

Where prawns grow up

Moreton Bay, off Brisbane, is the heart of one of Australia's main prawn fisheries. The annual catch of king prawns brings in \$2 million or more, and the area also harbours large populations of greasyback and tiger prawns.

Trawlers fill their nets in both the Bay and the nearby ocean. The same prawns spend different parts of their lives in the enclosed and open waters, and are pursued in both areas.

The prawns spawn in the ocean. When they are about

a centimetre long, they float into the Bay and settle around shallow sandbanks and mud flats. As they grow, they move to deeper parts of the Bay and then out to sea, where the life cycle begins again.

Probably the greatest threat to the prawn populations—apart from overfishing—is disturbance to the shallow areas in the Bay where they grow to catchable size. Seagrass covers the floor of the most sheltered of these areas.

Research by Dr Peter

Young, Mr Hugh Kirkman, and colleagues from the CSIRO Division of Fisheries and Oceanography shows that growing prawns are much more likely to survive to adulthood in grassed than in bare shallows. If the seagrass disappeared, so, almost certainly, would many of the prawns.

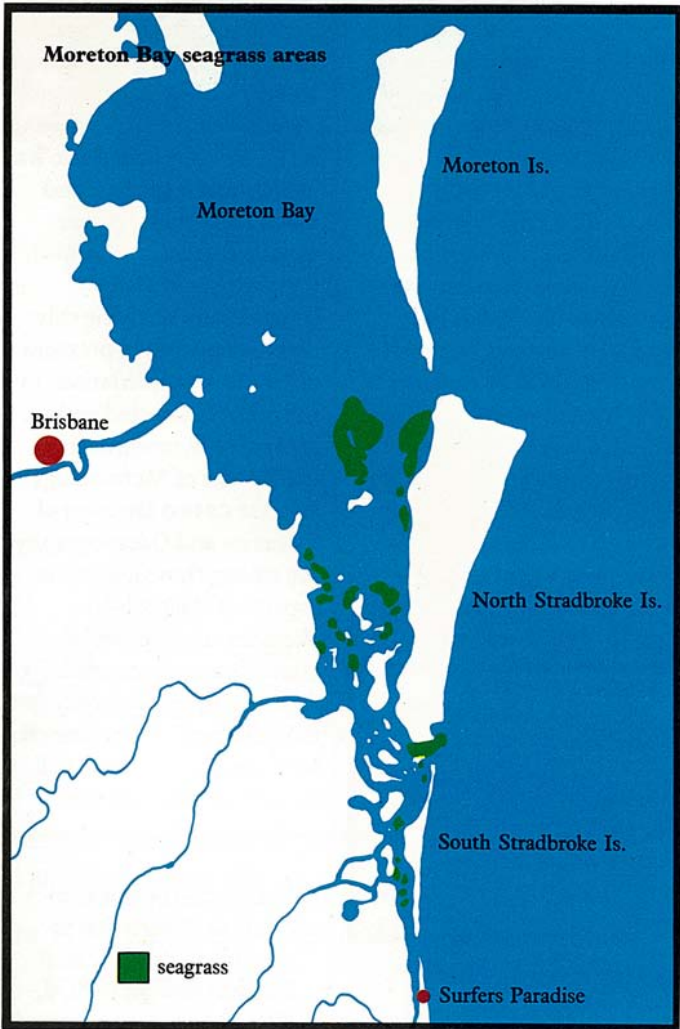
The Moreton Bay seagrass is not about to disappear. But after surveying it as part of a research project on the prawn

fisheries of Australia's east coast, the scientists conclude that it is very susceptible to human disturbance.

Already sand-mining on North Stradbroke Island, which encloses the southern part of the Bay, has destroyed patches of it. The mining takes place on the eastern shore of the Island, facing the sea, but spoil from the operation has flowed off the west coast onto sandbanks, killing the seagrass there.



Grassed mud flats at low tide.



Oyster-gathering also has destroyed seagrass on patches of mud flat; speedboat propellers and people walking on the grass do the damage.

The scientists believe that the development of canal estates, like those on Queensland's Gold Coast, in the seagrass areas would do great damage. Increased turbidity caused by dredging and pumping would kill grass by reducing the amount of light getting through to it. Seagrass could not grow in the canals because they would be too deep. Fortunately, canal development has not come, so far, to these areas.

Another threat that needs to be guarded against is pollution entering the Bay from coastal rivers, including the Brisbane River. No sign of damage from this quarter has appeared yet.

Looking at the Bay as a whole, the damage done to the seagrass by Man's activities has been small so far, and will remain small if adequate care is taken. But if large areas of the grass are destroyed, not only the prawns will suffer.

The scientists are still unravelling the role of the seagrass in the life of Moreton Bay. But they have enough information already to show that it has an importance

comparable with that of the Bay's mangroves for many creatures besides prawns. Turtles, swans, and dugongs feed on it, and so do some of the Bay's 250 or so fish species. Other fish congregate in the grassed areas in their juvenile period, as the prawns do.

The seagrass beds look rather like untidy lawns. The scientists have found six seagrass species in Moreton Bay, growing in some areas as single-species stands and in others as mixtures of two or more. Some of the beds support algae populations.

The species have different preferences for depth, some remaining under water all the time while others are exposed at low tide. Some just expose their leaf tips when the tide is exceptionally low. Two of the species, found more commonly further north, have not been sighted any further south than Moreton Bay.

A description of the seagrass communities of Stradbroke Island. H. Kirkman. *Proceedings of the Royal Society of Queensland*, 1975, 86, 129-31.

The seagrass communities of Moreton Bay, Queensland. P. C. Young and H. Kirkman. *Aquatic Botany*, 1975, 1, 191-202.