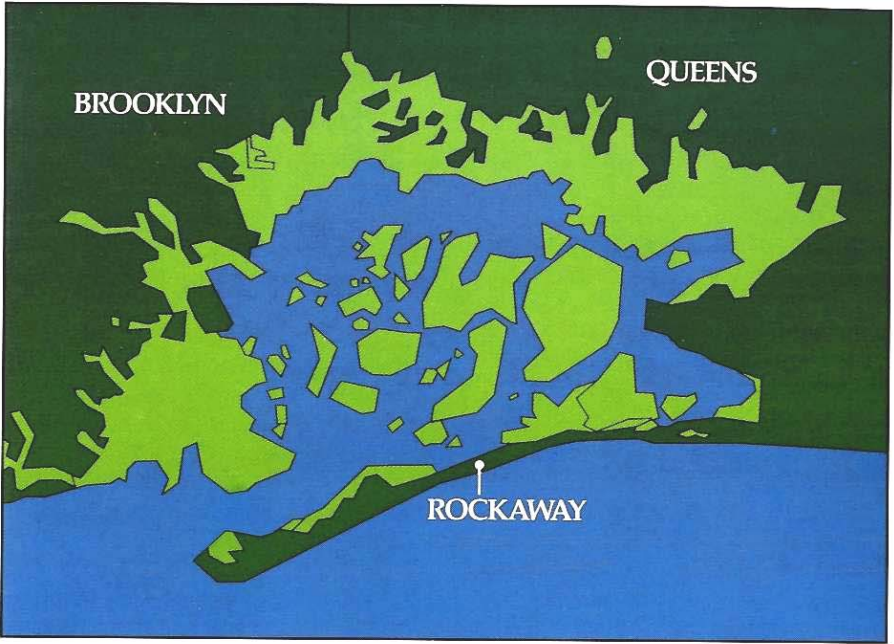
Native Americans were the first humans to visit the marshes. Archeological evidence suggests that they fished, gathered shellfish, and hunted game in the marshes and surrounding areas as early as 4,000 years ago. In summer, they camped beside tidal creeks and collected great quantities of oysters—some as large as twelve inches long—and to a lesser extent hard clams, bay scallops, and channelled whelks. They hunted deer, turkey, and small game in nearby uplands.

For several thousand years, Native Americans had the marsh to themselves, and the habitat flourished undisturbed. When European settlers arrived, human activity became a major force in the salt marsh.

Early Dutch and English colonists settled near salt meadows, which resembled their native pasturelands. Cows turned out to pasture on the marsh grew fat. The rich salt meadow grasses, harvested in late August, provided farm animals with fodder throughout the long winter.

By the mid-19th century, New York City was well on its way to becoming a crowded metropolis. Farming gave way to manufacturing and shipping, and waves of European immigrants arrived to find better lives, to work in factories and on the docks. The need for more housing and industrial sites and the burgeoning port prompted the creation of new land along the shore, so marshes were filled with rubble and debris and then developed.


Land-filling increased dramatically in the 1920s and 1930s. In 1932, garbage



Saltmarsh areas of Jamaica Bay in the 19th Century



Saltmarsh areas of Jamaica Bay in the 20th Century



that had been dumped into the sea washed up on the Long Island and New Jersey shores, creating a public uproar. City officials decided to dump garbage in marshes, which when filled would be converted into parklands and recreational facilities or developed for commercial and private use. The New York City Parks Department and Sanitation Department initiated a "reclamation program" in 1932 to develop the marshlands while simultaneously solving the city's waste-disposal problem.

By 1950, 20,000 acres of New York City's salt marshes had been "reclaimed". The salt marshes of Flushing Meadows Corona Park in Queens, Soundview and Ferry Point Parks in the Bronx, Marine Park in Brooklyn, and Rikers Island in the East River were filled with trash, imported English ship ballast, and construction debris. Vast expanses of pristine wetlands were destroyed. Between 1955 and 1975, 400,000 acres of salt marsh were lost nationwide.

