

**UPLAND TRAIL GUIDE**  
**JAMAICA BAY**  
**WILDLIFE REFUGE**  
**FALL VERSION**

**CHANNEL VIEW SCHOOL FOR RESEARCH'S  
ENVIRONMENTAL SCIENCE TEAM**

**Photo by Christopher**



# Introduction



**Welcome to Jamaica Bay Wildlife Refuge! As you journey out into the Upland Trail you will see many unique things such as flowers, trees, and shrubs. Each and everything you see has it's own little story about how it came to be at the Refuge. Many organisms you will see are native to the area. However, there will be a number of species that are not native . This trail guide is designed to help you learn about nature while enjoying it. Take some time to walk the trail and enjoy yourself.**



# **1. Autumn Olive**

## **( *Elaeagnus umbellata* )**



Introduced to North America in the 1830s, the native Asian Shrub has become an invasive plant. Capable of enduring extreme drought and temperature it grows rapidly reaching an average height of around 20 feet. Although, now an invasive species they originally were planted to provide food for wildlife and control erosion. The dark green oval leaves have a silvery color beneath which is a distinguishing feature that can be used for easier identification. During Mid-May the small white flowers bloom eventually producing what starts off as a brown berry and ultimately turning a reddish color with hints of white spots. In the Refuge these berries are eaten by various wildlife species including birds during early winter such as robins, starlings, white-throated sparrows, cedar waxwings and hermit thrushes.

[http://www.hort.uconn.edu/cipwg/art\\_pubs/GUIDE/x12autumn.html](http://www.hort.uconn.edu/cipwg/art_pubs/GUIDE/x12autumn.html)

<http://www.issg.org/database/species/ecology.asp?fr=1>

[http://www.ppws.vt.edu/scott/weed\\_id/elgum.htm](http://www.ppws.vt.edu/scott/weed_id/elgum.htm)

## **2. Hackberry**

### **(*Celtis occidentalis*)**



A native tree to the United States that is often used for shade and furniture which grows quickly to about 60 to 80 feet. Hackberry prefers moist soil but can adjust to any climate condition. Identified by its thin cork bark with an asymmetrical leaf base it produces “sugarberries”, which are usually brown fruits that are consumed by robins and flickers. However, the leaves are also a major food source for caterpillars of the snout, question mark and tawny emperor butterflies. Sometimes called “witches broom”, a distinguishing characteristic of this tree are clusters of twigs spread throughout the crown of the tree. Although not extremely harmful to the tree, this feature, a distortion, is caused by mites and a fungus.

[http://hcs.osu.edu/hcs/tmi/plantlist/ce\\_talis.html](http://hcs.osu.edu/hcs/tmi/plantlist/ce_talis.html)

<http://mobot.org/gardeninghelp/plantfinder/plant.asp?code=a858>

[http://www.na.fs.fed.us/pubs/silvics\\_manual/volume\\_2/celtis/occidentalis.htm](http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/celtis/occidentalis.htm)

<http://wp.stockton.edu/sjbfs/2011/05/>



### **3. Japanese Black Pine** **( *Pinus thunbergii* )**



This native Asian evergreen was introduced to the Refuge because of its ability to flourish under harsh soil conditions and to serve as a year-round food source. The bark of this tree is dark gray or purple gray with light brown branches that are often ridged and contain dark green-needled leaves. A tree known to be tolerant of salt spray and good for screening it develops cones, which are needed by wildlife. However it has been evident that these trees have been dying due to fungal diseases and insects. This is also true of Japanese Black Pines that have been planted elsewhere.

[http://www.conifers.org/pi/Pinus\\_thunbergii.php](http://www.conifers.org/pi/Pinus_thunbergii.php)

[http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/pinus\\_thunbergiana.html](http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/pinus_thunbergiana.html)

<http://www.uri.edu/ce/factsheets/sheets/blackpines.html>

## **4. Tree of Heaven**

### **( *Ailanthus altissima* )**



The Tree of Heaven is an invasive species that can be found throughout the United States. It grows mainly in urban areas and can be found anywhere from parking lots, vacant fields, and roadsides. Capable of withstanding harsh conditions, such as pollution and toxins from the environment, it can quickly and easily intrude on any open area. The Tree of Heaven is easily distinguished by a glandular base on each leaflet and the scars on twigs left by leaves. The caterpillars of the Cynthia moth feed on the leaves. During summer, large yellow flowers blossom above the leaves producing a tan to reddish fruit on the female plant. When the leaves or stems are crushed they leave behind an odor some have described as similar to peanuts or cashews.

