

Alderflies & Hellgrammites (Megaloptera)

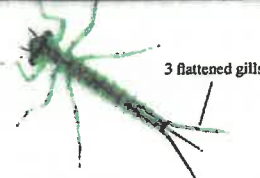


Alderfly (10-25 mm)
 Family: Sialidae
 • pair of large gill filaments on first seven abdominal segments
 • abdomen ends with single filament



Hellgrammite: Dobsonfly/Fishfly larva (25-90 mm)
 Family: Corydalidae
 • large gill filaments along abdomen
 • 2 prolegs at end of abdomen, each with pair of claws

Damselflies & Dragonflies (Odonata)



Damselfly (12-25 mm)
 Suborder: Zygoptera
 • long, thin body with wide head
 • 3 flattened, feather-like gills at end of abdomen



(Darter) Dragonfly (30-40 mm)
 Suborder: Anisoptera (Fm: Aeshnidae)
 • elongated body
 • end tapers to a point
 • slender antenna segments



(Clubtail) Dragonfly (20-42 mm)
 Suborder: Anisoptera (Fm: Gomphidae)
 • wide, somewhat flattened body
 • end of abdomen often rounded
 • cylindrical or oval antennae

Riffle Beetles (Coleoptera)

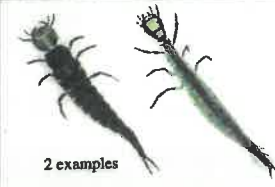


Riffle Beetle larvae (3-8 mm) 3 examples
 Family: Elmidae
 • small, elongated body covered with hardened plates
 • 6 short legs attach beneath thorax; one claw at end of each leg
 • posterior opening contains gill tufts, often concealed by hinged covering



Riffle Beetle adult (1-8 mm)
 Family: Elmidae
 • small oval bodies
 • 6 legs, each ends with 2 claws
 • crawls along bottom of tray

Predaceous Diving Beetles (Coleoptera)



Predaceous Beetle larva (2-70 mm)
 Family: Dytiscidae
 • large, sharp, front-projecting curved jaws
 • abdomen narrows to a point



Predaceous Beetle adult (3-25 mm)
 Family: Dytiscidae
 • long, slender antennae
 • hairs on middle and hind legs
 • swims rapidly in sample tray

Other Beetles (Coleoptera)



Water Penny (3-10 mm)
 Family: Psephenidae
 • oval body covering of flat plates
 • tan to brown in color
 • head and legs hidden underneath

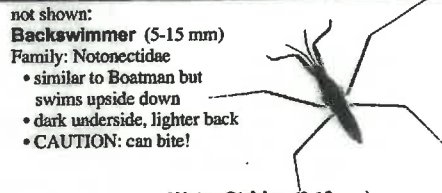


Whirligig Beetle (3-16 mm)
 Family: Gyrimidae
 • black, oval body
 • whirls around on top of water
 • eyes see above & below surface



Water Boatman (3-11 mm)
 Family: Corixidae
 • slightly elongated oval body; wings form X
 • wavy yellow lines across dark back
 • oar-like legs fringed with hair

True Bugs (Hemiptera)



not shown:
Backswimmer (5-15 mm)
 Family: Notonectidae
 • similar to Boatman but swims upside down
 • dark underside, lighter back
 • CAUTION: can bite!

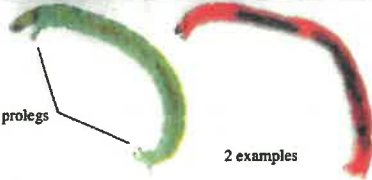
Water Strider (3-18 mm)
 Family: Gerridae
 • tiny oiled leg hairs & wide stance keep strider on top of water
 • front legs grab & beak pierces prey

Mosquitoes (Diptera)



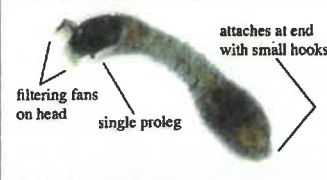
Mosquito (4-18 mm)
 Family: Culicidae
 • brushes of hair on sides of mouth
 • swollen (enlarged) thorax
 • breathing tube at end of abdomen

Midges (Diptera)



Midge (2-20 mm)
 Family: Chironomidae
 • thin, elongated body with prolegs at each end
 • varied colors (green, brown, tan, red)
 • distinct, capsule-like head

Black Flies (Diptera)



Black Fly (5-8 mm)
 Family: Simuliidae
 • brownish body; shaped like a bowling pin
 • 2 retractable filter fans on head
 • 1 proleg on first thoracic segment

Crane Flies (Diptera)



Crane Fly (10-25+ mm)
 Family: Tipulidae
 • fleshy bodies; head usually concealed in thorax
 • some have swollen areas; some have fleshy prolegs
 • abdomen ends with fleshy lobes (number varies)

