

Benthic Macroinvertebrates

Listed from Most to Least Sensitive

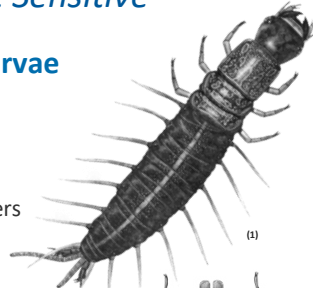
Hellgrammite (dobsonfly) larvae

Order: Megaloptera

Family: Corydalidae

Size: 10 - 90 mm

- Lateral appendages and large pincers



(1)

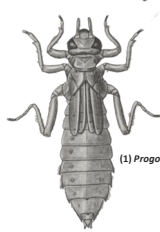
Clubtail Dragonfly

Order: Odonata

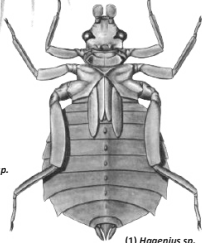
Family: Gomphidae

Size: 20 - 50 mm

- Large oval abdomen
- No external gills



(1) *Progomphus* sp.



(1) *Hogonius* sp.

Sensitive True Flies

Order: Diptera

Water Snipe Fly

Family: Athericidae

Size: 10 - 18 mm

- Tapered body, caterpillar-like pro- legs
- Pair of feathery filaments on back end



(1)

Net-winged Midge

Family: Blephariceridae

Size: 4-12 mm

- Flattened form
- Body divided into 7 sections



(1)



(2)

Dixid Midge

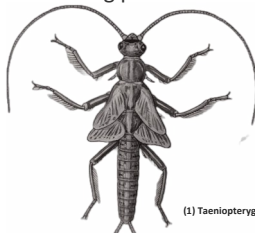
Family: Dixidae

Stonefly nymphs

Order: Plecoptera

Size: 5 - 30 mm

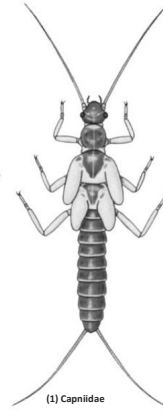
- Two tails
- Two sets of wing pads



(1) Taeniopterygidae



(1) Perlidae



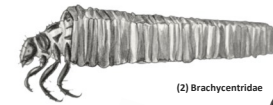
(1) Capniidae

Caddisfly larvae

Order: Trichoptera

Size: up to 25 mm cases

- Tube-case makers and free-living



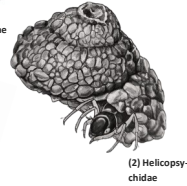
(2) Brachycentridae



(1) Leptoceridae



(1) Hydropsychidae



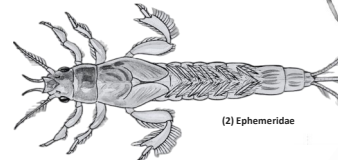
(2) Helicopsychidae

Mayfly nymphs

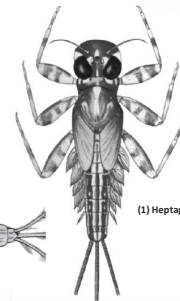
Order: Ephemeroptera

Size: 2 - 20 mm

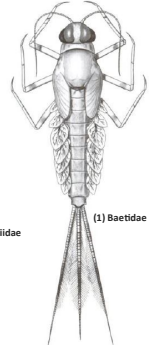
- Three long, hair-like tails
- One set of wing pads



(2) Ephemeridae



(1) Heptageniidae



(1) Baetidae

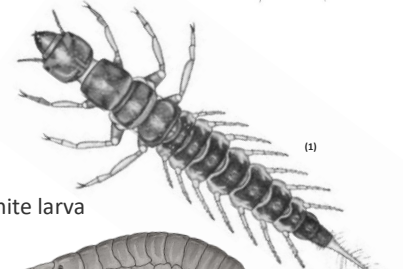
Alderfly larvae

Order: Megaloptera

Family: Sialidae

Size: 10 - 25 mm

- Lateral appendages
- Looks like a small hellgrammite larva



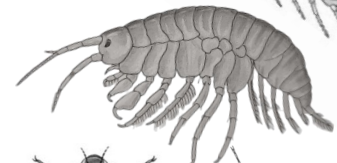
(1)

