



### BEFORE YOU BEGIN:

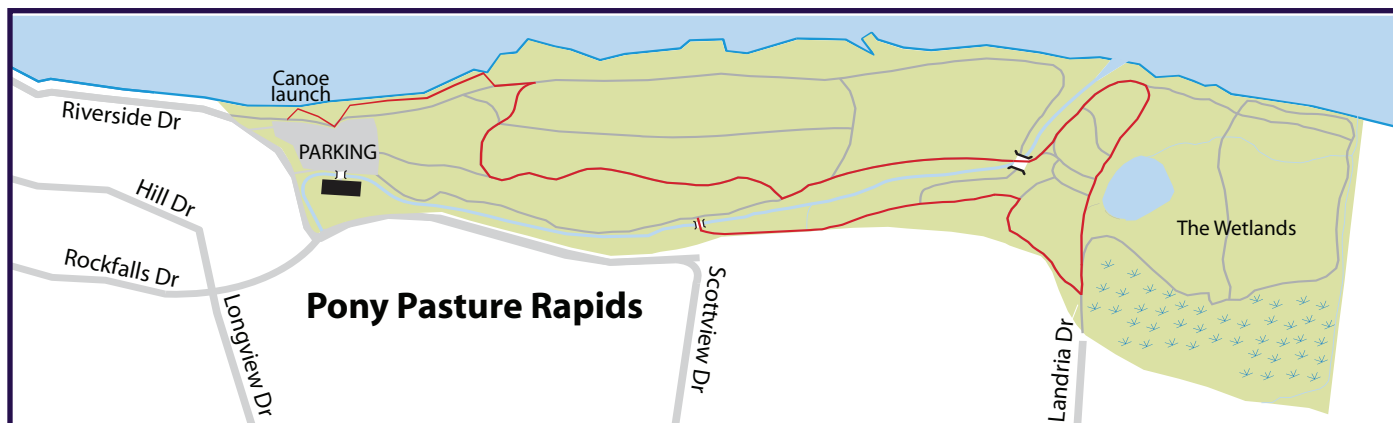
- Exploring the first part of the trail will take about ½ hour. A loop through the Wetlands Meadow and Forest Swamp will extend the route for another ¾ hour. Stops are longer and closer together in the first section. It is a ¼ hour walk back from the Wetlands.
- Each exploration site has a special feature, but there are no sign posts or number tags to intrude into the natural experience. You will need to search out features and pace off distances. Your senses of sight, touch, smell and hearing will come into play. The theme is that floods have shaped the land, determined the plants and animals and governed human use. Signs of these impacts are readily apparent if we slow down enough to see them.

## Pony Pasture Rapids Nature Walk

*An Interpretive Guide to the Trails of the Pony Pasture in the James River Park System*

OVER THOUSANDS OF YEARS THE ROUTE OF THE RIVERBED changed as the river both cut downward and wiggled slowly from side to side—it carved out islands and exposed new sets of rapids. Over the centuries, the river sculpted the rock forms—boulders in the riverbed are rounded and can be easily distinguished from the angular pieces of human-cut rocks.

*This brochure is dedicated to Louise Burke, whose perseverance and influence were instrumental in the preservation of the land which is now Pony Pasture Rapids section of the James River Park System. Her efforts have been an inspiration to the many other volunteers whose combined time and effort have helped make this one of the most exciting and beautiful city parks.*



*Walk towards the river, stop at the park map.*

## Carving a route through time

You have already experienced the impact of the river. Over the course of millions of years, it cut the river valley in which you are standing. You had to drive down the old river bank to reach this parking lot!

And every year, it slices away thin edges from the riverbanks creating a web of temporary, muddy channels and slender, shrub-lined islands. This area changes so much that the very trail you are about to walk may not be here in a few years.

*Start your walk at the canoe launch steps just beyond the river map.*

## Fluid Sculpture

Look out at the river. The rocks before you are the scar tissue from the collision of Africa and North America 250 million years ago. The American coast was pushed down several miles and melted. For the last 60 million years the continents have been bouncing apart and the collision line has reappeared as a long, narrow strip of granite rock. Mostly underground, it stretches 1,000 miles from New Jersey to Georgia, but may be only 5 to 10 miles wide at the surface. The James River cuts across it as it passes from the Appalachian Mountains to the Chesapeake Bay. Since the rock is quite hard it has worn away unevenly forming rapids and little water falls. This area is called the Fall Line. Here in Richmond it stretches for 7 miles—Bosher's Dam to the 14th St. Bridge—and drops a total of 105 feet.

