

Native Fish in Coastal Victoria

HEALTHY COASTAL CATCHMENTS - HEALTHY COASTAL FISH

Fish habitat: Aquatic Vegetation



Weedfish Species – image courtesy of Melbourne Museum

What is aquatic vegetation?

Aquatic vegetation is a broad term used to describe a wide range of plants that rely on the wet environment provided by rivers, wetlands and estuaries.

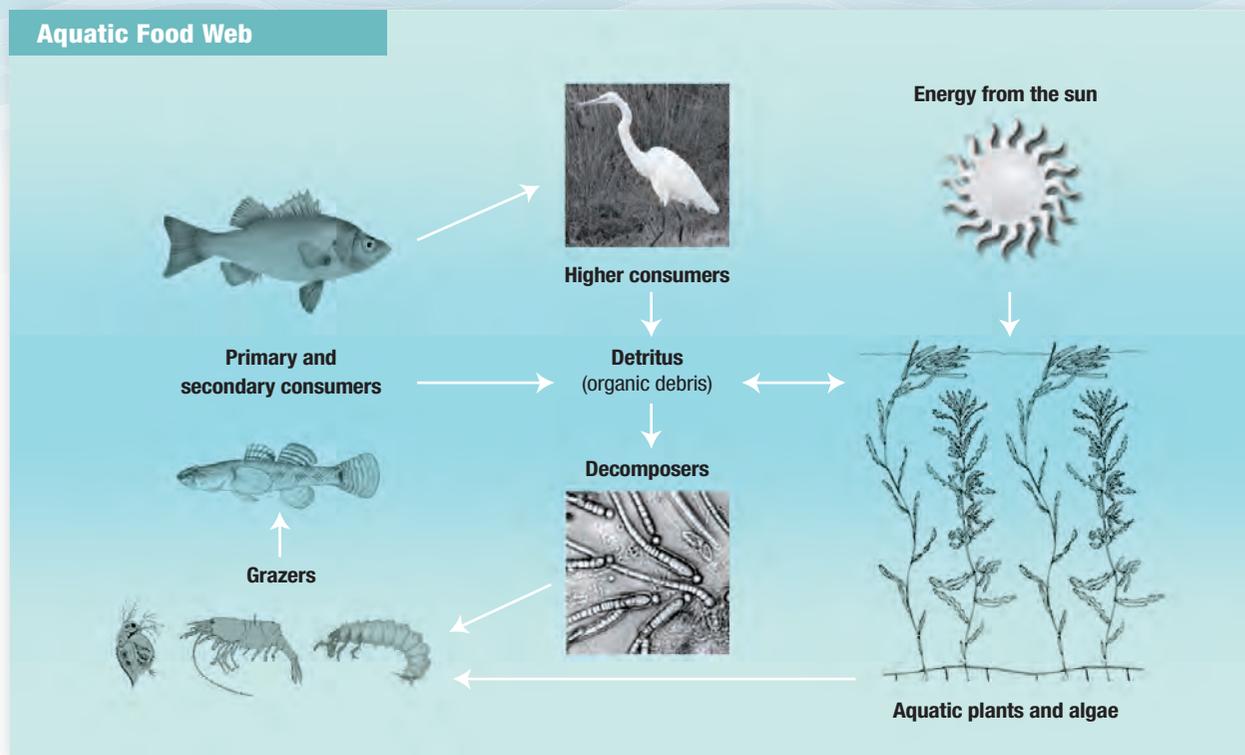
Aquatic vegetation can take many forms, ranging from algae and tiny free-floating duckweed (*Lemna* spp.) less than 1 mm in diameter to large emergent macrophytes (such as *Phragmites australis* or cumbungi *Typha* spp.) that can form dense stands many kilometres in length.

What role does aquatic vegetation have in the aquatic environment?

Aquatic vegetation is an essential part of any aquatic ecosystem. Just as terrestrial plants form the basis of the food web on dry land, aquatic plants provide the same role in aquatic habitats.

The following simplified diagram of an aquatic food web explains the vital links aquatic vegetation provides.

Dwarf Galaxias – photo courtesy of Rudie Kuiter



How does aquatic vegetation benefit fish?

Apart from providing a vital link in the food web for native fish, aquatic vegetation provides many other functions:

Structural: Aquatic plants play a significant role in stabilising damaged or unstable stream beds and banks by binding loose soils together with their (often extensive) root systems. Aquatic plants also slow down water velocities, allowing suspended sediments (silt) to settle on the stream bed. This process ensures that vital spawning sites are protected from damaging suspended and settling sediments.

Habitat: Aquatic vegetation creates instream habitat diversity which is important for a range of native fish species. Many smaller species, such as pygmy perch (maximum 6.5 cm in length) are particularly vulnerable to predation from larger fish including alien species such as Brown Trout, Rainbow Trout and Redfin. Submerged aquatic vegetation provides cover where species like pygmy perch can hide from predators.

Aquatic vegetation can also be ideal areas to lay eggs and rear juveniles. Vulnerable species such as Yarra Pygmy Perch (*Nannoperca obscura*) and the Dwarf Galaxias (*Galaxiella pusilla*) rely on the presence of aquatic vegetation for spawning. Loss of aquatic vegetation can be extremely detrimental to the survival of these species. Aquatic plants can also provide areas of shelter for aquatic fauna from sunlight, and vantage points to help capture prey.

Water quality: Aquatic vegetation is extremely important in removing nutrients from the water column. All too often, these nutrients are in amounts that far exceed natural levels. Runoff from agricultural land where artificial fertilisers are used, faecal input from livestock accessing waterways and inefficient septic tank operation all lead to increased nutrients in Victoria rivers, estuaries and wetlands. Aquatic plants use these nutrients as they grow, which reduces the

Seagrass – important aquatic vegetation



Photo courtesy of Jeremy Hindell

concentration of nutrients within the water and sediment layers. This in turn reduces the potential for toxic algal blooms which can cause large fish kills in some areas.

Aquatic plants release oxygen into the water column during sunlight hours through photosynthesis. This helps keep oxygen levels in the water high, improving the overall water quality.

Which species of fish rely on aquatic vegetation?

A number of fish species utilise aquatic vegetation for shelter and for accessing food resources. Additionally there are a number of vulnerable or threatened species that are highly reliant on aquatic vegetation for habitat and breeding. These include: the Yarra Pygmy Perch, Variegated Pygmy Perch (*Nannoperca variegata*), Australian Mudfish (*Neochanna cleaveri*) and the Dwarf Galaxias. Loss of aquatic vegetation, wetland drainage and predation from alien fish species are all threatening the persistence of these small fish species.

Yarra Pygmy Perch – photo courtesy of Tarmo Raadik