Scuds

Order: Amphipoda

Size: 5 - 20 mm

- Resembles tiny shrimp



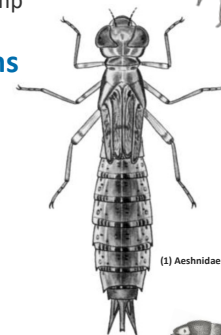
(2)

Dragonfly nymphs

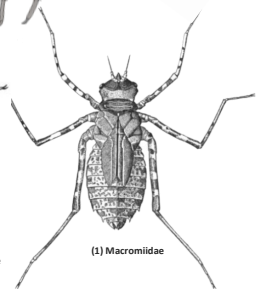
Order: Odonata

Size: 10 - 40 mm

- Large eyes
- Long oval abdomen



(1) Aeshnidae



(1) Macromiidae

Beetles

Order: Coleoptera

Size: 1 - 30 mm

- Diverse in appearance
- Adults have hardened bodies, shell-like

Pictured:

a. Riffle beetle larvae & adult

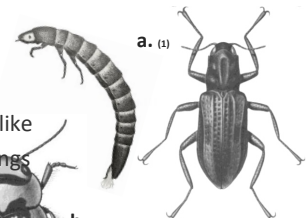
Family: Elmidae

b. Diving beetle

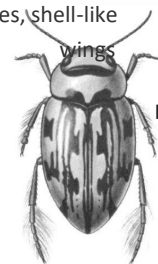
Family: Dytiscidae

c. Water penny beetle

Family: Dytiscidae



a. (1)

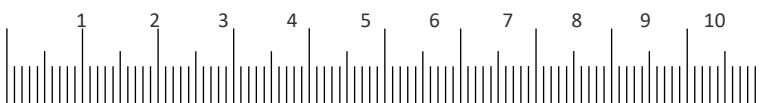


b. (1)



c. (2)

Scale in centimeters (Select "Actual Size" as page size when printing PDF for accurate scale)



Somewhat Sensitive True Flies

Order: Diptera

Black fly larvae

Family: Simuliidae

Size: 3 - 15 mm

- Body bulbous at one end
- Constricted in the middle



Crane fly larvae

Family: Tipulidae

Size: 3 - 100 mm

- Plump, caterpillar-like body
- No legs, small lobes at back end



Midge larvae

Family: Chironomidae

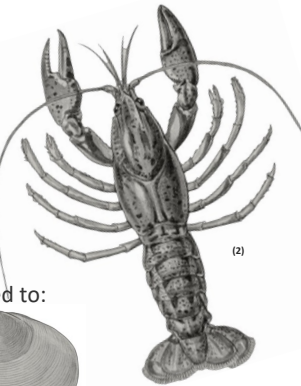
Size: 2 - 10 mm

Crayfish

Order: Decapoda

Size: up to 15 cm

- Crustacean, resembles small lobster



Bivalves and Snails

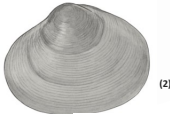
- Highly diverse, includes but not limited to:

Fingernail Clam

Class: Bivalvia

Size: 2 - 10 mm

- Thin shells, usually light colored

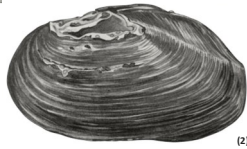


Mussels

Class: Bivalvia

Size: 30 - 250 mm

- Thick shells, usually oblong



Snails

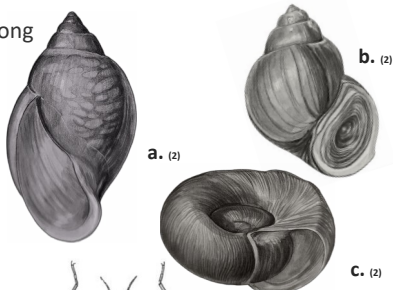
Pictured:

a. Left-handed snail

Family: Physidae

b. Right-handed snail

Family: Viviparidae

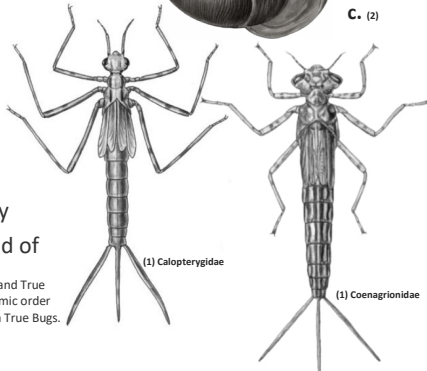


Damselfly nymphs*

Order: Odonata

Size: 13 - 40 mm

- Large eyes, slender body
- Three oar-like gills at end of



* To fit the content into the space, Damselflies and True Bugs were switched in the layout. At the taxonomic order level, Damselflies are slightly more tolerant than True Bugs.

