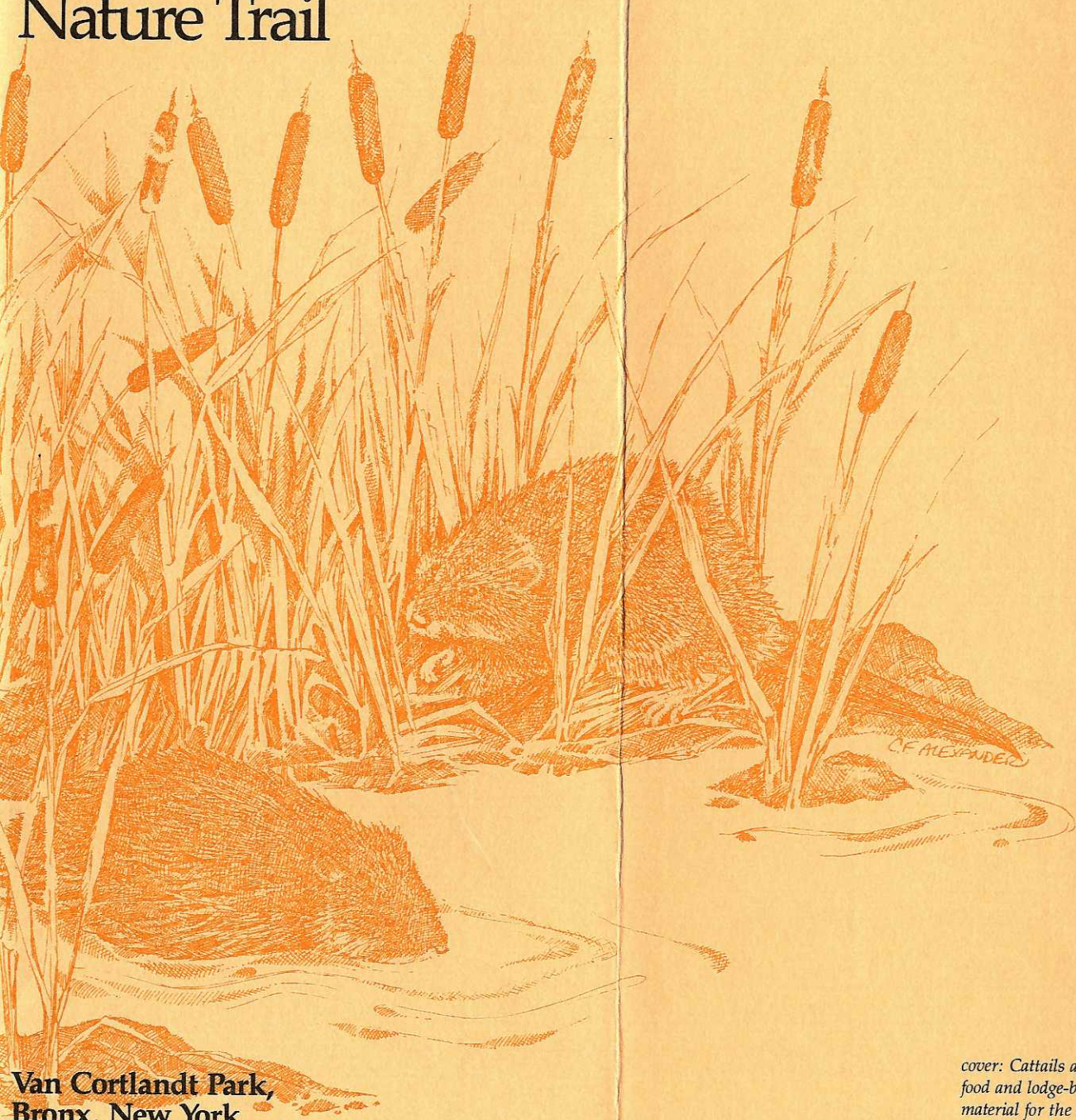






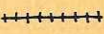



The John Kieran Nature Trail



