

Event Overview



What is "A Day in the Life"?

"A Day in the Life of the Buffalo River" is an event that celebrates the Buffalo River watershed and educates participants about the river's connection to their history, community and environment, and to themselves. Participants explore, observe, and collect scientific data to create a "snapshot" of the river at their unique sample site. Data is then compiled on the Web so participants can see how their site fits into the larger Buffalo watershed picture.

There are four main parts of the Buffalo River picture:

The Historical River: How has the river shaped the development of Buffalo?

The Physical River: How is each sample site unique? How might weather conditions and the area around the sample site affect water quality?

The Zoological River: What animals live in the river? What can they tell us about the water's health?

The Chemical River: Are the oxygen and pH levels of the water healthy enough to support life?

What is a watershed?

A watershed is an area of land where all living things are linked by a common water source. All water in that area drains to a common waterway, such as a stream, lake, or ocean. The Buffalo River Watershed encompasses 447 square miles, mostly in Erie County (see map). Water drains into the Buffalo River system, and ultimately Lake Erie.

Historical Timeline:

1825: Erie Canal completed, linking the Buffalo River with Lake Erie and opening Buffalo to development and trade.

1900s: Buffalo experiences huge industrial and economic growth along the waterfront. Industries dump toxic chemicals into the river.

1965: Buffalo River declared functionally dead and "devoid of life."

1966: President Lyndon Johnson visits Buffalo to review pollution problem. The public gets involved in water conservation efforts.

1968: Buffalo River catches on fire.

1987: Buffalo River named an "Area of Concern" (AOC) by the Environmental Protection Agency (EPA).

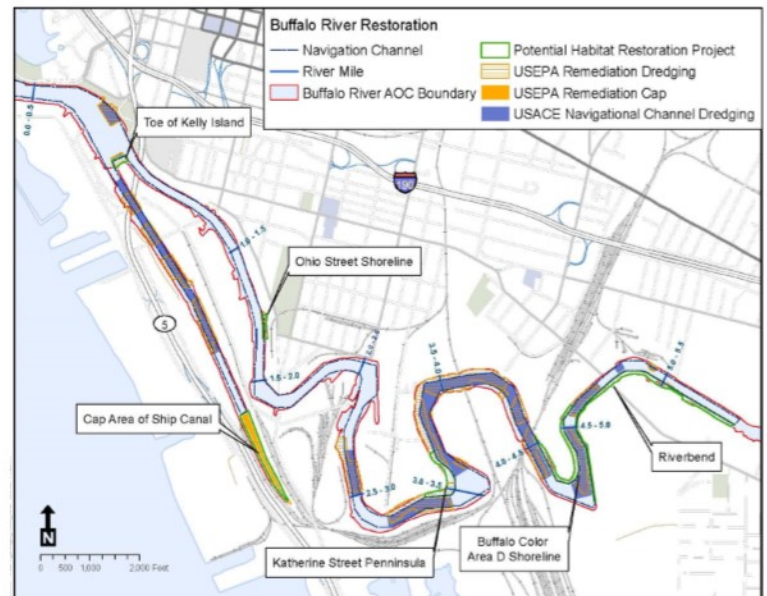
An AOC is an area that has experienced environmental degradation.

2011: The Buffalo River Restoration Partnership begins major efforts to remove contaminated sediment from the river (dredging), restore habitats for wildlife, and improve safe public access to the river.

2014: Final phase of the dredging project begins.

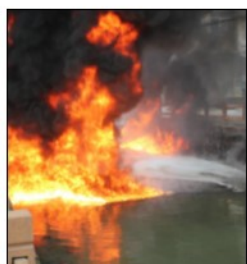
2019: Buffalo River no longer an Area of Concern (?)

Area of Concern/Buffalo River Restoration



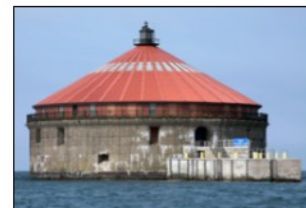
Map: Ecology & Environment

10 Cool Facts About the Buffalo River Watershed



1. The river became so polluted by industries that it caught on fire in 1968!
2. Instead of spending thousands of dollars to remove barnacles from their hulls, ships would sit in the Buffalo River and let the acidic water burn them off.

3. The round red house in Lake Erie is the Buffalo Water Intake Crib, where water filtration for our drinking water begins.



4. General Mills, the manufacturer of Cheerios, has property that borders the Buffalo River. The facility still uses the Buffalo River to bring in grain shipments, which are stored in the grain elevators.



