



CAPTINA
CONSERVANCY



CAPTINA CREEK

Aquatic Trail Guide

GLOSSARY

Backwater: stagnant water connected to a river or stream.

Benthic: on or living on the bottom of body of water (stream, river, lake, sea).

Confluence: place where two rivers or streams join.

Downstream: towards the mouth of a stream or river. The stream or river channel widens as it moves downstream.

Ephemeral Stream: stream channel is located above the water table resulting in inconsistent flow throughout the year that is dependent on local precipitation.

EPT Score/Taxa: index of biological assessment based on presence of Ephemeroptera (mayfly), Plecoptera (stonefly), and Trichoptera (caddisfly) nymphs and larvae in a section of stream. The greater the number and diversity of EPT, the higher quality the stream.

Glide: feature in a stream that has wide, even flow with low to moderate velocities and little or no surface turbulence. Glides are a transitional zone between a pool and a riffle. Substrate usually contains silt, sand, gravel, or cobble (next size up from gravel).

Gradient: elevation fall of a stream or river channel.

Headwaters: the area in which tributary streams feed into a river near the river's source. Streams are steeper and narrower with fast flow and are often in shaded areas.

Indicator Species: Species which is very sensitive to particular changes in the environment and can show that environmental changes are taking place.

Interstitial: the space between substrate material.

Macroinvertebrate: animals without a backbone that can be seen with the naked eye (without the aid of a microscope).

Mouth: farthest end of a river or stream where it joins another body of water.

Perennial Stream: stream channel is permanent and has consistent flow throughout the year.

Pool: a stream feature that is much deeper than the other sections with low to no water movement. Substrate is usually clay, silt, sand, or gravel.

Pollution Intolerant: organisms that cannot survive in poor water quality, which can include low dissolved oxygen levels, higher amounts of sediments, nutrient-rich water, warm water temperatures.

Riffle: an expanse of shallow bottom, over which the water flows swiftly with a wavy surface. These areas of streams have high oxygen concentrations. Substrate usually contains larger size material found in a stream.

Riparian Area: area referring to the bank of a river.

River: body of water that is larger (wider, deeper, and or longer) than a stream; water flows all year.

Run: Shallow to somewhat deep sections of stream with swift to moderate velocities and minor surface turbulence. Runs form between two riffles or as a transition between a riffle and a pool or glide.

Stream: smaller than a river, but larger than a creek. A stream may not have water flowing all year.

Stream Channel: a natural waterway that periodically or continuously contains moving water, or which forms a connecting link between two bodies of water.

Substrate: includes all natural materials on the stream bottom like clay, silt, sand, gravel, boulders, bedrock, logs, and roots. These materials provide habitat for aquatic organisms.

Taxa: (plural of taxon) groupings in a scientific classification of organisms, e.g. a family, genus, etc.

Transition Zone: change from one state to another.

Tributary: a stream flowing into a larger stream or river.

Upstream: towards the source (headwaters) of the stream or river.

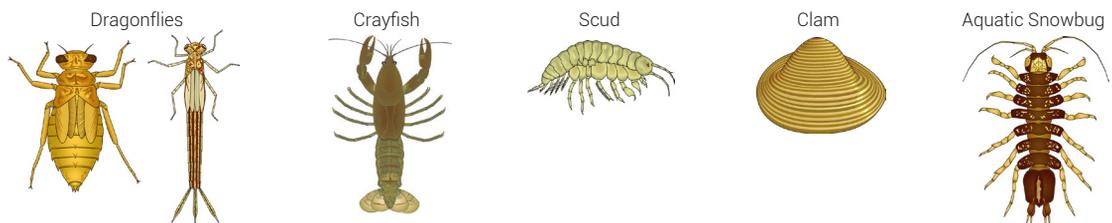
Watershed: a natural area (catchment basin) in which water drains from the headwaters downstream to the mouth. These catchment basins are defined by topography.

Woody Debris: vegetation such as sticks, branches, logs, root wads that provide habitat to aquatic organisms.

BIOTIC INDICATORS OF WATER QUALITY



These benthic macroinvertebrates need good quality water. They are generally pollution intolerant.



These benthic macroinvertebrates can live in a wide range of water quality conditions.



These benthic macroinvertebrates can tolerate pollution and survive in poor quality water.

Aquatic Habitat Description of **POWHATAN POINT**

Captina Creek flows into the Ohio River at this point and is greatly influenced by the "backwater" effect of the larger river. For several miles upstream, it is dominated by long, deep pools of slow-moving water that deposits sediment on the stream bottom. The substrates consist of silt covered cobble, gravel and sand with large woody debris scattered throughout. The stream banks are steep and covered in thick vegetation but are less forested than areas upstream. This provides the perfect habitat for a mixture of big river and stream fishes and macroinvertebrates that require sediment for protection and reproduction.

