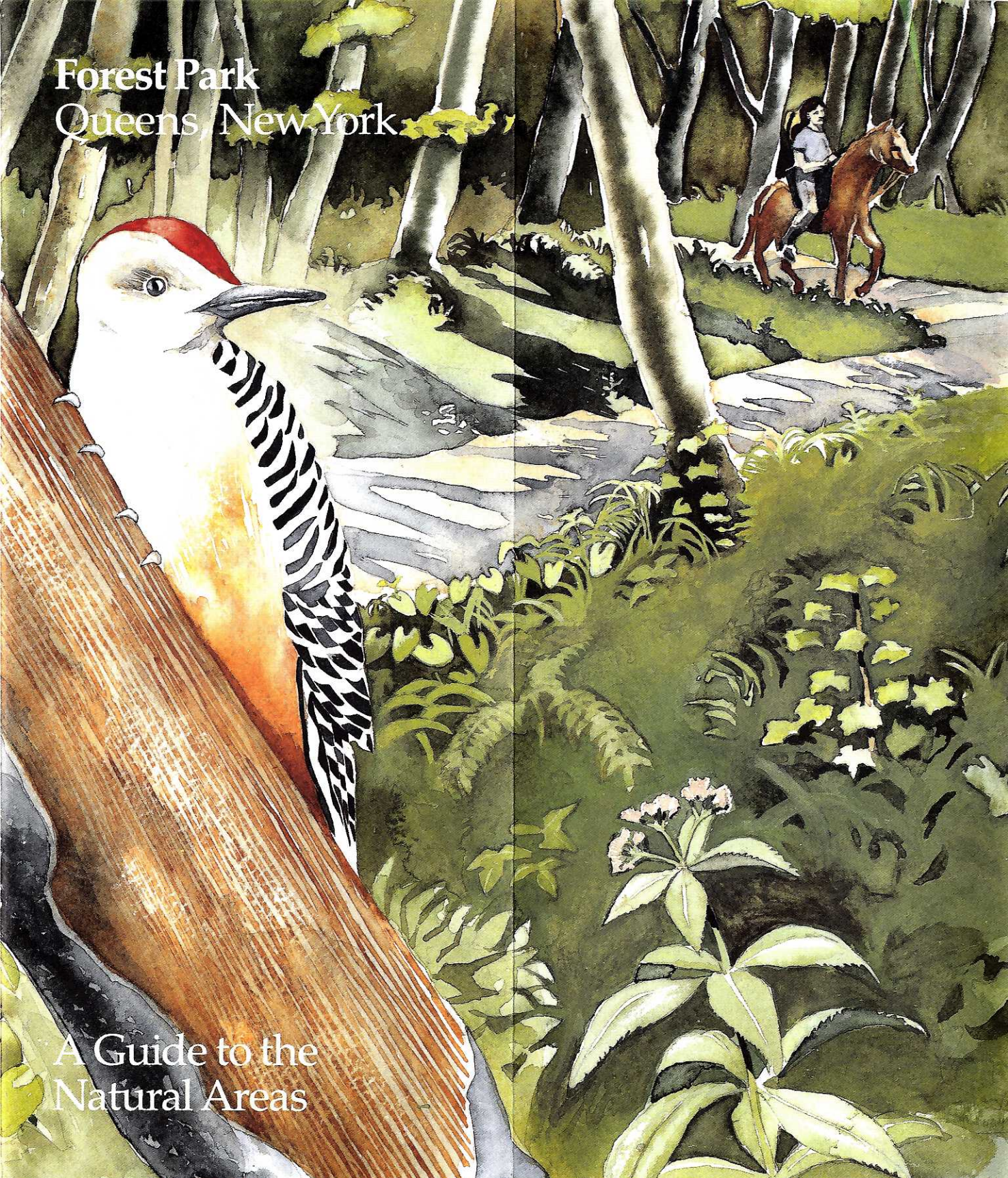


Forest Park
Queens, New York

A Guide to the Natural Areas


Woodlands/Forests
Meadows
Wet Areas
Managed Lawn
Active Recreation
Nature Trails
Bridle Paths/Other Paths
Railroad
P Parking
R Restrooms
Picnic/BBQ Area
N
0
¼ mile
The Overlook
Playground
Continental Avenue (71 Ave.)
Union Turnpike
Wallenberg Square
The Northern Forest
Mayfair Road
Metropolitan Avenue
71st Avenue
Playground
Interborough Parkway
The Gully
Park Lane South
Buddy Monument
Pine Grove
East Main Drive
Playground
109th Street
Union Turnpike
Myrtle Avenue
Woodhaven Boulevard
79th Avenue
Victory Field
86th Street
Playground
Playground
102nd Street
Carousel
98th Street
Twin Fields
Myrtle Avenue
Playground
Forest Park Golf Course
Seuffert Bandshell
Jamaica Avenue
Tennis Courts
Woodhaven Boulevard
Mt. Lebanon Cemetery
West Main Drive
Park Lane South
Forest Parkway
Playground
76th St
Model Airplane Field

Forest Park
Queens, New York

Forest Park, the third-largest park in Queens, covers 538 acres, 413 of them wooded. The park sits on an ancient glacial ridge overlooking the southern plains of Jamaica Bay. On days when the breeze wafts from the south, the scent of the saltmarsh drifts through the park's oak and hickory forest.

Forest Park offers something for everyone. Its groomed western half has athletic fields, a golf course, baseball diamonds and courts for tennis, handball and basketball. But it is the eastern half with its great oaks that is the focus of this brochure.

Perched on sassafras, this male Canada warbler shows off its necklace of black stripes.

Let us introduce you to the park's most prominent natural features, from its glacial topography to its 150-year-old oak forest, and the seasonal highlights of the park's natural areas.

Three nature trails have been color-coded for ease of reference. The Red and Yellow Trails take you through the northeast section. The Red Trail (½ mile) starts at the Buddy Monument and loops around the lower half of the Northern Forest. The Yellow Trail (1½ miles) begins at the Overlook and eventually parallels the railroad, taking you to the southeast side. The Blue Trail (1¾ miles) begins at Woodhaven Boulevard and East Main Drive, taking you through the Gully. Unmarked connecting trails as well as the bridle paths are indicated on the map. For your own safety, please yield to the horses.