5. The Buffalo River boasts the world's oldest working fireboat, the *Edward M. Cotter*.

6. The Buffalo Sabres arena, Canalside, and the Naval & Military Park are all located on the Buffalo River.

7. Cayuga Creek is a popular fishing destination because of its steelhead trout population.



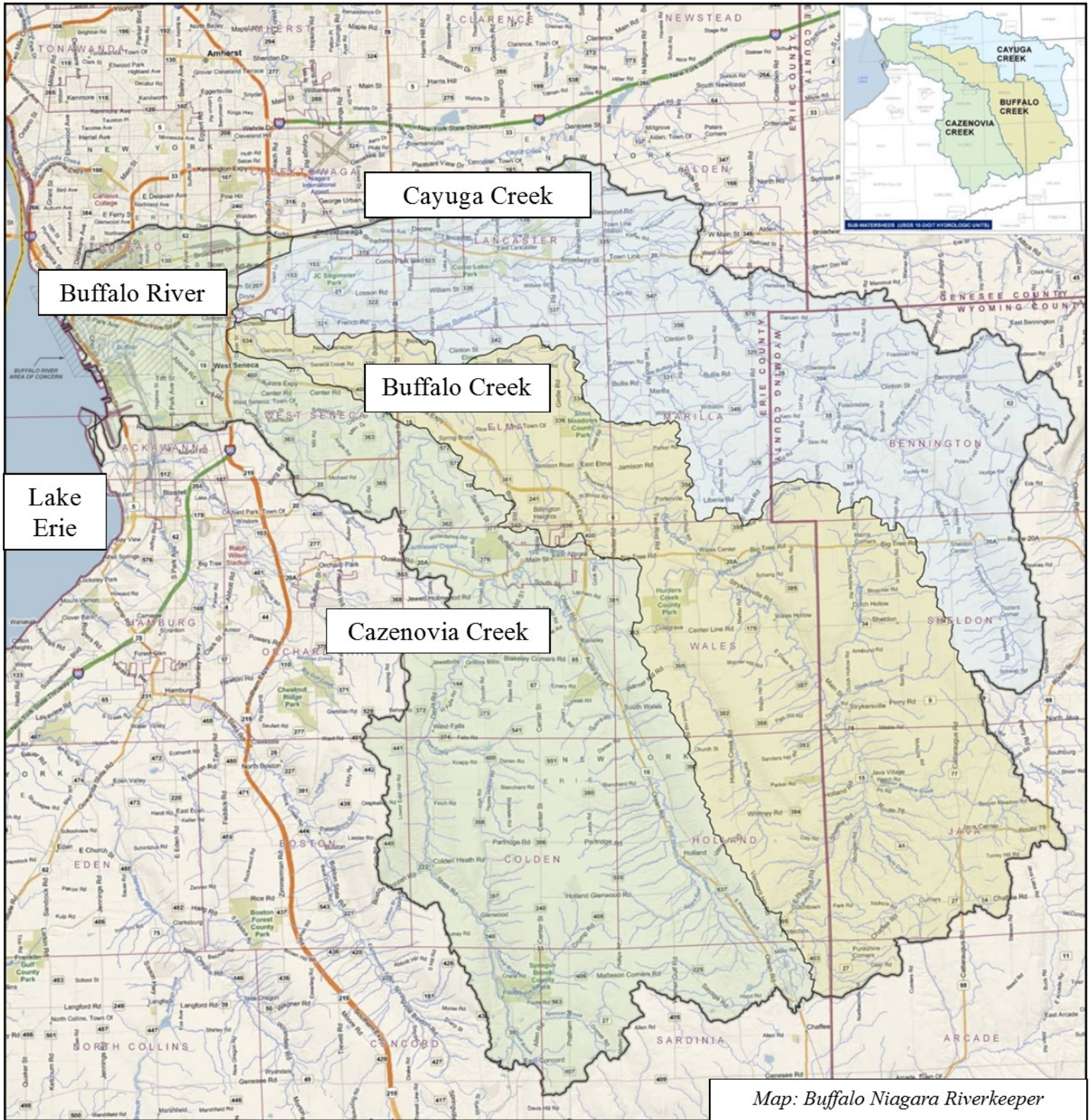
8. Red Jacket Riverfront Park was named after the Seneca chief "Red Jacket," who got his name from a coat given to him by the British for his services during the Revolutionary War.

9. The City of Buffalo is named after Buffalo Creek. The name "Buffalo" Creek was used as early as 1764.

10. Cazenovia Creek was named after Theophilus Cazenove, an agent of a land surveying company. Cayuga Creek was named for the Cayuga Native Americans. However, there is much debate as to how Buffalo Creek got its name. It may come from the French *beau fleuve*, meaning "beautiful river," from the bison that may have historically roamed here, or from a resident Seneca Native American named "De-gi-yah-goh" ("Buffalo").