[http://www.dcnr.state.pa.us/forestry/invasivetutorial/tree\\_of\\_heaven.htm](http://www.dcnr.state.pa.us/forestry/invasivetutorial/tree_of_heaven.htm)

<http://www.fs.fed.us/database/feis/plants/tree/ailalt/all.html>

<http://www.nps.gov/plants/alien/fact/aial1.htm>



## **5. Eastern White Pine**

### **(*Pinus strobus*)**



Native to Eastern North America, this pine can grow over 100 feet tall. Like many other conifers, it has evergreen needles and produces cones. It is the only native pine tree east of the Rockies with needles in bundles of five. The tree has a very thick scaly type bark, with a brown to grey brown color. Its “fruit”, the cones, can grow to be four to eight inches long. This tree contributes to the Refuge by the seeds providing a food source for small animals such as birds and squirrels. Other common uses of Eastern White Pine are as lumber and as Christmas trees.

[http://www.fcps.edu/islandcreekes/ecology/eastern\\_white\\_pine.htm](http://www.fcps.edu/islandcreekes/ecology/eastern_white_pine.htm)

[http://www.na.fs.fed.us/pubs/silvics\\_manual/Volume\\_1/pinus/strobus.htm](http://www.na.fs.fed.us/pubs/silvics_manual/Volume_1/pinus/strobus.htm)

<http://www.rook.org/earl/bwca/nature/trees/pinusstrob.html>

<http://www.plants.usda.gov/java/profile?symbol=PIST>

## **6. Black Cherry**

### **(*Prunus serotina*)**



*Prunus serotina*, is better known as black cherry. It is a woody plant that is native to parts of central and eastern North America. It is quite noticeable in the spring by the abundance of white flowers. In the summer cherries begin to grow. The bark of the tree can be distinguished when it is young because of the lenticels. As the trees get older the bark will begin to break and flake off. It is important to the wildlife Refuge because the abundant cherries produced are eaten by birds and other animals as soon as they grow.

<http://www.duke.edu/~cwcook/trees/prse.html>

<http://www.fs.fed.us/database/feis/plants/tree/pruser/all.html>

<http://plants.usda.gov/java/charProfile?symbol=PRSE2>



## 7. Shrub Thicket



This post consists of five different species, Bayberry (*Myrica cerifera*), Virginia Creeper (*Parthenocissus quinquefolia*), Poison Ivy (*Toxicodendron radicans*), Winged Sumac (*Rhus copallinum*), and Oriental Bittersweet (*Celastrus orbiculatus*). While each of these species has its own unique characteristics, when combined the shrub thicket is beneficial to the Refuge in many ways. The thicket provides small animals such as birds and squirrels a place to stay hidden from predators and while hunting prey. It also contributes to the Refuge by providing various berries as a food source for many animals.

<http://www.fs.fed.us/database/feis/plants/shrub/myrcer/all.html>

<http://www.nps.gov/plants/alien/fact/ceor1.htm>

<http://plants.usda.gov/java/profile?symbol=PAQU2>

<http://plants.usda.gov/java/profile?symbol=RHCO>

<http://plants.usda.gov/java/profile?symbol=TORA2>

## **8. Shadbush**

### **(*Amelanchier*)**



Amelanchier, better known as shadbush, is actually part of the rose family which is witnessed by the beautiful flowers that grow in the spring. The tree can grow from six to thirty feet. The leaves are alternately arranged with a medium green color. The trunk of the tree is smooth with a grey color, and often has small lenticels on it. The fruit of the tree usually grows in June. Which is why the tree is also known by its nickname, Juneberry. The berries are reddish-black, sweet, and are edible. Thus shadbush is beneficial to the Refuge by providing berries as food to small animals, such as birds and squirrels.

<http://hcs.osu.edu/hcs/tmi/plantlist/amelanchier.html>

<http://www.hort.uconn.edu/plants/a/amecan/amecan1.html>

<http://plants.usda.gov/java/profile?symbol=AMAR3>



## 9. European Alder

### (*Alnus glutinosa*)



Introduced to North America during the colonial time period, this tree can become an invasive species. It is a member of the birch family. It can be used to make furniture. Its leaves are round have serrated edges and can grow from three to five inches. Growing up to 60 feet or more it provides shade for wildlife at the Refuge. This tree produces elliptical cones in March which last throughout the winter months. It also produces fruits with winged nutlets which provide food to various birds such as redpolls, siskins, and goldfinches. The European Alder is mostly found in wet swampy areas. However, it can grow in dry places as well.