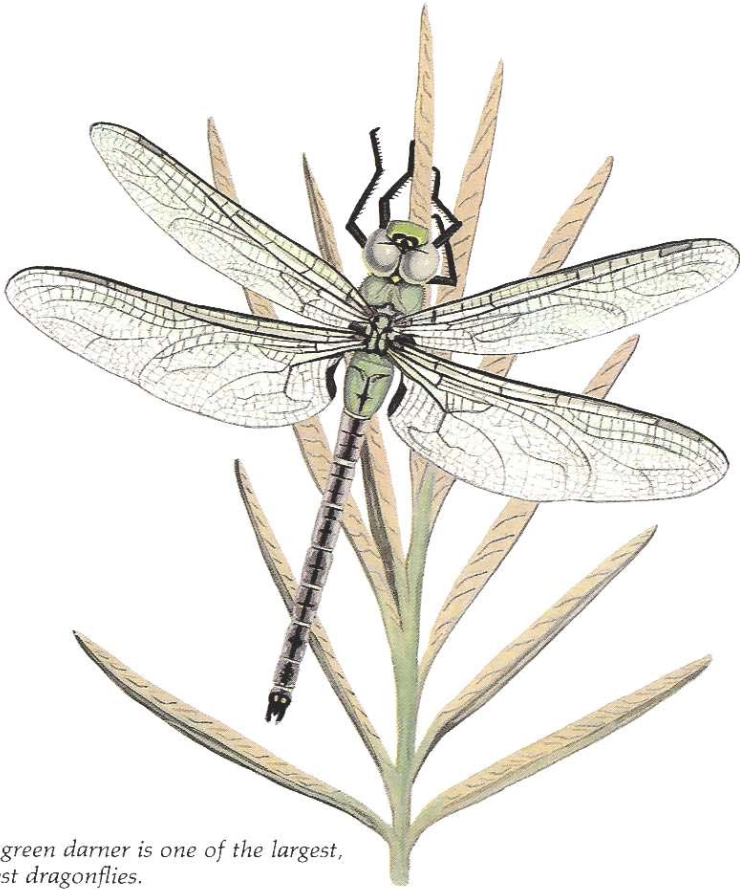
In recent years, environmental awareness has increased. Environmental issues have come to the forefront of the political arena. More people are beginning to appreciate the natural beauty of the marsh, and its importance as a part of our national heritage. Efforts are under way to restore damaged salt marshes, and to rehabilitate their native fauna and flora, but they represent only a fraction of what remains to be done.

The Salt Marsh Ecosystem

Life on the marsh is supported by a nutrient-rich mud composed of decaying plant and animal matter. This life-giving mud, called detritus, is the basis of a complex food web by which nutrition and energy are passed along from one organism to another. Scavengers like mudsnails, and small shrimp-like crustaceans called amphipods, for example, graze detritus from the mudflats; pinky-sized killifish eat amphipods; young bluefish gulp down the killifish; and in turn, the bluefish fall prey to osprey or fishermen.

The plants and animals that inhabit the marsh have adapted to survive in a salt water environment. Wading birds, for example, ingest large amounts of salt in their diet and excrete excess salt through glands above their eyes. Saltmarsh plants have glands on their leaf surfaces that excrete excess salt.

The salt marsh has three distinct zones. The plants in each area vary according to their ability to tolerate salt and submersion. At the water's edge are the mudflats, an unvegetated zone visible only at low tide. A pure stand of saltmarsh cordgrass (*Spartina alterniflora*) grows in the low, or intertidal marsh, where the roots and parts of the stems are covered twice daily by high tide. The high marsh, or salt meadow, is dominated by salt-meadow cordgrass (*Spartina patens*). High marsh is covered only twice a month by the tides that occur during the new and full moons. The upper limits of the high marsh are flooded a few times a year by severe storms or



The green darner is one of the largest, fastest dragonflies.

the highest tides that occur around the vernal and autumnal equinoxes.


Mudflats

Mudflats, located between the high and low tide lines along gradually sloping shorelines, are regularly flooded. The lowest parts of the flats may be exposed to air for only a few hours a month. Organisms in the mudflats must be able to withstand extremely variable conditions: they may be submerged for half a day and left high and dry for the other half, or

washed by a salty incoming tide and then rinsed at low tide by freshwater from upriver.

The mudflat looks like a desert in comparison to the lush green of the upper marsh, but appearances can deceive. Buried beneath the mudflat's fertile ooze live an abundance of creatures that in turn provide food for many of the marsh's birds, fish, and mammals.

Large numbers of marine worms live under the mud, which provides shelter from extremes of salt and temper-



ature. Some of them are voracious predators; others feed on algae or detritus extracted from the sand. Common types such as the lugworm (*Arenicola sp.*) and the clamworm (*Nereis virens*) are prized by fishermen as bait.

