

Jackson County Conservation Summer 2020—Weekly Nature Activity Series

We hope that our weekly nature activities can provide some outdoor fun for you and your family this summer. You are welcome to gather your own supplies for the activities or pick up materials at the Hurstville Interpretive Center. Materials will be available in the outdoor classroom on the south side building on Monday morning beginning at 9 am and are available while supplies last. There will also be some materials inside the Center on the exhibit floor.

Week 8: July 27

Materials we are providing this week: nets, bug containers, data sheet and ID guide

Pond Study

Activity

Explore a water habitat and learn more about the aquatic macroinvertebrates that live there.

Materials:

- Nets
- Buckets, ice cube tray, or other containers
- Field guide
- Data sheet
- Download the Creek Critters free app for additional help!



Instructions:

1. Brainstorm different animals that live in freshwater (think little too!)
2. Find a pond, stream or wetland near your house (or check out the frog pond in front of the Hurstville Center).
3. Using nets, collect critters from the water. Brush your net along the plants and lift up rocks and gently shake over net.
 - * Did you find some of the animals you thought of during your brainstorm session?
 - * Look for the aquatic macroinvertebrates too!
1. Place any bugs or animals found in your bucket. Feel free to sort in an ice cube tray.
2. Use the field guide included to identify what you caught. Or download the free Creek Critters app by the Audubon Naturalist Society.
5. Fill in the data collection sheet and determine the health of the water.
6. Discussion: What factors might influence the health of the water?
7. Release all the critters back to their home.

We'd love to see photos of your adventures with our weekly nature activities!

Send photos to jess@jacksonccb.com.



Aquatic Macroinvertebrates

Aquatic macroinvertebrate seems like a big word but by breaking it down, it is easier to understand.

Aquatic = lives in or near water

Macro = big enough to see with your eyes (you don't need a microscope = micro)

Invertebrate = animal without a backbone (95% of the animal kingdom are invertebrates!)

Why study aquatic macroinvertebrates?

Macroinvertebrates are easy to collect and identify, and can tell us the health of the water. They are called indicator species. Because they spend their whole life in the stream or pond, they are sensitive to changes in water quality. Different species have different levels of tolerance to pollution.

Contact Us

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Aquatic Invertebrate Data Collection Sheet

Sensitive to Pollution Group	Somewhat Sensitive Group	Tolerant of Pollution Group
<input type="checkbox"/> Caddisfly	<input type="checkbox"/> Alderfly	<input type="checkbox"/> Aquatic Worm
<input type="checkbox"/> Dobsonfly	<input type="checkbox"/> Backswimmer	<input type="checkbox"/> Black fly
<input type="checkbox"/> Mayfly	<input type="checkbox"/> Cranefly	<input type="checkbox"/> Flatworm
<input type="checkbox"/> Snail (not pouch)	<input type="checkbox"/> Crawdad	<input type="checkbox"/> Leech
<input type="checkbox"/> Stonefly	<input type="checkbox"/> Crawling Water Beetle	<input type="checkbox"/> Midge Fly
<input type="checkbox"/> Riffle Beetle	<input type="checkbox"/> Damselfly	<input type="checkbox"/> Mosquito
<input type="checkbox"/> Water Penny Beetle	<input type="checkbox"/> Dragonfly	<input type="checkbox"/> Pouch Snail
<input type="checkbox"/>	<input type="checkbox"/> Fingernail Clam	<input type="checkbox"/> Rat-tailed Maggot
<input type="checkbox"/>	<input type="checkbox"/> Giant Water Bug	<input type="checkbox"/> Water Scavenger Beetle
<input type="checkbox"/>	<input type="checkbox"/> Limpet	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Orbsnail	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Predaceous Diving Beetle	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Sowbug	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Scud	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Water Boatman	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Water Mite	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Water Scorpion	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Water Strider	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Whirligig Beetle	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1) Tally the number of Aquatic Invertebrates found in each group, then multiple by the number below and add each column to get (E) and (F).

Sensitive Group: _____ X 3 = _____

Somewhat Sensitive Group: _____ X 2 = _____

Tolerant Group: _____ X 1 = _____

Total: _____ (E) _____ (F)

Divide (F) by (E) to calculate your Index Score

_____ ÷ _____ = _____

2) How Healthy is the Stream?

