

# James River Rock Pool Flora

---



## TREES

### Woody Plants (Trees and Shrubs)

Woody plants invest energy in growing strong trunks or stems to lift their leaves to the sunlight. In this Fall Zone environment, they are more stunted than their counterparts on the banks, often having multiple trunks, with trees tending to look like shrubs. Both are usually perennial.

Unique environmental conditions sculpt plants growing in and around the rock pools. Floods break off branches, there is often little space for roots, and nutrients are scarce. The bedrock holds the summer heat, and reflections off the water can be intense. On the plus side, sunshine and moisture are usually abundant, competition is limited, and there are few plant-eaters. Plants come back year after year, proof that living is reasonably good for those who can adapt.

Trees and shrubs listed here are either specifically designed for severe conditions or have adapted to the harsh environment. Only a few species, mostly native to Virginia, can tolerate this unpredictable environment, so identifying them is relatively easy. Both Common and Latin names are given as well as the Plant Families. Non-native and invasive plants are indicated, along with interesting facts and suggestions to help identification and spur curiosity.



## Buttonbush

*Cephalanthus occidentalis* L.  
Madder Family (Rubiaceae)

### Honey Balls, Globe Flower

This small shrub grows in damp, sandy areas and in shallow water. The glossy, oblong leaves have pointed tips, are 2 to 3 inches long, and grow in whorls of 3 or 4. Stems and twigs are often reddish. It is easily identified by sight (or nose) in mid-summer by distinctive clusters of globular, white, fragrant flowers that look like fireworks or exploding stars. Dry seed heads often remain over the winter.



➡ *LOOK FOR* the small, round seed heads that look like old-fashioned buttons once used in the Middle Ages and in colonial America. To make a button, a needle was pushed through the soft, unripe fruit to make a hole. When it hardened in the fall, it was harvested and sewn onto a garment.



## Eastern Cottonwood

*Populus deltoids* Bartr. Ex Marsh  
Willow Family (Salicaceae)

### Eastern Cottonwood

A large, moisture loving tree with alternate, large, triangular to heart-shaped leaves with wide bases that make them shake with the slightest breeze. Leaves taper to a pointed tip and are edged with shallow, rounded teeth. Flowers are produced on dangling, fox-tail catkins are followed by seed capsules which split and release multiple seeds with cottony threads attached. Fluffy white cottonwood seeds drift on the wind and collect in cracks, and pockets in the rocks, only to be washed downriver in heavy rains.



➡ LOOK FOR heart-shaped leaves with yellow mid-veins and flattened leaf stalks, shaking in the wind.





## Winged Elms

*Ulmus alata* Michx.

Elm Family (Ulmaceae)

### Winged Elm

A medium sized tree (to 60 ft) that grows in wet or dry conditions. Along the James, this sun-lover inhabits the shoreline and rocky, sunlit areas. The slightly rough, oblong leaves are 2 inches long with toothed side edges. The base is lopsided.



➡ LOOK FOR cork-like ridges along the twigs and 2 inch leaves.



## Elms

American Elm *Ulmus americana*  
Elm Family (Ulmaceae)

### American Elm

Once a common, large-sized tree (to 80 ft) of wetland habitats, it now grows only as a sapling or small tree and then dies back as a result of Dutch Elm Disease, a fungus brought to America in 1940. The smooth, oblong leaves are 3 to 6 inches long with a lopsided base. This was once a favorite shade tree lining urban streets. Mature trees have a tall, wide, vase-shaped growth with tough branches did not snap off.



➡ LOOK FOR smooth twigs and 3 to 6 inch long leaves.



## False Indigo-bush

*Amorpha fruticosa* L.

Bean Family (Fabaceae)

### Indigo bush, Leadplant

This many-stemmed shrub anchors the shoreline. Leaf shape is pea-form: alternate, compound and made up of 9 to 35 oval leaflets. Violet-blue flowers grow in tight clusters and yield small pea-like pods with 2 or 3 seeds. These are unlike the usual pea flowers and have only one petal tightly rolled into a cylinder.



➡ LOOK FOR honeybees, beetles and butterflies attracted to the flowers to feed on pollen and nectar. Examine the leaves to find a tiny bristle at the end of each leaflet.





## Green Ash

*Fraxinus pennsylvanica* Marsh.

Olive Family (Oleaceae)

### Green Ash, Swamp Ash

A fast growing, medium sized (to 60 ft) tree found occasionally on islands among the pools, along the shoreline, or, more often, inland away from the strongest flood impact. The compound leaves grow opposite each other and are 6 to 9 inches long with 7 to 9 toothed, elongated oval leaflets and. They are shiny, bright green. above and smooth to slightly fuzzy underneath. Male and female flowers are usually on separate trees. Fruits are 1 to 2 inches long, narrow, flat and symmetrically winged. In the fall, the fruits hang in conspicuous clusters.



