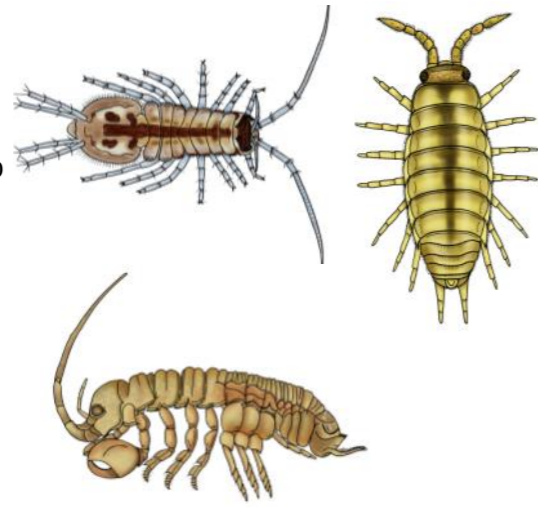


### Isopoda (Freshwater slater)

**Very Tolerant**

**Description:** Flattened from top to bottom with no body carapace. Slow movement. Up to 7mm.

**Habitat:** Wetlands and river edges.

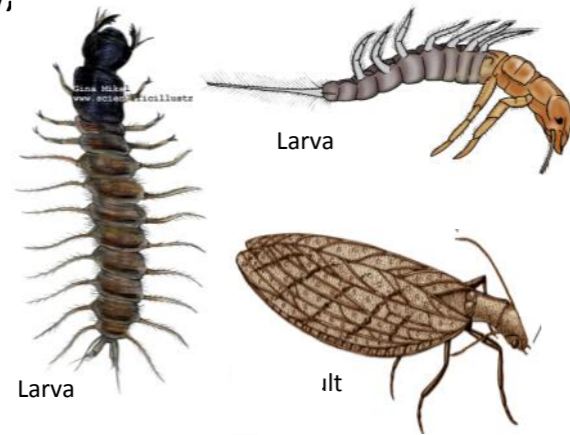


### Megaloptera (Dobson fly; Alder fly; Toebiters)

**Very Sensitive**

**Description:** Slow deliberate crawl. Dark brown microspines. Up to 35mm.

**Habitat:** Fast flowing stony rivers.



### Nematoda (roundworms)

**Moderately tolerant**

**Description:** Thin elongated worms without segments. Can be transparent. Thrashing coiling/uncoiling movement. Can be confused with Gordian worms. Up to 12mm.