[http://www.dnr.state.oh.us/forestry/trees/alder\\_euroblk/tabid/5327/Default.aspx](http://www.dnr.state.oh.us/forestry/trees/alder_euroblk/tabid/5327/Default.aspx)

[http://plants.usda.gov/factsheet/pdf/fs\\_algl2.pdf](http://plants.usda.gov/factsheet/pdf/fs_algl2.pdf)

[http://www.na.fs.fed.us/pubs/silvics\\_manual/volume\\_2/alnus/glutinosa.htm](http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/alnus/glutinosa.htm)

## **10. Phragmites**

### **(*Phragmites australis*)**



Phragmites is also known as common reed. It can grow, in marshes, swamps, near streams, lakes, ponds, and wet wastelands, up to 15 feet in height and 1 to 1.5 inches in width. The leaf blade is flat and smooth and its seed head is an open panicle with a purplish and flag like appearance. Although it is an annoying invasive, it does have many potential usages: for building lattices, fences, mats, nets and baskets; and as a emergency food source which can be processed for its starch.

[http://www.hort.purdue.edu/newcrop/duke\\_energy/Phragmites\\_australis.html](http://www.hort.purdue.edu/newcrop/duke_energy/Phragmites_australis.html)

<http://www.invasiveplants.net/phragmites/>

[http://plants.usda.gov/factsheet/pdf/fs\\_phau7.pdf](http://plants.usda.gov/factsheet/pdf/fs_phau7.pdf)



## **11. Grey Birch**

### **(*Betula populifolia*)**



Also known as Gray Birch, it is a pioneer species which is usually found in places that have a lot of sunlight. It grows best on moist soil near swamps, pond, and lakes but also has the ability to grow on dry sandy soil. It is a small tree that has a maximum height of 30 feet. Yet very few grey birches become so tall. Its leaves are triangular with long serrations along the edges which grow from 2 to 3 inches, and the bark is white, papery, and has black rough patches. Birds such as gold finches, pine siskins and chickadees eat the seeds.

<http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=16>

<http://www.hort.uconn.edu/plants/b/betpop/betpop1.html>

[http://plants.usda.gov/factsheet/pdf/fs\\_bepo.pdf](http://plants.usda.gov/factsheet/pdf/fs_bepo.pdf)

## **12. Multiflora Rosa**

### **(*Rosa multiflora*)**



It is an invasive species whose native range is Japan, Korea, and Eastern China. It was introduced to North America from Japan in 1866. It is a perennial shrub that can grow up to 15 feet. In the spring it has small five petal flowers that grow in clusters. Its leaves are divided into five toothed leaflets. Multiflora Rosa is able to grow in a variety of different conditions such as woods, prairies, pastures, near streams, and on roadsides. It produces small red fruits, also known as rose hips, which can stay on throughout the winter which provides food to many birds that also distribute the seed. The seed can remain viable for up to twenty years which is what leads this plant to exclude the native species.

<http://dnr.wi.gov/invasives/fact/rose.htm>

<http://www.invasivespeciesinfo.gov/plants/multiflorarose.html>

<http://www.nps.gov/plants/alien/fact/romu1.htm>



### **13. Sassafras**

#### **(*Sassafras albidum*)**



Originally foreign to wildlife within the Refuge, some theories suggest that songbirds, species dependent upon sassafras, unintentionally transported seeds of this species to the Refuge. An identifying feature is the variety of shapes the leaves can form: mitten-shaped, three lobed or entire. Sometimes only a shrub, at maturity sassafras can attain heights varying from 30-60 feet. The leaves can be used for soup. Teas can be brewed from the bark of the roots and oils from the leaves can be used as a fragrance for perfumes and soaps.

<http://www.cas.vanderbilt.edu/bioimages/species/saal5.htm>

<http://www.duke.edu/~cwcook/trees/saal.html>

[http://www.na.fs.fed.us/pubs/silvics\\_manual/volume\\_2/sassafras/albidum.htm](http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/sassafras/albidum.htm)

## **14. Red Maple**

### **(*Acer rubrum*)**



Also known as Scarlet maple because of its conspicuous bright fall foliage. Leaves of this species are oppositely arranged and contain three pointed lobes. Fruits produced by red maple are known as red double samara and its appearance resembles the wings of a helicopter. Red maple has many usages considering the tannin, sugar and wood extracted and produced from it are necessary in order to create dye, ink, maple syrup, and materialistic objects such as clothes, hangers, clothespins and furniture. Red maple is capable of reaching 60 to 90ft at maturity.

<http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=1>

[http://www.na.fs.fed.us/pubs/silvics\\_manual/volume\\_2/acer/rubrum.htm](http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/acer/rubrum.htm)

[http://www.sfrc.ufl.edu/4h/red\\_maple/redmaple.htm](http://www.sfrc.ufl.edu/4h/red_maple/redmaple.htm)



## **15. American Holly**

### **(*Ilex opaca*)**



American Holly is well-known as a holiday decoration. It has shiny, dark green, simple, alternately arranged leaves that are about 2 inches to 4 inches long by 1 inch to 2 inches wide. There are several stiff, piercing spines, erecting from the margins of the leaves. American Holly produces assortments of red drupes that contain ribbed nutlets in which various species feed upon. The height of an American holly can reach up to 40 feet.

