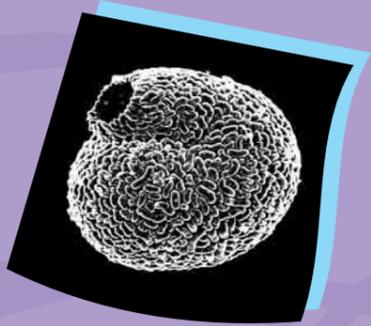


BioBlitz

... how scientists find stream and river life

Much of the life in streams and rivers is secretive and not easily seen, but lurking below the water surface is a wide range of life forms. These include microbes, plankton floating in the water column, invertebrate life such as snails, worms and insects living on the bottom, and native and introduced fish species. Scientists use a variety of tools and methods to catch aquatic life.

Microbes



Bacteria and fungi typically grow on vegetation decaying on the river bottom. These microbes need to be cultured or stained, and examined under high power microscopes to identify them. Amoebae and other very small animals called "meiofauna" can be collected by squeezing vegetation into a jar, or by sweeping a fine-mesh net through vegetation and mud at the margins. They are examined under microscopes and some may need to be dissected for identification.

Plankton

These small plants (phytoplankton) and animals (zooplankton) are caught by dragging a very fine-mesh net through the water. A microscope is needed to identify them.



Plants living on the bottom

Bottom-dwelling plants mostly grow near the edge of deep rivers where enough light gets through the water column to allow for photosynthesis. These plants include large life-forms (macrophytes) with roots that feed on nutrients in bottom sediments, and algae attached to surfaces such as stones, wood and other plants. Scientists scrape surfaces to remove algae; they may need a microscope to identify them. Many macrophytes found in the river are from overseas and some are considered pests; they may need to be collected using SCUBA.



Mussels, worms, crustaceans, sponges, insects and other aquatic invertebrates

Most stream and river invertebrates live on the bottom, although some like the freshwater shrimp are good swimmers and others may drift with the current periodically. Larvae of the freshwater mussel hitch a ride on fish. Invertebrates are usually collected with nets. In deeper rivers they can be taken by "vacuuming" or "scooping" up bits of the riverbed, and by using artificial substrates which are taken back to the laboratory for analysis. Aquatic insects also have an adult stage that lives on land; for some groups this adult stage can be caught by setting light traps over night.



Fish

Some fish may live in the river whereas others may just be passing through on their way to suitable habitats. Some of these migrating small fish make up the whitebait catch. Several exotic fish such as koi carp and mosquito fish are considered pests and it is illegal to move them around. Fish can be caught using special nets and traps, or by using an electric current to attract and stun them. In large rivers an electric fishing boat is sometimes used. Many native fish are active at night, and in small streams spotlighting is often the best way to see them.