TYPICAL AQUATIC ORGANISMS FOUND AT THIS SITE & THIS TYPE OF HABITAT

Fish typically found in the backwater habitat at Powhatan Point include big river species such as common carp, silver redhorse, flathead catfish, channel catfish, longnose gar and sauger. Green sunfish, bluegill sunfish, largemouth bass and spotted bass are also common. Emerald shiners and gizzard shad are the most common baitfish within this habitat. The once endangered bluebreast darter can also be found here.

Macroinvertebrates found within the sediment and vegetation include dragonfly and damselfly nymphs, burrowing mayflies, midges, leeches, Asian clams, scuds, freshwater mussels, and true bugs (hemipterans) such as the fish-eating giant water bug and water scorpion.



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Flathead Catfish



Dragonfly Larvae



Red Midge



Scud



Longnose Gar



Gizzard Shad



Silver Redhorse



Dragonfly Adult

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Aquatic Habitat Description of ALLEDONIA

From the confluence of the North and South Forks downstream to the backwaters of the Ohio River, Captina Creek exhibits a typical high quality, free flowing, perennial stream. The gradient in this section is much greater resulting in alternating pools and riffles that transition to shallow glides and runs and back to pools. These changes offer a multitude of habitat types which results in an increase of aquatic life diversity. The pools are characterized with mature stream bank trees with undercut bank cavities and exposed root wads. Pool depths vary from 1 to 5 feet with rock rubble, boulders, boulder slabs, bedrock, gravel, sand, wood debris and very little fine sediment at the bottom. The variable currents create eddies and slow-moving shallow areas where aquatic plants such as water willow can flourish. The shallow areas are characterized by rock rubble, gravel, large rock slabs and sand. All of these habitats make the mainstem section of Captina Creek the most biologically diverse section of the stream.



TYPICAL AQUATIC ORGANISMS FOUND AT THIS SITE & THIS TYPE OF HABITAT

Typical fish life in the pools consist of sunfishes such as pumpkinseed, warmouth, longear and rock bass. The smallmouth bass is also very common throughout these sections of Captina. Other common fish species include northern hog sucker, yellow and black bullheads, creek chub, striped shiner, white

sucker, freshwater drum, channel catfish, sand shiner, river chub, bigeyed chub, mimic shiner, emerald shiner and silverjaw minnow. Many darter species are common in the transition zones of the pool to riffles and include greenside, banded, fantail, johnny, variegate, logperch and rainbow darters.

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These highly diverse habitats produce a wide variety of aquatic macroinvertebrates. These include mayfly and stonefly nymphs, caddisfly larvae; several species of beetle nymphs such as water pennies and riffle beetles; midge fly (true flies) larvae, dragonfly nymphs, and the dobsonfly larvae, known as the hellgrammite. Other common invertebrates include fingernail clams, several species of mussels and the abundant crayfish or "crawfish". Some of the most abundant and diverse groups of macroinvertebrates within this section are also the most pollution sensitive. Eight (8) different families of mayflies, seven (7) different families of stoneflies and ten (10) different families of caddisflies are common. Within each family there are multiple genus and species making the diversity extremely high.

Of great significance in this section of the stream is the presence of the Eastern Hellbender. The high-water quality, abundance of large flat boulder slabs, relatively low amounts of sediment and abundant prey make the mainstem of Captina Creek one of the last suitable habitats left in the state of Ohio where hellbenders can survive and reproduce.



Smallmouth Bass



Freelifving Caddisfly



Hellbender



Small Minnow Mayfly



Common Stonefly



Striped Shiner



Variegate Darter



Crayfish



Hellgrammite



Perlodid Stonefly

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Aquatic Habitat Description of RAINBOW'S END

Two major tributaries converge to form the mainstem Captina Creek: North Fork and South Fork. The headwaters of South Fork begin around Slope Creek Reservoir, located southwest of Barnesville. As South Fork flows by Rainbow's End, the site is dominated by exposed bedrock substrate with scattered riffles, runs, and pools. Many areas have bedrock waterfalls with semi-shallow plunge pools that contain scattered boulders. There are also many sections with very swift flowing riffles. The many turns and sharp bends create unique habitats even in the absence of an abundance of substrate types. The riparian areas are approximately 70% forested which helps to keep the water cooler. The fish and macroinvertebrate diversity are lower than elsewhere within Captina Creek due to the lack of cracks, crevices, and interstitial space that other substrates offer. However, in areas where substrates other than bedrock exist, a diversity of organisms can be found. Headwater species of fish are much more common in this section of stream, and young smallmouth bass are the top predators.



TYPICAL AQUATIC ORGANISMS FOUND AT THIS SITE & THIS TYPE OF HABITAT

Within the swift moving waters, you can find striped shiners, sand shiners, spotfin shiners, northern hog sucker, black redhorse, golden redhorse, central stoneroller, rainbow darters, greenside darters, and Johnny darters. Looking under flat rocks within the riffles you may be lucky and encounter a stonecat madtom. Within

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the slower moving runs and pools, you will find smallmouth bass, rock bass, longear sunfish, northern creek chub, bluegill sunfish, western blacknose dace, and silverjaw minnow.