Common fiddler crabs emerge from their burrows under the low marsh at low tide and scurry sideways along the mudflats grazing detritus. Birds congregate there to feast on the foraging crabs, as well as on other exposed small animals. Fiddlers are extremely sensitive to vibrations and will flee into their burrows at the first sound of footsteps. But, with some luck, or a good pair of binoculars, you may be able to see their elaborate mating displays. The males engage in mock battles with one another, and attempt to attract females into their burrows by beckoning with their enlarged "fiddle claw."

Wading birds, such as egrets and herons, and shorebirds, such as willets and killdeer, are easily seen on the mudflats. The wading birds are talented fishermen. Watch great blue herons and snowy egrets stalk small killifish and silversides in the tidal waters. They stand motionless on stilt-like legs, patiently awaiting their prey, and then lunge at the fish with a quick stab of their long spear-like bills.

Life In The Low Marsh

The low marsh stretches from mudflats up to the mean high tide level. Its soil, exposed to air at low tide, is colonized by tall stands of *Spartina alterniflora*. *Spartina* has evolved a unique set of adaptations that allows it to survive despite its highly saline environment, regular tidal flooding, and low oxygen levels. Its root cells, for example, have specialized membranes that restrict salt intake, so it extracts nearly fresh water from the sea. The salt that does enter *Spartina* accumulates inside the plant's cells, and is excreted through glands on its leaves, where it dries in the form of glistening brine crystals.

To solve the oxygen dilemma, *Spartina* has developed a mutual relationship with fiddler crabs and ribbed mussels living among its roots. The fiddlers and mussels feed on decaying matter trapped in *Spartina's* roots. They, in turn, help *Spartina* in two ways: by burrowing, the fiddler aerates the roots, providing essential oxygen, while the mussels excrete small bundles of nutrient-rich fecal matter, providing *Spartina* with the nitrogen it needs to flourish.

The High Marsh

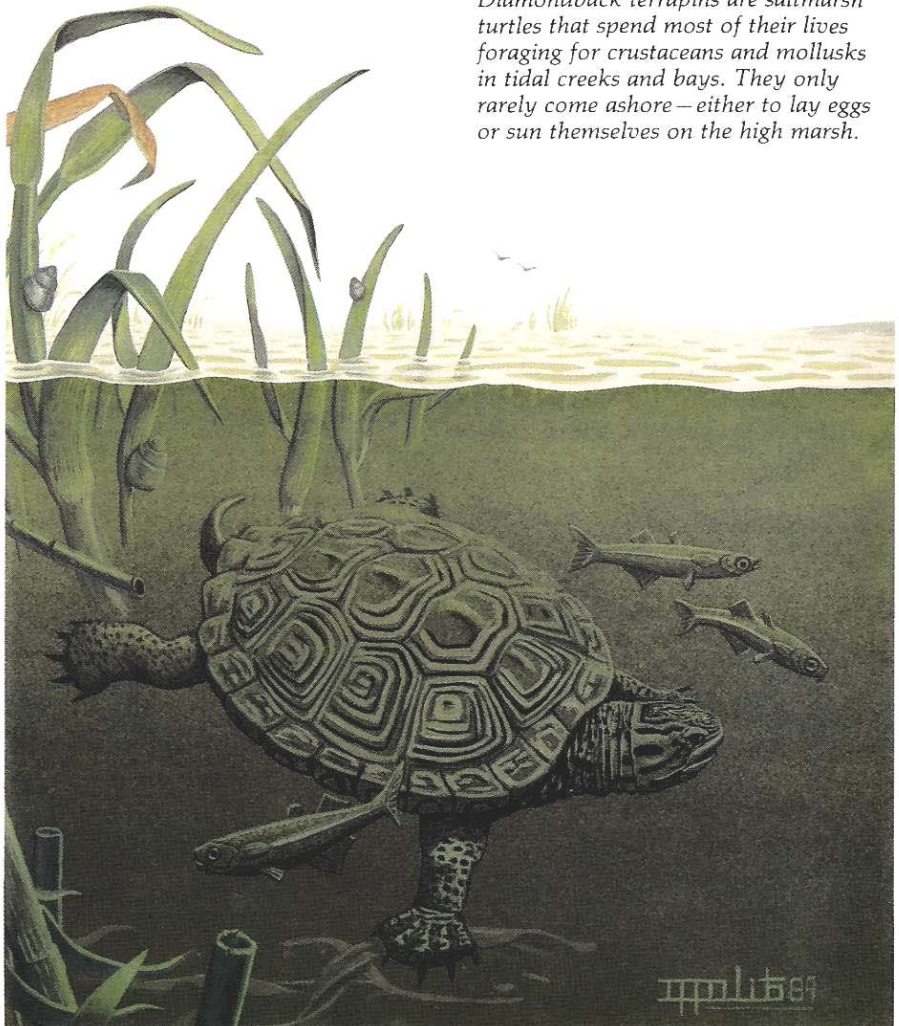
Spartina patens (saltmeadow cordgrass) grows directly upland from *Spartina alterniflora*. Saltmeadow cordgrass is shorter and finer than saltwater cordgrass, and grows in a dense mat that spreads like a thick, even carpet over the high marsh. The wind swirls its slender stems into ridges that resemble cowlicks.