➡ LOOK FOR 3 trees in the Park with leaves, twigs, and branches that grow opposite each other-**Green Ash**, Maple, and Dogwood. Green Ash is easy to confuse with Box Elder, also called Ash-leafed Maple.



## Halberd-leaved Rose Mallow

*Hibiscus laevis* All.

Mallow Family (Malvaceae)

### Scarlet Rose Mallow, Halberd-leaved Hibiscus

Tall (4 to 6 ft) perennial with large, alternate leaves with 3 to 5 pointed lobes. Flowers are large (~5" across) with rounded, overlapping pink petals and a prominent central reproductive column protruding from the red-purple throat. Flowers bloom at the leaf axils from the bottom to the top of the erect stalks in mid- to late summer. Each flower lasts a day, opens in the morning and closes tightly at night.



➡ LOOK FOR large, distinctive seed pods with flattened sides.





## Mimosa

*Albizzia julibrissin* Durazzini  
Bean Family (Fabaceae)

### Mimosa (*Non-native*)

A small tree with alternating, finely cut, compound leaves that give the tree a fern-like appearance. Leaves have 18 to 32 small, oblong leaflets that sometimes fold up when touched. Introduced from Asia in the 1800's as an ornamental, mimosas have spread into the wild, preferring partial shade along the forest and shoreline edge.



➡ LOOK FOR delicate, sweet-scented, 2" globular pink flowers in May. The fruits resemble flat beans.



## Multiflora rose

*Rosa multiflora* Murray  
Rose Family (Rosaceae)

Multiflora rose, Blackberry rose

*(Non-native and invasive)*

A thorny shrub with arching branches, or canes, with alternating compound leaves of 7 to 9 leaflets. In spring and early summer, short-lived, fragrant white flowers bloom, producing clusters of small, red, apple-like fruit (rose hips) attractive to birds and small animals. These bushes were introduced in highway median strips because their dense thickets could safely stop any car that ran off the road, but they are highly invasive and difficult to control.



➡ LOOK FOR the round stems and thin, straight thorns. In contrast, wild blackberry bushes have 5 ridges on the stems and slightly curved stout thorns.





## Red Mulberry

*Morus rubra* L.

Mulberry Family (Moraceae)

### Red Mulberry

A medium-sized tree (to 60 ft) with spreading branches. Leaves are 3 to 5 inches long and can have any of 3 shapes: oval, mitten, or 3 lobed. The slightly rough leaves have toothed edges and are downy underneath. In exposed or restricted sites among the rocks, these trees may have smaller than normal leaves and distorted shapes.



➡ LOOK FOR dense collections of 1" long cylindrical fruit in late spring that look like narrow blackberries. When ripe, the fruit is popular with birds, many other animals and are even eaten by fish.





## Redbud

*Cercis canadensis* L.

Bean Family (Fabaceae)

### Redbud , Judas Tree

A small tree (up to 40 ft) with dark gray, spreading branches that look black when wet. Leaves are heart-shaped, 3 by 5 inches long and wide, with smooth edges. Bright purple flowers bloom along the twigs and branches in early spring. Clusters of flat, dangling brown pods appear in late-summer and fall. As a member of the Bean Family, its roots produce nodules containing nitrogen-fixing bacteria that take nitrogen gas out of the air and change it to a form used as fertilizer. This adaptation enables it to grow in poor soil and also helps adjacent plants. According to myth, Judas hanged himself on the Asian relative of this tree, and its white flowers changed color with his shame. Occasional specimens of both species show up white.



➡ LOOK FOR the purple outline of the tree in spring, the clusters of small bean pods in late summer, and the yellow, heart-shaped leaves on the ground in early fall.



## River Birch

*Betula nigra* L.

Birch Family (Betulaceae)

River Birch, Red Birch, Southern Birch, Black Birch

A slender, small to medium tree that prefers river or stream banks and ponds, instantly identifiable by distinctive gray-white bark peeling to show red-brown areas. Leaves are alternate, simple, 1½ to 3 inches long with double-toothed edge and wedge-shaped base that makes them look like a small, fat Christmas tree. They are dark green above and light underneath. The flowers are borne in catkins pollinated by the wind. This is the only birch native to the Coastal Plain.



➡ LOOK FOR trees with peeling bark, usually arching out over the water's edge.





## Silver Maple

*Acer saccharinum* L.

Maple Family (Aceraceae)

### Silver Maple, White Maple

Normally a large tree (to 80 ft), small versions establish themselves in barren, rocky areas where shallow roots take hold in deposits of sand and soil. Leaves are opposite with toothed edges and have 5 deep lobes, each coming to a point. The top surface is green and the bottom almost white. One of the first bloomers, tiny reddish clumps of flowers appear in early spring, giving the branches of the forest a blurry, reddish glow. In late spring, the distinctive fruits appear- paired seeds with stiff wings that form a 2 inch long 'V'. When they drop, they spin through the air like tiny helicopters away from the parent tree. This is a method of seed dispersal.