How Forest Park Came To Be

In 1895, overcrowding in western Brooklyn led officials to search nearby for a place to develop a recreational facility. They wanted a space of around 500 acres that would connect to a series of "greenbelts." Within three years, they had acquired 538 acres in nearby Queens County, and "Brooklyn Forest Park" was created. Heavily forested and filled with songbirds, rabbit, and quail, the park offered magnificent views of the Long Island Sound and Atlantic Ocean from its high hills. In 1898, Queens County became part of New York City and Forest Park became part of Queens.

The early 1900s brought great changes to the park. The park's main drive, which was designed by Frederick Law Olmsted's famous landscape architecture firm, was completed. Land was set aside for a golf course, clubhouse, and greenhouse, and existing buildings were sold at auction and removed. The forest was devastated by the chestnut blight, a fungus that

plagued our region, and thousands of trees were lost.

From 1913 to 1930, extensive construction reshaped the park. New roads were laid, recreational facilities were built, and park paths were installed. Jackson Pond was remodeled and became a favorite spot for ice skating, fishing, and model boat racing. In 1935 the construction of the Interborough Parkway reduced the park by 30 acres. Fortunately, a pine grove was planted and more than 60 percent of the park remained a dense woodland.

During the 1960s and '70s, budget cuts and community discord caused deterioration of the park's facilities. Today additional money has been allocated to give Forest Park a major facelift. A complete study of the park's natural areas, conducted by the Parks Department's Natural Resources Group, will be used to create a management plan that will preserve this green oasis. With the restoration efforts of the Department of Parks & Recreation and the support of the surrounding neighborhoods, Forest Park is experiencing a renaissance.

