



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Wetlands Australia

NATIONAL WETLANDS UPDATE, JULY 2013 – Issue No 23

Aquatic Plant Restoration

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<http://www.environment.gov.au/water/publications/environmental/wetlands/wetlands-australia/wa23.html>

AQUATIC PLANT RESTORATION



Boat with environmentally friendly mooring at Dalpura Bay (*SEQ Catchments*).

Seagrass making a comeback

Sibel Korhaliller, SEQ Catchments

Seagrass is making a comeback in Moreton Bay, thanks to an award winning new boat mooring design that causes minimal disturbance to the seabed floor.

Boating remains a popular pastime in Moreton Bay. A lesser known impact of this is happening below the ocean surface, with traditional

moorings ripping up seagrass as the chain drags on the seafloor. As a result, 'crop circles' in a classic halo shape are formed.

Seagrass beds are one of the most important marine environments on earth. They are home to juvenile fish and crustaceans that form the basis of commercial and recreational fisheries. They provide food for globally vulnerable dugongs, and green turtles.



“Crop circles” caused by traditional moorings in Morton Bay (SEQ Catchments).

But according to a scientific study, 58 per cent of the world's seagrass meadows are currently declining. There are many factors that contribute to the decline of seagrass, including sediment runoff and algal blooms, but perhaps less known is the damage from block and chain moorings.

Environmentally Friendly Moorings offered in Queensland for the first time

Between 2012 and 2013, over 100 ‘Seagrass Friendly Moorings’ were offered to boaters at three locations across Moreton Bay, following a successful trial.

Environmentally friendly moorings cause less damage to the seagrass bed, by ensuring there is minimal contact with the sea bed, while still being able to safely secure vessels in the environmental conditions of Moreton Bay.

The Seagrass Friendly Mooring was recently awarded the 2013 Product and Manufacturing award at the Healthy Waterways awards and has previously featured on the ABC's New Inventors Program.

How much seagrass will recover as a result of these moorings?

Up to 15 per cent of seagrass is scoured out by boat moorings in Moreton Bay. Each boat can scour out as much as 1400 square metres of seagrass, leaving a desert like area void of marine life.

By using these new designs, an area of approximately 18 football fields of seagrass will begin to recover, although the cumulative benefit to surrounding seagrass beds is expected to be much higher covering an area as large as 120 hectares.

At June 2013, 110 boats were secured with these new moorings installed, free of charge, through a voluntary program coordinated by SEQ Catchments and funded through the Australian Government's Caring for Our Country program, as well as the Queensland Government, OceanWatch Australia and WetlandCare Australia.

For further information visit www.seqcatchments.com.au/case-studies/mooring-trial-to-end-crop-circles-in-moreton-bay or contact Sibel Korhaliller at skorhaliller@seqcatchments.com.au



The Ruppia Translocation Project is part of the Murray Futures Coorong, Lower Lakes and Murray Mouth Recovery Project (*Gemma Cunningham*).

Seagrass translocation in the Coorong


Katherine Ryan, South Australian Department of Environment, Water and Natural Resources

A unique project is aiming to return a native seagrass to South Australia's iconic Coorong.

The Ruppia Translocation Project, part of the Murray Futures Coorong, Lower Lakes and Murray Mouth (CLLMM) Recovery Project, is being delivered in partnership with the Traditional Owners of the CLLMM region, the Ngarrindjeri. Restoring the health and character

of the Coorong is a long-held aspiration of Ngarrindjeri, and the Ngarrindjeri Regional Authority (NRA) has been directly involved since project inception. The NRA is also delivering critical heritage clearance and on-ground work for the project.

Ruppia tuberosa provides habitat and food for invertebrates, native fish, and food for migratory waterbirds. However, inadequate flows of fresh water to the region, especially during the recent drought, had a devastating impact on the ecological health of the Coorong. When the drought broke and the inflows returned, Ruppia populations did not return on a large scale, especially in the Coorong's South Lagoon.



