

# River of Life

The Rivanna River serves as a corridor for wildlife and will provide you with much opportunity to behold its natural wealth. With luck and patience, you can easily see animals along the river from either the shoreline or from a canoe. Remember that the Rivanna is their home; you are just passing through.

## Wildlife as Indicators of Water Quality

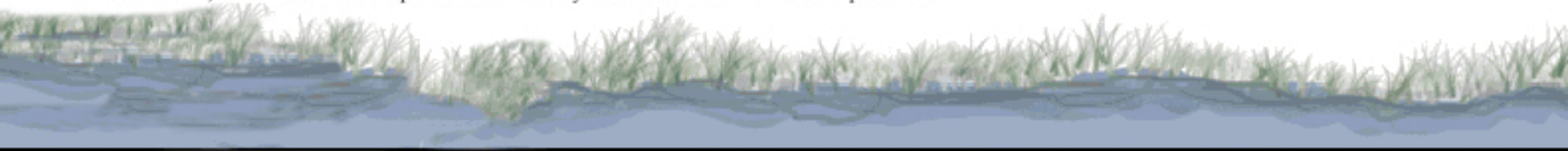
Animals have many of the same needs for clean air and water that we do. Their simple presence, or absence, in an area can sometimes tell us how polluted that area is. Animals can also be used, through their habitat associations, to measure environmental characteristics more subtle than the presence of disease or toxins. For example, the presence of nest-building chubs (fish in the genus *Nocomis*) in a stretch of river indicates that the water is relatively silt-free. Chubs use pebbles to build their nests and feed on aquatic insects found in gravel and rock riffles. Silt from soil erosion can bury riffles and pebble bottoms and drive away chubs. Another example would be fish eating birds such as herons, ospreys and bald eagles. Recent increases in the number of these birds reflect a general decrease in the amount of toxic material discharged into water and then concentrated in fish flesh.

## Wildlife Viewing Ethics

- View wild animals from an appropriate distance. If animals change their behavior when you approach, you are too close!
- Use binoculars or a spotting scope for closer views.
- Stay clear of nests, dens, and rookeries. Do not touch or feed wild animals.
- Do not use calls or whistles, or try to rouse animals in any way.
- Limit your stay to minimize stress on animals.
- Do not surround a wild animal with a group of people.
- Do not allow pets to interfere with wild animals.

## Be Aware!

Along the river shore beware of poison ivy – it can be prolific! This vine or shrub has sets of three leaves that tend to be shiny. If you come into contact with it, wash well with soap and water – away from the river – as soon as possible.

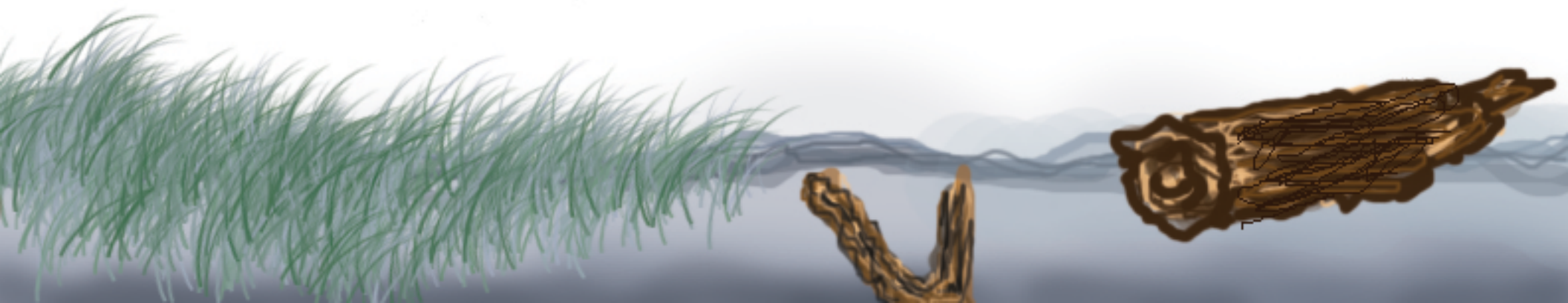


## Mammals

Presence of the **Beaver** (*Castor Canadensis*) is unmistakable. Look near the water for signs of carefully gnawed tree trunks and peeled, pointed branches and stumps. Beavers eat the inner bark of trees (cambium) and cut trees down with their teeth to get at that bark. While often cursed for their seemingly destructive behavior, beavers contribute to the growth of young shrubs, groundcovers and understory trees in the forest which benefit from the added sunlight made available by their cutting activity. Dams and lodges are not practical on larger rivers due to flooding, so on the Rivanna beavers live in bank dens similar to those of muskrats. If you've entered an active beaver's territory, then it will gladly notify you of its presence by loudly slapping its broad, flattened tail on the water's surface.