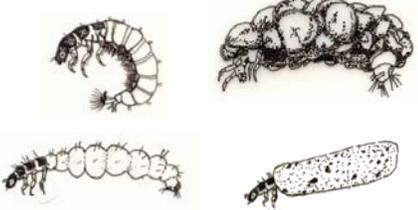
0.1 to 1 = Poor: population is dominated by tolerant Aquatic Invertebrates

1.01 to 2 = Fair

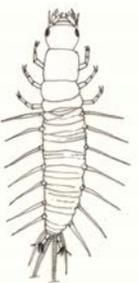
2.01 to 3 = Good: population is dominated by sensitive Aquatic Invertebrates but can include tolerant Aquatic Invertebrates

IOWATER BENTHIC MACROINVERTEBRATE KEY

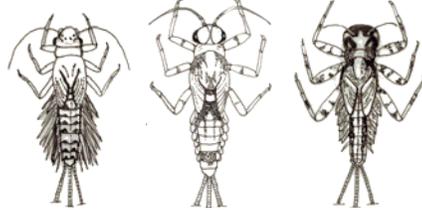
Pollution Intolerant (High Quality Group)



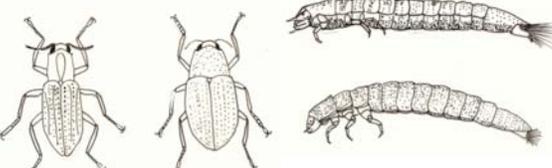
Caddisfly: 6 hooked legs on upper body, 2 hooks on end, may have stick, rock or leaf case, 2-40 mm in length.



Dobsonfly: 6 legs, 8 pairs of feelers and gill tufts on lower half of body, short antennae, 25-90 mm in length.



Mayfly: 6 legs, feathery or oval-shaped gills on lower body, 2 to 3 long tails, 3-30 mm in length.

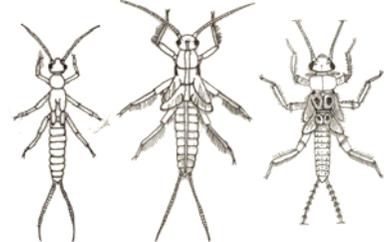



Riffle Beetle: Adult has 6 legs, body covered with tiny hairs, walks slowly underwater, 1-8 mm in length.

Larva has hard plates on each segment, 2-60 mm in length.



Snail (not pouch): When opening is facing you, shell opens on right, operculum (flap over opening) present.

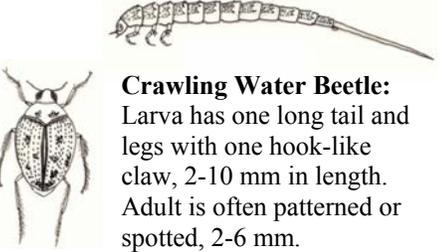


Stonefly: 6 legs with hooked tips, antennae, 2 tails, gill tufts under legs or no visible gills, 5-60 mm in length.

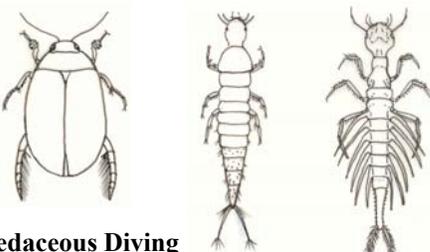


Water Penny Beetle: Flat saucer-shaped body, 6 tiny legs and gills on underside, 4-6 mm.

Somewhat Pollution Tolerant (Middle Quality Group)

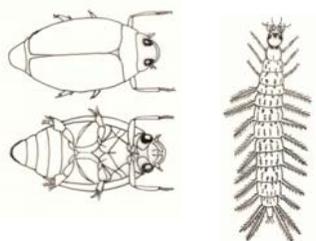


Crawling Water Beetle: Larva has one long tail and legs with one hook-like claw, 2-10 mm in length. Adult is often patterned or spotted, 2-6 mm.



Predaceous Diving Beetle: Adults have an oval streamlined body, longer antennae than Whirligig Beetle, 1-80 mm in length.

Larva has many hairs on body, two feathery tails, large head, 5-70 mm in length.



Whirligig Beetle: Flattened oval body, short, clubbed antennae, erratic swimmer, 3-15 mm.

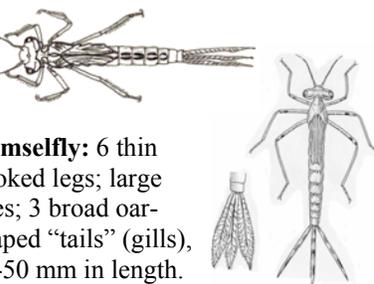
Larva has many hairs on body, short tail or no tail, up to 30 mm in length.