What the Glacier Left Behind

Following the footpaths, you will notice the park's prominent ridge, steep slopes, and rocky earth. The topography of Forest Park, like the rest of Long Island, was shaped over the last million years by four glacial advances. Each glacier sculpted the topography by eroding bedrock and transporting boulders, cobbles, gravel, and sand. The last glacier to "bulldoze" our region was called the Wisconsin glacier, which covered this area 20,000 years ago.

When the Wisconsin glacier began to melt and retreat, it left behind two hilly ridges: the Ronkonkoma and Harbor Hill Moraines. The ridges are made of rounded pebbles, cobbles, boulders, sand, and clay, marking the front of

the last glacier. Forest Park sits on the Harbor Hill Moraine, which runs northeast to southwest, forming the backbone of Long Island.

You can experience the height of this ridge by entering the park at Forest Parkway and Park Lane South. Follow the road up to a small clearing on your left. As you look out towards the village of Woodhaven, you'll see flatlands extending to Jamaica Bay. This area is called the outwash plain because stratified deposits of gravel, sand, and finer materials were left here by meltwater running off the glacier.

Other clues to Forest Park's glacial past are the kettles, knobs, boulders, and rocky terrain evident throughout the park. As the glacier retreated, ice blocks fell off and were partially buried by outwash sand and gravel. As each ice block melted, it created a kettle, a depression in the ground. Several kettles are scattered throughout the park. If a kettle is so deep that its bottom is below the groundwater level, it can become a kettle pond or lake. Small kettle ponds once dotted the landscape of this park.

Small isolated hills, or knobs, are prominent in this forest. These steep, streamlined knobs were created when accumulated rock debris (or till) collected in openings in the glacial ice. As the ice melted, the knobs were left behind.

Take a look at the smooth boulders that have been placed at many of the trail entrances. They are called erratics. They're so smooth because they were polished by the advancing ice sheets that dragged them along the ground. When the glacier retreated, these erratics were left behind, permanent reminders of the glacier's immense size.

Forest Park's natural areas are dominated by the largest continuous oak forest in Queens. Some of its trees are over 150 years old. If you look from one of the ridges that offers open vistas, you can see three distinctive layers that define the forest: the forest floor, the understory and the tree canopy.

This shorttail shrew, which is active both day and night, must eat its own body weight in food each day.

The Forest Floor

As you scan the forest floor you will see grasses, mosses, fungi, flowers and ferns. Earthworms, millipedes and sowbugs live under the floor. They keep the forest soils rich in nutrients by breaking down plants.

Mushrooms also live off dead and dying plants because they can't produce their own food. A variety of mushrooms thrive on the rich, well-drained soils of Forest Park. Although most mushrooms sprout in late summer, a few varieties brighten up the park in the spring, including oyster and chicken mushrooms. Look for shell-shaped, overlapping clusters of oyster mushrooms on logs and stumps. You'll know chicken mushroom by its bright orange and sulphur-yellow colors. It grows in fan-like groups.

In spring the forest floor is thick with blooming wildflowers. Look for jack-in-the-

pulpit and white wood aster in moist shady areas. You'll find wild geranium, once used by the Indians to slow bleeding, in open clearings. In May, you can see false Solomon's seal, Canada mayflower, wild oats, and moccasin flower. And in June, whorled loosestrife produces red-centered yellow flowers.

When sunlight streams through cracks in the canopy, you'll see illuminated patches of lacy ferns. Their simple, subtle beauty is reminiscent of the plants that dominated the ancient earth. In Forest Park you'll find both hay-scented fern and the broad-bladed, lobed, sensitive fern, which turns pale at first frost.

The Understory

Look up from the forest floor and you will come to its second layer, the understory, which is dominated by vines, shrubs, and small trees. You'll see flowering dogwood and Virginia creeper thriving. In the lower slopes of the forest understory, you'll find arrowwood, spicebush, sassafras saplings, and wild grape, which blooms in June. The dense foliage provides good cover for songbirds and small mammals.