Like the beaver but much smaller in stature, the **Muskrat** (*Ondatra zibethica*) is also a member of the rodent family. They feed mainly on aquatic plants, but will feast on occasional mussels, crayfish, fish, and frogs. The muskrat has dark, glossy brown fur, a keeled tail, webbed hind feet, and a musky odor. Its unique tail, being long, naked, scaly and black with laterally flattened sides, makes the muskrat an expert swimmer and helps to easily distinguish it from other mammals. The entrance to its riverbank burrow is usually underwater.







The playful and sociable **River Otter** (*Lutra canadensis*) is a real treat to watch. A member of the weasel family, this torpedo-shaped creature is a carnivore – feeding on crayfish, slow-swimming fish, amphibians, mussels and other prey found both on land and in water. Like the beaver, it is well adapted to its wet life with a glossy brown waterproof coat, webbed feet and the ability to close its ears and nose when under water. Otters do not hibernate, but remain active throughout the cold winter. Look for their slide runs and tracks on the riverbank, and the occasional scat pile full of fish scales on a rock- left there for all to see.



More common than you might think, the secretive **Mink** (*Mustela vison*) is a excellent swimmer whose favorite food is muskrat. At home on land as well as water, mink also eat frogs, worms, rabbits and even young snapping turtles. This very slender long-bodied weasel is roughly 24 inches long, which includes a long bushy tail of about 8 inches. It has beautiful chocolate brow fur and short round ears. Like the otter, the mink often dens at the end of tunnels in the river's banks.



## Birds

The **Great Blue Heron** (*Ardea herodias*) is a large blue-gray bird with long legs. These slow, strong flyers have long necks, stand up to four feet tall and can have a seven-foot wingspan. Wading in shallow water, great blue herons primarily hunt for fish, as well as for frogs, crayfish and snakes. Their long pointed bill, keen short-range vision and ability to uncoil their long snakelike neck like a spring also help them catch insects, mice and other small animals. View these birds very quietly as they stand motionless while waiting for prey and you may be rewarded with a close look.

Our nation's symbol, the **Bald Eagle** (*Haliaeetus leucocephalus*), is a magnificent representative of the Rivanna River. This large bird has a broad bill and head and flies with its wings held flat. Adults are dark brown and have white feathers on their head, neck and tail. Bald is a derivation of "balde", an Old English word meaning white. Bald eagles feed primarily upon fish, dead or alive, and often harass other fish-eaters until they abandon their catch. For this habit, the eagle has been called a "master thief". The presence of the bald eagle on the Rivanna clearly represents the effectiveness of the Endangered Species Act and the dedication of all who believe that biodiversity, natural resources and the environment are worth protecting.

The **Osprey** (*Pandion haliaetus*) is a fish-eater that is often harassed by the bald eagle for its catch. This magnificent bird of prey soars on a wingspan of up to five feet long. It is sometimes referred to as the "fish hawk" or "fish eagle" because it feeds on an almost exclusive fish diet. The osprey is able to spot fish at 150 feet in the air and make spectacular dives straight down into the water. After these underwater dives they emerge with a fish in their talons and carry it in a streamlined, headfirst orientation back to the nest. They are dark brown above, white below, have a white head with a prominent black eye strip. The osprey often cries out a loud, annoyed series of high-pitched *cheeps*. Like the bald eagle, the osprey's future depends upon plenty of open space and healthy river habitat.







The **Canada Goose** (*Branta Canadensis*) is frequently seen flying in V-shaped flock formations along the Rivanna River. Geese learn navigational skills from their parents and appear to use large landforms, the stars, and the sun to guide them during migration. Their heads and necks are black, they have a bold, white “chinstrap” and their bodies are gray-brown. Today, many non-migratory populations of Canada geese live and breed year-round in suburban and rural areas. The diet of the Canada goose consists mainly of grasses and plants in and along the river.