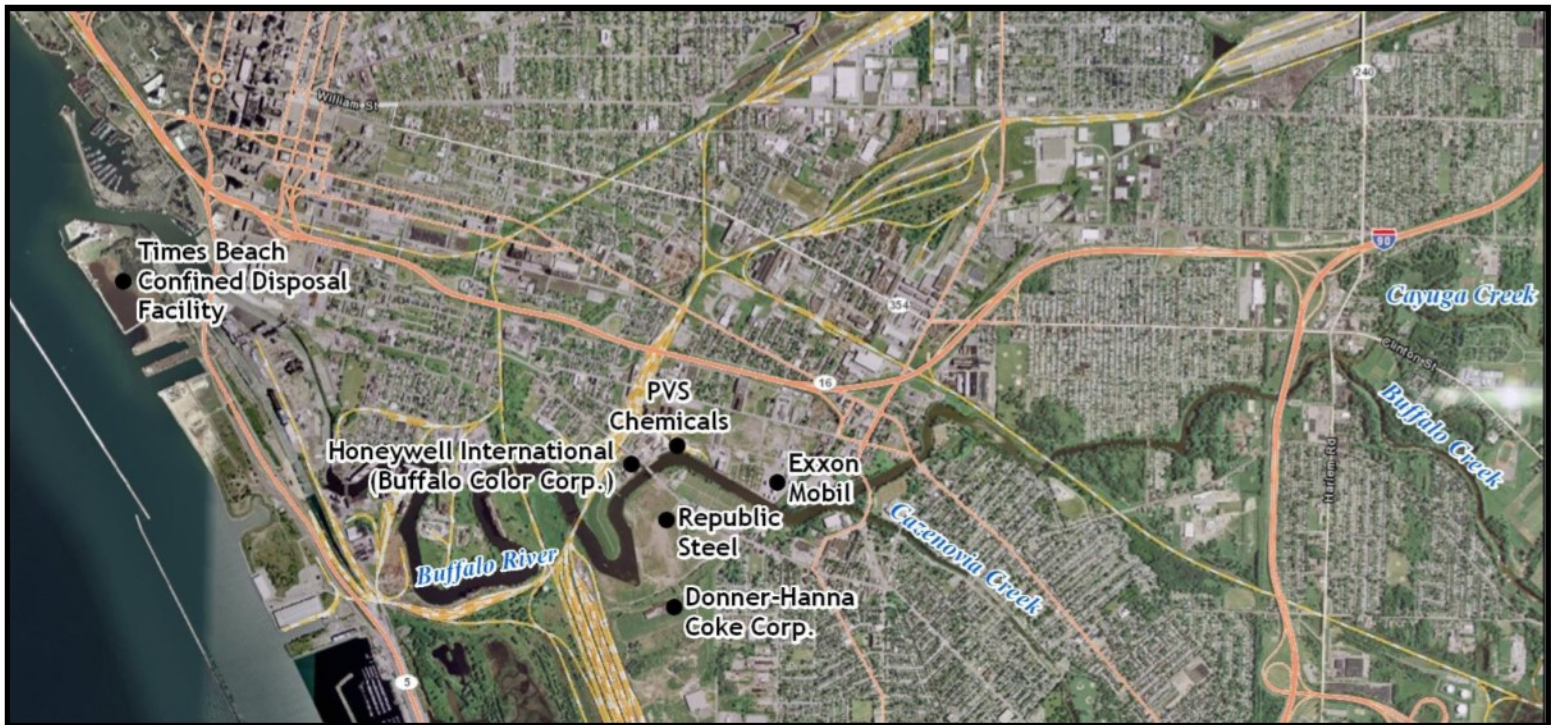
Buffalo River Watershed



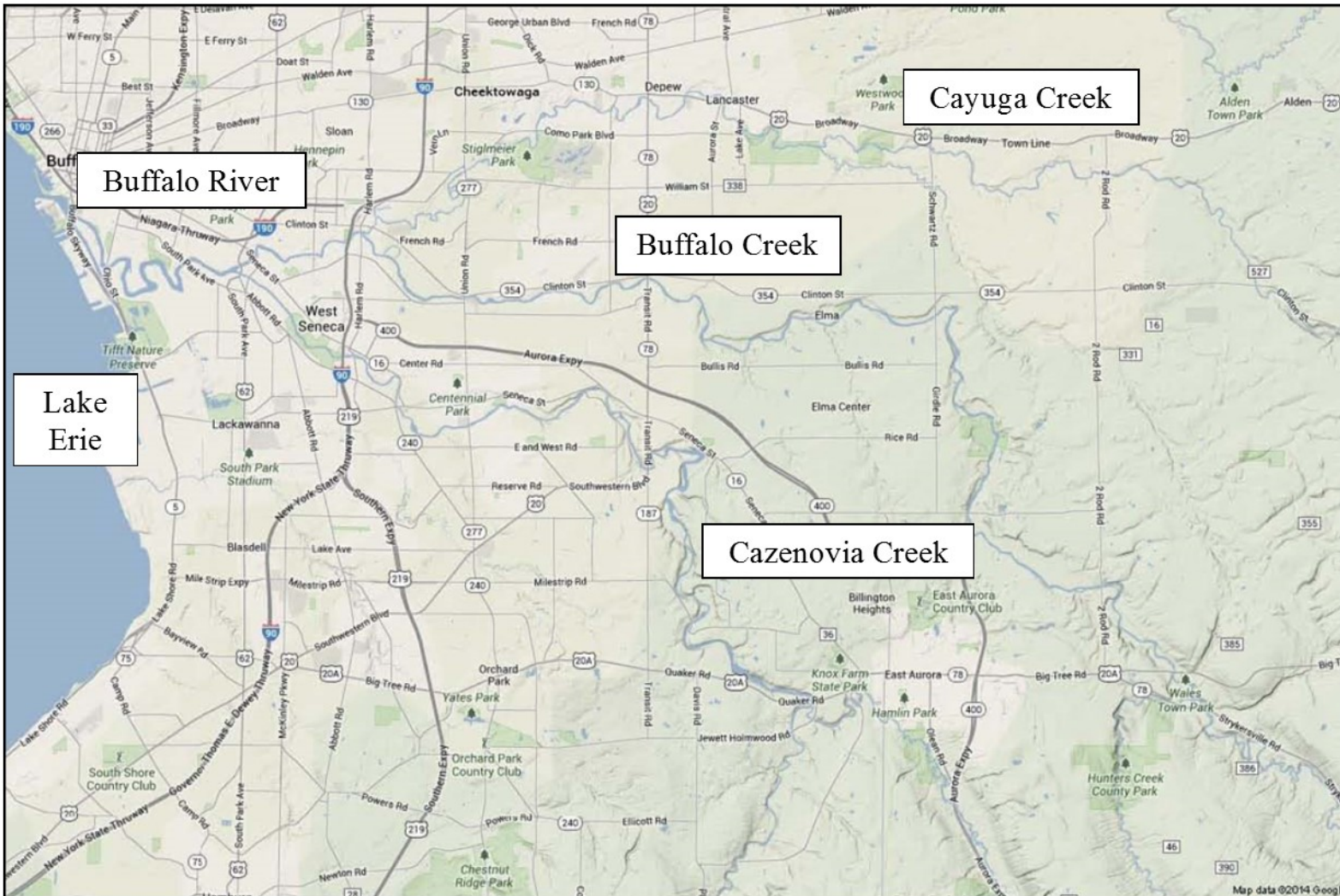
Map: Buffalo Niagara Riverkeeper

The **Buffalo River** is 8.7 miles long and flows to the west, emptying into Lake Erie. It is fed by three tributaries: Cayuga Creek, Buffalo Creek, and Cazenovia Creek. All tributaries join together at various points. **Cayuga Creek** is the northernmost tributary, which passes through Lancaster, Depew, and Cheektowaga before joining with Buffalo Creek in West Seneca. **Buffalo Creek** has two branches: one in the Town of Holland and the other in Java. These branches join together in Wales. From there, the creek flows through Elma and West Seneca. **Cazenovia Creek** also has two sources: one in Sardinia and the other in Concord. These branches join together in East Aurora. The creek flows through Aurora, Elma, West Seneca, and the city of Buffalo, where it joins the Buffalo River. The entire **watershed** encompasses 447 square miles.