Intertwining vines often cling to the many shrubs found in the understory. You'll find that a common shrub in shady forests is maple-leaf viburnum, which produces showy white flower clusters and dark blue fruits – a great food source for wildlife. Other common shrubs you should look for are arrowwood and spicebush. Arrowwood's slender, arching stems were once used by native Americans for arrow shafts. The oval, smooth leaves of spicebush are aromatic when crushed.

The last stop on our journey through the oak forest understory is the small tree layer. Here saplings struggle to grow in the shade of taller, mature trees. They are the forest's next generation. In spring look for the flowering dogwood, which can grow as tall as 30 feet. You can identify it by its oval leaves with veins that

arch toward a pointed leaf tip, and by its showy "flowers," which are really modified leaves or bracts.

You may also spot sassafras, with its three distinctive leaf shapes. If you crush a sassafras leaf or twig, you'll smell a pleasant scent. The American chestnut, once a common sight, now grows here only as a young sprout. A fungus infection in the early 1900s reduced all American chestnut to stumps. The stumps continue to sprout young branches, but these too eventually die back.

You may also notice the corktree here. This aggressive native of western Asia illustrates the problems caused by exotic species in urban parklands. Without natural predators (such as insects or disease) to control their numbers, such plants run rampant. The corktree's dominance of the understory will eventually hinder the growth of regenerating native trees, and could change the natural composition of the forest.

The late summer blooms of joe-pye weed attract many butterflies, including the tiger swallowtail shown here.

The Tree Canopy

If you look up from the understory you'll see huge crowns of trees that make up the canopy. On high ridges and midslopes stand the mighty oaks mixed with black birch and pignut hickory. On the low slopes are tulip trees, red oaks, and a few black walnuts.

Oaks are the star attraction in Forest Park. They are divided into two groups: red and white. Trees in the red oak group, which includes black oak, have tiny bristles at the tip of their leaves and lobes. The leaves of red and black oak look similar, but their bark patterns are different. Red oaks have gray bark with wide reddish furrows; black oaks have dark, scaly bark.

Members of the white oak family have bristleless leaves with rounded lobes. If you look closely at the forest floor, you'll see many oak seedlings. They are successful because they develop unusually long roots and full-sized leaves. You may also spot the tulip tree's tulip-shaped flowers, which have six yellow-green petals on an orange base.

On the midslopes of the forest you'll find black birch and pignut hickory. You'll know the black birch by its smooth, black, lustrous bark with horizontal lines across the trunk. Its twigs smell and taste like wintergreen. Near the black birches, you'll see pignut hickory trees growing up to 65 feet tall. The pignut hickory is a favorite of wild animals because its leaves, bark, and nuts are so nutritious.

Spring: the Season for Birds

As the days grow longer in spring, the forest begins to stir. The air, thick with moisture, awakens amphibians like the red-backed salamander. The sun penetrates the open canopy, animating groggy creatures. Nourished by unobstructed light, wildflowers, grasses, and ferns flourish. Dogwood, spicebush, and pink azaleas burst into bloom. The long silence of

In fall, broadwinged hawks form flocks called kettles, drifting on the drafts of northwest winds.

winter is finally broken as the forest resounds with birdsong.

Forest Park lies in the path of the Atlantic Flyway, a coastal route followed by migrating birds. From mid-April to the end of May, the park is one of their favorite stopovers because it offers them prime feeding areas. You can see such species as the American redstart and the chestnut-sided warbler.

During spring Forest Park is visited by as many as 100 species of migrating birds. Mid-May marks the "Warbler Wave." You can spot these tiny creatures best from just west of the railroad tracks. Rare but regular visitors during the wave include hooded warbler, worm-eating warbler, cerulean warbler, and mourning warbler.

