



Freshwater Critter Count

Freshwater Invertebrates Introduction



There are over 4,000 species of freshwater invertebrates in the UK. Freshwater invertebrates complete all or part of their life cycle in the freshwater environment or have life stages closely associated with freshwater environments.

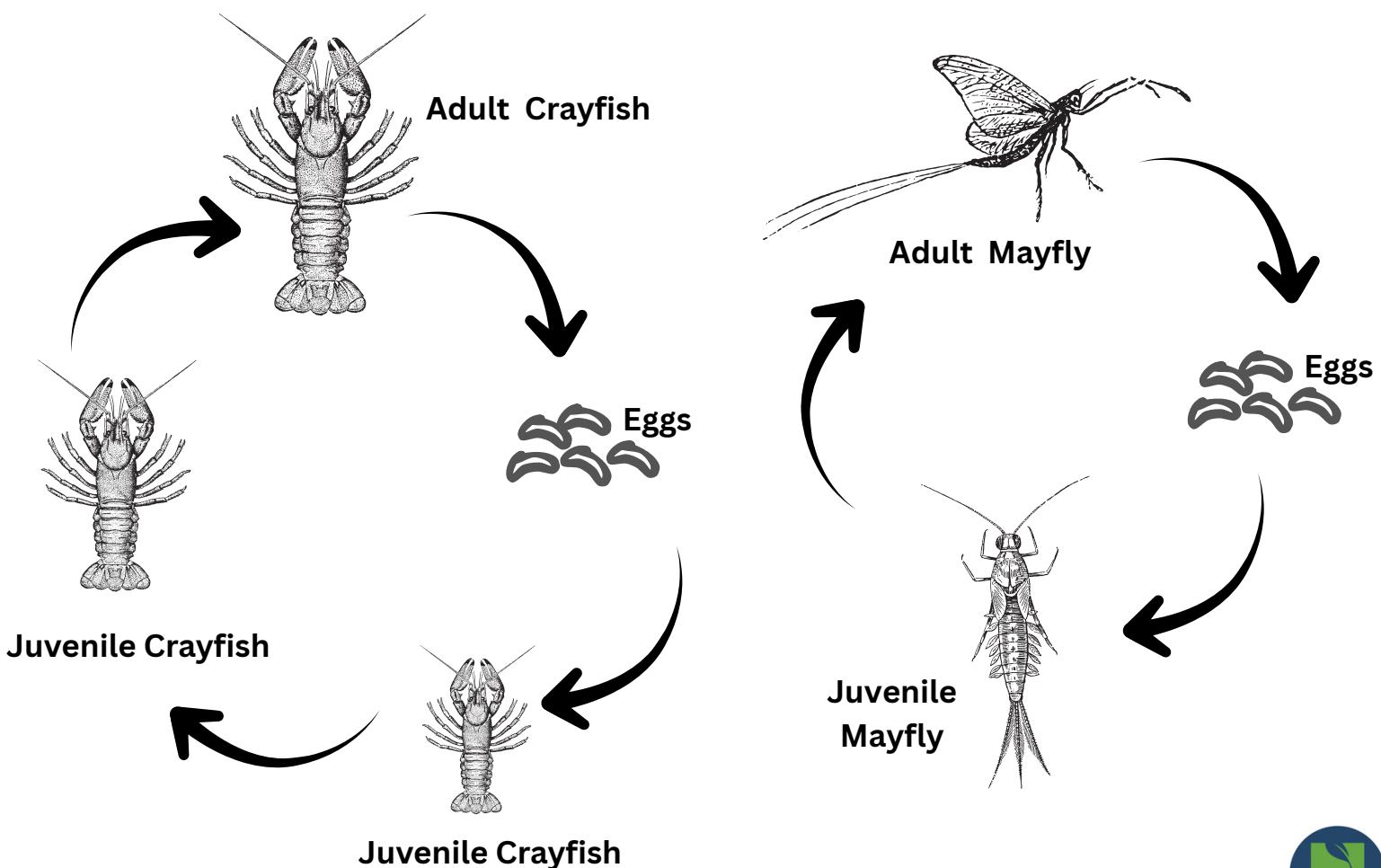
Freshwater invertebrates help to maintain clean water by breaking down and filtering organic matter. They are also important sources of food for fish and birds. Freshwater invertebrates can be used as an indicator of the health of the freshwater environment, with some species unable to tolerate polluted waters.

The freshwater environment in Guernsey is under studied and there is a lack of records for all freshwater species.