Historic Industries along the Buffalo River

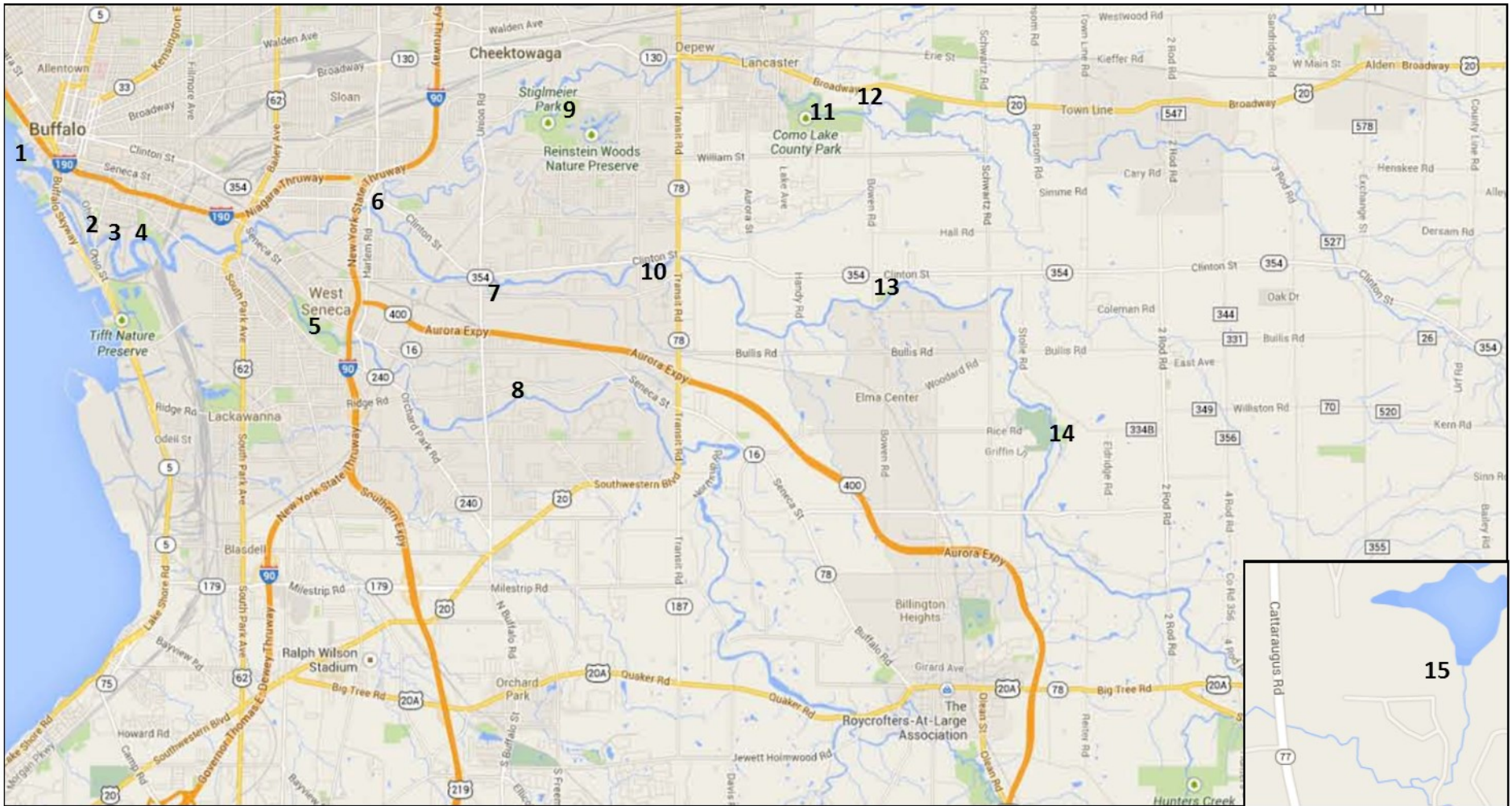


Buffalo River & Tributaries



"A Day in the Life of the Buffalo River" Sample Sites

Google Maps, 2014

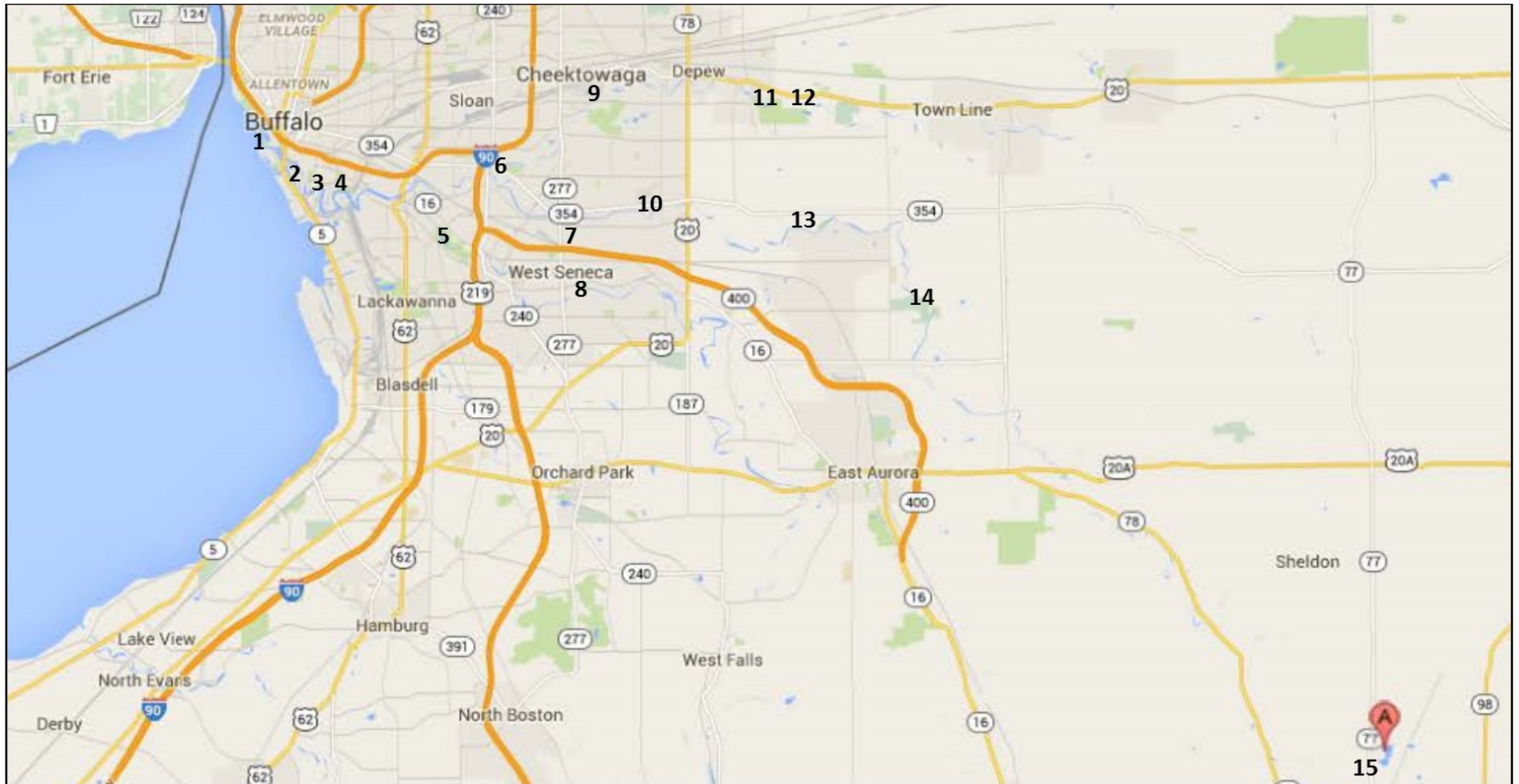


- 1 = Erie Basin and Marina Gardens (mouth of Buffalo River)
- 2 = Ohio Street Fishing Access (Buffalo River)
- 3 = Mutual Riverfront Park (Buffalo River)
- 4 = Red Jacket Riverfront Park (Buffalo River)
- 5 = Cazenovia Park (Cazenovia Creek)
- 6 = Harlem Road Fishing Access (Buffalo Creek)
- 7 = Burchfield Nature Center (Buffalo Creek)
- 8 = Mill Road Park (Cazenovia Creek)

- 9 = Stiglmeier Park (Cayuga Creek)
- 10 = Borden Road Access (Buffalo Creek)
- 11 = Como Lake Park (Cayuga Creek)
- 12 = Bowen Grove (Cayuga Creek/Little Buffalo Creek)
- 13 = Elma Village Green (Buffalo Creek)
- 14 = Elma Centennial Park (Buffalo Creek)
- 15 = Beaver Meadow (headwaters of Buffalo River - map inset)

"A Day in the Life of the Buffalo River" Sample Sites - Large View

Google Maps, 2015



Buffalo River Facts

Length of Buffalo River : 8.7 miles (from where Buffalo and Cayuga Creeks meet)

Depth: 23 feet

Headwaters: Ghost Pond at Beaver Meadow Audubon Center, North Java (#15 on map)

Mouth: Lake Erie (#1 on map)