Approximately 35 breeding birds have been recorded in Forest Park. These species include ring-necked pheasant; red-bellied, hairy and downy woodpeckers; tufted titmouse; wood

thrush; gray catbird; and rufous-sided towhee. The Gully and East Waterhole are popular birdwatching spots.

Summer: the Season for Butterflies

From late July to August the woodlands seem silent. Birds and mammals that noisily sought mates in the spring now keep a low profile to protect their young. The silence is broken occasionally by the deafening chorus of cicadas. The forest understory, with its small trees, shrubs, and vines, is lush and vibrant. Cold-blooded vertebrates like the box turtle take to the woods in search of succulent plants and insects.

The "dog days" of summer may drive forest animals into temporary seclusion but they stimulate the insect community to emerge. Hoards of insects hatch in late June or early July. The most obvious insects in Forest Park are the butterflies, who add flashes of brilliant color to the forest green.

As fall approaches the green pigments of leaves fade, allowing other minor pigments to show through. Maples turn red, oaks turn bronze, and birches become yellow.

Approximately 25 species of butterfly float through the forest in search of food and mates. You may find them in sunny patches, warming themselves before they take flight. In Forest Park, you'll see such common summer butterflies as the tiger and spicebush swallowtails, little wood satyr, and mourning cloak. From late May to early July, you can find them siphoning nectar from the flowers of milkweed, joe-pye weed, dogbane, and thistle.

You'll recognize the swallowtails by their wingspans – up to six and a half inches. They may be bright yellow with black stripes (tiger) or mainly dark with a blue sheen on their hindwings (spicebush). The little wood satyr can be seen weaving low among the shrubs and grasses. And the mourning cloak has wings of deep purple bordered by pale yellow. When perched, the mourning cloak keeps its front legs folded against its chest because they are too short for walking.

Autumn: the Season for Color

In Forest Park the fall foliage usually peaks the second or third week in October. Each plant displays a distinctive color. Birches and hickories are yellow, oaks are red and bronze, and maples are red and orange.

From late August to early December, many birds fly south to more suitable climates, while others remain, gathering in flocks and seeking shelter. The small, weak flyers travel by night, while faster and larger birds move during daylight. Following familiar landmarks like a coastline or ridge and using the stars and sun, they make their way south. Some birds even have bits of magnitite in their brain, which allows them to use the earth's magnetic field as a guide on cloudy days.

Although small birds pass through Forest Park almost unnoticed, the passage of hawks creates a breathtaking spectacle. These large birds of prey follow the ridges in Forest Park,

taking advantage of thermals – updrafts of warm air – and stiff northwest winds to glide effortlessly through the sky.

The first to begin its flight south is the broad-winged hawk. Its tail is broadly barred with black and white, and it has rust colored bars across its breast. In mid-September, you might look for an open clearing near the ridge in the western section of the park. Watch for the broad-winged hawk as it spirals up one thermal and glides to the next.

The last to leave Forest Park is the red-tailed hawk, which favors open woodlands. Although most local red-tails start south in early November, many from farther north spend the winter in city parks. This conspicuous hawk has a bright rusty tail and a white breast with a dark belly band.

Winter: the Season of Stillness

If you like searching for animal tracks and tunnels, visit the park after a light snowfall. The mammals of Forest Park have several strategies for dealing with winter. They remain active, they hibernate, or they become torpid – a state of partial hibernation. Most mammals are extremely wary and are seldom seen. But, you can tell what animals are active by examining tracks left in the snow.