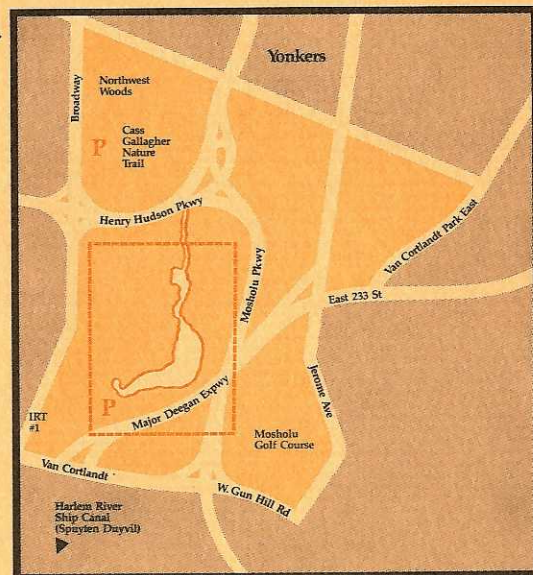
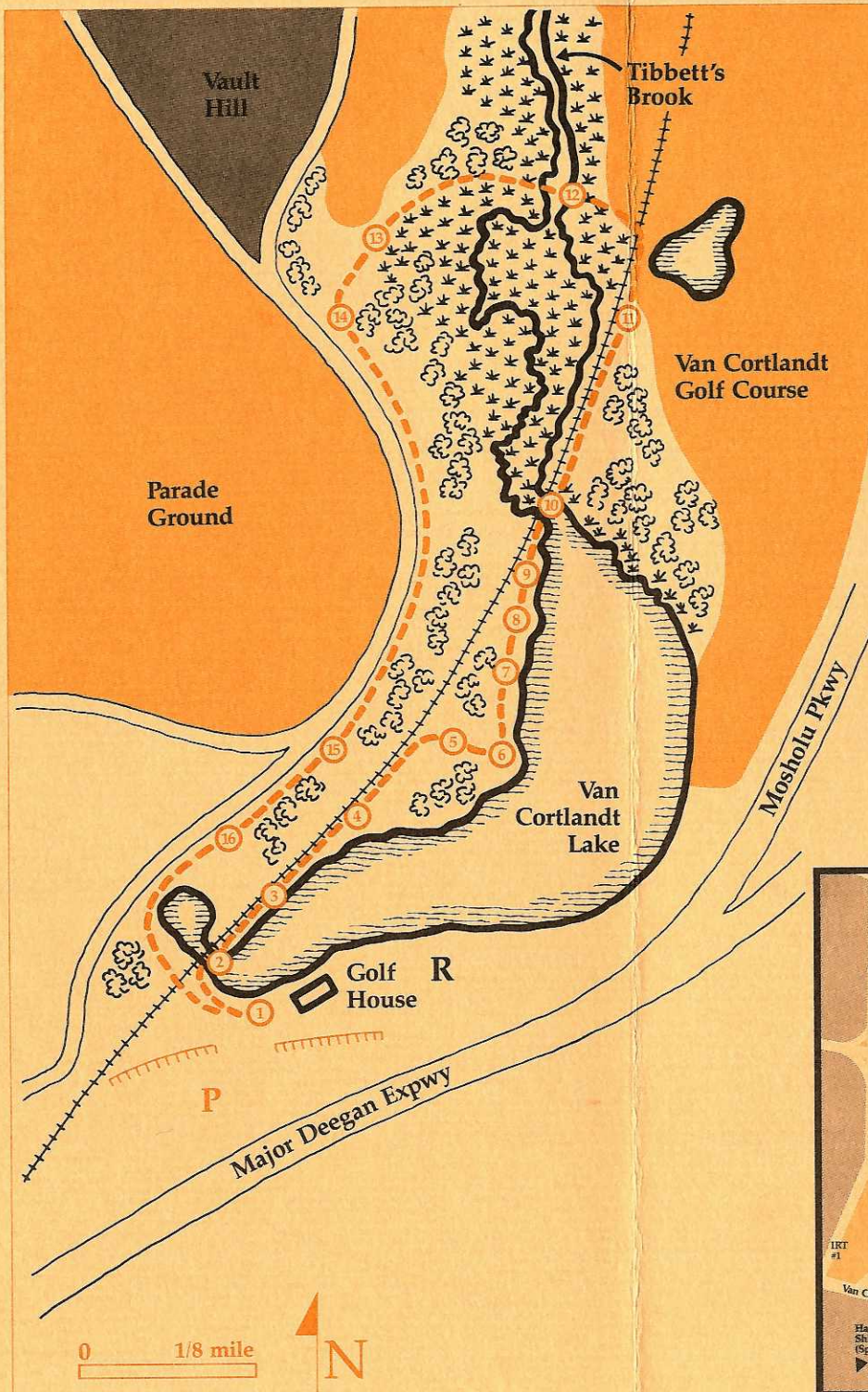
**Van Cortlandt Park,
Bronx, New York**