<http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=51>

[http://www.na.fs.fed.us/pubs/silvics\\_manual/volume\\_2/ilex/opaca.htm](http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/ilex/opaca.htm)

[http://www.sfrc.ufl.edu/4h/american\\_holly/amerholl.htm](http://www.sfrc.ufl.edu/4h/american_holly/amerholl.htm)

## **16. Eastern Redcedar**

### **( *Juniperus virginiana* )**



Serving as a valuable resource for many species, Eastern Redcedar with its reddish-brown bark has offered refuge to bird species that grow weary of their tiresome journey. Birds are able to nest and are protected from the harsh climates of winter due to the Redcedar's prickly, spiny point leaves which are about 1/5 to 1/4 inch in length. Many birds are dependent upon Eastern Redcedar for survival. Not only does Eastern Redcedar offer protection to species but offers food as well. The tiny, glossy blue ball-like fruits are consumed by birds, rabbits, raccoons, foxes and other species. This tree attains heights up to 40ft tall at maturity.

<http://www.ag.ndsu.edu/trees/handbook/th-3-173.pdf>

<http://www.gpnc.org/eastern.htm>

<http://plants.usda.gov/java/profile?symbol=JUVI>



## **17 . Inkberry**

### **(*Llex glabra*)**



Commonly found in the Coastal Plains Inkberry is gets its name for its drupes which most of the time are misinterpreted for berries, which are black as ink. As part of the Holly family it is one out of 300-350 species around the world and only of 14 trees and 2 shrubs in the North American region one. When Inkberry blossoms it produces light clear honey which is commonly used in the southern states. The drupes on the shrub are known for attracting wild life such as birds (sonic bird).

<http://arnoldia.arboretum.harvard.edu>

<http://www.duke.edu>

<http://plants.usda.gov>

## **18. Eastern Cottonwood** **(*Populus deltoides*)**



As one of the largest trees growing at the Refuge, this Eastern Cottonwood stands over 100 feet tall. Eastern Cottonwoods are mostly found in the Southeastern part of the United States and enjoy the more dry areas close to streams. Blooming in early spring, the Eastern Cottonwood produces catkins that droop from the tree and have a yellow-pinkish color to them which form a descending line in essence giving them the name “necklace Poplar “. After the flowers are developed it takes about 4 to 6 weeks for the Eastern Cottonwood to produce its cottony like seeds which originate from sexual reproduction when wind carries pollen from flower to flower. In some environments, Eastern Cottonwoods attract mice and rabbits as well as many birds including hawks and eagles.

<http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=64>

[http://www.na.fs.fed.us/pubs/silvics\\_manual/volume\\_2/populus/deltoides.htm](http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/populus/deltoides.htm)

[http://www.wildflower.org/plants/result.php?id\\_plant=PODE3](http://www.wildflower.org/plants/result.php?id_plant=PODE3)



## **19. Willow Oak** **(*Quercus phellos*)**



Reaching a maximum of 120 ft., Willow Oak is mostly uncommon in the northern part of New York State with the exception of refuges and other preservation sites. Willow Oak is mostly known for its enormous size and its leaves which are not broad like other oaks but thin like that of willows. The slender leaves are about one inch in width and five inches in length. Willow Oak produces both male and female flowers. The male flowers are catkins that hang down and are yellow to green in color. Like other oaks the willow produces acorns as fruits which attract many animals such as squirrels, Blue Jays, chipmunks, crows, raccoons, ducks and woodpeckers.

[http://www.fcps.edu/islandcreekes/ecology/willow\\_oak.htm](http://www.fcps.edu/islandcreekes/ecology/willow_oak.htm)

[http://www.na.fs.fed.us/spfo/pubs/silvics\\_manual/volume\\_2/quercus/phellos.htm](http://www.na.fs.fed.us/spfo/pubs/silvics_manual/volume_2/quercus/phellos.htm)

In 1972, Jamaica Bay Wildlife Refuge (JBWR) was designated as a unit of the National Parks Service. Although well known and visited by birders and naturalists from throughout the world, JBWR remains unknown to many New Yorkers and nearby residents of the Rockaways. As homage to the Refuge and the Natural World, Channel View School for Research's (CVSR's) Environmental Science Team hopes to promote the beauty and importance of one of New York City's finest treasures. CVSR's Environmental Science Team has visited the Refuge for two years documenting the wildlife and changes of the seasons. They have come to appreciate the quiet beauty of this urban oasis and hope others will too. This field guide is one of several products they have created towards informing the general public as well as the students at CVSR.

This work was produced under the guidance of teacher/mentor Marianne by Channel View School for Research's Environmental Science Team: Ivonne, Christopher, Bharat, Catherine, Ravin

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