Associate Professor David Paton from the University of Adelaide trialled a number of translocation methods and this research led to using seed sediment taken from nearby lakes when they were dry and transferring these to the mudflats on which *Ruppia* grows in the Coorong.

The seed sediment has been sourced from Lake Cantara, an ephemeral lake in the Coorong National Park. In 2013 a small excavator was used to scrape the top layer of sediment (15 millimetres) containing the seeds when the lake was dry. Track mats were used to reduce the impact of the excavator. Seed was collected in strips leaving even-width gaps to promote faster recovery at the collection site. Less than one hectare of the total 200 hectare lake bed has been used for seed sediment collection.

The collected seed sediment was used to treat 20 hectares of mudflats on the eastern side of the Coorong South Lagoon. So far the planting has involved lightly agitating the mudflat surface, scattering the seed sediment, and then pressing it into the soil. Deeper sections of mudflats had shallow water cover at planting time. Here seed sediment was scattered directly into the water, where the sediment and seeds should sink provided local wave action is not excessive.

Further research will be used to review and refine the project in the future.

For more information about the Ruppia Translocation Project contact **katherine.ryan2@sa.gov.au**

The CLLMM Recovery Project is part of the South Australian Government's Murray Futures program, which is funded by the Australian Government's Water for the Future initiative.

The South Australian Government acknowledges Ngarrindjeri are the Traditional Owners of the land and that according to their traditions, customs and spiritual beliefs its lands and waters remain their traditional country.





Over 3 million plants have been planted around the Lower Lakes and Coorong since 2009 (*Andy Rasheed*).

Restoring the sedge and reed bed habitats of the Lower Lakes in South Australia

Sacha Jellinek, James Thiessen and Simon Cheers, South Australian Department of Environment, Water and Natural Resources

Since the establishment of intensive agriculture in the Murray Darling Basin including around the Lower Lakes and Coorong in South Australia, there has been a loss of natural habitats and alteration of waterways, changing how the landscape and associated ecosystems function. These changes have been exacerbated by the Millennium drought, causing the Ramsar listed

Lower Lakes and Coorong wetlands, and their surrounds to become increasingly degraded. Impacts included exposure of acid sulphate soils, increased lakeshore erosion and habitat loss, simplification and fragmentation.

To combat these processes, the Coorong, Lower Lakes and Murray Mouth (CLLMM) Recovery Project has been working closely with the traditional owners, the Ngarrindjeri, as well as regional communities over the past two years of a five year program to plan, prioritise and implement an ecological restoration program to help strengthen social and ecological resilience in region. Since 2009, the program has planted over three million plants around the Lower Lakes



The shorelines of Lake Alexandrina and Lake Albert have been replanted with 13 000 river club rush (*Simon Cheers*).

and Coorong, aerially seeded up to 10 000 hectares of the exposed lakebed during the drought and restored lakeshore vegetation.

To complement the terrestrial plantings the shorelines of Lake Alexandrina and Lake Albert have been replanted with 13 000 river club rush (*Schoenoplectus validus*) over the last two years and a further 140 000 sedges are being propagated for planting in Spring 2013. Plantings have taken place in priority areas that provide multiple benefits such as the addition of carbon to reduce the production of acid sulphate soils, and reduction of wave energy to decrease bank erosion. Sedge plantings are also thought to promote the natural regeneration of in-shore aquatic plants, thereby increasing habitat for fish, water birds and invertebrates. In order to assess these benefits and inform management decisions, a monitoring program is currently being undertaken.

The Ngarrindjeri and the Milang and District Community Association have played a vital role

in the replanting of these important reed beds. Community members have developed innovative propagation and planting techniques that increase the success of sedge plantings.

The link between community participation, education and collaborative management actions fostered under this program makes it stand out in the conservation and wise use of Australian wetlands.

For more information about the Vegetation Program contact james.thiessen@sa.gov.au

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