Width of river mouth: 1600 feet

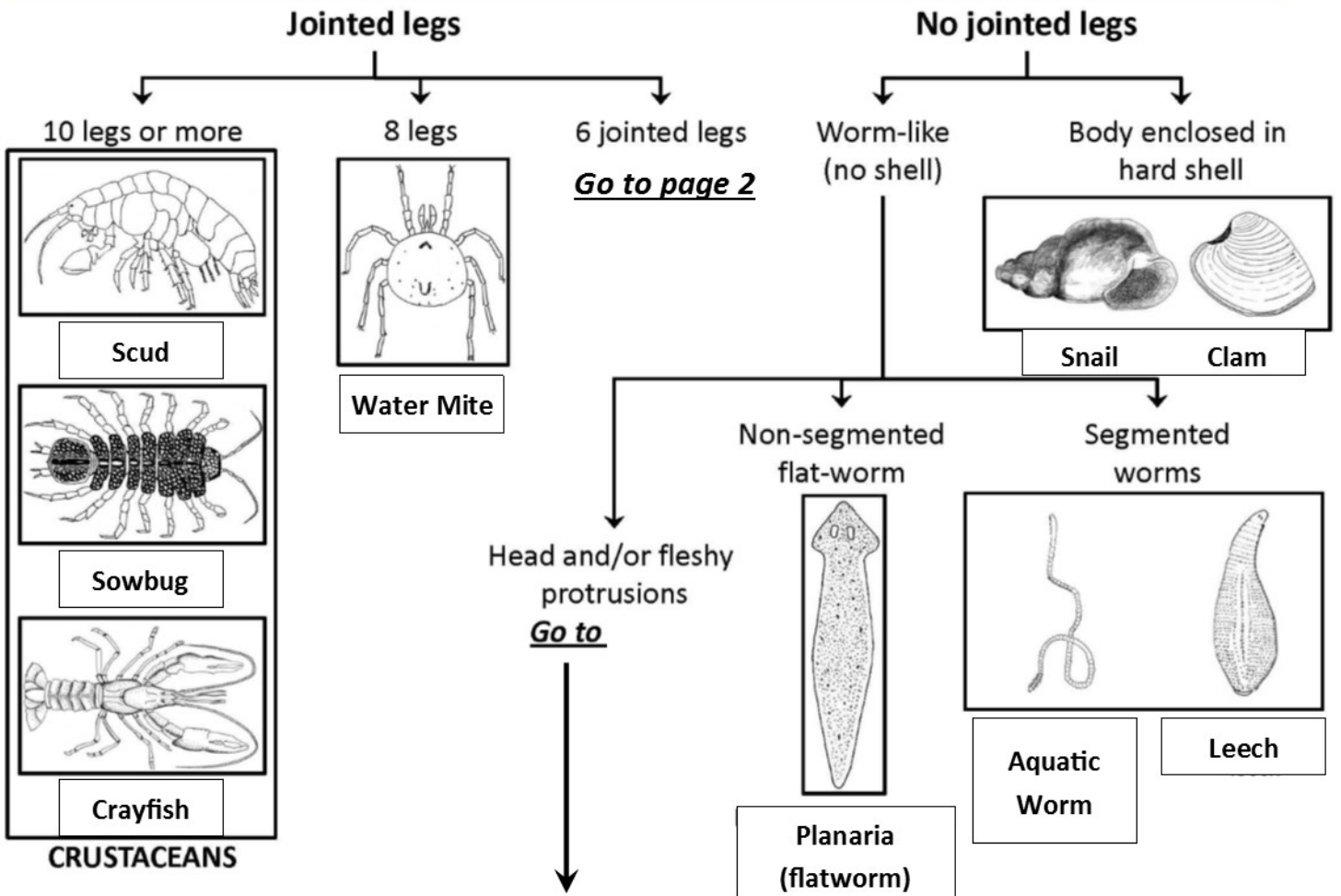
Length of Cayuga Creek: 40 miles

Length of Buffalo Creek: 43 miles

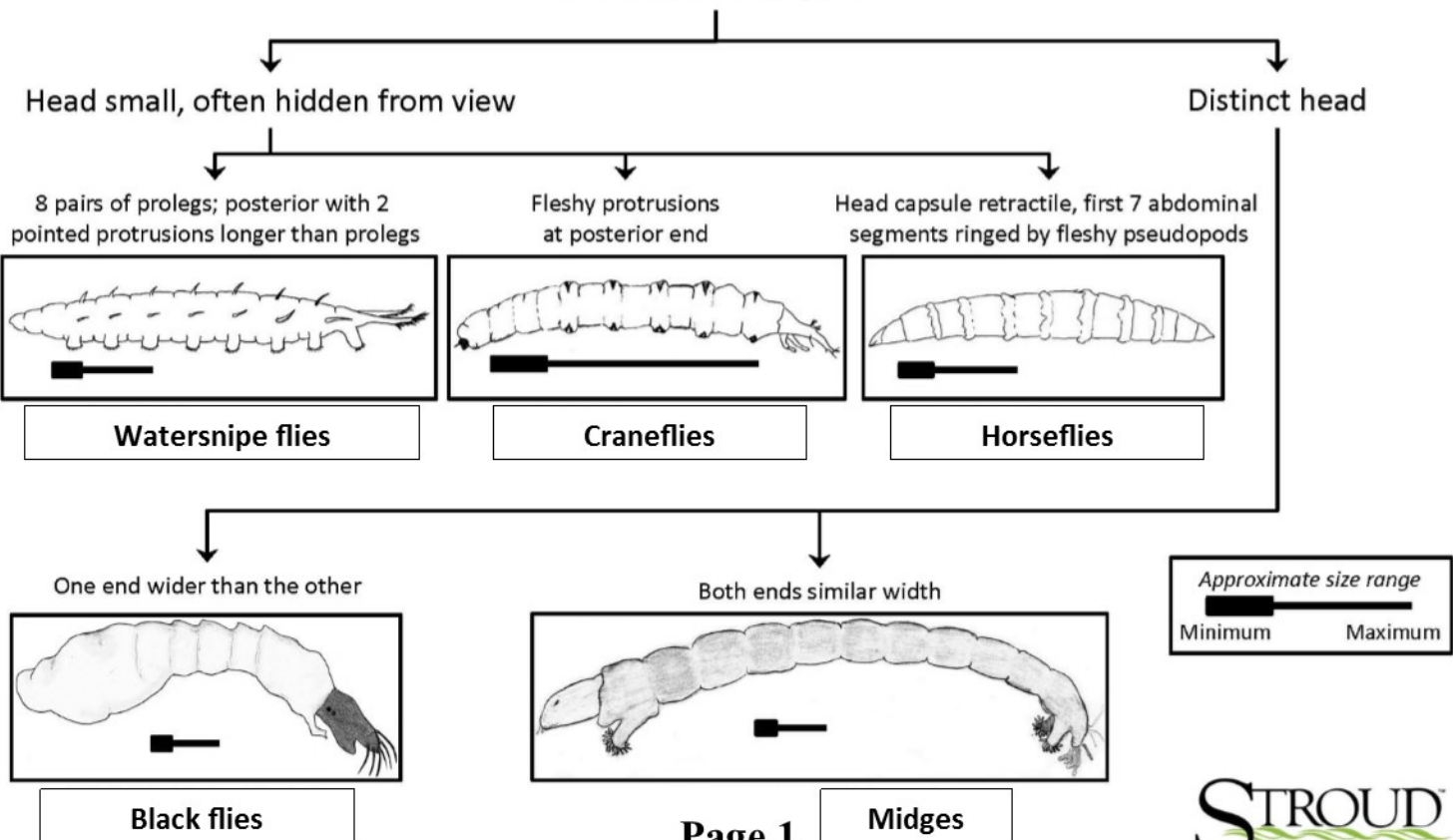
Buffalo River Watershed: 447 square miles

