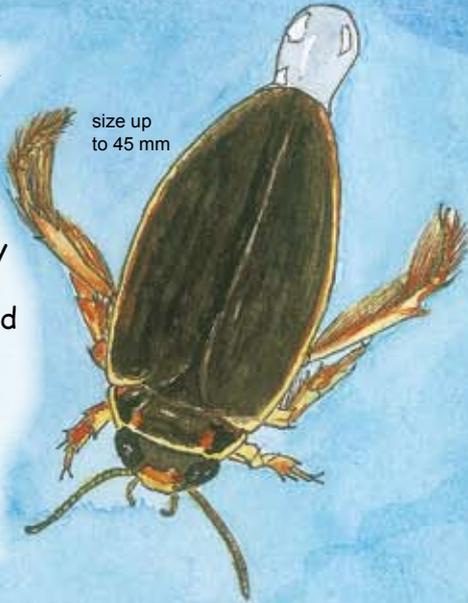


River Survivors



Swish kaplish!! The river frog has turned you into a river animal. Oh no! How will you survive? Will the current sweep you away? How will you breathe under water? What will you eat, and how will you catch it? And who will be trying to catch you? Your problems will differ depending on where you live.

Diving beetles ▶ have rounded bodies and strong legs for swimming. While under water, they breathe from an air bubble trapped in the hairs on their bodies. These beetles have strong jaws and grab small animals for food.



size up to 45 mm

Surviving Upstream

Upstream, the water rushes incredibly fast over the rocks and boulders. This makes it really hard for animals to hold on and not be washed away. But, it's easy to breathe here as there's plenty of air in the water as it tumbles over rocks. The stony river bed gives animals lots of places to hide from predators like fish, crabs, beetles and dragonflies. However, stones can also crush animals as they roll about in the water currents - especially during floods - so watch out!

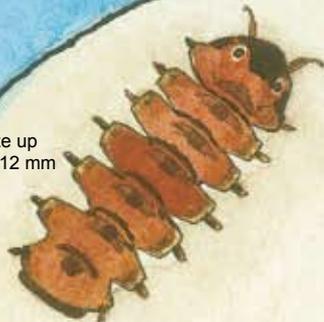
▼ **Mayfly nymphs** (babies) are built like racing cars - they're almost completely flat and the head is shaped like the spoiler on the front of a car. They have back spoilers too - all of which push the water upwards as it flows over their bodies and keeps them flattened against the rock surface.



size 10-25 mm

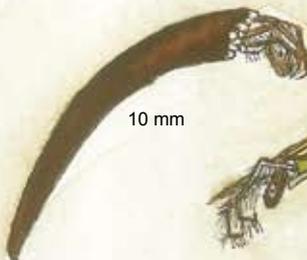
Sharp claws grip on to tiny cracks in rocks.

size up to 12 mm

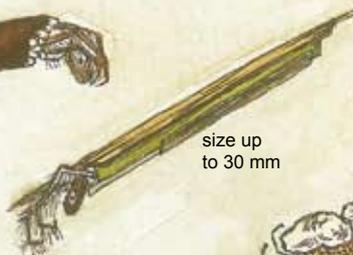


Some **case caddisfly larvae** build sand, stick or leaf homes and carry them for protection. They are rather like river tortoises! ▼

▲ **Net-winged midge larvae** have a row of suckers along their tummies that help them to stick to rocks. They move on stubby legs and feed on tiny plant cells growing on rock surfaces.



10 mm

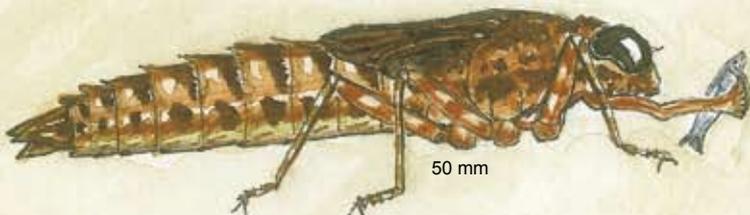


size up to 30 mm



10 mm

40 mm



50 mm

◀ **Dragonfly nymphs** have large spring-loaded jaws that shoot out and catch unsuspecting prey. They can swim super-fast by using water-jets squirted from their bottoms!

Surviving Downstream

Downstream, where the river is lazy and sandy, animals are less likely to be washed away. However, there is less oxygen in the water and it's much harder to breathe. Many animals have gills or spiracles or other ways of getting air. There are also few small places in which to hide, so most animals dig into the sandy-mud bottom, or live on plants growing in the channel or along the banks.

size up to 40 mm

▲ These **mayfly nymphs** have gills for breathing in the low-oxygen water. They also have tusks that dig into mud, and long hairs on their legs to filter tiny food particles from the mud.

Worms 40 mm

10 mm

◀ Some fly larvae, like these **rat-tailed maggots**, stick their stretchy back ends out of the water to breathe!

▼ **Blackfly larvae** use their huge fan-like jaws to grab tiny food particles out of the water. They spin a mat of silk on the rocks and hook into it with lots of tiny hooks on their bottoms. They also spin a silk safety line in case they get swept away.

10 mm

▶ **Snails and limpets** use their slimy feet to hold on. Their raspy tongues scrape algae from the rocks.

size 2-10 mm

◀ Other **caddisfly larvae** build nets to catch tiny food particles in the water.

So ... what animal would you choose to be? And where in the river would you live?



◀ Some **beetles**, and other insects, use certain plants to breathe under water. The plants store air in their stems, so the beetles pierce the stems and use the air to breathe. Some bite the plants with their jaws, while others have spikes on their 'tummies' or their 'bottoms' that pierce the plants.

10 mm