Since the falling water could be easily harnessed to turn water wheels, Richmond and most other major cities in the mid-Atlantic region were located along the Fall Line; Philadelphia, Baltimore, Fredericksburg, Petersburg, etc.

Think about this: The same energy that can be harnessed to power industry has also carved out underwater pockets in the rocks and mixed oxygen into the water. This zone is thus the richest site for fish and aquatic insects along the river and for the other animals that eat them.

*Walk on the path downstream until you come to pieces of blasted rock on the left and a double-tree on the right.*

## A Rotten Way to Live

This big tree is typical of a species that is larger than any

**Try this:** Stand at the water's edge and use your finger to trace the outline of the rocks you see in the river. Note the fluid movement of your hand. This is the same movement that river water makes during high water conditions. Floodwaters carrying silt have sand-blasted these rocks into the rounded humps you see. Now look at the rocks at your feet. How do the shapes differ? This rock has been explosion-blasted by humans. Note the resulting chunky shape and odd angles. These particular pieces were dumped to armor the shoreline against the impacts of floods after the trees and shrubs had been removed.

other along the river. It is identifiable by a distinctive bark. Look high up. From the middle to the top of the



*The sycamore tree has distinctive bark. Photo courtesy of the Northern Forest Atlas Foundation.*

trunk the bark peels off in large, thin pieces. The pattern (in most seasons) looks like the green and brown camouflage of hunters clothing. This is an easy tree to remember. Bark is like skin. If it peeled off would you be healthy or sick? If it peeled a lot would you be more sick or less? Turn the words around. You've got Sycamore! (Of course, this is just a way to remember the name. These trees are perfectly healthy. The old bark is being formed underneath as the tree grows.) If you visit in the winter, you'll note that a sycamore trunk is almost bone white. A glance across the river will reveal how common they are. On a misty morning you can also see why some

people call them the "ghosts of the forest."

*Continue walking downstream. Take a left at the trash can, and scramble through the rocks to the river's edge.*

## Dam Floodwaters

You are looking at the Lower Pony Pasture Rapids. While the river seems to slow from the left (west) this slight bend marks the place where an unseen, small channel on the far shore joins the big channel in front of you. Here's what happened. The granite ridge that causes the rapids

**Try this:** Look up for big holes in the tree. Since the wood of these trees is brittle, large branches often break off during storms. The trunk rots at these points and forms holes. Sometimes large parts of the tree become hollow. While the seeds of this tree offer little value to wildlife, sycamores provide the best homes for woodpeckers, squirrels, owls and raccoons. A close inspection should reveal several right here.

## Something to consider.

*During your walk, you will find at least four different kinds of vines. Two of them you can see where you stand now. Vines use the support of other plants to climb up to find sunlight. They grow faster than most trees and shrubs because they don't have to spend energy growing a sturdy trunk. You'll need to know some of these vines. Several will have an impact on how you travel the park.*



LOOK FOR A THICK, brown vine gripping the bark with a mat of short, thin hairs. In Winter this "frayed rope" appearance is especially obvious. In the Fall there are occasional side stems sticking out with clusters of waxy,

white berries. In Spring and Summer there is a distinctive growth pattern to the leaves—3 leaflets to a single leaf stem. Although it has no chemical poison in it (deer eat the leaves and birds eat the berries) the juice in the plant causes an allergic reaction on the skin of most people—blisters and itching 3 days after contact. This is Poison Ivy. (You can gently touch the plant without danger if you do not break the surface. If in doubt you have 20 minutes to wash. Use soap.)



NOW, FIND A ROUGH brown vine wrapped loosely around a tree trunk or dangling parallel to it. Examined up close you'll find that the edges of little pieces of the bark seem square and you'll often find little strips of this in bird's nests. (Please don't pick any of this bark because it will quickly kill the vine.) Some of these vines grow rather thick (2-3 inches in diameter) and often hang down like loose ropes. This is because the trees they grew up on have been shaded out and died. The top of the vine has moved over to other supports. This vine produces fruit that dangles down in clusters of purple "berries." At any time of the year you can see the side stems grip other plants with wiry, cork screw tendrils about as thick as a pencil lead. Can you find a Wild Grape Vine?

now was once higher. It formed a low, natural dam. During floods the backed up water cut a new channel along the north and created Williams Island. Also on the far shore ahead and slightly to the right, are the stony remains of the 5 Miles Locks of the Kanawha Canal. Canals were created, of course, to provide a way to get big boats around rocks and rapids like these.