Fish: more than 30 species, including Brown Bullhead, Large- and Smallmouth Bass, Yellow Perch, Rainbow Trout, White Sucker

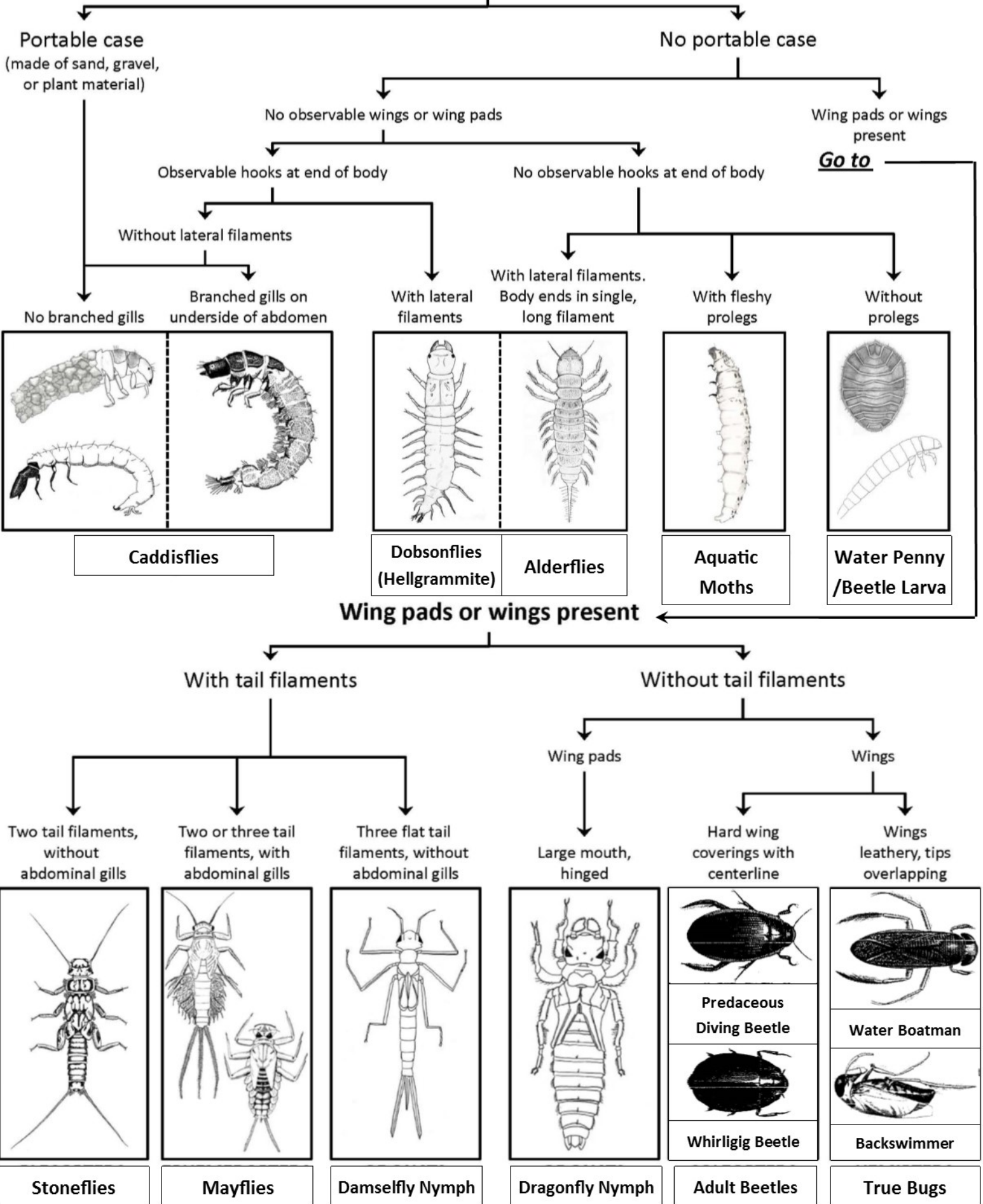
Identification Guide to Freshwater Macroinvertebrates



Worm-like with distinct head or fleshy protrusion
DIPTERA – true flies



Six jointed legs



Pond Animals Guide

bars indicate typical size

Insect Larvae



Mayfly Nymph



Stonefly Nymph



Caddisfly Larvae (some build case of rocks, sticks)



Caddisfly Larvae



Damselfly Nymph
Up to 2 inches



Midge Fly Larva



Mosquito Larva and Pupa



Dragonfly Nymph
up to 3 inches



Alderfly Larva



Rat-Tailed Maggot



Hellgrammite



Fish Fly Larva
(no gill tufts)



Whirligig Beetle Larva



Diving Beetle Larva
(smooth sides) - 2"

Adult Insects



Water Boatman



Backswimmer



Whirligig Beetle



Diving Beetle -
up to 2 inches



Crawling Water Beetle



Water Strider



Giant Water Bug -
2 inches

Created by: Helmer Nature Center
Irondequoit, NY

Worms



Flatworm



Aquatic Worm



Leech

Leeches can be 1/2 to 2 inches and change shape.