*cover: Cattails are a favorite
food and lodge-building
material for the muskrat.*

The John Kieran Nature Trail

-  Wetland
-  Forest
-  Meadow
-  Lawn
-  Railroad Track
-  Nature Trail
-  Parking
-  Restrooms

Van Cortlandt Park, Bronx



A raccoon traps a crayfish at the bank of a still lake. Nearby, a great blue heron stands motionless, craning its sinuous neck. An iridescent green dragonfly hovers, then darts over the dark water.

This is life at the edge of the biggest, busiest metropolis in North America, where the 1,146 acres of Van Cortlandt Park—deep forests, rolling meadows, and lush wetlands—form part of the northern border of New York City.

When the boundaries of the park were established in 1888, the Bronx was composed of forests, farms, and marshes. But as the city raced northward in the late 1800s and early 1900s, the agricultural and wild lands disappeared. Farms were paved over, creeks turned into storm sewers, and wetlands filled in.

Today the original character of the land is preserved only in our parks, and even parkland like Van Cortlandt has been dramatically changed by human activity. Still, many spots in the park offer a glimpse into the past, hinting at what the terrain may have looked like hundreds of years ago.

- ◀ **This trail, which takes about 45 minutes to walk, introduces you to the area around the park's lake and freshwater marsh. The numbered posts along the route correspond to the numbered stops in this guide. As you walk, watch for chattering chipmunks darting across your path and cottontail rabbits munching on weeds along the railroad track. If you are lucky, you may spot a raccoon clambering up a tree or a chubby muskrat slipping into the marsh. The more alert an observer you are, the more you will see.**

History

By the time Europeans first arrived in the Bronx, American Indians had been hunting and fishing in the area for thousands of years and farming there for centuries. In 1646, Adriaen Van der Donck, the first lawyer in the young colony of New Netherland, was granted title by the Dutch to a large tract of land north of Manhattan Island. Van der Donck also purchased this land from the local Indians, so his claim was doubly insured.

In 1699, after several transfers of ownership, 50 acres passed into the hands of Jacobus Van Cortlandt, future mayor of New York City (1710-11 and 1719-20). This parcel was the nucleus of the city park that would be created as part of a package of about 4,000 acres of new Bronx parks and parkways nearly two centuries later.

Thousands of years of human presence and millions of years of natural processes at work in Van Cortlandt Park have drastically altered its landscape. But natural systems can be very resilient. Changes brought about by nature or by human intervention are almost never permanent. The formerly busy train track network that once laced the woodlands, for example, has all but disappeared. This push and pull of natural systems responding to changes is clearly evident on the John Kieran Nature Trail.

1. Van Cortlandt Lake

When Jacobus Van Cortlandt built a dam here across Tibbett's Brook around 1700, he created this lake. Until the early 1900s, Tibbett's broad stream—known to the local Indians as Mosholu (hence Mosholu Avenue and Mosholu Parkway)—flowed peacefully between wooded banks. It began in Yonkers and ran down through the park's forests and marshes, across what is now Broadway, and south to join the waters of Spuyten Duyvil Creek, a mile off in the valley below. Because of this Spuyten Duyvil connection to the Hudson River, the now-filled marshes in the southwest section of the park were once flushed regularly by the tides.

At the southern outflow of Van Cortlandt Lake was a millpond, where the Van Cortlandt mills once stood. The history of the mills is unclear, but popular accounts indicate that Jacobus built a combination gristmill and sawmill somewhere on the pond side of the bridge at the next stop. During the Revolution, the mill ground grain and cut lumber for both the Americans and the British, as each gained control of the area. It was later removed and rebuilt as two separate mills when the dam was replaced in the early 1800s. Local farmers continued to bring their corn here for milling up until the transfer of this land to the city in the 1880s.