➡ LOOK FOR 3 trees in the Park with leaves, twigs, and branches that grow opposite each other—Green Ash, **Maple**, and Dogwood. Look for a flash of silver when the wind reveals the white undersides of the leaves.





## Swamp Rose-mallow

*Hibiscus moscheutos* L.

Mallow Family (Malvaceae)

Swamp Rose-mallow, Wild Hibiscus, Marsh Mallow, Crimson-eyed Rose-mallow

This tall (3 to 6 ft) perennial shrub has multiple hairy stems and alternate oval leaves that taper to a sharp point. Unlike most perennials, these plants die back each year, their stalks looking like clumps of scattered broomsticks in the winter. In late July-August, large, white flowers appear in the axils of the leaves- 3 inches across, with a ruby-red band at the base of each petal, and long, bright yellow stamens protruding from the center. Distinctive dry seed capsules persist through the winter. A similar species with pink flowers also grows in this area. It is said that Native Americans taught the Colonial settlers to whip the juice from the roots into a thick froth, which was then mixed with sweetener and baked to make a dessert we now call marshmallows.



➡ *LOOK FOR last year's tan stalks among this year's green ones. If you are patient you may see hummingbirds feeding at the flowers.*



## Sweetgum

*Liquidambar styraciflua* L.

Witch-hazel Family (Altingiaceae)

### American Sweetgum, Alligator-wood

A common medium to large tree with alternate, simple, star-shaped leaves with 5 (sometimes 7) sharply pointed lobes. Fruit is an easily recognizable 1 to 1½ inch globe, made of many capsules and are known as 'gum balls'. In fall, the tree can have leaves in brilliant shades of red, purple, gold and orange simultaneously. The Genus name refers to a fragrant, sticky sap that exudes from the tree when damaged.



➡ LOOK FOR sap deposits on damaged areas of Sweetgum trunks. This sap was once used as chewing gum.



## Sycamore

*Platanus occidentalis* L.

Planetree Family (Platanaceae)

### Sycamore, American Planetree

The largest tree in the floodplain, sycamores can exceed 100 feet in height and 10 feet in diameter and are easily identified by peeling patchworks of tan, green, and brown on a smooth white trunk. Leaves are alternate, large (3 to 7 inches), broadly 5-lobed, and edged with large teeth. The base of each leaf covers a bud and is surrounded by two mini-leaves called bracts. The globular fruits are brown and lumpy, hanging on 3 to 4 inches stems. Their tiny, very hairy seeds attract small birds. The wood rots easily, so when limbs break off, the interior quickly crumbles. Entire tree trunks can become hollow yet the trees continue to stand and grow. Trees often have holes used in succession by woodpeckers, owls, and raccoons. If sycamore seedlings gain a foothold in restricted environments like rock cracks, tree growth can be stunted, but where sand and soil accumulate, they grow into shrubby trees that help to create or anchor and enlarge islands in the river.



➔ **LOOK FOR** the splotchy green-white-and tan camouflaged trunks in summer and the bare, smooth, white appearance in winter. Seen in the morning mists of December, you can understand their early description as “the Ghosts of the Forest”. These are the most common big trees you will see in the James River Park System.





## Willows

*Salix spp.*

Willow Family (Salicaceae)

Two species of willow grow along the shoreline and among the rocks in this area: Black Willow and Carolina Willow. Both have alternate, narrow lance-shaped leaves that come to a point, and have finely toothed edges. In spring, the male and female flowers are borne in catkins that look like fox tails. The catkin fruits persist into the fall. Fibrous root systems anchor the trees on unstable substrates, stabilizing shorelines or helping to create islands in the river. The stems are flexible and tolerant of flood impact. If broken, branches can quickly take root in a new area. The tiny seeds can sprout in a matter of hours if they land on mud, and seedlings can appear in 2 to 3 days. These species are truly adapted to disaster. You will find them thriving in areas highly impacted by floods.

➡ **INTERESTING FACT:** Willow sap contains salicylic acid, the chemical from which aspirin is derived, and for hundreds of years the bark was crushed and soaked to make a pain reliever.



## Black Willow

*Salix nigra*

### Black Willow, Swamp Willow

These vary in size from small to a very large (30 to 100 ft). In the Park, Black Willows tend to be small, and often have 2 or 3 trunks. In pioneer times, they were used extensively to produce fine charcoal required to make gunpowder and later, in the South, to make boxes, barrels and interior trim.



➡ LOOK FOR leaves that are green on both top and bottom.



## Coastal Plain Willow

*Salix caroliniana* Michx.

Coastal Plain Willow, Southern Willow,  
Carolina Willow

This grows as either a small tree or large bush.



➡ LOOK FOR leaves that are green on top and whitish underneath.