Within the vast bedrock-bottomed areas, fish and macroinvertebrate diversity and abundance can be quite low. But where diverse substrate is found, a full assemblage of species can be expected. Hellgrammites (dobsonfly larva) and waterpennies are very common. A wide array of mayfly, stonefly and caddisfly (EPT) species are found here. Along the bank, in overhanging vegetation, and within submerged root-wads one can find many dragonfly and damselfly nymphs, predacious diving beetles, water scorpions, giant water-bugs, riffle beetles and case making caddisflies.



Northern Hogsucker



Rainbow Darter



Waterpenny



Northern Case Maker
Caddisfly with Sticks



Rock Bass



Spotfin Shiner



Flatheaded Mayfly



Northern Case Maker
Caddisfly with Leaves



Longear Sunfish



Stonecat Madtom

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Aquatic Habitat Description of **RAVEN ROCKS**

Piney Creek is one of many headwater tributaries within the Captina Creek watershed. Much of Piney Creek is in the Raven Rocks Conservation Easement managed by the Captina Conservancy. These headwater tributaries are typically in forested, steep valleys and some are in rock walled, cliff lined gorges. Because of the forested valleys and steep elevations, many of these headwaters have cooler water temperatures than the lower elevation streams of the watersheds.

Piney Creek's permanent stream channel is narrow (3-6 feet wide), shallow (<2 feet deep), has a small number of short pools, and is dominated by riffles. The entire length of the stream is heavily forested and well shaded. The channel bottom is composed of bedrock, rock rubble, gravel and sand. The riparian area is narrow with little vegetation and quickly transitions to steep mature forests of popular, oak, maple, cherry, beech, etc. – trees typical of the region. Along the stream within the Raven Rocks Gorge a microclimate allows for the growth of trees such as eastern hemlock and yellow birch that are typical of more northern, higher elevation climates.



TYPICAL AQUATIC ORGANISMS FOUND AT THIS SITE & THIS TYPE OF HABITAT

Despite the small size of Piney Creek, a great number of macroinvertebrates inhabit the stream. It is dominated by mayfly-stonefly-caddisfly nymphs and larvae (EPT Taxa) which indicates high water quality. Samples within the

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stream have found twelve (12) different mayflies, nine (9) different stoneflies, and nine (9) different caddisflies. In addition, other macros found included true fly larvae, mussels, snails, aquatic worms, aquatic beetles, and crayfish making a total taxa list of 49.

Headwater streams such as Piney Creek usually have a low number of fish and fish species. Here, three species are common: mottled sculpin, northern creek chub, and green sunfish. The sculpin is significant, as it is an indicator species for high quality streams and streams of cooler temperatures. Other species found in tributaries of this size are the southern redbelly dace and redbelly dace. Salamanders such as the northern dusky, longtail, ravine, northern slimy, northern spring, and northern and southern two-lined are found along the stream sheltering under rocks and within cracks and crevices of exposed rock outcrops.



Redbelly Dace Male



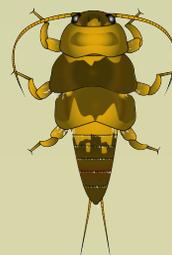
Redside Dace Male



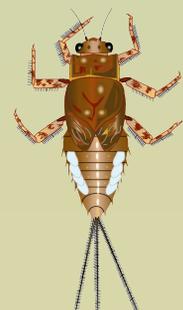
Mottled Sculpin Male



Saddlecase Caddisfly



Roachlike Stonefly



Spiny Crawler Mayfly

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CAPTINA CREEK WATERSHED

The Captina Creek Watershed covers approximately 180 squares miles in southern Belmont and northern Monroe counties. The headwaters flow easterly from the areas of Jacobsburg, Bethesda, Barnesville, Malaga, Jerusalem, and Beallsville towards the mouth in Powhatan Point. Here, Captina Creek joins the Ohio River.

A drive along State Route 148 from Powhatan Point to State Route 800 south of Barnesville will provide a nice showcase of the diversity in ecology and geology throughout the watershed. On this drive, you will notice the mainstem of Captina Creek weaving along the road. You will see wide valleys and rolling hills at the beginning of your drive. As you continue westward, you will see the landscape change. Rock outcrops are exposed along the banks as the road curves with Captina. Captina Creek's channel will become narrower and the vegetation will become more dense. Upon nearing State Route 800, the stream disappears from the road as it branches into steep ravines. You may not see water flowing in these upper reaches during parts of the year.

This watershed is located in one of the most heavily mined areas in the state of Ohio. Over the century, coal, timber, and oil and gas have been extracted from this unglaciated section of the Appalachian foothills.

Captina Creek is home to one of the last breeding populations of the state-endangered Eastern Hellbender. The watershed also supports a healthy smallmouth bass fishery, along with 55 other species of fish. Of the 56 total fish species identified during a 2009 study by the Ohio Environmental Protection Agency, 17 are pollution intolerant. This same study found over 100 taxa of macroinvertebrates within the Captina Creek watershed making this one of the most ecologically diverse areas in the state of Ohio.

Captina Conservancy would like to thank Belmont County Tourism Council for funding this project.

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