Black grass and ditch-grass are often found in association with salt-meadow cordgrass in the high marsh. Black grass (*Juncus gerardii*) is actually a rush, related to the lilies. In spring it turns a dark, greenish-purple, and when it blooms in early summer it has small spikelets of dark magenta flowers. Ditch-grass (*Distichlis spicata*) looks like saltmeadow cordgrass except when it is in flower.

Whitish florets adorn ditch-grass; cordgrass florets are dark purple.

Salicornia, or glasswort, grows in bare spots and shallow depressions in the high marsh, called pannes. Its fleshy leaves turn a spectacular red in the fall. Pannes are rarely flooded by tidal waters. Salt accumulates, and algae and bacteria thrive. Sometimes you can see one of the bacteria in the form of a purple film on a panne's surface.

Diamondback terrapins are saltmarsh turtles that spend most of their lives foraging for crustaceans and mollusks in tidal creeks and bays. They only rarely come ashore—either to lay eggs or sun themselves on the high marsh.



Flowering plants grow along the upper limits of the high marsh. They include sea lavender that blooms in a mist of purple flowers, salt marsh aster with its small, daisy-like flowers, and seaside goldenrod.

The Upland Border

The upland border of the high marsh is a transitional zone between the marsh and dry land. It is drier and less salty than the marsh, so more species of plants thrive here. The vegetation is typically shrubby, with a mix of grasses and flowering plants. Marsh elder is the most common of the border plants. A shrub, rarely growing taller than five feet, it has thick, fleshy leaves, and greenish-white flowers that bloom in the late summer.

Swamp rose mallow, a tall, shrubby plant with large, showy pink flowers, blooms in the upland in late summer and early fall. Seaside goldenrod grows here as well, and bursts into golden-yellow flowers in autumn. Unlike its inland cousins, seaside goldenrod has a thick, succulent stalk that retains fresh water — a handy competitive edge in a salt water environment.

Phragmites

Common reed (*Phragmites australis*) grows in marshes that have been disturbed. It takes over entire marshes in areas where tidal gates, dredging, filling, and ditching have drastically changed patterns of flooding and ground elevation. Since *Phragmites* does not decompose into as nutritious a substance as *Spartina* does, a *Phragmites* marsh does not contribute as much to coastal ecosystems as a *Spartina* marsh.

Phragmites, however, does provide some benefits for wildlife. Some species prefer it over other saltmarsh plants. Red-winged blackbirds and marsh wrens frequently nest in *Phragmites*. Marsh hawks (northern harriers), clapper rails, and cottontail rabbits seek shelter among its dense, tall stems. And in winter, downy woodpeckers occasionally peck on the dry stems for insect larvae.



Animals of the Salt Marsh

While marsh plants typically grow in distinct bands, animals move freely throughout the marsh. Birds and flying insects are probably the most widely scattered marsh creatures. A variety of insects abound, including butterflies, dragonflies, leaf hoppers, mosquitoes, and greenheaded flies.

The clapper rail is one of the few bird species that spends its entire life in the marsh, where it feeds on fiddler crabs and other shellfish. The clapper rail builds its nest only inches above the mean high tide level, beneath a canopy of grass. Its

nest is vulnerable to flooding, but the eggs are water-resistant; they will hatch as long as they don't wash away or fall prey to egg-stealing crows or red-winged blackbirds.

The marsh wren is another bird with strong ties to the salt marsh. The male wren constructs as many as thirty nests in the saltmarsh cordgrass or *Phragmites*. These nests are never used; they are built just to attract a female. Sharp-tailed sparrows and seaside sparrows are other winged residents of the marsh. The sharp-tailed sparrow (especially when compared to the more common drab sparrows) is a handsome little bird that sports an orange-tinged face.