Active mammals, such as the moles, shrews, gray squirrel, and cottontail rabbit, have adapted several methods to cope with the cold. Although you will see moles and shrews only rarely, their presence is evident in the many subsurface tunnels that run through the park. These mammals are buffered from winter hardships by living underground. Their streamlined bodies are covered with dense fur, which allows them to travel easily through tunnels. They exhibit an acute sense of hearing and are sensitive to vibrations. Moles and

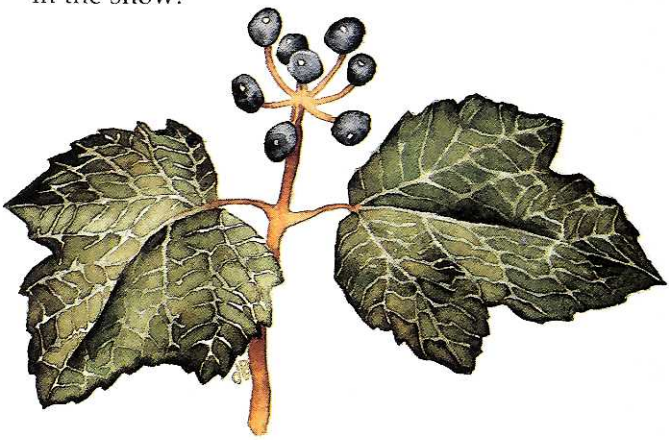
shrews have sensitive snouts that aid them in their hunt for food. Both mammals can consume their own weight in food each day.

Except during severe storms, gray squirrels appear throughout the winter in Forest Park. You can watch them dig diligently into the snow, uncovering their autumn caches of acorns. Their chattering and tail movements are interesting to observe – three consecutive "kuks" mean danger is imminent, while rapid waves of the tail are a sign of agitation.

The most distinctive tracks in the forest may be those of the cottontail rabbit. It darts across the snow, leaving elliptical tracks. Other signs of its presence are twigs gnawed at a 45° angle.

Forest Park's torpid residents are the eastern chipmunk and the raccoon. Chipmunks create a series of underground tunnels, each leading to several chambers. You can hear their high-pitched chipping sound on mild winter days.

Raccoons search for ground or tree dens to shield themselves from frigid temperatures. Living off stored fat, they can go without food until early spring. But if the weather breaks, these masked bandits will venture out in search of small tidbits of food or receptive mates. Their unmistakable tracks look like a small hand print in the snow.



The red fruit of maple-leaf viburnum turns black-purple as the season ends. It is a favorite of chipmunks and songbirds.

Forest Park
Natural Happenings

December
Lingering migrants. Winter coats of small mammals are in best condition. Watch for tracks and tunnels after first snow.

January
First heavy snows. Mating season for raccoons. Winter birds: woodpeckers, bluejays, crows, goldfinch, nuthatch, and chickadee. Look for snow fleas near trees. Watch for honeybee flights.

February
Look for chipmunks on a mild day. Gray squirrel and striped skunk look for mates. Red-winged black birds arrive. Shrews and moles active.

March
Waterfowl move north. Little brown bat first out. Tree sap swells. Gray squirrels build nests. Mourning dove arrives. Song sparrow, blackbird, and robin return. Raccoon young born. First hardy flowers are up. Listen for mating call of American toads.

April
Squirrels produce young. Mammals shed winter coats. Mourning cloaks. Crows nest. Turtles become active and seek mates. Forsythia blooms and dogwood flowers. Robins nest. Spring azure, hummingbirds, red eyed vireo, and catbirds arrive.

May
Mammals complete spring molt. Canada mayflower blooms. Warblers arrive. Moles and skunk produce young in burrows. Salamanders lay eggs. Birds start to nest.

June
Young mammals and birds leave nest. Wild geranium blooms. Salamanders cast their skins. Tiger swallowtails and fire flies appear. Bats out in full force.

July
Second brood of small rodents born. Yellow stargrass up. Wine berries ripen. Look for indian-pipe, asiatic dayflower, and spotted wintergreen. Katydids call. Joe-pye weed blooms. Look for green fruits on shrubs and trees. White wood aster blossoms.

August
Insects in full voice. Snakes shed their skin. Look for early morning spider webs. Tiger swallowtails deposit eggs. First wave of fall warbler migration.

September
Migratory hawks arrive from north and gather into flocks. Monarch butterfly migration. Toads go into hibernation.

