

Select aquatic insect families

Coleoptera

Head has thick hardened skin; thorax and abdomen of most adult families have moderately hardened skin, several larvae have a soft-skinned abdomen; no wing pads on the thorax in most larvae, but wing pads are usually visible on adults; three pairs of segmented legs attach to the thorax; no structures or projections extend from the sides of the abdomen in most adult families, but some larval stages have flat plates or filaments; no prolegs or long tapering filaments at the end of the abdomen. Beetles are one of the most diverse the insect groups, but are not as common in aquatic environments. Most of the adult stages of the families listed are aquatic or semi-aquatic.

Dryopidae
Dytiscidae

Elmidae
Haliplidae

Hydrophilidae
Psephenidae

Scirtidae

Diptera

Head may be a capsule-like structure with thick hard skin; head may be partially reduced so that it appears to be part of the thorax, or it may be greatly reduced with only the mouthparts visible; no wing pads occur on the thorax; false-legs (pseudo-legs) may extend from various sections of the thorax and abdomen in some families; no segmented legs in the larval forms; thorax and abdomen composed of entirely soft skin, but some families have hardened plates scattered on various body features. Note: Larval stages do not have legs.

Athericidae
Blephariceridae
Ceratopogonidae
Chaoboridae

Chironomidae
Culicidae
Dixidae
Empididae

Ephydriidae
Psychodidae
Ptychopteridae
Simuliidae

Stratiomyidae
Syrphidae
Tabanidae
Tipulidae

Ephemeroptera

Wing pads may be present on the thorax; three pairs of segmented legs attach to the thorax; one claw occurs on the end of the segmented legs; gills occur on the abdominal segments and are attached mainly to the sides of the abdomen, but sometimes extend over the top and bottom of the abdomen; gills consist of either flat plates or filaments; three long thin caudal (tails filaments) usually occur at the end of the abdomen, but there may only be two in some kinds.

Baetidae
Baetiscidae
Caenidae

Ephemerellidae
Ephemeridae
Heptageniidae

Isonychiidae
Leptohiphidae
Potamanthidae

Siphonuridae

Megaloptera

Head and thorax has thick hardened skin, while the abdomen has thin soft skin; prominent chewing mouthparts project in front of the head; no wing pads on the thorax; three pairs of segmented legs attach to the thorax; seven or eight pairs of stout tapering filaments extend from the abdomen; end of the abdomen has either a pair of prolegs with two claws on each proleg, or a single long tapering filament with no prolegs.

Corydalidae

Sialidae

Odonata

Anisoptera: Lower lip (labium) is long and elbowed to fold back against the head when not feeding, thus concealing other mouthparts; wing pads are present on the thorax; three pairs of segmented legs attach to the thorax; no gills on the sides of the abdomen; three pointed structures may occur at the end of the abdomen forming a pyramid shaped opening; bodies are long and stout or some- what oval. Zygoptera: Three flat gills at the end of the abdomen forming a tail-like structure and their bodies are long and slender.

Aeshnidae
Calopterygidae

Coenagrionidae
Cordulegastridae

Gomphidae
Lestidae

Libellulidae

Plecoptera

Long thin antenna project in front of the head; wing pads usually present on the thorax but may only be visible in older larvae; three pairs of segmented legs attach to the thorax; two claws are located at the end of the segmented legs; gills occur on the thorax region, usually on the legs or bottom of the thorax, or there may be no visible gills (usually there are none or very few gills on the abdomen); gills are either single or branched filaments; two long thin tails project from the

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rear of the abdomen. The order Plecoptera has low tolerance to many insults; however, several families are tolerant of slightly acidic conditions.

Capniidae
Chloroperlidae

Leuctridae
Nemouridae

Perlidae
Perlodidae

Pteronarcyidae
Taeniopterygidae

Trichoptera

Head has a thick hardened skin; antennae are very short, usually not visible; no wing pads occur on the thorax; top of the first thorax always has a hardened plate and in several families the second and third section of the thorax have a hardened plate; three pairs of segmented legs attach to the thorax; abdomen has a thin soft skin; single or branched gills on the abdomen in many families, but some have no visible gills; pair of prolegs with one claw on each, is situated at the end of the abdomen; most families construct various kinds of retreats consisting of a wide variety of materials collected from the streambed. [Click-here](#) to learn more.

Brachycentridae
Glossosomatidae
Helicopsychidae
Hydropsychidae

Hydroptilidae
Lepidostomatidae
Leptoceridae
Limnephilidae

Molannidae
Philopotamidae
Phryganeidae
Polycentropodidae

Rhyacophilidae
Uenoidae

Note: Does not include the insect order [Hemiptera](#) and [Lepidoptera](#).

Resources

University of Wisconsin Extension Service. Water Action Volunteers: [macroinvertebrate information](#)
More information at: <http://www.dep.wv.gov/WWE/getinvolved/sos/Pages/Benthics.aspx>