Small mammals such as raccoons are frequent visitors to the marsh. Raccoons come at night to eat fish and shellfish, often leaving tracks, which look like tiny human hand prints in the mud as evidence of their nocturnal forays. The muskrat is the only mammal that makes its permanent home in the salt marsh. Its presence indicates a healthy marsh ecosystem. Muskrats build conical homes of mud and reeds, called lodges, that protrude out of the shallow tidal creeks. The lodges are used as winter homes. Burrows along muddy banks, lead to dens occupied during the warmer seasons. Muskrats eat marsh plants. They supplement their diet with shellfish, insects, and an occasional fish.

The clapper rail is a common, but elusive, resident of the salt marsh. It can run through the protective cover of salt marsh cordgrass without rustling a single leaf.



Jamaica Bay, Queens

Only twenty miles from Manhattan, the Jamaica Bay Wildlife Refuge is a world apart, where more than 325 species of birds find food and shelter. The refuge was acquired by New York City in 1938. In 1974, the Jamaica Bay Wildlife Refuge was incorporated into the newly formed Gateway National Recreation Area. Now managed by the National Park Service, the refuge encompasses 9,155 acres of islands, open water, dunes, and salt marsh.

In summer, wading birds, including great blue, little blue, and tricolored herons, and great and snowy egrets, feed in the shallows and mudflats. The osprey has been making a strong comeback at the refuge — a pair has nested, but not bred, for the past two summers — after decades of decline tied to the use of the now-banned pesticide DDT. In winter, thousands of ducks, geese, and other waterfowl congregate in Jamaica Bay's relatively protected waters. Each fall and spring, waves of migrating shore-birds descend on the bay's mudflats to feed.

Most of the refuge is composed of saltmarsh islands that are off limits to the general public. Visitors are welcome at the refuge headquarters, where several trails allow for a panoramic view of the marshes, and a variety of other habitats created and maintained to attract diverse bird species. A free permit, required to visit the grounds, may be obtained at the refuge headquarters. Ask for maps and check the log for recent bird sightings.

Transportation

Subway: A or C train to Broad Channel; then walk west to Cross Bay Boulevard and north about a mile to the refuge entrance.

Bus: The Q53 runs north-south along Cross Bay Boulevard between Horace Harding Boulevard and the Rockaways. Take bus to refuge entrance.

Car: Belt Parkway to Cross Bay Boulevard south. Head south, cross bridge, and look for parking lot entrance 1 1/4 miles ahead on the right.

Perhaps the most widespread of breeding herons in our area's salt marshes, the green-backed heron nests in trees and shrubs near water.



Inwood Hill Park, Manhattan

Inwood Hill Park, a 196-acre oasis at the northern tip of Manhattan, features the last remnant of the tidal marshes that once surrounded Manhattan Island. The marsh receives a mixture of fresh water flowing from the upper Hudson River and salt water from the ocean's tides. The mix of salt and fresh waters, called brackish water, has created an environment unique in the city. While the low marshes of Jamaica Bay and Long Island Sound are pure stands of *Spartina alterniflora*, Inwood Hill Park's low marsh also contains big saltwater cordgrass (*Spartina cynosuroides*) and two species of bullrush.

Between the low marsh and the park path are a number of marsh plants rare elsewhere in the city, including water hemp, salt marsh bullrush, and seabeach dock. Marsh elder, swamp rose mallow, and groundsel bush also grow here.

A broad, expansive mudflat runs from the marsh to the channel of the Harlem River Ship Canal. Great blue herons frequent the flat in winter. Great and snowy egrets are common visitors from spring through fall. You can often hear the chattering of a bel-



0 1/4 mile



ted kingfisher as it flies overhead, hovers, and then drops into the water, emerging with a wriggling fish in its oversized bill.