October
Look for fall fruits. Vine berries appear. Fall colors peak. Nuts ripen. Mammals gather and store nuts. Chipmunks go underground.

November
Redtail hawks and waterfowl migrate. Hibernating mammals go into dormancy. Winter bird residents arrive. Reptiles and amphibians retire for the winter. Witch hazel blooms. Milkweed pods open.

Transportation

Subway: *East Section:* J train to Woodhaven Boulevard and Jamaica Avenue or 102nd Street, transfer to Q11 (directions below); or take E or F train to Union Turnpike/Kew Gardens, transfer to Q37 (directions below). *West Section;* J train to Forest Parkway and Jamaica Avenue; walk northeast on Forest Parkway to Forest Park Drive.

Bus: The Q11 bus runs north-south along Woodhaven/Cross Bay Boulevard and between Horace Harding Expressway and Jamaica Bay. Take this bus to Forest Park Drive.

The B55 bus runs west-east along Myrtle Avenue between Linden Street and 117th Street. Take bus to Park Lane South.

The Q37 runs north-south between Union Turnpike and Rockaway Boulevard. Take bus to Union Turnpike and Park Lane or continue along Park Lane South to Myrtle Avenue.

Car: For the *East Section,* Van Wyck Expressway south to Union Turnpike exit. Left on Markwood Place/Park Lane; enter park drive near the Overlook. For the *West Section,* Interborough Parkway south to Forest Park Drive exit; left onto park drive.

Forest Park Drive: East Main Drive is closed to vehicular traffic from 10 a.m. to 4 p.m. weekdays and from 8 a.m. to 4 p.m. on weekends. The drive is part of the Brooklyn/Queens Greenway, a bicycle/pedestrian path that links the Atlantic Ocean to the Long Island Sound.

Note: When visiting the park's natural areas wear comfortable walking shoes or boots. In summer mosquitos may be a nuisance, so wear long pants and bring insect repellant. And because safety should always be a consideration, hike with a friend.

Visitor Services & Information

Urban Park Rangers
Rangers conduct a variety of year-round walks and programs for nature lovers of all ages. For a schedule of events, call (718) 699-4204.

Park Events
Concerts: The Seuffert Bandshell offers concerts every Sunday at 3 p.m. from June to October. For more information, call (718) 520-5911.

Recreational Activities
Forest Park offers basketball, bocci, golf, football, handball, horseshoes, horseback riding,

playgrounds, softball, shuffleboard, tennis and several wading pools.
Track and Field: Victory Field, located off Woodhaven Boulevard and Forest Park Drive, offers a 400-meter track with facilities for pole vaulting, broad jumping, shot put and discus throwing.
Horseback Riding: The eastern half of Forest Park has several bridle paths. Horses can be rented at two stables, located at 70th Road and Sybilla Street. For more information, call Dixie Dew Riding Academy (718) 263-3500; or Lynne's Riding School (718) 261-7679.
Forest Park Golf Course: Open year-round (except January) from 5 a.m. to 8:15 p.m. Call (718) 296-7679.

Queens Borough Office (The Overlook)	(718) 520-5900
Forest Park Administrator's Office (The Clubhouse)	(718) 235-0635
Urban Park Rangers	(718) 699-4204
Parks Enforcement Patrol (PEP)	(718) 699-4289
Forest Park PEP Substation	(718) 846-2731
Permit Office (tennis and golf)	(718) 263-4121
Permit Office (softball)	(718) 520-5932
Recreation	(718) 520-5920
Special Events Permits	(718) 520-5933
Special Events Hotline	(718) 520-5911

Funding for reprinting of this brochure was provided by the Urban Forest & Education Program, a project of the City of New York Parks & Recreation and City Parks Foundation, which receives major support from the Lila Wallace-Reader's Digest Fund.

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

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Natural Resources Group

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Second Edition, 1993

Cover:
Before 1955, the red-bellied woodpecker was rarely sighted in New York, but this native of the southeastern United States is becoming increasingly common in our area.


J BURMANS