Freshwater Invertebrates Life Cycle



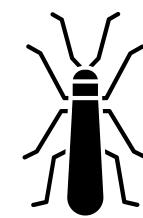
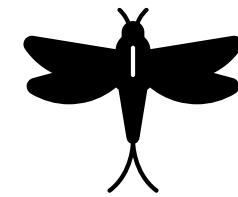
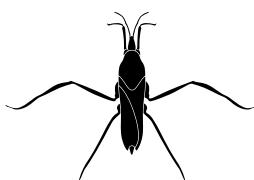
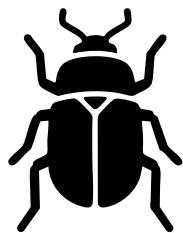
Many freshwater invertebrates have clearly defined life stages, with adults and juveniles looking very different, such as Mayflies. These juveniles typically remain hidden underwater until they mature into adults. Other freshwater invertebrates have juveniles that are similar to adults but smaller, such as Crayfish (see below for examples). A great way to find these underwater juveniles is by pond dipping (see overleaf for a guide).





Freshwater Critter Count

Freshwater Invertebrates



Coleoptera/
Beetles

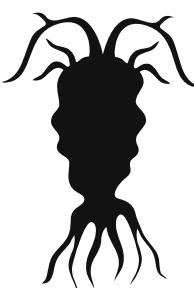
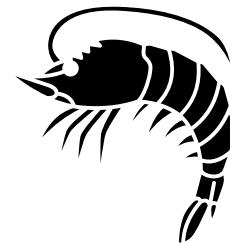
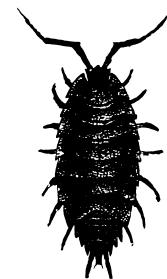
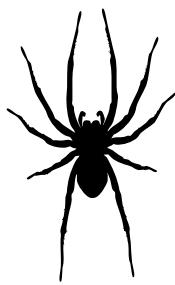
Hemiptera/
True Bugs

Odonata/
Dragon & Damselflies

Ephemeroptera/
Mayflies

Plecoptera/
Stoneflies

Trichoptera/
Caddisflies



Araneae/
Spiders

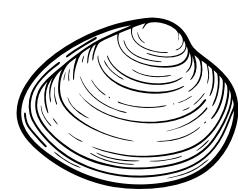
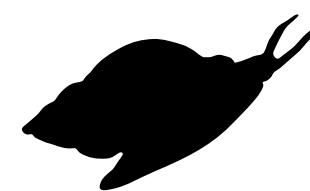
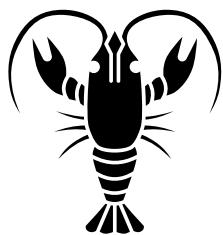
Hydrachnidia/
Water Mites

Isopoda/
Water Lice/Slater

Amphipoda/
Freshwater Shrimp

Cladocera/
Water Fleas

Copepod



Parastacidae/
Crayfish

Oligochaeta/
Freshwater Worms

Hirudinea/
Leeches

Tricladida/
Flatworms

Gastropoda/
Snails

Bivalves/
Clams & Mussels

Pond Dipping

You will need: Net, white tray, ID Guides (this spotter sheet, Natural History Museum freshwater invertebrate guide <https://www.nhm.ac.uk/take-part/identify-nature/guide-identifying-common-freshwater-invertebrate-groups.html>)

Method:

- Slowly approach the water's edge. Observe any invertebrates on the surface first.
- Half fill your tray with pond water.
- Lower your net into the water and move it in a figure of eight motion a few times.
- Place it in your tray and turn it inside out. Have a look to see what you've found.
- See if you can identify what you've found and take photos to include when submitting records to iRecord. When finished return everything back to the pond.

Never pond dip alone and always wash your hands when finished. Make sure any cuts are covered. Always follow the CHECK CLEAN DRY method of biosecurity <https://www.nonnativeSpecies.org/what-can-i-do/check-clean-dry>





Freshwater Critter Count

Surface dwelling Invertebrate Spotter

Now that you've explored freshwater invertebrates, you're ready to start identifying common species. Use this guide to help you spot and identify some of Guernsey's freshwater insects and non-insects.

Pond Skater (*Gerridae*)



Photo credit Andy Marquis

Size: 10-20mm

Appearance: Thin, brown-grey bodies and small heads with large eyes. Six legs with the two at the front shorter than the others. Usually have wings.

Habitat: Ponds.

Other: Seen on the surface of the water. They use the long hydrophobic hairs on their legs and the surface tension of the water to skate across the water surface.

Water Boatmen (*Corixidae*)



Size: Maximum size is 15mm

Appearance: Long, oar-like, hairy hind legs. Usually brown with yellow mottled markings. Short, broad, triangular head with large eyes. Boat-shaped. Light belly and dark back.

Habitat: Ponds. Found on the surface and underwater.

