



Seagrass



Seagrasses are flowering plants that have adapted to live in salty or brackish water in sheltered or shallow areas. Seagrasses have evolved from land plants and have lots of similar features, such as:

- Flowers, pollen, seeds and fruits for reproduction.
- Leaves which they shed annually.
- Roots that anchor them in the sandy or muddy beds – this is where they get most of the nutrients they need (they don't take in many nutrients from the water).

The importance of seagrass

Seagrasses are protected under the *NSW Fisheries Management Act 1994*. To help protect these important plants, it is an offence under this Act to remove or damage live seagrass. The Tuggerah Lakes estuary is home to three main species of seagrass – Eel Grass (*Zostera capricorni*), Stack Weed (*Ruppia megacarpa*) and Paddle Weed (*Halophila ovalis*). They play an important role in maintaining the health of the estuary by:

- Stabilising sediments with their roots like trees do.
- Slowing water flow and allowing sediments suspended in the water to drop to the bottom, which helps to build-up the bottom sediments and improve water quality.
- Providing food, oxygen, shelter, breeding grounds and nursery areas for prawns, fish, seahorses, crustaceans and wading birds.

Threats to seagrass

Since the first recorded seagrass mapping in 1966, we can see that the seagrass meadows of the Tuggerah Lakes estuary have moved from the deeper centres of the lakes to the shallow edges. A major cause of this change has been the increase in sediment entering the lakes as a result of increased development and population of the catchment over the past 200 years, particularly the rapid changes in the last 50 years.

Large amounts of urban stormwater wash sediments and pollutants into the water, resulting in high turbidity (cloudiness of the water). Just like plants in a garden, seagrass needs light to photosynthesise (turn sunlight into food). When sediment levels in the water are high, the light is reduced and seagrass struggles to survive. Additionally, nutrients flowing into the lakes, such as fertilisers, cause excessive algal growth which also block the light for seagrass plants and decrease the overall water quality of the lakes.

In many ways seagrasses are more closely related to land grasses than the macroalgae often found in the water with them (macroalgae reproduce in a different way and don't have leaves or roots – they also take all the nutrients they need to grow from the water not the soil).

Image above: *Halophila ovalis* – source T. Glasby



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Seagrass wrack

Like many land plants, seagrasses shed their leaves throughout the year in response to wind and other physical disturbances, with the largest natural shed in autumn and winter. The dead seagrass leaves combined with floating macroalgae, known as wrack, float to the surface of the water where they are blown around the lakes by the wind and eventually wash onto lake foreshores. This is part of a natural process and provides food and habitat for many animals, like crabs, as well as protecting the foreshore from erosion.

Seagrass wrack is so important to estuaries like Tuggerah Lakes, that under the NSW Fisheries Management Act 1994, limits have been imposed on the amount that is allowed to be collected. A licence under the Act is required to remove amounts over these limits.

To find out more about what happens to seagrass wrack when it reaches the shore, refer to the factsheet on Saltmarsh.

How you can help seagrass

- Reduce the use of fertilisers on lawns and gardens.
- Keep grass clippings out of storm water channels by using your green waste bin.
- Anchor boats in deeper water away from seagrass beds.
- Try to keep boating activities away from sea grass beds, if you do need to go over a seagrass bed, raise your boat's propeller up as high as possible to avoid damage to the seagrass.
- Leave saltmarsh areas to grow – do not remove plants or mow down to the water's edge.
- Pick up pet poo and put it in the bin.

For more information about Tuggerah Lakes estuary go to www.loveourlivinglakes.com.au

did you know...

Tuggerah Lakes estuary is home to White's seahorse (*Hippocampus whitei*) which lives in the seagrass beds. It relies on seagrass for shelter, protection from predators, food and as a place for breeding. Seahorses are not strong swimmers, so they live in the calmer waters found in seagrass beds. They often wrap their tails around seagrass leaves to anchor themselves.

Images above, left to right: *Hippocampus whitei*, *Zostera capricorni* – source A. McSorley, *Ruppia megacarpa* – source A. Ferguson, *Hippocampus whitei*.



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