Transportation

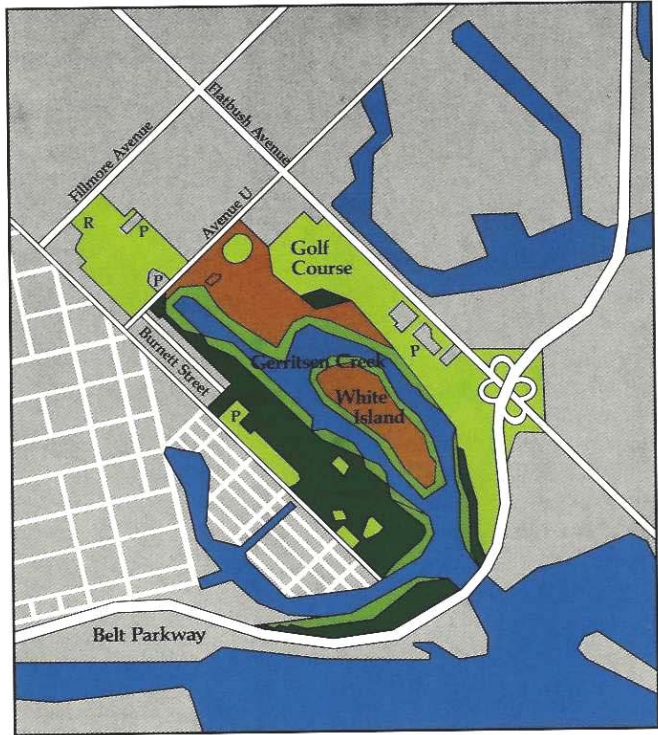
Subway: IND A train to 207th Street or Dyckman Street; IRT #1 train to 207th Street or 215th Street.

Bus: M-100 to Dyckman Street or 207th Street.

Car: Henry Hudson Parkway to Dyckman Street exit; east on Dyckman to Broadway; north on Broadway to 207th Street; west to Seaman Avenue.

Marine Park, Brooklyn

Most of Marine Park's 798 acres consist of salt marshes and uplands that flank Gerritsen Creek, the westernmost inlet of Jamaica Bay. The sheltered creek attracts a wide variety of marsh birds. From June through August clapper rails can be heard calling throughout the marsh. In winter, freshwater and marine waterfowl find shelter in the creek. Winter visitors include greater and lesser scaup, canvas-back, black duck, ruddy duck, mute swan, Canada goose, brant, and common loon. Trails along the west side of the creek begin at Avenue U, opposite the parking lot, on the east side at Avenue U and Burnett Street.



0 1/2 mile
N

Car: Belt Parkway to Kings Plaza exit (11N), then north on Flatbush Avenue; turn left on Avenue U and continue west for ten blocks; pass East 33rd Street and look for parking lot on right.

Transportation

Subway: M or D train to Avenue U station; then eastbound B-3 bus to Burnett Street and Avenue U.

Bus: B-46, B-2, or B-41 to Kings Plaza; transfer for westbound B-3 bus to Burnett Street and Avenue U.

Pelham Bay Park, Bronx

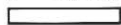
Pelham Bay Park encompasses 2,764 acres on the eastern shore of the Bronx. It is the largest Park in New York City, and has the greatest variety of habitat. In addition to large tracts of forest, meadows, and rocky shoreline, Pelham Bay Park includes 195 acres of salt marsh, much of it abutting mature oak forest.

The Thomas Pell Wildlife Refuge, near the Hutchinson River at the park's western boundary, contains vast tracts of pristine salt marsh dotted by forested rock outcrops. The border between salt marsh and forest is a good place to see yellow thistle (*Cirsium horridulum*) and holy grass (*Hierochloa odorata*), both rare in the City. To reach the Thomas Pell Refuge, follow the bridle path from the Pelham Bay Golf Course parking lot; please yield to horses.

The Kazimiroff Nature Trail winds through the 189-acre Hunter Island and leads to salt marshes. At the outset of your visit, stop by the Environmental Center on Twin Island, staffed by Urban Park Rangers, and pick up a copy of the Kazimiroff Nature Trail Guide.