**Try this:** When the river level is low, go out on the nearest rocks, face the shore and kneel down. Can you find where the roots of trees and shrubs (especially willows and river birch) are beginning to re-anchor the shoreline? Note which way the roots are growing. Is it mostly down or to the sides? Why? In what sort of environment would roots tend to grow more the other way?

## Blocks and Docks

Inspect the rocks at your feet. Although dumped here to control erosion, these long, rectangular stones were not created by blasting. They were carefully cut. Can you find a line of drill holes

into which wedges were hammered to make the rocks split?

Long thin pieces would have been used for curbing. Rectangular blocks would have been used in structures like canal walls, large buildings and docks. Can you think of a place near here where large blocks of granite would have been used? Look across the river. How about small pieces like cobblestones? Think downtown.

## Entering the Twentieth Century

When concrete came into use at the turn of the 20th century builders stopped using cut stone. It was heavy, hard to move and expensive to process. The pieces here may have come from the old Westham Quarry, now a pond, located near the Z-Dam, opposite Riverside Meadow Greenspace... or from culverts along the railroad line that ran along what is now Riverside Drive.

## Anchoring History

The natural protection of the shoreline here was once

a web of roots. This living framework held the soft soil particles together and buffered the impact of floodwaters on the land beyond. A century ago the trees and shrubs were cut from the shoreline and all the way back to the hillside to allow this damp forest to be filled and graded for farmland. To make up for the loss of protective vegetation these rocks were dumped.

Walk until you reach a sandy beach: To reach this you can either follow the river's edge on any of several small paths along the rocky shoreline, or return to the trash can, turn left and follow the main trail until you come to a grassy clearing and a trash can on your left.

*Stand at the shoreline, face the river and look upstream to your left.*

## Living in the Disaster Zone

Notice the small trees growing among the rocks. Here in the most flood-impacted environment, they are low-growing and shrubby; along the shoreline they grow bigger and single stemmed.

One has coarse bark, finger length narrow leaves and yellow-green branches—the color is especially evident in winter. Sometimes it has a multi-stemmed shrub-like appearance and other times it will have a short, twisted stem that often seems to be falling over. These are Black Willows.



*Black Willow*

Another is an even more common species. On small trees it has a distinctively thin, reddish-tan bark that often flips up in little curls. Close examination of a piece will reveal little white slits called lenticels that allow the entrance of extra oxygen. On big trees the lower bark is dark and rough; but the upper parts remain characteristic. (If you are uncertain of the identification, there are several planted in the parking



*River Birch*

lot.) This is River Birch—also known as Red Birch. It is the only birch that lives in the south; white birches used by Indians to make canoes all live in cooler climates.

## Going with the Flow

Consider why a tree would want to stay low to the ground. During floods, the river rushes over these rocks and trees, pushing and pulling on everything in its path. Low, flexible trees like these are less likely to catch a raft of flood debris and get knocked over. By way of contrast, you may notice that the tall sycamores mostly grow further inland—protected from the impact of flood debris by this wall of low and twisted vegetation.

## Juiced up and Ready to Grow

Willows have another special adaptation to floods. If a piece does break off it can re-sprout if it lodges in a sunny mound of mud or sand. In fact, most willows start from twigs or root sprouts since their tiny seeds only have enough energy to last a few days. This special quality was once harnessed by commercial horticulturalists who used the juice of black willow twigs and bark to make other plants sprout.

## Too Big for their Birches



*River Birch*

and are therefore the biggest and strongest are also the first to fall down... and it is floods that wash them away,

**Try this:** If the water is low enough, carefully walk onto the rocks. Kneel down to get a fish-eye view of a flood. Notice that there are clumps of small plants growing between the hair-like fibers of the tree roots. The roots have created small pockets of protected space that allows mud to settle out and allow for more tender plants like grass to grow. When enough plants grow, even more silt and debris can collect. In this way a small island can form. The rocks and the roots are the skeleton, the soil is the muscle and these first plants stems are the scar tissue. Mother Nature is healing herself in this, the natural Disaster Zone.

not knock them down!

