



# Stream Macroinvertebrates



John R Griffin, Secretary

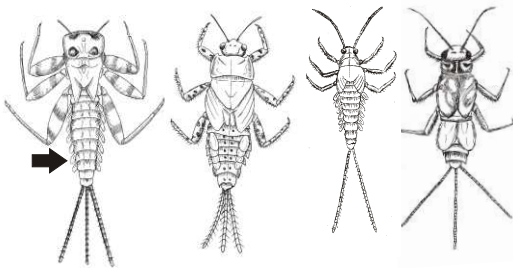
Maryland Department of Natural Resources

Martin O'Malley, Governor

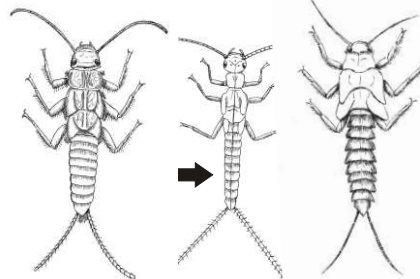
Relative abundances in Maryland are indicated by "rare", "common", or "abundant". The number of families in Maryland for higher taxonomic levels are also listed (if applicable). Sizes are for "full grown" animals. To learn more about these fascinating creatures, go to <http://www.dnr.maryland.gov/bay/cblife/insects/index.html>. To learn about DNR's volunteer stream monitoring program, Maryland Stream Waders, send an inquiry to [streamwaders@dnr.state.md.us](mailto:streamwaders@dnr.state.md.us).

## SENSITIVE ORGANISMS

POLLUTION-SENSITIVE ORGANISMS TYPICALLY FOUND IN HEALTHY STREAMS



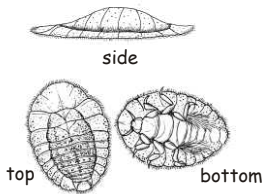
**Mayfly: Order Ephemeroptera-** Plate-like or feathery gills on sides of lower body (arrow); three (sometimes 2) long, hair-like tails; 1"; abundant; 11 families.



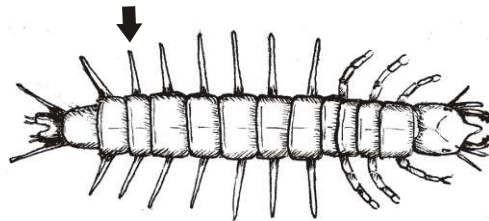
**Stonefly: Order Plecoptera-** Two hair-like tails; six jointed legs with two hooked tips each; big antennae; no gills on lower half of body (arrow); 1½"; abundant; 9 families.



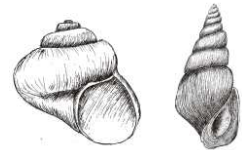
**Caddisfly: Order Trichoptera-** Six jointed, hooked legs just behind head; 2 hooks at back end; may be in a case made of stones, leaves or sticks; non-net-spinning caddisflies have no bushy gills along bottom; 1"; abundant; 20 families.



**Water Penny: Order Coleoptera-** shaped like a tiny, grey, oblong frisbee; 6 tiny legs on bottom; slow crawler; ½"; common.



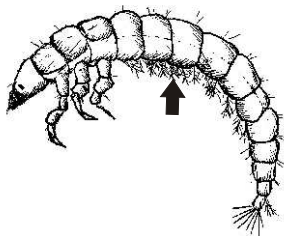
**Hellgrammite and Fishfly: Order Megaloptera-** dark body; six jointed legs; large, pinching jaws; many pointed feelers along edge of body (arrow); two small hooks at back end; hellgrammites have feathery tufts of gills along side of body; 4"; rare.



**Gilled Snail: Class Gastropoda-** shell opens on the right and is covered by a hard shield-like operculum; 1"; rare; 4 families.

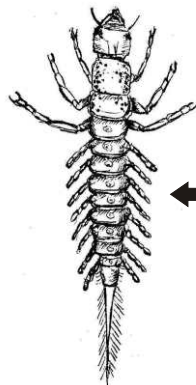
## MODERATELY-SENSITIVE ORGANISMS

MODERATELY POLLUTION-SENSITIVE ORGANISMS FOUND IN HEALTHY OR FAIR QUALITY STREAMS



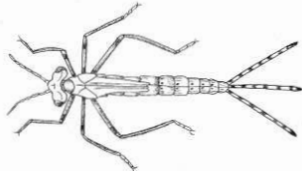
**Net-spinning Caddisfly: Order Trichoptera-** six jointed, hooked legs just behind head; 2 hooks at back end; bushy gills along lower half (arrow); 1"; abundant.