2. Wildlife corridor

The obviously unusual feature here is the old railroad track. Actually, as you can see by the double width of the railroad bridge, *two* tracks once ran here, a southbound track (since removed) and the surviving northbound track. This was the route of the Putnam Division of the New York Central Railroad. The main route of the "Put" ran between High Bridge in the Bronx and Brewster, N.Y., where travelers could make a connection to Boston. This line carried passengers and freight from 1881 until 1958, and occasional freight loads—very slowly—until at least 1981.

A second route, the Yonkers branch of the Putnam Division, split off from the main route just north of here. This was a commuter route between High Bridge and Getty Square in Yonkers from 1888 until 1943. When service ended, the right of way was transferred to the city and the track was dismantled, though traces of it can still be seen in the park.

Today, the railroad track serves as a commuter route for wildlife through the park and northward. It brings occasional surprises, such as deer wandering down from Westchester County. (If you wish to make a brief detour here, walk south on the track about 200 yards to see the remnants of the old Van Cortlandt Station.)

3. A wall of poison ivy

Don't touch the plant growing along this fence! This poison ivy can give you a nasty, itching rash. Some people are especially sensitive to it; others seem to be immune, though their immunity may disappear with repeated exposure. If you do touch it, wash your skin with soap and water as soon as possible after contact to help prevent the rash.



Poison ivy's scarlet fall foliage adds brilliance to the autumn landscape.

Even though poison ivy grows in different forms (ranging from a sprawling or climbing vine to a shrublike form, as here), you can recognize it by its shiny, dark green, three-leafleted leaves, which turn scarlet in the fall. In late spring, the ivy produces clusters of green flowers that develop into poisonous berrylike fruits, which turn white as they ripen.

Though harmful to humans, poison ivy is food for many animals. A horse, for example, will often munch happily on its foliage, and the flicker (a type of woodpecker common in the park) relishes its fruit in winter. This is a good example of how humans and animals cannot always safely share the same diet.

4. A stand of common reeds

In front of you, on the right side of the track, is a large stand of *Phragmites*, or common reedgrass. Why is it growing here? Do you notice anything that might make this site different from the surrounding area? The most obvious difference is that it is a wide area open to the sun. The soil seems looser, a little deeper, maybe somewhat wetter.

Phragmites quickly colonizes and spreads by rhizomes (underground stems) over moist, sunny areas such as the edges of salt and freshwater marshes, lakes, and ponds. It often grows in dense, monotonous stands where such water bodies have been filled in or otherwise disturbed, but may also be found on drier sites such as roadsides, especially where rhizomes have been accidentally introduced with fill.

Among the other moisture-loving plants you may find growing here with the *Phragmites* are tall joe-pye weeds, with their dense clusters of tiny pink flowers, and the bright orange-flowered jewelweed.

5. The five-trunked tree

Early in this gray birch's life, it was injured. A rabbit may have munched it down to the ground. Or it may have been burned by fire. But however it was hurt, it rebounded by putting up several sprouts, which over time developed into these trunks.

Later in its life, this tree was victimized by some vandal, who peeled away its pliable bark and carved initials in the exposed wood. Such an injury can seriously damage or even kill a tree, since the bark shields the tree's internal life processes from the dangers of the outside environment, ranging from disease-causing bacteria to the drying effects of the sun.

6. Native New Yorkers: a fern colony

On the ground here, in the expansive shade of a big black cherry tree, is a colony of New York fern. This species grows not only in New York but over most of eastern North America (the specimen used for the original formal description was from Canada). This is one of the easiest fern species to recognize. Its delicate, widely spaced pinnae—the “leaves” that radiate from the main axis—taper to almost nothing near the base of the fern.

Actually, what we commonly think of as an individual fern is really a frond. Many fronds may grow from a single branching rhizome (under-ground stem) and as such be part of a single plant. The above-ground parts (the fronds) die back in winter, but new fronds sprout from the rhizome in the spring.

The New York fern generally prefers shade or filtered sun (as on this site) and somewhat moist, acidic soil. Like most ferns, it requires a relatively undisturbed habitat to grow well. In fact, this fern colony is more characteristic of a rural woodland than a city park. It is a good example of the wild aspect of the park that remains unchanged.