The **Belted Kingfisher** (*Megasceryle alcyon*) lets you know that is nearby with its loud, penetrating “rattle” call. This pigeon-sized bird is blue-gray above and white below with a bushy crest and dagger-like bill. The male has a blue-gray breast band; the female is similar with a rust-colored bellyband. It burrows a nest hole in the steep wall of the riverbank – commonly digging the shaft from four to fourteen feet long. The nest is atop a branch looking for prey, and then in a sudden burst of speed, dives down to catch small fish, crayfish, frogs, tadpoles, salamanders, lizards or insects. It may even hover in mid-air before taking a violent plunge into the water. After spearing a fish with its stocky, pointed bill, this agile bird can then toss its catch into the air and eat it head first – *while still flying!*

**River Chub** (*Nocomis micripogon*), at times as long as eight inches, are among the larger members of the minnow family and are fairly common in the Rivanna. You will notice their pebble nests as you float down the river. The males build gravel mounds that can be a foot tall and three feet wide! A large nest may contain 7000 stones – each one carried to the nest site in the fish’s mouth – and will take the fish up to four days to build. If interested, a female will then enter a trough built into the nest and they will spawn. When they finish spawning the male chases the female away and fills the trough. Pebble nests are excellent places for fish to lay eggs. The eggs filter in among the pebbles where they are protected from predators and are nourished by the oxygen rich water that is able to flow through the chub nests. Other fish are aware of this and often successfully spawn over chub nests. In this way chubs help to keep the general fish population of the Rivanna healthy.







**Smallmouth Bass** (*Micropterus dolomieu*) are non-native but well-established fish in the Rivanna River. They are referred to as smallmouth because their upper jaw only extends to the area below the middle of their eye. Much of the original expansion of this popular sport fish's range can be traced to the building of railroads across North America. Railroad workers enamored with the sporting qualities of this bass reputedly carried bass fingerlings in buckets and dumped them off train trestles into nearly every river they crossed. Smallmouth prefer the clear, cool, flowing sections of the Rivanna with a rock or gravel bottom. They eat the insects, crayfish and smaller fish that are also found in these riffle areas.



The **Largemouth Bass** (*Micropterus salmoides*) is a native and popular sport fish in the river. Largemouth bass have an upper jaw that extends well beyond the area below their eye; thus their common name is "largemouth". These predators are most often found under the cover of ledges, docks, bridges or overhanging trees. As is the case with many of our fish, the males are the nest builders and protectors of the young. Their nests look something like a crater or bowl of sand once the fish has fanned all of the slit away. The female lays her eggs in the nest; the male fertilizes them, and if all goes well, guards the young after they hatch.



The **Longnose Gar** (*Lepisosteus osseus*) is a living remnant from primitive times. It looks prehistoric. This unique fish can usually be found near vegetation in sluggish pools and slack water in the Rivanna River system. The first thing you notice when you see a gar is its curiously long, tooth-lined snout. While these peculiar fish are carnivores, they are not dangerous to people. Their habit of basking in the sun, just below the water's surface, makes them easy to observe and a favorite of fish watchers. Gar eggs (called "roe") are highly toxic to many animals and potential predators – a possible explanation for its perseverance through the ages. Gar-like fish have been swimming on this Earth for at least 245 million years! In addition to gill breathing, gars have a unique swim bladder that they are able to use like a lung to extract oxygen from the air. This air-breathing ability enables gar to survive in waters where many other fish species cannot live.



The background of the page features a stylized illustration. At the top, a large, textured sun in shades of yellow and orange is partially obscured by dark, silhouetted trees or foliage. Below the sun, a body of water is depicted with blue and white wavy lines representing ripples. In the middle ground, an Eastern Painted Turtle is shown from a side profile, facing left. It has a detailed shell with scutes and a plastron, and its head and front legs are extended. In the foreground, a Northern Watersnake is coiled on a rocky or grassy bank. The snake has a patterned body with dark cross-bands and is positioned as if it might be drinking from the water. The bottom of the page shows a dark, textured shoreline with some sparse vegetation.