**Alderfly: Order Megaloptera-** six jointed legs; pinching jaws; many pointed feelers along edge of body (arrow); long tail at the end; 1"; rare.

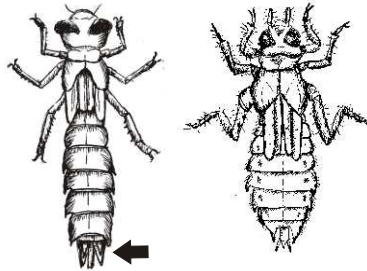
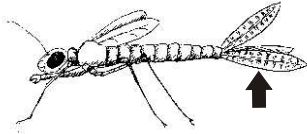


**Crane Fly: Order Diptera-** worm-like; no jointed legs; head hidden inside the light brown body; 4 finger-like lobes at back end (arrow); 2"; abundant.

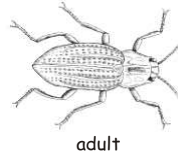
## MODERATELY-SENSITIVE ORGANISMS (continued)



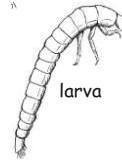
**Damselfly:** Order Odonata- 6 long, thin legs; 3 broad oval tails at end (arrow); may have wing pads; no gills along sides of body; 2"; common; 3 families.



**Dragonfly:** Order Odonata- large eyes; bullet-shaped, round or leaf-like body; 6 long legs; 3 short-spike-like tails (arrow); may have wing pads; 2"; common; 6 families.

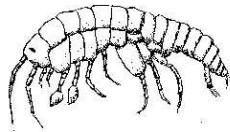


adult

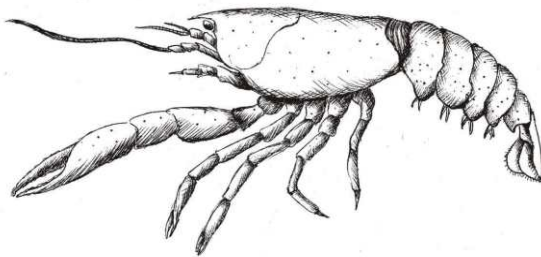


larva

**Riffle Beetle:** Order Coleoptera - 6 jointed legs; brown or black; adults have hard covering over the wings, body with fairly hard covering; 3/8"; abundant.

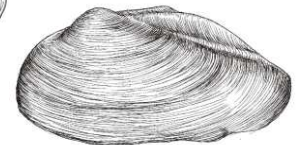


**Crayfish:** Order Decapoda- 8 walking legs and 2 pinching claws; 6"; abundant.



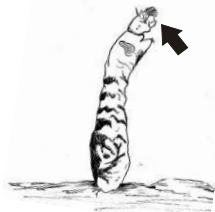
**Scud:** Order Amphipoda - white to gray; more than six legs; swims on its side; looks like a small shrimp; 1/4"; abundant; 3 families.

**Clams and mussels:** Class Bivalvia - two hinged hard shells; 5"; rare; 2 families.



## TOLERANT ORGANISMS

POLLUTION-TOLERANT ORGANISMS FOUND IN HEALTHY, FAIR OR POOR QUALITY STREAMS



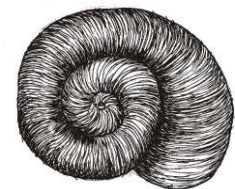
**Black Fly:** Order Diptera - shaped like a little bowling pin; black head with tiny bristles for filtering food (arrow); suction pad on end; no jointed legs; 1/2"; abundant.



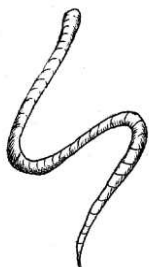
**Non-biting Midge:** Order Diptera - dark head; body white, gray or reddish; worm-like segmented body; 2 tiny unjointed legs on both ends (arrow); 1/2"; abundant.



**Leech:** Order Hirudinea - brown or grey, slimy, suction pads on both ends (arrow); 2"; rare; 3 families.



**Ramshorn Snails:** Class Gastropoda - No hard cover over opening; shell coiled in one plane; 1/2"; common.



**Aquatic worm:** Class Oligochaeta - thin and hairlike or thicker like an earthworm; 2 1/2"; common; 8



**Pouch Snail:** Class Gastropoda - shell opens on the left; no hard covering over shell opening; 3/4"; common.