7. Arrow arum and skunk cabbage

Turn off the path and step down to the lakeshore into the cool, dappled shade of a big, twisted willow. The conspicuous plant that grows densely in the shallows before you is arrow arum, named for its arrowhead-shaped leaves. Arrow arum typically grows in several inches of water at the edges of still freshwater ponds, lakes, and marshes. It is a good example of an ecological class of plants known as emergents—plants rooted under water but extending their plant parts above the surface. Emergents grow along the shoreline, where there are more species of plants and denser growth than in waters farther from the shore.

The male red-winged blackbird's startling red and black coloration helps him win a mate and defend a territory; the female's drab plumage makes her inconspicuous to predators while she cares for eggs and young.



Floating among the arrow arum are tiny round duckweed plants, which in summer may form dense green mats on the water's surface. Duckweeds have been used as biological filters for wastewater, since their rapid growth allows them to absorb large amounts of nutrients very quickly (some species may double their numbers in less than three days) and they are easily harvested by skimming them off the surface.

On the north side of the willow is a low, dark green plant with leaves that are huge by summer. This is skunk cabbage. It grows in swampy spots where it can keep its "feet" wet. Its malodorous nature is most apparent in the spring, shortly after it emerges from the ground. Skunk cabbage may emerge before the last snow has melted by producing enough metabolic heat to melt its way through.

If you are here in summer, look for the tiny, sky-blue flowers of the forget-me-not at the water's edge. In late summer, at the edge of the thicket behind you, look for the tiny white flowers of the water horehound clustered densely around the stem at the bases of the plant's leaves. Listen for the slow, steady "Ahoohm, Ahoohm" of the male bullfrog, his deep, resonating call befitting North America's largest frog. Return to the path by the trunk of the willow and continue until you emerge from the *Phragmites*.

8. Birch leaf miner

Looking up to your left, you can see a number of birch trees whose leaves are turning brown and withering. This is the work of the wasp-like sawfly known as the birch leaf miner. In spring and summer, the adults lay eggs in tender new foliage. After about a week, the larvae hatch and begin to feed, creating visible leaf tunnels, which may fuse to form a single brown mass.

If you tear one of the brown leaves, you can see that the entire inside of the leaf has been consumed, leaving only a hollow shell. The dark powder in each tunnel is the larva's excrement.

Accidentally introduced from Europe, the birch leaf miner was first found in this country in Connecticut in 1923 and has since spread throughout the Northeast. While these insects rarely kill a tree, they may weaken it and make it more susceptible to attack by fungi or another insect. Similar introductions by humans of disease-causing organisms led to the dramatic decline of the American elm and to the near extermination of the American chestnut, once a dominant tree in our region.

9. Traffic intrusion

Across the lake from you is the Major Deegan Expressway, the last of the three major roads constructed through the park (it was opened in 1956). If you are here in summer, the expressway is

almost hidden behind dense foliage (although the traffic creates a constant background hum). In winter, the roadway is starkly exposed.

While at one time the geography of the park was defined by natural features such as wooded ridges and a stream valley, the highways now slicing through the park have redefined its separate sections along lines that are often unrelated to natural features.

Like the construction of the Henry Hudson Parkway (opened in 1937) and the Mosholu Parkway Extension (which connects the Mosholu to the Major Deegan and the Henry Hudson), building the Major Deegan dramatically altered the park, destroying acres of freshwater marsh, even then rare in the city. Now park managers must consider the effects of undesirable runoff from the highways in planning the restoration of the park.

10. Lake and marsh

This bridge is a good point from which to examine some of the differences between the lake (on your right) and the marsh (on your left). Years ago, this marsh was a continuation of the lake. As time passed, sewage output from Yonkers, highway runoff water, and silt carried downstream by Tibbett's Brook were deposited in the lake, raising the bottom and increasing nutrient levels in the lake. As more plant nutrients poured into the lake, aquatic vegetation increased. These new plants died and sank to the bottom more quickly than they could be decomposed, causing the lake bottom to rise even higher. As these organic sediments were broken down, they further enriched the system, perpetuating the cycle.