*Walk back to the main trail and go left; after about 10 or 15 paces take the first right hand turn.*

## Curious Corkscrews

Down this path you will be able to find the third and fourth kinds of vines common in this park.

Look first for a smooth, green-stemmed vine with sharp, sturdy thorns. In spring and summer you'll find heart-shaped leaves. It also has curious corkscrew fingers like the wild grape vine to help it climb, but the color and thorns make sure you won't confuse the two. This is Green Briar. (If you ever try to push your way through a tangle of this plant you will understand why the fox won't chase Bra'er Rabbit into the briar patch in the Uncle Remus stories.)

Now, find a slender, multi-branched vine that seems to grow over almost everything. The small oval leaves hang on for 10 months a year and grow opposite each other. In the late spring and summer there are bunches of tubular yellow and white flowers followed by dark hard berries in the fall and winter. The nectar is sweet and fragrant...but this foreign plant is actually a bit of a pest since it often shades out other plants. This is Japanese Honeysuckle. Although deer and goats eat



*Green Briar*



*Japanese Honeysuckle, photo courtesy of Chuck Barger, University of Georgia, Bugwood.org.*

them, the leaves are slightly poisonous to humans.

*Take the right-hand path. Stop in the middle of the meadow. You are facing west.*

## Stopping the Progress of Time

This clearing is a remnant of the pasture that gave the park its name. At an earlier time it may have been a cornfield. Now just a tiny opening, it once extended from the parking lot ahead of you to the Old Forest area ¼ mile behind you. The tall grasses and different kinds of sunflowers are a special habitat that provide a home for butterflies, ground-nesting birds and small mammals. The



*Sugarfoot and her colt Duke in what is now Pony Pasture's parking lot. Sugarfoot was a Welsh pony. Photo courtesy of Michele Garrigan.*

open conditions also make it a favorite feeding place for hawks and owls.

You may be able to spot a few small trees (saplings) growing among the tall grasses. The seeds of pioneer species like Box Elder and Green Ash grow quickly in the open sunlight. To keep it open the woody growth must be cut and the meadow mowed once or twice a year. What

would it look like if this wasn't done?

*Take the left fork of the footpath that leads out of the meadow...*

## Delicate Dirt

As you walk, pick up a little soil. Examine the texture. The grains are tiny, almost powder, quite different from the sand and gravel on the main road. This delicate dirt is a mix of tiny pieces of plant and very fine sand and clay. It is deposited here when rushing floodwater is slowed down by the trees and shrubs and drops its load of mud. The soil is called alluvium. Because much of it has washed away from farms upstream, it is very rich in nutrients. About once a year, during floods, the land where you are standing goes underwater to a depth over your head. Inspect the branches above you. If there's been a recent

flood you may be able to spot clumps of leaves, grass, or other debris that have been Walk out of the meadow to a T intersection in the woods. If you'd like to end your nature walk now, turn right. It is a 2 minute walk back to the parking lot.

*To continue go left. Examine both sides of the trail as you walk along.*

## Back to the Future

You are entering a new habitat. While the built up trail is relatively smooth and flat you can see that the ground on either side is low and uneven. Even when there is dense vegetation in summer you should be able to see long trenches, depressions, and flat, bare spots. In late winter and spring you will see pools of standing water and patches of mud. You are witnessing the rebirth of an ecosystem. The artificial system of flat pastures and fields is growing back into the rich mix of mini-habitats that used to be the Powwhite Swamp.

Wetlands like these are immensely important to humans if we are to live in a healthy environment. Trees and shrubs slow down the speed of flood water and filter out logs and debris reducing impacts downstream. Organic soils that build up help hold moisture during floods and release it during dry times. The seasonal pools are safe homes for frogs and salamanders—creatures that cannot survive in the river since they are eaten by fish. The tangle of brushy growth provides a safe home for many small birds like warblers and small-sized mammals like weasels. The tall trees are home to larger creatures like woodpeckers, owls and raccoons. One animal that doesn't live well directly in a swamp is humans. Can you list several reasons why? (Think insect repellent, boots, first aid cream,...)