**Habitat:** Burrow into the substrate.

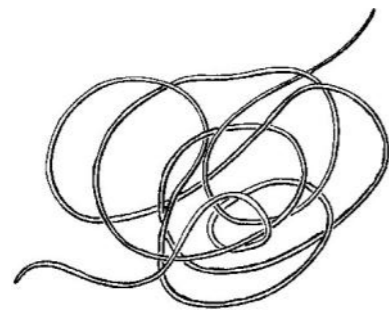


### Nematomorpha (Gordian worms)

**Sensitive**

**Description:** Long thin parasitic worm up to 1 metre long.

**Habitat:** Adults are free living in aquatic environments.

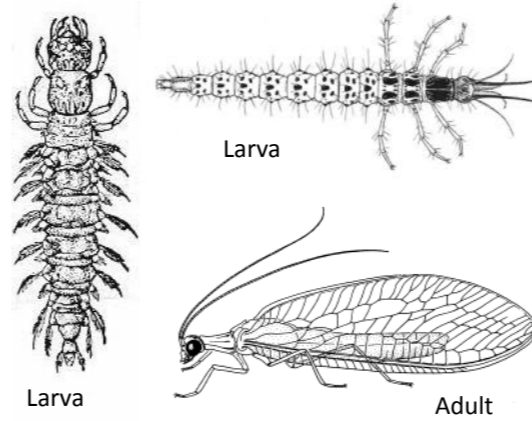


### Neuroptera (Lacewings)

**Sensitive**

**Description:** Distinct neck and jaw with very fast or very slow movement. Confused with beetle larvae. Up to 20mm.

**Habitat:** Fast flowing streams

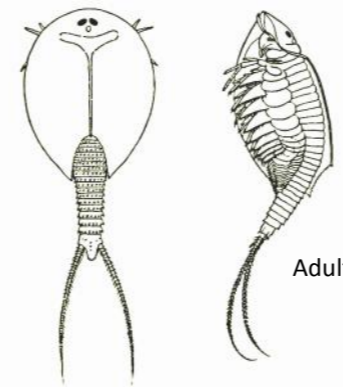


### Notostraca (Tadpole shrimp; Shield shrimp)

**Very Tolerant**

**Description:** Shell-shaped dorsal shield that covers elongated body. Up to 35mm.

**Habitat:** Burrow into soft substrate.

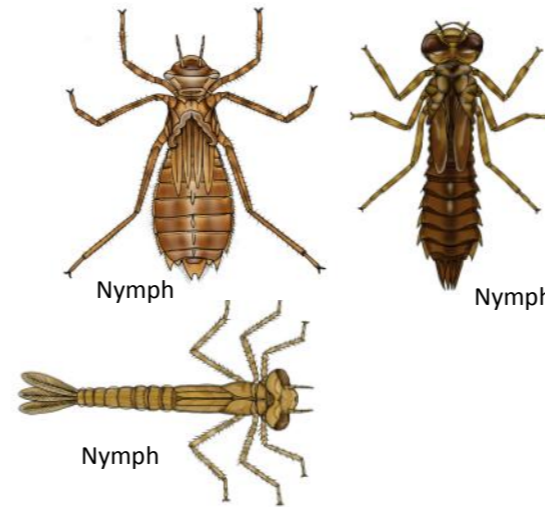


### Odonata (Dragonfly nymph)

**Moderately tolerant**

**Description:** Stout bodies, no external gills and extendable mouth parts. Between 12-50mm.

**Habitat:** Found within the substrate and vegetation of rivers and streams.



### Oligocheata (Freshwater worm)

**Very Tolerant**

**Description:** Segmented worm with rounded ends, no suckers or legs and usually red or flesh coloured. Up to 30mm.

**Habitat:** Found in soft sediment rich in organic matter.

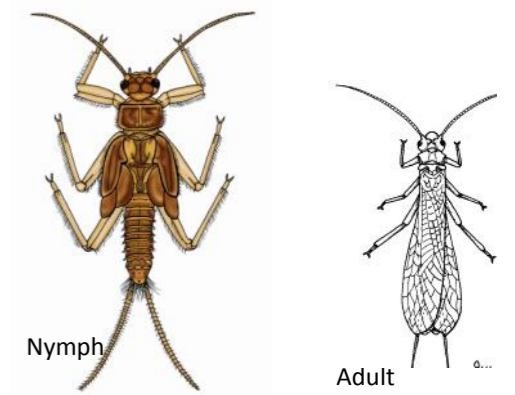


### Plecoptera (Stonefly nymph)

**Very Sensitive**

**Description:** Two thin tails and gills extending from their abdomen. Shimmy from side to side. Between 7-12mm

**Habitat:** Found among stones or plants in fast moving waters.

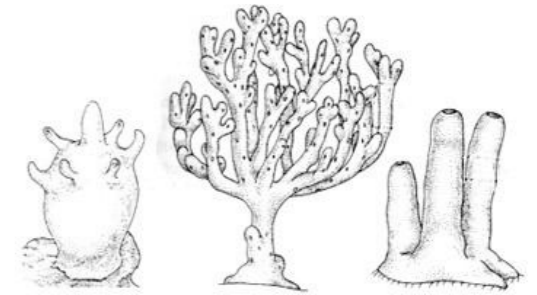


### Porifera (Freshwater sponge)

**Moderately tolerant**

**Description:** Bodies filled with holes or pores for water circulation. Colour is grey, brownish or yellowish. Individuals are 5-10mm that form large colonies.