True Bugs*

Order: Hemiptera

- Highly diverse in appearance
- Adults have elongate, sucking

Pictured:

a. Water Strider

Family: Gerridae

b. Back-swimmer

Family: Notonectidae

c. Water Boatman

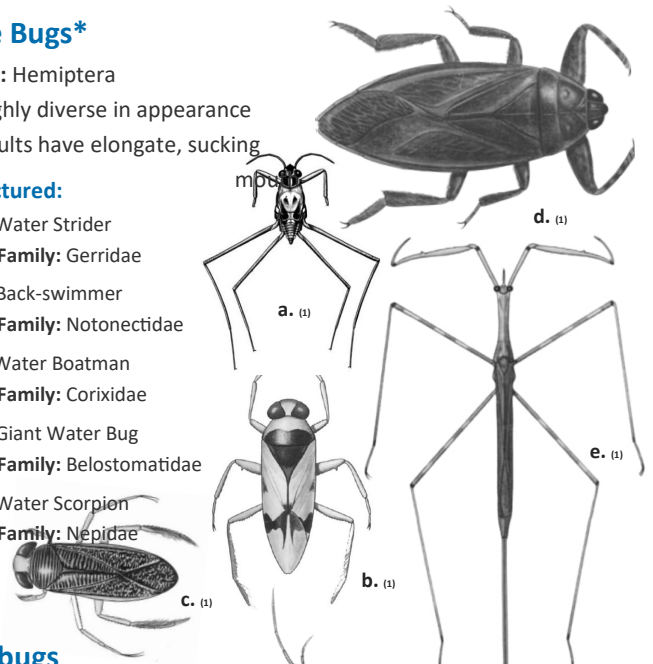
Family: Corixidae

d. Giant Water Bug

Family: Belostomatidae

e. Water Scorpion

Family: Nepidae



Sowbugs

Order: Isopoda

Size: 5 - 20 mm

- Segmented, flat body
- Many legs, antennae



Tolerant True Flies

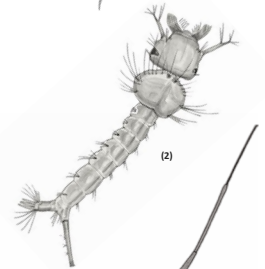
Order: Diptera

Mosquito

Family: Culicidae

Size: 4 - 18 mm

- Distinct head separate from thorax
- Brushes on head and sides of mouth

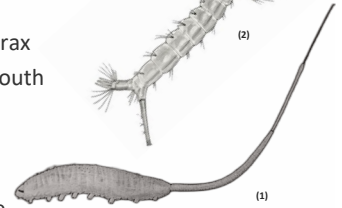


Rat-tailed Maggot

Family: Syrphidae

Size: 4 - 16 mm w/o breathing tube

- Body fat, rounded
- Long breathing tube at end of abdomen



Soldier Fly

Family: Stratiomyidae



Aquatic Worms

Class: Oligochaeta

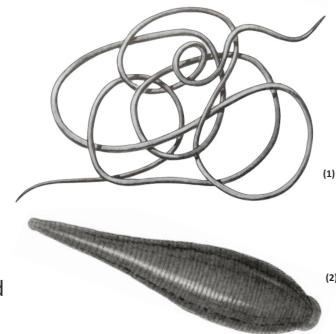
Size: usually 1 - 30 mm, up to 150 mm

Leeches

Class: Hirudinea

Size: 1 - 450 mm fully extended

- External striations (stripes)



References for Images:

1. McCafferty, W.P. 1998. Aquatic Entomology. The Fisherman's and Ecologists Illustrated Guide to Insects and Their Relatives. Science Book International, Boston, MA.
2. Voshell, J.R. 2002. A Guide to Common Freshwater Invertebrates of North America. The McDonald & Woodward Publishing Company, Blackburg, VA
3. Kate Laramie. 2023. Sowbug. [graphite pencil]. Huron River Watershed Council. Ann Arbor, MI.



Michigan Clean
Water Corps