As a lake becomes shallower, emergents such as arrow arum and spatterdock (the yellow water lily with heart-shaped leaves that flourishes in this marsh) grow farther out from the shore, and stands of marsh-border species such as cattails, *Phragmites*, and buttonbush (which you will see shortly) begin to develop. Dense vegetation slows water flow, causing more and more suspended

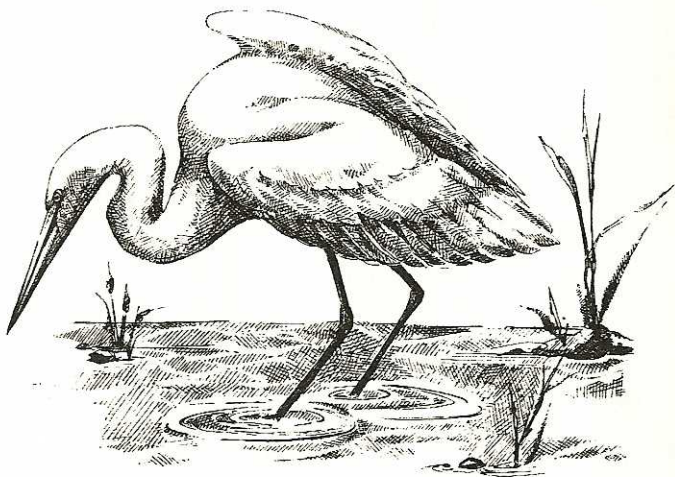
material to be deposited on the lake bottom. If this process goes on long enough, terrestrial plants will continue to establish themselves farther and farther from the shore, and the lake will eventually become a meadow.

11. The heart of the marsh

Here is your first look into the heart of the freshwater marsh. Standing here, it is easy to forget that you are in the Bronx. Just at the water's edge in front of you, spreading several yards out into the water, is a thick growth of arrow arum and a little farther out, a mat of spatterdock. Looking across the marsh, you can see dense stands of button-bush, cattails, and *Phragmites*.

Certain plants that grow in freshwater marshes—such as some sedges, arrow arum, and cattails—are indicator species. Their presence is used in

By the turn of the century, egrets were hunted nearly to extinction because the head plumes they develop in breeding plumage were much sought after for ladies' hats. Their numbers have increased since protective legislation was passed in 1913.



many states as a way to legally define a particular site as a freshwater wetland for protection under wetlands conservation laws. This marsh is protected under New York State's Freshwater Wetlands Act of 1975.

Besides abundant plant life, birds and other animals thrive here. Keep an eye out for hunting herons—such as the long-legged, long-necked, pure white great egret—as they stalk fish, frogs, and insects in the shallows. Listen for the reedy call of the red-winged blackbird as the male proclaims his territory from a conspicuous perch, his red wingpatch flashing in the sun. Watch for mallard and wood ducks trailing strings of ducklings. In winter, as the cattails and reeds die back, you may spot a muskrat lodge out in the water—a rounded mound of mud and vegetation built by muskrats for shelter. Stand or sit quietly and look, listen, lose yourself in the peacefulness of the marsh.

12. More marsh wildlife

Just in front of you is a close-up view of button-bush. If you are here in late summer, you can see the globular flower and seed heads that give this shrub its name. This bridge offers a beautiful view of the marsh from another perspective and an opportunity to see wildlife that may not have been visible from your first viewing position. Insects are the most abundant and diverse group of animals living here, from the muddy bottom up to the water surface. Do you see any aquatic insects, such as the splay-legged waterstrider skittering along the surface?

In summer, look around you for brightly colored dragonflies (wings outstretched at rest) and damselflies (wings raised at rest). These ferocious-looking insects are harmless to humans, but for the mosquitos, midges, and other small insects that make up their diet, these sharp-eyed "mosquito hawks" pose quite a danger. The young dragonflies, or nymphs, are born and live under water and, like the adults, are voracious eaters of other

insects. The placid surface of the water hides a dramatic underwater world of countless fish, insects, and microscopic plants and animals.