Other: They bring an oxygen bubble from the surface underwater so they can breathe. They swim on their front.

Backswimmers (*Notonectidae*)



Size: Up to 20mm

Appearance: Long, oar-like, hairy hind legs. Usually brown with darker section behind the head, greenish legs and large, reddish eyes. Boat-shaped. Dark belly and light back.

Habitat: Ponds. Found on the surface and underwater.

Other: Similar to water boatmen but swim upside down. Often seen at surface and look silvery due to trapped air bubbles.

Water Measurers (*Hydrometridae*)



Size: Up to 13mm

Appearance: Slender body and a long, thin head. Six long legs and the antennae look like a fourth pair of legs. Usually wingless. Dark grey, brown or black.

Habitat: Ponds, stagnant water and marshy areas.

Other: They walk slowly along the water surface.





Freshwater Critter Count

Surface dwelling Invertebrate Spotter

Water Beetle (*Dytiscidae*)



Size: Maximum size is 3.8mm

Appearance: Oval-shaped, streamlined body. Very rounded. Colour varies and they can be red, black, yellow, brown and reddish-brown.

Habitat: Ponds and other still waters.

Whirligig Beetle (*Gyrinidae*)



Size: 3-7mm

Appearance: Oval-shaped. Shiny black/dark with flattened, short paler back legs. Two sets of compound eyes. Very short antennae.

Habitat: Ponds and other still waters.

Other: Unmistakable circling behaviour. One set of eyes is for looking up and the other is for looking underwater.

Photo credit David Nicholls/
www.naturespot.org.uk

Caddisfly Larvae (*Trichoptera*)



Size: 0.5-40mm

Appearance: Worm-like body with six legs and a pair of claw like appendages at end of abdomen. Cased larvae have cases made of stones, sand, leaves and twigs attached to them.



Habitat: Ponds and streams.

Other: Not all larvae have cases attached and some may be termed 'caseless'.





Freshwater Critter Count

Underwater Invertebrate Spotter

Mayfly Larvae (*Ephemeroptera*)



Size: 5-20mm

Appearance: Long, segmented body. Six legs and three long tails.

Habitat: Running, clean water and ponds.

Other: Adult mayflies don't live very long and are weak fliers.

Dragonfly Larvae (*Anisoptera*)



Size: 20-50mm

Appearance: Six legs and large eyes. Wing sheaths on back present. Short spines at end of body. Not brightly coloured, usually green or brown for camouflage.

Habitat: Ponds. Found at the bottom in soft sediment and organic debris.

Other: The lower jaw shoots out to catch prey.

Damselfly Larvae (*Zygoptera*)



Size: 20-30mm

Appearance: Slender with six legs and large eyes. Wing buds. Usually three tails at end of body, thin or leaf shaped. Not brightly coloured, usually green or brown for camouflage.

Habitat: Ponds. Found at the bottom in soft sediment and organic debris.

Water Louse (*Asellidae*)



Size: 10-15mm

Appearance: Looks like a woodlouse. Two local species. *Asellus aquaticus* (pictured) has two pale spots on head, separated by a central, dark pigmented area. *Proasellus meridianus*, has a continuous, pale band along the back of the head.

Habitat: Stagnant water, ponds.





Freshwater Critter Count

Underwater Invertebrate Spotter



Pond Snails (*Gastropoda*)



Size: Varies from 2-3mm to a maximum 40mm

Appearance: Usually brown or grey and may have markings. Lots of different shapes, including spirals, conical and those that look like a ramshorn (pictured).

Habitat: Ponds, can tolerate some pollution.

Other: Some species are invasive.

Photo credit David Nicholls/ www.naturespot.org.uk

Freshwater Shrimp (*Gammaridae*)



Size: Up to 22mm

Appearance: Curved, greyish/brown body. Long antennae. Lots of limbs for grasping and swimming.

Habitat: Mainly flowing water and sometimes ponds, around the edge. Found under rocks and in vegetation /organic debris.

Other: Can be quite tolerant of pollution.

Photo credit Andy Marquis

Cranefly Larvae (*Tipulidae*)



Size: Up to 40mm

Appearance: Tubular. Black or white or grey-brown. Look like a plump segmented caterpillars with no legs. Small, fleshy projections at one end.

Habitat: Freshwater environments.

Other: Cranefly larvae can also be found terrestrially as well.

Photo credit Graham Calow/ www.naturespot.org.uk

Flatworm (*Tricladida*)



Size: 12-20mm

Appearance: Flat body with no legs, no shells and no sucker. Arrow-shaped head with eyes present.

Habitat: Ponds and streams. Under rocks, plants and debris.

Other: Moves by sliding slowly along the bottom.

Photo credit Jody Robert