**Habitat:** Form a mat-like colony on underside or edges of submerged rocks or wood.

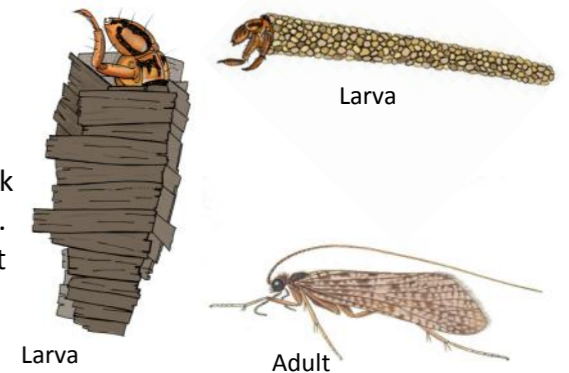


### Trichoptera (Caddisfly Larva)

**Very Sensitive**

**Description:** Often enclosed within a case of twigs, plant material or silk. Rocks head back and forth to move. Up to 20mm.

**Habitat:** Found among sediment and rocks in streams and ponds.



### Turbellaria (Flatworms)

**Very Tolerant**

**Description:** Primitive body plan. Flat with ribbon or leaf-like body. Slow moving. Between 6-20mm.

**Habitat:** Prefer the dark. Found in submerged leaf litter or under rocks.



## Water Bug Detective Guide

Common Water Bugs

### Acarina (Water mite)

**Sensitive**

**Description:** Simple round body with eight legs. Can be confused with Ostracods. Up to 5mm.

**Habitat:** Plants or stones on stream bed in standing or slow moving water.

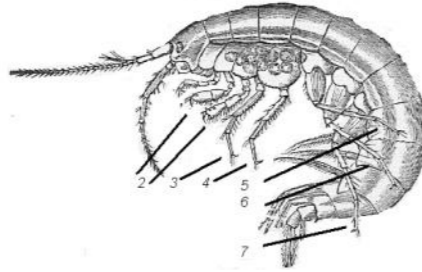


### Amphipoda (Side-swimmers, scuds)

**Moderately tolerant**

**Description:** Rests on its side and swims in swift bursts. Up to 15mm.

**Habitat:** Wetlands and edges of slow moving water.

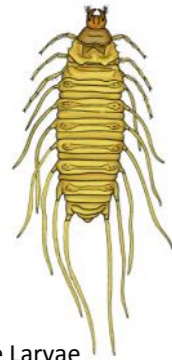


### Coleoptera (Beetles; eg. Riffle beetles, Whirligigs)

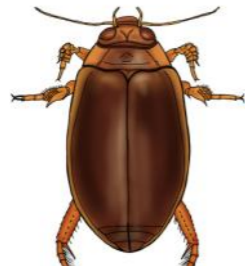
**Moderately tolerant**

**Description:** Small head, rounded back, smooth swimming action. Between 5-40mm.

**Habitat:** Flowing waters, found on detritus, river edge.



Beetle Larvae



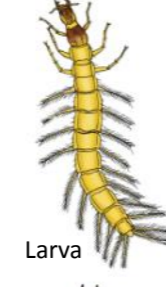
Diving Beetle Adult



Larva



Whirligig Beetle Adult



Larva



Riffle Beetle Adult



Larva

### Collembola (Springtails)

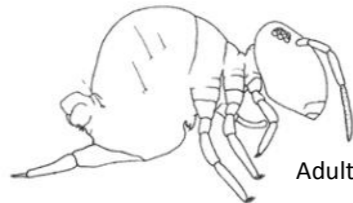