13. Bullfrog pool

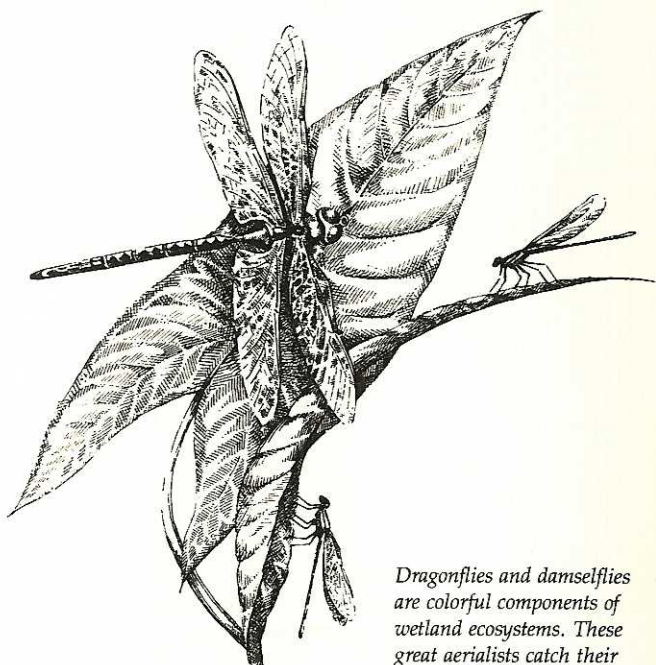
This small pool, which feeds into the marsh, is formed by runoff from Broadway storm sewers and from the Parade Ground just above you. As you approach the pool in warm weather, you may startle a bullfrog, which will leap into the water with the staccato squeal it emits when alarmed.

The bullfrog is an amphibian—a class of animals that also includes salamanders and toads. In the evolution of animals, amphibians are a transitional group between primitive, water-dependent animals, like fish, and more advanced land animals—like reptiles, birds, and mammals. Amphibians can live on land, but are rarely found far from water. Nearly all amphibians begin their lives in water and their skin must always be kept moist.

Looking around, you can see some old rusting metal posts and concrete blocks. These are remains of the Yonkers commuter shuttle (mentioned earlier) which ran here, along the edge of the Parade Ground, nearly half a century ago.

14. The Parade Ground

When the formal recommendation was made in 1884 to create Van Cortlandt Park, one of the main arguments in its favor was the potential value of this stretch of land—once farmland—as a Parade Ground for training Squadron A of the National Guard (which was sharing the already busy Prospect Park Parade Ground in Brooklyn). Once the parkland was acquired, the guardsmen did use this tract extensively for war games and polo matches—attracting thousands of spectators—especially during 1917-18, when the Army took over all of Van Cortlandt Park to train troops for combat in World War I. Once used to prepare Americans for violent encounters with other nations, this



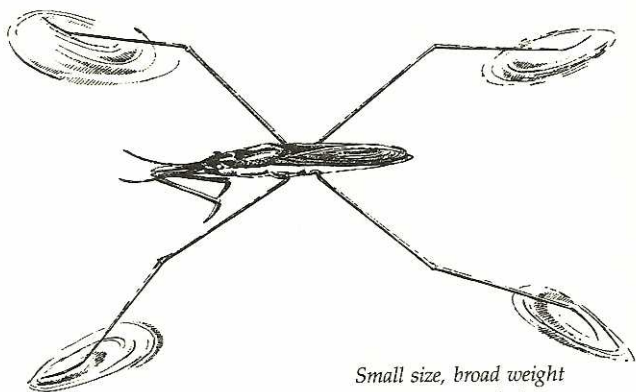
Dragonflies and damselflies are colorful components of wetland ecosystems. These great aerialists catch their insect prey—and often even mate—on the wing.

lawn is now shared by people of many different national origins for sports and picnicking. The area's use has evolved quickly, in contrast to the slower, though no less dramatic, changes in the nearby woods and wetlands.

15. Stone pillars in the woods

Step into the woods here and look down toward the railroad fence at the 13 stone pillars standing there. These pillars are an eerie monument to the great railroad past of our region.

Erected around the turn of the century, these pillars were made of stone from different quarries around the Northeast (and one in Illinois). They were placed here by the New York Central Railroad to test each stone's durability and color in order to select one type for the facade of the new Grand Central Terminal in Manhattan. The stone finally selected—the Indiana limestone represented by the



Small size, broad weight distribution, and tiny water-repellent hairs on its legs allow the waterstrider to be held up by the surface tension of the water.

two pillars on the far right—was from Illinois. It was chosen largely because it could be carried the greatest distance on the New York Central's own tracks, which made it the cheapest to transport.

The limestone of which these pillars are made was formed gradually from the broken skeletons of sea creatures like shellfish and corals, in this case animals that lived and died in an inland sea that occupied the central United States 300 million years ago.