Arachnids



Water Mite



Water Spider

Mollusks



Pill Clam



Planorbis Snail



Gilled Snail



Pond Snail

Crustaceans



Crayfish - up to 3 inches



Water Flea
very tiny



Copepod



Aquatic Sowbug



Scud

Reptiles



Painted Turtle - 5 to 10 inches



Snapping Turtle - 8 to 12 inches

Amphibians



Green Frog - 3 inches



Green Frog Tadpole
1st year - 1 inch
2nd year - 3 inches



American Toad - up to 3 inches
seen mostly on land



American Toad Tadpole - 1 inch

*Created by: Helmer Nature Center
Irondequoit, NY*

Invasive Freshwater Mussels



Approximate actual size
(1.5 cm)

Zebra Mussel

(Dreissena polymorpha)

- Alternating dark and light bands in a zigzag pattern
- “D” shaped triangular shell
- Two halves of shell form a straight line
- Sits flat when laid on its bottom side
- Prefers to attach to firm surfaces



Approximate actual size
(2.0 cm)

Quagga Mussel

(Dreissena rostriformis bugensis)

- Alternating dark and light stripes
- Lighter in color near hinge
- Rounder shell than zebra mussel
- Two halves of shell form a wavy line
- Does not sit flat when laid on its bottom side—leans
- Can attach to a wide range of surfaces
- Tolerates colder and deeper water than zebra mussels



Negative impacts of invasive mussels

Increase contaminants and bacteria in our drinking water.



Sharp mussels make beaches dangerous for swimmers.

Outcompete native species for limited resources.

Less habitat for natives.

Decrease dissolved oxygen (DO). Fish suffocate.



Attach to native animals, killing them. **Less biodiversity** (variety of species).



Remove plankton from water via filter feeding. Less food for other animals in the food web. Animals starve to death.

Clog water and industrial pipes. Foul boat hulls and motors.



Increase water clarity, which encourages growth of harmful algae blooms.



700,000

The number of mussels that can occupy one square meter.

1 Million

The number of eggs a single zebra mussel can produce in one year.

10 Trillion

The estimated number of invasive mussels in the Great Lakes (as of 2015).

1

The number of liters of water a single mussel can filter in one day.

1988

The year zebra mussels were first identified in North America.

1989

The year quagga mussels were first identified in Lake Erie.



STOP AQUATIC HITCHHIKERS!

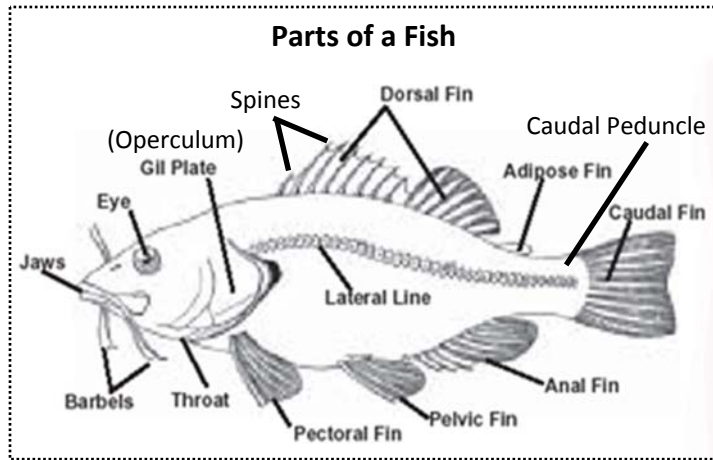
Boaters can help stop the spread of invasive mussels by cleaning their boats and gear.

Fish of the Buffalo River



Walleye

- Huge mouth with large teeth
- Opaque silver eye
- Yellow-olive body with greyish bands
- Size: up to 36 in.



Brown Trout

- Red and black spots
- Yellow-brown above, white to yellow below
- Size: up to 40.5 in.



Brown Bullhead

- Yellowish-brown with mottled sides
- Dark brown barbels (whiskers)
- Straight caudal (tail) fin
- Size: up to 21 in.



Channel Catfish

- White to grey barbels
- Blue-black back
- May have scattered dark spots
- Size: up to 50 in.



Yellow Perch

- Forked caudal fin
- Green-brown vertical stripes
- Yellow body; yellow-red fins
- Size: up to 16 in.



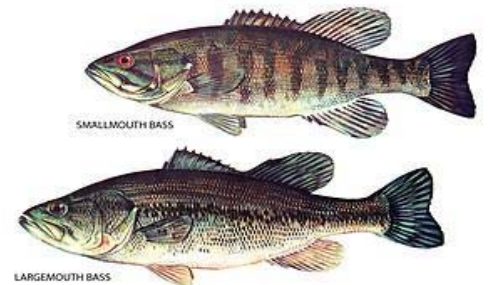
Bluegill

- Small mouth, dark spot behind eye
- Color ranges from olive to blue to black; white to yellow below
- Breeding male has blue head and orange belly
- Size: up to 16.25 in.



Pumpkinseed

- Red/orange spot behind eye
- Wavy blue lines on cheek
- Olive green back and side with yellow flecks
- Size: up to 16 in.



Smallmouth Bass

- Red eye
- Dark brown spots or bars along sides
- Size: up to 27.25 in.

Largemouth Bass

- Upper jaw extends past eye
- Silver to brassy color with dark stripes
- Size: up to 38 in.



Bluntnose Minnow

- Blunt snout
- Black spot on caudal fin
- Light tan/olive color above, light belly
- Size: up to 4.25 in.



Golden Shiner

- Uprturned mouth; pointed snout
- Curved lateral line (line along length of body)
- Range from silver to gold in color
- Size: up to 12 in.



White Sucker

- Lower lip twice as thick as upper
- Lips on lower part of snout
- Dark grey to brown above, light belly
- Size: up to 25 in.