**Very Tolerant**

**Description:** Either compact or elongated body shape. Sudden jumping action. Up to 10mm.

**Habitat:** Surface of still waters and on terrestrial vegetation.



Adult



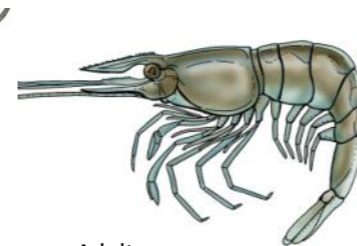
Adult

### Decapoda (Yabbies, shrimp, crayfish)

**Moderately tolerant**

**Description:** Walk with sudden movement when disturbed. Hard shell, fan tail. Up to 30cm.

**Habitat:** Between plants and rocks in pools and rivers.



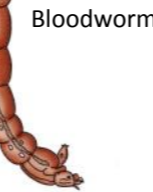
Adult

### Diplopoda (Aquatic millipedes)

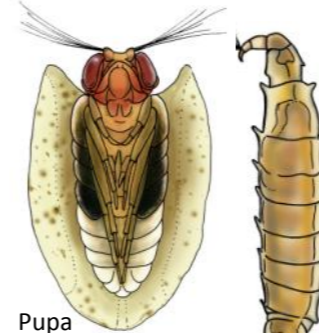
**Moderately tolerant**

**Description:** Worm-like with two pairs of legs per body segment.

**Habitat:** avoids light; hides under debris on waters edge.



Bloodworm



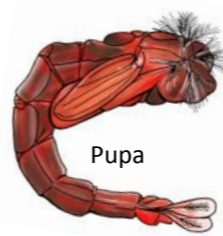
Pupa



Larva



Larva



Pupa



Larva



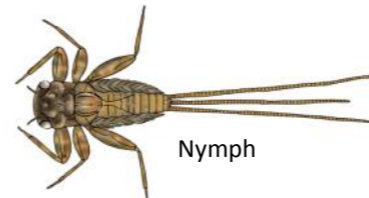
Pupa

### Ephemeroptera (Mayflies)

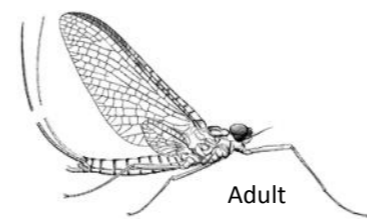
**Very Sensitive**

**Description:** Three long thin tails. Movement like a rocking horse. Up to 15mm.

**Habitat:** Cool flowing upland streams.



Nymph



Adult



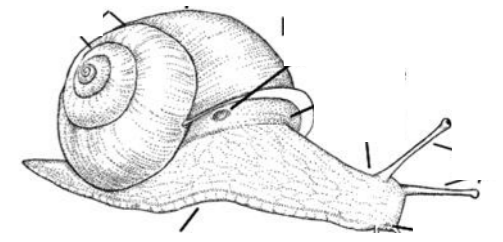
Nymph

### Gastropoda (Freshwater snails)

**Very Tolerant**

**Description:** Soft bodied animals enclosed in hard, protective, coiled shell. Up to 25mm.

**Habitat:** Found on plants and rocks in slow flowing or standing water.

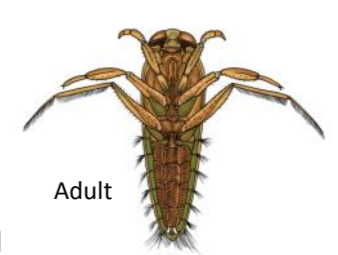


### Hemiptera (True Bugs; eg. Back swimmers, water boatman, needle bug)

**Very Tolerant**

**Description:** Flat backs, head as wide as body. Jerky swimming action. No wings when young. Up to 10mm.

**Habitat:** Wetlands and river edges.



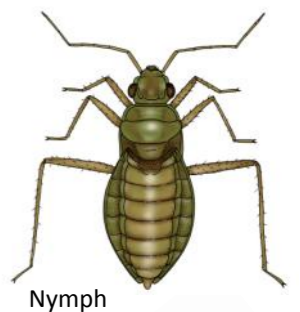