Limestone is easily dissolved by sulphuric acid, a by-product of car or industrial exhaust and water. The air around our cities has become more and more acidic since the dawn of the industrial age in the mid-1800s, and "acid rain" is now a problem in even the most remote areas of the country. Besides its serious ecological effects, acid rain contributes to the gradual deterioration of limestone buildings and monuments.

16. The old cemetery

This shady grove was the site of a cemetery whose oldest tombstones dated from the 1700s. Supposedly buried here are members of several families whose names figure prominently in the history of the Bronx and Westchester, including the

Ackermans, Berriens, Betts, and Tippetts. The author of an early history of the Bronx reported that on a visit here in 1902, he found evidence that a cavalry squadron camped in the park that week had tethered their horses to the tombstones, causing considerable damage. Though a fence was erected shortly thereafter, vandalism and theft of tombstones continued into the 1970s, when the several remaining stones were removed to safety. Nature has wasted no time here; saplings have invaded the area and will soon form living monuments to the early Bronx residents.

As you make your way back to the Golf House, look to the southwest. You can see a little patch of marsh flourishing in what not long ago was a part of the mowed field that surrounds it. While several factors are at work here, this may be an example of how difficult it is to keep water down: Tibbett's Brook appears to be resurfacing. Walk around the pond, cross the railroad track, and you are back at the Golf House.

This trail offers a view of just one small (though unique) section of the park, but provides a larger example of the constant changes that are the essence of natural systems. For a more complete view of the park, visit again and explore other areas, such as the Northwest Woods and the meadows of Vault Hill. Van Cortlandt Park is rich territory for discovering natural and cultural history or simply for escaping from asphalt and automobiles to a calmer world of meadows, woods, and wetlands.

While it normally feeds on insects, snails, and fish, the bullfrog may occasionally down small birds or mice.



John Kieran (1892-1981)

The John Kieran Nature Trail is named in honor of a great amateur naturalist and author who had a lifelong love for Van Cortlandt Park. Born and raised in the Bronx, Kieran attended City College and Fordham University and in 1915 began his career as a sportswriter for *The New York Times*. In 1927, he began writing "Sports of the Times," the first bylined column ever to appear in the *Times*. Until 1944 he wrote sports, news, and features for various New York newspapers and for more than a decade he was a member of the panel of experts for the radio show, *Information, Please*.

But John Kieran will be best remembered as a naturalist. New York was his wilderness, and the swamps and woods of Van Cortlandt Park were his specialty. He wrote many nature articles and books, including *Footnotes on Nature* and the classic *Natural History of New York City*, for which he received the prestigious John Burroughs Medal in 1960. Published in 1959, this book remains the most complete single reference on the city's wild-life and wild areas in the first half of the century.

Transportation

For more information on transportation or public walks, call the Van Cortlandt Urban Park Rangers at (212) 548-7070.

Subway: Broadway IRT #1 Train to 242 Street; enter park next to southern subway staircase and walk east on main path to Golf House.

Bus: #1, #2, or #3 from Westchester to 242 Street; Bx 9 to 242 Street or X61 to 244 Street; enter park next to southern subway staircase and walk east on main path to Golf House.

Car: Major Deegan Expressway to Van Cortlandt Park South exit; follow sign to golf course (next to entrance for northbound Major Deegan) *or* take Henry Hudson Parkway to Broadway South exit; continue south on Broadway to Van Cortlandt Park South; turn left here, and then left again at sign for northbound Major Deegan; follow sign to golf course (left fork).

This project was funded by the Zoos, Botanical Gardens and Aquariums Grant Program, which is administered by the New York State Office of Parks, Recreation and Historic Preservation for the Natural Heritage Trust.

Illustrations, Casey French Alexander

Maps, Mentyka/Schlott Design

Text, Leo Shapiro

Production, Therese Braddick and Adrian Benepe



City of New York
Parks & Recreation
Natural Resources Group

Edward I. Koch, Mayor

Fernando Ferrer, Bronx Borough President

Henry J. Stern, Commissioner

James R. Ryan, Bronx Parks Commissioner

Paul C. Berizzi, Administrator,
Van Cortlandt and Pelham Bay Parks

Marc Matsil, Director, Natural Resources Group

First Edition, December 1987