Mites (Arachnida)



Water Mite (1-3 mm)
 Order: Acariformes (Hydracarina)
 • looks like a small, moving (red, grey, or green) dot
 • round body with 8 legs

Scuds (Crustacea)



Scud/Sideswimmer (5-20 mm)
 Order: Amphipoda
 • curved, shrimp-like body
 • flattened from side-to-side
 • swims or crawls on its side

Sow Bugs (Crustacea)



Aquatic Sow Bug (5-20 mm)
 Order: Isopoda
 • tan, brown or grayish body
 • flattened from top-to-bottom
 • crawls flat on bottom of tray

Crayfish (Crustacea)



Crayfish (10-150 mm)
 Order: Decapoda
 • 5 pair of legs, includes 2 large claws
 • hard exoskeleton; jointed abdomen
 • broad flipper at end of abdomen

Segmented Worms (Annelida)



Aquatic Earthworm (1-30+ mm)
 Class: Oligochaeta
 • long, tubular, segmented body
 • white, brown or reddish in color
 • tiny bristles extend from segments



Leech (4-100+ mm)
 Class: Hirudinea
 • elongated, segmented body
 • colors & patterns vary
 • 2 suckers - one at front & one at rear

Flatworms



Flatworm/Planaria (5-20 mm)
 Class: Turbellaria
 • soft, flattened, unsegmented body
 • may have eyespots or "arrow" head
 • glides smoothly along tray bottom

Snails (Mollusca)



Gilled Snail (2-70 mm)
 Class: Gastropoda
 • coiled shell tapers to point
 • right-side opening (narrow end up)
 • hard plate covers opening



Lunged/Pouch Snail (5-20 mm)
 Class: Gastropoda
 • coiled shell tapers to point
 • left-side opening (narrow end up)
 • no hard plate covers opening

Limpets (Mollusca)



Limpet (3-7 mm)
 Class: Gastropoda
 • single, low, dome-shaped shell
 • shell is usually dark
 • soft body and foot underneath

Clams & Mussels (Mollusca)



Clam (Fingemal: 2-10 mm; Asian: 35-50 mm)
 Class: Bivalvia
 • 2 shells attached at hinge with soft body inside
 • Fingemal clam is small & smooth shelled
 • Asian (non-native) is larger with ridges on shell

Mussel (30-250 mm)
 Class: Bivalvia
 • some may live 100 years

Freshwater Macroinvertebrates

from Streams in Western Washington and Western Oregon

Caddisflies (Trichoptera)

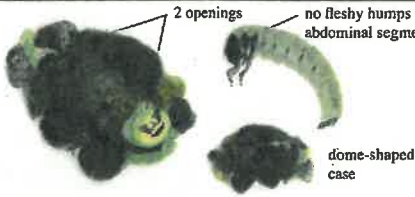
Caddisfly larvae characteristics: 6 legs; soft fleshy abdomen with 2 claws on last (posterior) segment; hair-like gills may be visible along sides or beneath abdomen; some caddisflies build portable cases from plant material, sand, or small stones; some caddisflies build fixed shelters (called retreats) attached to rocks or submerged logs; some caddisflies are "free-living" (they don't build cases or retreats)



Northern Case-maker (20-30 mm)

Family: Limnephilidae

- diverse group of case-maker caddisflies
- cases are large (length: 25-50 mm)
- outside of case is made of gravel and/or large pieces of plant material (leaves, sticks, fir needles, ...)



Saddle-case-maker (3-10 mm)

Family: Glossosomatidae

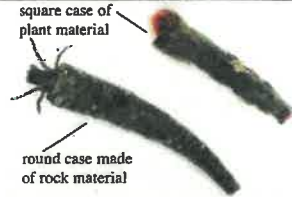
- small, oval, dome-shaped case (3-12 mm) with 2 openings (head & end of abdomen) on underside
- light body; head, legs & small plate on end are dark



Humpless Case-maker (8-11 mm)

Family: Brachycentridae

- case of plant material is round or square in cross section
- abdomen lacks fleshy humps on top & sides of 1st abdominal segment

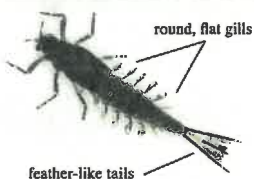


Lepidostomatid Case-maker (7-13 mm)

Family: Lepidostomatidae

- round case of sand particles, or 4-sided case of leaf/bark pieces, or spiraling case of plant matter

Mayflies (Ephemeroptera)



Ameletid Minnow (5-13 mm)

Family: Ameletidae

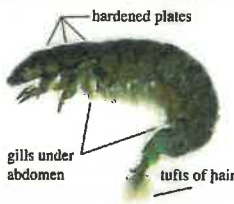
- torpedo-shaped body
- round, flat gills along abdomen
- short antennae & 3 feathery tails



