

Native Fish in Coastal Victoria

HEALTHY COASTAL CATCHMENTS – HEALTHY COASTAL FISH

Fish habitat: **Water quality**



Dwarf Galaxias – photo courtesy of Rudie Kuitert

What influences the quality of water?

The concentration of contaminants (e.g. sediments, oils, salts and chemicals) and nutrients (e.g. phosphorus and nitrogen) in the water all determine its quality. In natural systems, water has some contaminants and nutrients, but human modifications can change the concentration and types of contaminants and nutrients in the water.

Aquatic systems that have contaminants and nutrients higher than natural are said to have reduced water quality. This is a common problem in coastal Victoria and is having an adverse impact on our native fish.

Why is the quality of water important for fish?

Clear water with lots of oxygen and little or no contamination helps fish breathe, swim and find food easily. Water has some natural nutrients, which enable aquatic plants to grow and these in turn support aquatic invertebrates, and other aquatic organisms on which fish feed. However, there is a fine balance between the concentration and type of contaminants in a waterbody that will either benefit or cause detriment to the system.



Southern Victorian Spiny Crayfish – photo courtesy of Tarmo Raadik



Photo courtesy of Jarod Lyon

What causes contamination and increased nutrient concentrations in the water?

NUTRIENTS AND SEDIMENTS: Although some nutrients are good, too many can cause the excessive growth of algae. Algae may then dominate the waterbody killing other aquatic plants, such as seagrasses. This can reduce the habitat diversity in the system making it unliveable for many aquatic organisms. Furthermore, when conditions are no longer favourable for algal growth, the mass death of the algae can result in the complete loss of oxygen in the water. This can kill large numbers of fish and other aquatic fauna.

Sediments often have high nutrient loads. In a natural system, native vegetation binds the soil and acts as a filter of nutrients dissolved in the water. However, the extensive clearing of native vegetation has enabled previously bound sediments and nutrients to be washed into waterways. Artificial fertilisers, urbanisation and associated poor waste management, industry, loss of floodplain wetlands and high intensity grazing in riparian zones also contribute nutrients and sediments to waterways.

WATER QUALITY

Erosion of river banks leads to poor water quality



Photo courtesy of Paul Tinkler

SALT: In estuarine and marine environments and in some wetlands, salt is naturally occurring and the species in these habitats are adapted to it. However, high salt concentrations in aquatic environments which are naturally fresh (secondary salinised) can be deadly to the flora and fauna live in that waterbody. Secondary salinisation is believed to be a direct consequence of the removal of deep rooted perennial native vegetation. The loss of the native vegetation has resulted in the groundwater table rising and bringing with it salts that are naturally present in deep layers of soil. Once mobilised, these salts can quickly impact on freshwater wetlands and rivers and the fish that live in them.

How can you help?

REVEGETATION: of riparian zones is an important first step in improving the water quality of aquatic ecosystems. Riparian vegetation acts as a filter – minimising the nutrient and sediment loads entering aquatic ecosystems, and buffers aquatic ecosystems from chemical spray drift.

FENCING RIPARIAN VEGETATION: Fencing, controls stock access to riparian zones and can reduce the amount of faecal matter and sediment entering aquatic systems, while protecting native vegetation.

REESTABLISHMENT OF FLOODPLAIN WETLANDS: wetlands are efficient at absorbing and retaining nutrients and sediments and will act like retarding basins during times of flood. The high organic loads found in wetland sediments are also effective at retaining and stabilising many chemicals that would otherwise contaminate aquatic ecosystems.

MAINTENANCE OF SEPTIC SYSTEMS: poorly maintained septic tanks can be a substantial source of nutrients to Victoria's waterways. All septic tanks should be regularly maintained (every 5 to 10 years) to minimise the amount of nutrients going to our waterways.



Pale Mangrove Goby – photo courtesy of Tarmo Raadik