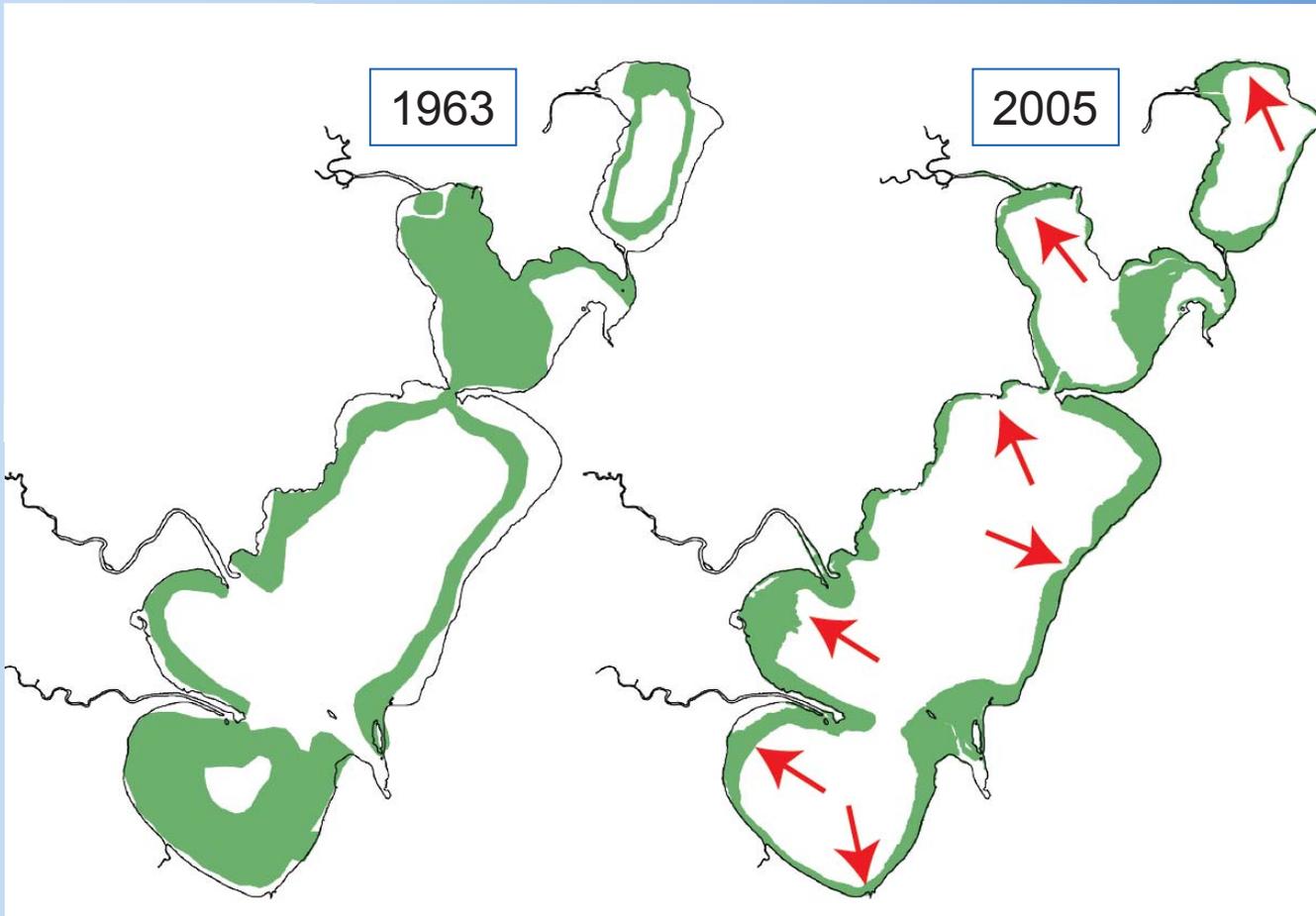


Shift in seagrass distributions over past 50 years

Seagrass survey data and anecdotal accounts indicate that seagrass in Tuggerah Lakes has shifted from deeper lake basins to the shallower lake fringes. This shift was most likely in response to a decline in water quality, in particular water clarity.



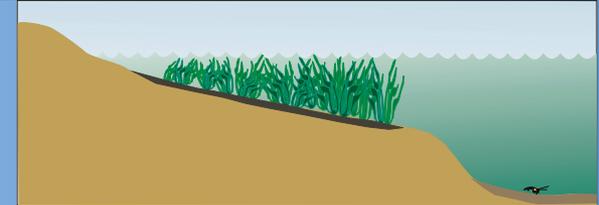
Seagrass has shifted into shallow areas in order to receive sufficient light for growth. The loss of seagrass from deeper lake basins has likely resulted in greater resuspension of sediment due to wind waves, thereby causing further reductions in water clarity. This is referred to as a “feedback loop” and can be very difficult to reverse.

Seagrass and its limitations

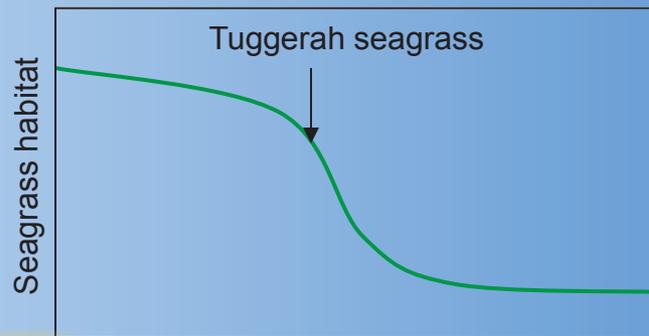
Seagrass meadows represent one of the most important habitats in Tuggerah Lakes, providing food and refuge for a wide range of invertebrates, fish, crustacean, and bird species. Seagrasses are currently under threat from a combination of suspended sediment and nutrient pollution.



This indicates that a phase shift has occurred from a healthy lakes system with more energy coming from seagrass, to a more eutrophic system.



Seagrass grows in the shallow lake margins, but is limited in areas that receive high wave energy. The enrichment of the nearshore zone has caused stress to seagrass due to the build-up of compounds toxic to plants (e.g., hydrogen sulfide) in the sediments.



Seagrass wrack accumulations

Wrack accumulations around the lake form at different rates and under different conditions depending on location of wrack sources, prevailing currents and wave energy, shoreline aspect and grade and submerged attached vegetation (seagrass meadows and some macroalgae species). OEH have developed a wrack model to better understand annual accumulations and to provide management strategies.

Wrack constitutes an important part of the Tuggerah Lakes ecosystem, providing services such as food and habitat for invertebrate, fish and bird species. It is desirable therefore that wrack should be allowed to accumulate in areas that are not prone to urban stormwater or groundwater inputs, and will not cause adverse public reaction.

Along some parts of the shoreline, wrack is associated with smelly black ooze and unfavourable recreational conditions.

From the Tuggerah Lakes Wrack Harvesting Strategy, OEH 2013

In order for wrack harvesting to be most effective, it is recommended to time harvest certain areas with seasonal prevailing winds and currents