0 1/2 mile



Transportation

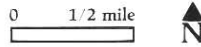
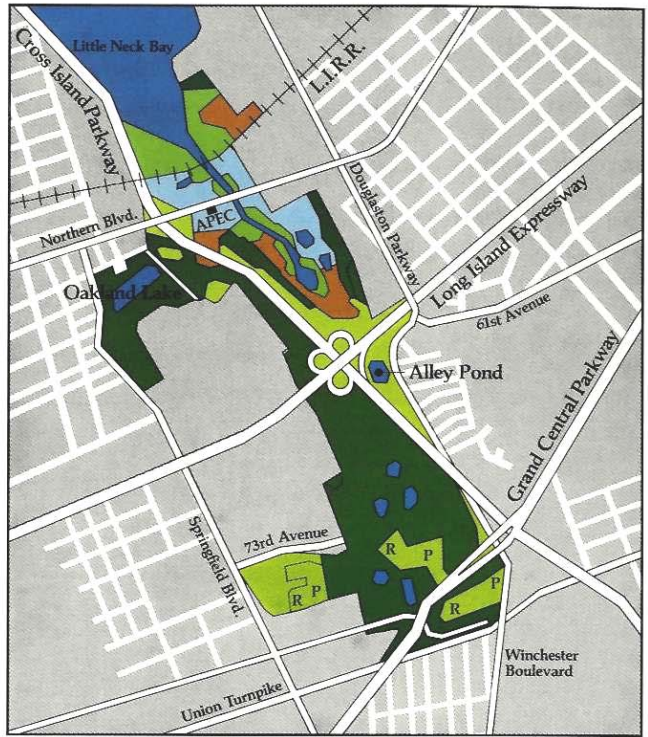
Subway: IRT Lexington Avenue #6 train to Pelham Bay Park station #12 bus to Orchard Beach (summer only).

Car: New England Thruway to Orchard Beach exit, or Hutchinson River Parkway to City Island/ Orchard Beach exit. Follow signs to Orchard Beach (free parking Labor Day to Memorial Day); Pelham Bay Environmental Center is at north end of the beach. For Thomas Pell Refuge, follow signs to Shore Road; park at Pelham Golf Course lot immediately on your left. Take bridle trail under train trestle to refuge.

Alley Pond Park, Queens

Alley Pond Park, located in north-eastern Queens, stretches from Little Neck Bay south to Union Turnpike. Its 625 acres of woodlands, salt marsh, meadow, and ponds make it the largest and most diverse of the borough's natural parklands.

"The Alley" is a 150-acre strip of salt marsh and upland scrub in the northern end of the park. Alley Creek is fed by natural springs and storm water that flow north through the area, merging with tidal waters from the bay.



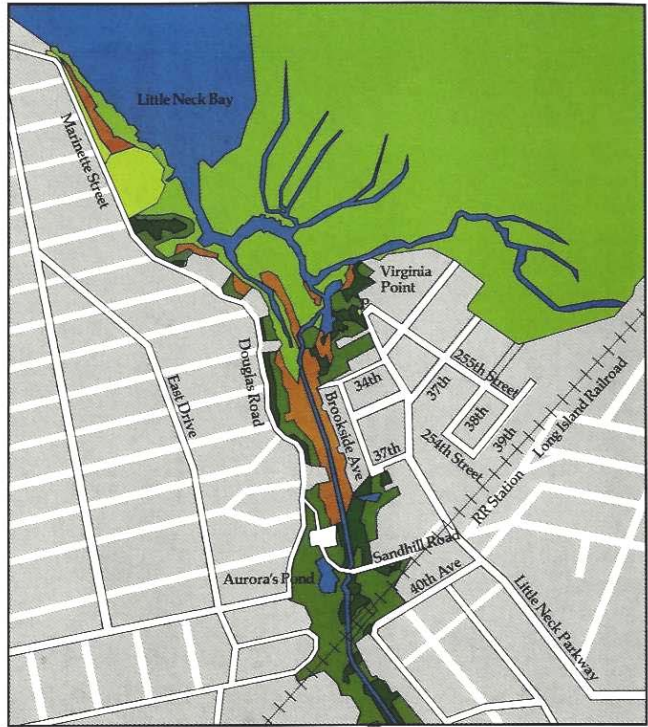
Transportation

Subway: #7 train to Main Street; then #12 bus to Northern Blvd.

Car: Long Island Expressway to Douglaston Parkway; north to Northern Boulevard; take left on Northern and continue three blocks to park. The Cattail Trail leads from the rear of APEC to an observation deck over Alley Creek.

Udalls Park Preserve, Queens

This little known treasure is one of New York City's most recent park acquisitions. Located in northeastern Queens, on the border of Nassau and Queens Counties, the 30-acre preserve contains a variety of habitats, including salt marsh, woodlands, and a freshwater pond. The salt marsh in Udalls Cove is one of the most pristine in the city. Tidal creeks wind through broad salt meadows, supplying the marsh with an abundance of food for many birds, insects, and small mammals.



0 1/8 mile



The best view of the marsh is from Virginia Point, an old clam digger's landing at the end of Little Neck Parkway. Little Neck Bay can be seen from the playground on Douglas Avenue.