Adult



Adult



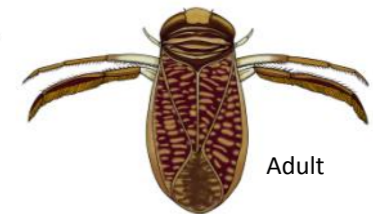
Adult



Nymph



Adult



Adult



Adult

### Hirudinea (Leech)

**Very Tolerant**

**Description:** Flattened soft bodied annelid with suckers for creeping. 10-20mm.

**Habitat:** Standing or slow moving water and moist edge areas.

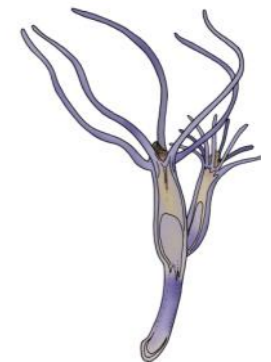


### Hydrozoa (freshwater jellyfish)

**Very Tolerant**

**Description:** simple sack-like body with a mouth encircled by tentacles. Up to 30mm.

**Habitat:** Attached to rocks, plants or twigs in fast flowing water.

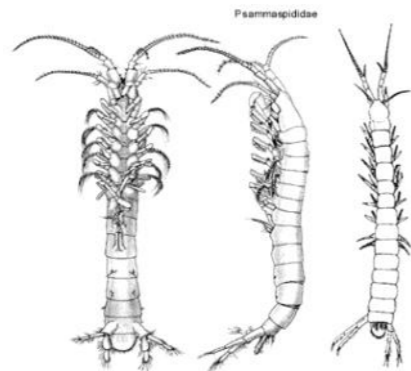


**Anaspidacea (Cave shrimp)**

**Sensitive**

**Description:** True carapace and compound eyes. Not strong swimmers.

**Habitat:** Found in crayfish burrows; or mats of algae on the bottom.

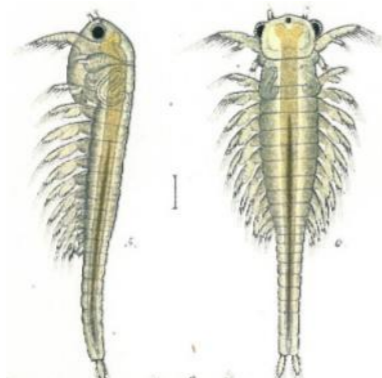


**Anostraca (Brine shrimps; Fairy shrimps)**

**Very Tolerant**

**Description:** Pale colour with constant pulsing rows of legs.

**Habitat:** Can live in fresh or salty waters.

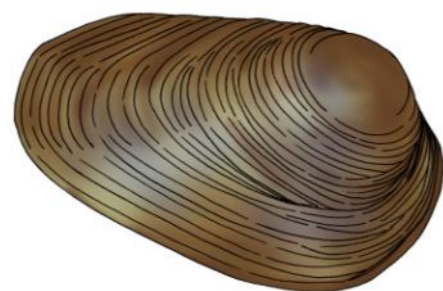


**Bivalvia (Freshwater mussels; Clams)**

**Moderately tolerant**

**Description:** Paired hard shells with fleshy body between them. Up to 150mm.

**Habitat:** Found on sandy or muddy stream beds.

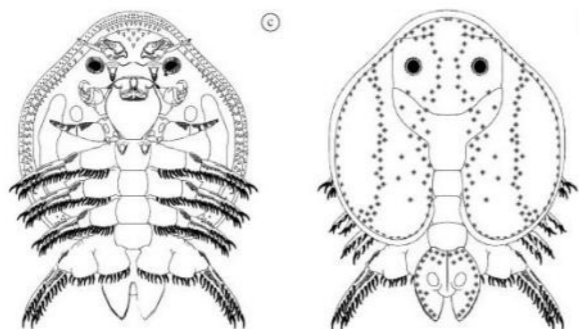


**Branchiura (Fish lice)**

**Very Tolerant**

**Description:** Flat oval body covered by carapace with prominent eyes. Fast swimmer. Between 5-10mm.

**Habitat:** Spend most of their time on a host except when moving between hosts or laying eggs.

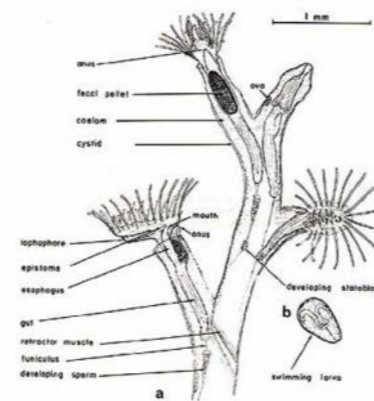