Prong-gill (4-15 mm)

Family: Leptophlebiidae

- torpedo-shaped body
- hair-like gills (with split ends)
- some have pair of tusks projecting from front of head (not shown)



Net-spinner (12-18 mm)

Family: Hydropsychidae

- plates on top of 3 thoracic segments
- gills on underside of abdomen
- tufts of hair on both posterior legs



Finger-net (12-18 mm)

Family: Philopotamidae

- usually yellowish body & tan head
- 2nd & 3rd thoracic segments soft
- upper lip is soft, fleshy & T-shaped



Free-living (10-30 mm)

Family: Rhyacophilidae

- also called "Green Rock Worm"
- active predators with curved jaws
- no plates on thoracic segments 2 & 3

Mayflies (Ephemeroptera)

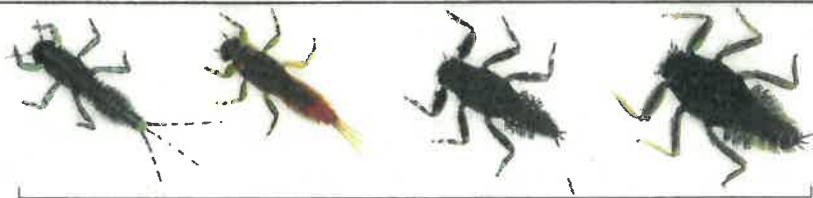
Mayfly larvae characteristics: diverse group of aquatic insect larvae with gills along the abdomen; 2 or 3 tails; 2 (visible) thoracic segments; 1 pair of wing pads (not visible on young larvae); 6 legs with single tarsal claw at the end of each leg



Small Minnow (3-12 mm)

Family: Baetidae

- torpedo-shaped body with round, flat gills along the sides of the abdomen
- 2 or 3 tails; middle tail (if present) often shorter than others; antennae 3X head width
- many swim, then float in "drift posture" (legs spread and abdomen arched)



Spiny Crawler (3-15 mm)

Family: Ephemerellidae

- diverse group of mayflies with varying colors, markings, and body shapes; many have dark band(s) across tails
- most have stout (sturdy-looking) bodies, with heads that are narrower than the thorax
- gills may flutter while mayfly is resting; gills not present on 1st and 2nd abdominal segments

Stoneflies (Plecoptera)

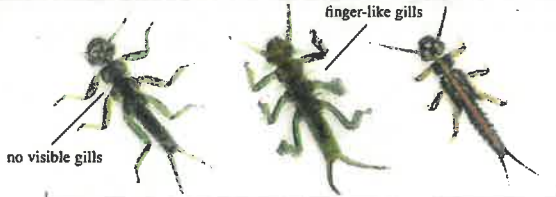
Stonefly larvae characteristics: 3 distinct thoracic segments; gills, if visible, are on the neck, thorax, or sometimes between the tails - none along the sides of abdomen; all have 2 tails (cerci); 2 pair of wing pads (not visible on young larvae); 6 legs with two tarsal claws at the end of each leg



Golden (15-30 mm)

Family: Perlidae

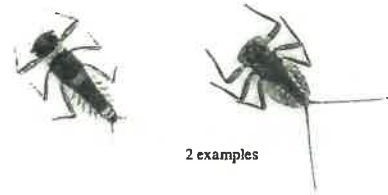
- grow to become large, predatory macros
- "hairy" gills on thorax between legs; some with gills between tails (may be difficult to see on young larvae)



Little Yellow (5-26 mm)

Family: Perlodidae

- diverse group of stoneflies that look similar to Golden but have no "hairy" gill clusters between legs (may have 1 or 2 finger-like gills)
- tails are as long or longer than abdomen



Flat-headed (5-20 mm)

Family: Heptageniidae

- head is wider than body; large eyes on top of head
- bodies flattened from top to bottom; legs often spread to the side
- may have 2 or 3 long tails; color & markings vary
- oval gills along abdomen, some species with "tufts" at base of gills

Stoneflies (Plecoptera)



Little Brown (3-9 mm)

Family: Nemouridae

- small, brownish bodies
- wing pads angle outward (if present)
- most have gills attached at throat



Little Green (5-18 mm)

Family: Chloroperlidae

- long abdomen, short tails
- oval shaped wing pads (if present)



Slender Winter (5-10 mm)

Family: Capniidae

- long, slender abdomen, generally wider near the middle
- long tails and antennae



Giant (15-50 mm)

Family: Pteronarcyidae

- large, dark stonefly with short tails
- white gills on underside of thorax & first two abdominal segments



Roach-like (6-11 mm)

Family: Peltoperlidae

- small, brown, flattened body
- broad, roach-like appearance
- relatively short legs & tails