Backswimmer: Forelegs not as spoon-shaped as Water Boatman's, swims upside-down, body is V-shaped, 5-17 mm in length.



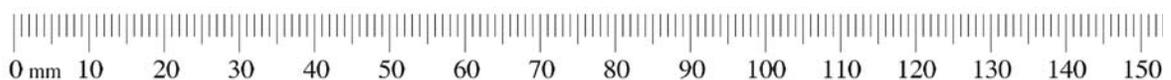
Water Boatman: Forelegs spoon-shaped and shorter compared to Backswimmer, 3-11 mm in length.



Damselfly: 6 thin hooked legs; large eyes; 3 broad oar-shaped "tails" (gills), 10-50 mm in length.



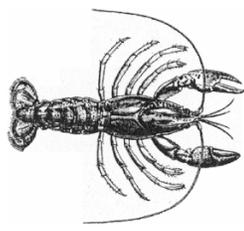
Dragonfly: Wide oval abdomen, 6 hooked legs, large eyes, 10-60 mm in length.



Somewhat Pollution Tolerant (Middle Quality Group) continued



Crane Fly: Milky, green, or light brown color, caterpillar-like segmented body, 4 finger-like lobes at back end, no visible head, 10-100 mm.



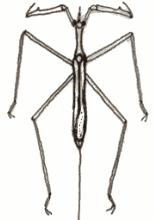
Crawdad: 2 large claws, 8 legs, up to 6 inches long.



Mussels/Clams: Fleshy body enclosed between 2 clamped shells (bivalve), 2-250 mm.



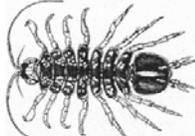
Scud: White to grey, more than 6 legs, swims sideways, body higher than wide, 5-20 mm



Water Scorpion: Raptor-like forelegs for catching prey, long breathing tube, stick-like long body, 15-45 mm.



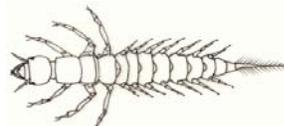
Giant Water Bug: Raptor-like forelegs for catching prey, leathery textured, oval body, 15-65 mm in length.



Sowbug: Gray body wider than it is high, more than 6 legs, 5-20 mm.



Water Strider: Slender body, long legs "walk" on water surface, 3-21 mm.



Alderfly: Looks like a small Dobsonfly but has one long tail and no gill tufts, 10-25 mm.



Orbsnail: One shell, coiled and flattened, a.k.a. rams-horn, 3-30 mm



Water Mite: 8 legs, round body, may be brightly colored, 2-3 mm

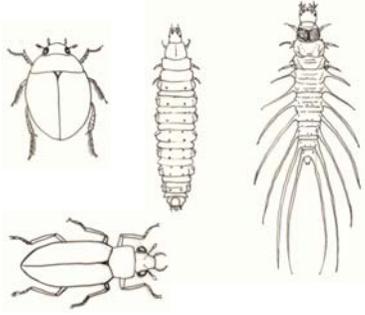


Limpet: One shell, not coiled, shaped like a flat cone 3-7 mm

Pollution Tolerant (Low Quality Group)



Mosquito: Head has small mouth brushes and short antennae; abdomen has breathing siphon, surfaces for air, 4-12 mm.



Water Scavenger Beetle: Adult may or may not be streamlined, most have no hairs on legs, short clubbed antennae, 1-40 mm. Larva have short antenna, 8 soft body segments, 4 -60 mm.



Pouch Snail: When opening is facing you, shell opens on the left, no operculum (flap over opening).



Black Fly: One end of body wider, black head and suction pad on other end, 3-12 mm.



Midge Fly: Small, dark head, 2 tiny legs on each end, 2-20 mm.

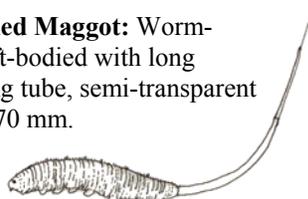
Bloodworm: One type of midge fly, has a red body due to hemoglobin.



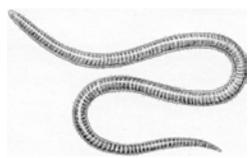
Flatworm (Planarian): Flat, soft-bodied worm with arrowhead-shaped head, 1-30 mm in length.



Leech: Brown, slimy body, suction pads on body, 5-400 mm.



Rat-tailed Maggot: Worm-like, soft-bodied with long breathing tube, semi-transparent skin, 4-70 mm.



Aquatic Worm: Thin, worm-like, 0.5-700 mm.