Transportation

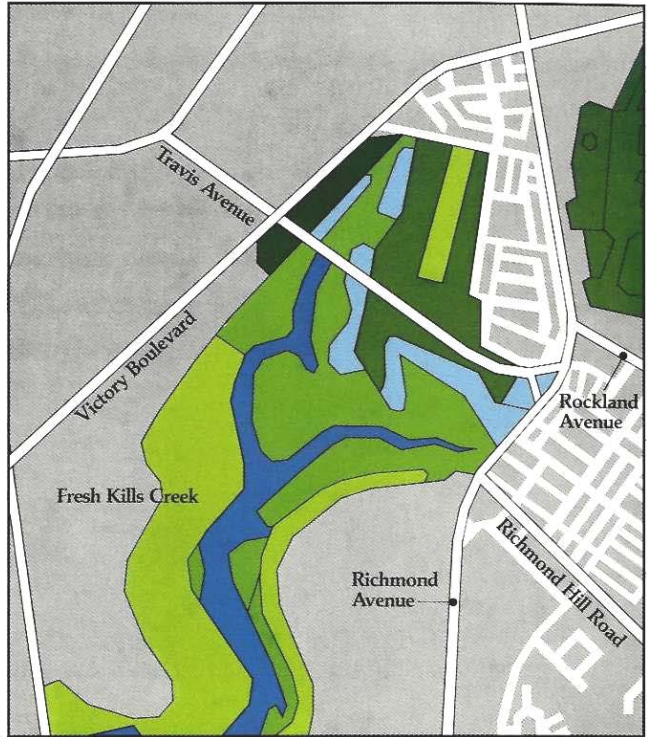
Subway: IRT #7 to Main Street; then #12 bus to Northern Boulevard and Little Neck Parkway; walk north on Little Neck Parkway about five blocks to the end (Virginia Point).

Rail: Long Island Rail Road to Little Neck Station; walk north on Little Neck Parkway to end (Virginia Point).

Car: Long Island Expressway or Grand Central Parkway to Little Neck Parkway exit; continue north on Little Neck Parkway to end (Virginia Point).

William T. Davis Wildlife Refuge, Staten Island

The William T. Davis Wildlife Refuge is located at the head of Main and Springville Creeks, two tributaries of Freshkill Creek on Staten Island. With 260 acres, the refuge is remarkably diverse; it contains broad expanses of salt meadow fringed by low marsh, forested uplands, rock outcrops, a swamp forest, and many small, spring-fed ponds. The variety of habitat is reflected by abundant bird-life. More than 117 bird species have been recorded here, including saltmarsh birds like the sharp-tailed sparrow, the swamp-forest-nesting wood duck, and black-poll – a migrant wood warbler. Hawks and owls can also be seen here, especially in winter. Barn, great horned, and short-eared owls hunt in the refuge by night; red-tailed, red-shouldered, and rough-legged hawks by day. Marsh hawks patrol at dawn and dusk.



0 1/2 mile



Transportation

Ferry and Bus: Take R 107 or R 102 bus from Manhattan ferry; transfer to R 114 bus to Richmond Avenue and Travis Avenue; walk down Travis Avenue about one block to nature trail.

Car: Verrazano Narrows Bridge to Richmond Avenue exit; turn right on Richmond Avenue and continue to Travis Avenue; turn right on Travis Avenue and look for nature trail on the left, about one block.

Legend

-  Salt Marsh
-  Woodland/Forests
-  Fields/Meadows
-  Phragmites
-  Freshwater Wetlands
-  Open Water
-  Managed Lawns/
Active Recreation
- +++ Railroad
-  Buildings
- P Parking
- R Restrooms

Note: When visiting natural areas, wear comfortable walking shoes or boots. In summer protect against mosquitoes and ticks: use insect repellent, wear light-colored clothing, and tuck long pants into socks. And because safety should always be a consideration, hike with a friend.

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City of New York
Parks & Recreation
Natural Resources Group

Rudolph W. Giuliani
Mayor

Henry J. Stern
Commissioner

Marc A. Matsil
Director

A division of NYC Parks, the Natural Resources Group (NRG) is an international leader in innovations in restoration ecology, research, and Parks management. Dedicated to preservation and restoration of the City's wetlands, woodlands, and meadows, NRG has inventoried and saved rare and endangered species, and developed management plans for identifying significant areas to be acquired as parkland. As the City's ecological watchdog, NRG has designed natural resources damages claims in major pollution cases.

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