**Bryozoa (Pipe mosses)**

**Moderately tolerant**

**Description:** Form large colonies of several square meters that look like moss. Filter feeders with tentacles. Colouring brownish or opaque.

**Habitat:** Shaded littoral areas on the underside of rocks, logs or submerged debris.

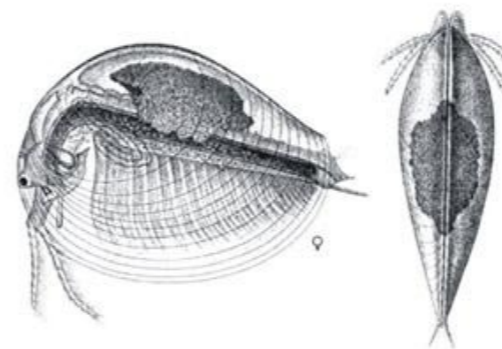


**Conchostraca (Clam Shrimp)**

**Very Tolerant**

**Description:** Bivalved carapace, enclosing whole animal. Slow swimmers. Up to 25mm.

**Habitat:** Turbid freshwater systems.

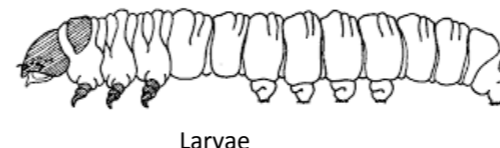


**Lepidoptera (Moth Larvae)**

**Very Tolerant**

**Description:** Caterpillar with soft segmented body, short legs and hair-like projections. Length 10-20mm.

**Habitat:** Pupate attach to vegetation and are found in moist soil and litter.

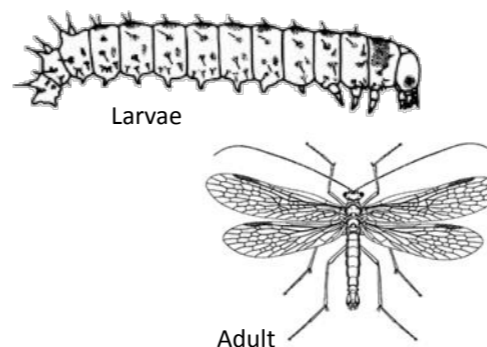


**Mecoptera (Scorpion flies)**

**Very Sensitive**

**Description:** Larvae are smooth and look like caterpillars with short clawed true legs and suction hook at the end of the abdomen. Length 10mm.

**Habitat:** Larvae live in leaf litter and moist soil.



**Nemertea (Proboscis worms)**

**Moderately tolerant**

**Description:** Unsegmented thin body with no differentiated head. Less than 20cm.

**Habitat:** Brackish waters in and around rocks and substrate.

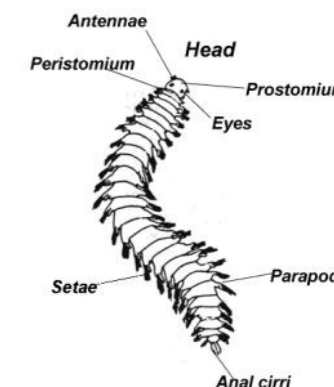


**Polychaeta (Bristle worms)**

**Very Tolerant**

**Description:** Segmented worm with bristles on their many leg-like parapodia. Slow movement. Max size 4cm.

**Habitat:** Marine systems in mud and sand habitats.



**Water Bug Detective Guide**

Uncommon Water Bugs