## Mussels

You'll probably notice the many tiny fingernail clams and clamshells in the river. These are **Asian Clams** (*Corbicula fluminea*). They were first reported in the Rivanna in the 1970's. They were probably introduced into the James River Basin in the ballast water of ship coming from overseas. As they compete with native mussel species they are not a welcome addition to the Rivanna River system. Like all mussels, they filter water as they feed.

## Reptiles

The **Eastern Painted Turtle** (*Chrysemys picta*) is diurnal, spending nights sleeping on the river bottom or on a partially submerged object. They become active at sunrise and bask for several hours before foraging for food in late morning. These aquatic reptiles can be observed sun basking on logs and rocks – oftentimes forming many layers by resting on top of one another. Most painted turtles become dormant in the colder winter months. They burrow into the mud or seek muskrat burrows or other suitable shelter. Painted turtles are omnivores, feeding on both plants and animals. The margins of their shell are red and black, and they usually have two yellow spots in line behind their eye.

The **Northern Watersnake** (*Nerodia sipedon*) is frequently encountered basking on rocks or logs near the river's edge. Its food is primarily slow moving fishes, frogs, salamanders and crayfish. These carnivores are reddish, brown or gray to brownish-black, with dark cross bands on their neck and alternating dark blotches on the back and sides near mid-body. The watersnake may be seen smoothly swimming just below the water's surface with only its head emerging to breathe. It can also swim while fully submerged. It is a non-venomous snake with no poisonous fangs.



## Trees

The attractiveness of the **River Birch** (*Betula nigra*) is most outstanding during late autumn and winter after its leaves have dropped. The salmon to rust colored bark develops papery, exfoliating scales of many colors. Its leaves are simple, alternate, and toothed, being green above, paler and fuzzy underneath. The river birch's cone-like brown catkins near the tips of branch twigs are 1 to 1-1/2 inches long with many hairy scales. The real beauty of this tree is its tolerance for wet soils that affords it a wonderful erosion prevention capability.

The **American Sycamore** (*Platanus occidentalis*) has a striking appearance due to its ornamental and "camouflage"-like bark, with or without its leaves. The trademark bark of young trees is thin, mottled brown, green, yellow, gray and white, and flakes off in large, irregular patches. Look for these patterns in the upper parts of older trees. The courses of our rivers can be visibly traced in winter by the patterns of white-crowned sycamores lining the banks. Sycamores are very massive trees with heavy, spreading, curved branches and zigzag twigs. Pioneers were reported to have sheltered themselves or their livestock in hollow sycamores. Many of the trees were gigantic then. The sycamore has large, palmate leaves, commonly mistaken for maple, but larger and thicker with long stems. These trees are well-suited for survival in the wet soil conditions of the Rivanna floodplain. The unique fruit, called a "button-ball," is a ball of multiple, brown achenes (or seeds), resembles a Christmas tree ornament in winter and breaks apart when ripe. As the wood is nearly impossible to split, cross sections were once used for ox-cart wheels.







The fast growing **Green Ash** (*Fraxinus pennsylvanica*) is in its element on an often-disturbed riverbank. Opposite branching should be your first clue as to the identification of this widely rooting, extremely hardy tree. Riverbank soils are often quite sandy and will easily dry out during drought conditions. Riverbank trees need to be able to withstand both that threat of drought and the inevitability of flood. The ash is up to the task. If you are using a paddle made from wood, it is probably made from this tree. Green ash wood is known for the virtues of toughness, elasticity, straight grain and strength. These are just the qualities wanted in an oar. Many implement handles are made from ash.



It is assumed that the **Box Elder** (*Acer Negundo*) takes its name from its elder-like leaves and Box tree like wood. The foliage is most similar to that of Poison Ivy. The fact that Box elder tree has leaves that emerge from the twig opposite each other, and the Poison Ivy vine has leaves that are alternate, should help you differentiate the two. The flowers and the “key-like” will inform you that its nearest relatives are the Maples. It can be tapped for sugar sap, and while it is not as sweet as that of a Sugar maple, it is able to grow in places where no Sugar maple could endure. All riverbank trees hold the banks against the swirl of the current. The Box elder plays a major role in the cause of soil conservation.

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# RIVANNA CONSERVATION SOCIETY