*Continue along the path*

## Signs of the Times

Notice the strange way some trees that normally would have one trunk grow with groups of trunks instead. Although there are some trees that naturally grow this way (River Birch and Basswood for example) patterns like this usually indicate that the tree was cut and allowed to

re-grow from the stump. This is often evidence of an old field, roadside, or logging operation. Keep an eye peeled for large wild grape vines here too. They got started when the trees first began growing in the abandoned clearing.

## A Prickly Situation

In late May and early June, you can find lots of wild rose bushes on the sides of the path. Remnant plants from the former open space, wild rose plants look similar to the blackberry bushes that also used to grow here. You can easily tell them apart. Look at the stems. The rose stems are round and smooth while the blackberries have ridges and are slightly rough. You'll need to touch them carefully since they both have sharp thorns.

### *Continue walking along*

Just as there are certain trees that live along the ever-changing river edge, there are others that specialize in the temporary job of taking over old fields. A common one is here. Look for a small tree with smooth green twigs. Each branch, each twig, each leaf grows in pairs, opposite one another. Although it doesn't immediately look like one, this is an especially fast growing species of maple called Box Elder or Ash-Leafed Maple. It can be confused with



*Box Elder*

another, a little less common tree with smooth green twigs called the Green Ash. It also grows here. With a little examination you can tell them apart. The keys are size and color. Maples always have a little bit of red somewhere on the bud or stem and the twig gets gradually thinner as it tapers to the end. Green Ash has a slightly thicker twig that is evenly sized the whole way and therefore looks comparatively stubby. It also has a much fatter bud and no red. Box Elders predominate and you can see that easily in the Fall and Winter. Their lower limbs are all tan, dead and brittle. Only the middle and upper branches get enough sun to live.

## Living Record

Stop at the big pine tree next to the path. The Loblolly Pine trees you see here are 80 to 100 years old and at the

end of their life spans. They are a living record of the land's history as a farm. Pines begin their lives in sunny, open, dry areas like the edges of a field or pasture. Although horses keep most of the vegetation in their enclosure trimmed, they don't eat pine seedlings. What else do you see growing up the trunk of this old tree?

*Turn left when you come to the wide trail that follows Pleasant Creek. Walk until you come to a manhole cover.*

## Running Backward

Look to your right. This is the "new" mouth of Pleasant Creek (Rockfalls Creek). Before the wetlands were drained to make farmland it used to run directly into the river across where the parking lot is now. Because the creek doesn't naturally run here it flows very slowly except during rain events when it carries storm water from the roadways. Most of the time water from the river backs up into the channel and deposits silt. When it rains the flush of fast water washes out the silt and carves the banks to a steep or nearly vertical angle. In a natural system the banks would be gently sloped and covered with plants.

*Continue to where the pipeline crosses the creek.*

## Not quite a banana

Look around for a small tree with large, long, oval leaves...you are going to have trouble with this stop in winter. In spring look for sparse clumps of unattractive, brownish purple flowers. In summer look for occasional clusters of oval or pear-shaped green fruit. Check out the leaves. A few will have holes eaten out of the center by the caterpillars of the Zebra Swallow-tailed Butterfly. This is a paw-paw tree—source of the folk-



*Paw-paw fruit*

song "Pick'in up paw paws, put'em in your pocket" and the northern most example of this tropical species of the Custard Apple family. The deep roots prosper only where the soil is rich, soft and damp. The broad leaves show that

it grows in low light conditions. It is thus an under-story tree of southern streams, islands and swamps. (Question: this tree likes wet feet. Do you find it right along the River's edge? Why or why not?) The James River Park System has one of the best stands of paw-paws and related butterflies in the nation.

*Cross the footbridge and turn left.*

## Lessons in Landscaping

You are in The Wetlands section of the park. Follow Pleasant Creek to the little beach at the shoreline of the James River. This is the wheelchair access to the river for special water exploration and boating programs. There is about a one mile stretch of flat water from the Lower Pony Pasture Rapids on your left to the Powwhite Ledges (the rocks beside the Powwhite Parkway Bridge) on your right. While fun for people, the soft, shifting, sandy bottom offers little habitat for aquatic creatures to live; the fishing is better elsewhere among the rocks and rapids.

Stand facing the water and contemplate the opposite shore. How many houses can you count? Look carefully. More may appear. Dark brick, brown wood and slate roofed structures blend into the environment; houses with a few trees in front almost seem to disappear. By the way of contrast, the yellow and white structures or those surrounded by a slash of green grass seem to jump out and destroy the rural settings.

*Continue to the trail intersection and turn right.*

## Leave it to Beaver

As you walk, look for trees with peeling, reddish-brown bark. (Do you remember them from a stop earlier in the walk?) These trees are designed to withstand wet conditions and the impact of beavers that live in those conditions. Beavers don't seem to like to cut them down. Perhaps it's the mouthful of dry peely bark, but beavers don't seem to chew on them.



*Beaver damaged tree*

*Walk to the first wildlife blind.*

## Combative Dragonflies

It's on the left overlooking a small, shallow pond that was dug to attract wildlife. If it is summer and you are quiet and still, this is a great place to watch dragonflies. Males will select an area and continually re-trace the borders of their oddly shaped territories. They are looking for small flying insects to eat or females to mate with. When not flying you'll see them stop at the same particular sticks or structures that give a good vantage point. Females tend to appear out of nowhere and cruise blithely through in a gentle, curving pattern. If you hear a loud rustle of dry wings look for the battle between two males meeting at their boundary line...or a female fighting for escape from a male she doesn't like. Dragonflies fly and rest with their wings pointing out to the sides. Damselflies look like small dragonflies, but rest with their wings folded up over their backs. They all eat mosquitoes and none hurt people.



*Dragonfly*

*Continue on the trail to a boardwalk that leads to a second wildlife blind.*

Just before the steps that lead to the blind is a small trail on your right that takes you to a third blind. Stand on the right side of the structure and look out over the field. This is a wet meadow—and in springtime it is actually wet! To keep it from growing up in trees it must be mowed once or twice a year. A rare habitat in this area, it benefits birds and insects like Redwing Blackbirds, Bluebirds, Swamp Sparrows, and miscellaneous bats, frogs and dragonflies which all require a wet open space and low vegetation. It's an excellent place to watch fireflies in late June and early July.

The land here shows other signs of human management. The pond is manmade; dug to increase the number of frogs and salamanders. The open grassland was once a forested swamp. Both hold storm water that runs off the



surrounding streets. The original swamp was drained at the turn of the century to become a cornfield. By mid-century it was converted to a sewage lagoon and before becoming a protected area it was used as a leaf dump. Today it is being allowed to heal and return to its natural state as a swampland.

**To go back to the parking lot**, turn left on the gravel path, and take the first right. The meadow will be at your left as you turn. The trail leads through pines to the bridge across Pleasant Creek. On the other side a right turn takes you back along the river; a left turn along the creek.

**To explore the Old Powhite Swamp**, turn left on the gravel path, continue beyond the meadow and take the second right-hand turn.

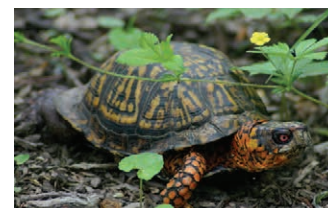
## Rocking on the Railroad

The raised mound of dirt you are walking on is the remnant of an old quarry railroad line. It went from granite processing sites along Powhite Creek (under the parkway now) to what is now a quarry pond along Riverside Drive opposite the Z dam. Notice how the ground was built up to allow the route to pass through the swamp.

*Cross the boardwalk. Turn left. (You are off the railroad route now and some areas cross private property. Please respect "Private Property" signs.)*

## Red-Eyed Cup Holders

This shady, damp area is a rich habitat for certain wildlife. Keep an eye peeled for box turtles. Males have red eyes and cupped bottom shells, females have yellow eyes and flat bottom shells. You are welcome to pick them up but, please remember, all plants and animals in the park are protected.



*Box turtle*

It is illegal and unfair to remove them from their homes.

*Follow the trail to a T intersection and go right. The path leads down to Pleasant Creek. Go right and follow the creek-side trail back to The Wetlands bridge. Cross the bridge and turn right. This takes you back to the river. Follow the main trail upstream to return to the beginning of your nature walk. Be sure to investigate the many small trails that parallel the main one, closer to the river's edge.*



Written by Sharon Bricker

Published by Friends of the James River Park

Fall 1999, Revised fall 2001 and summer 2019

[www.jamesriverpark.org](http://www.jamesriverpark.org)