Vegetation Program



The Vegetation Program aims to help repair the environmental damage caused by the drought, and to ensure the region is more resilient so it can better adapt in the future to changing water levels.

Impacts of drought

The severe drought across the Murray-Darling Basin between 2006-2010 left a legacy of environmental, social, cultural and economic damage across South Australia's unique Coorong, Lower Lakes and Murray Mouth (CLLMM) region.

As water levels across this internationally-recognised wetland plummeted, a range of critical ecological issues developed: among them, the exposure of thousands of hectares of previously inundated lake beds.

Scientists soon discovered that the exposed lake bed soil contained sulfuric acid and had the potential to cause widespread acidification across the CLLMM region when the drought broke and the water returned. They concluded that adding carbon to the soil would help reduce the acid.

The best way to add carbon was to undertake large-scale plantings of native grasses and other plant species on the exposed lake beds and at the fringes of Lakes Alexandrina and Albert.

Bioremediation: the first step

Under a \$10 million Revegetation and Bioremediation Program funded by the Australian and South Australian governments, trial plantings were undertaken.

Native seedling - vegetation restoration site

Bioremediation is the process of promoting naturally occurring bacteria to help return contaminated environments to a healthy state.

Ensuring such organic matter is available in the soil is therefore critical to the process.

The trials proved successful, and planning began for major regionwide planting projects, with the aim of tackling the acidification threat, stabilising the soil, preventing erosion, suppressing dust movement, and providing more habitat for the region's native animal, bird, and fish species.

In autumn 2009, more than 5000 native plants were hand-planted and many hectares of exposed lake beds were seeded by air, beginning the ongoing work to build a resilient environment for the future.

The Coorong, Lower Lakes and Murray Mouth (CLLMM) Recovery Project is a key component of South Australia's \$610 million Murray Futures program, funded by the Australian Government's Water for the Future initiative.

The CLLMM Recovery Project, is comprised of a suite of management actions that collectively aim to improve the ecological features of the CLLMM site to deliver a healthy, productive and resilient wetland of international importance, as well as to increase capacity, knowledge and understanding across communities. It is being delivered in collaboration with the community and Ngarrindjeri, the areas traditional owners.









Community volunteers

Getting the community involved

The original \$10 million Revegetation and Bioremediation Program was not only aimed at helping the environment, but also to help the healing and recovery process for the region's people.

The program was designed with the community in mind, and would need the community's input and involvement to be a success.

As a result, a network of community nurseries – administered by the Milang and District Community Association – was created to propagate many of the plants required for the planting projects.

The Revegetation and Bioremediation Project played a key role in galvanizing the community and giving them a common purpose to better understand the environment and protect it for future generations.

The project also delivered much-needed funding, jobs, and training opportunities for the region, including the establishment of two information hubs at Milang and Meningie.

Progress to date

With the Australian and South Australian governments committing up to \$200 million to restore the CLLMM region to health, the early revegetation and bioremediation project has developed into one of Australia's largest-ever revegetation programs.

Since the first planting trials were undertaken in 2009, almost three million native plants have been planted at many sites throughout the CLLMM region. The Vegetation Program is focusing plantings within 5 kms of the lower lakes and Coorong. About 10 000 ha of lake bed has also been seeded by air.

The current Vegetation Program operates at two levels: commercial planting, and community planting. In 2012, more than 740 000 plants were planted at more than 40 sites across the region, with the community and Ngarrindjeri responsible for around half of those plantings.

The focus of today's Vegetation Program has also moved from tackling acidification and stabilising the soil to restoring native vegetation communities, mitigating against the effects of erosion, and providing valuable habitat for the region's native animals, birds and fish.



Ngarrindjeri community planting cultural revegetation

Ngarrindjeri

The Ngarrindjeri people, as the traditional owners of the Coorong, Lower Lakes and Murray Mouth region, are important partners for the Vegetation Program.

The Ngarrindjeri believe that for their people to be healthy, the environment and water must be healthy. The severe impacts of the drought had significantly impacted on the Ngarrindjeri's culture and wellbeing.

The ground-breaking Kungun Ngarrindjeri Yunnan Agreement (KNYA) between the South Australian Government and the Ngarrindjeri Regional Authority enables Ngarrindjeri to provide advice, knowledge, and input into the Vegetation Program.

The revegetation work has delivered training and sustainable jobs for the Ngarrindjeri community, which also provides invaluable cultural heritage advice for revegetation projects and a range of other projects across the region.

Planning

Revegetating within the CLLMM region presents a number of significant challenges. More than 200 years of land clearance, burning, grazing, and cropping has left much of the region in a degraded ecological state.

Much of the land available for revegetation is economically unviable, and includes sites that have deep sand or clay. Therefore, each year's plantings are carefully planned in collaboration with landholders, the community and the Ngarrindjeri.

A priority planting plan was developed with the community and landholders in 2010 to guide the planting work for the life of the Vegetation Program.

An annual expression of interest process seeks landholders keen to have their land revegetated. Criteria such as property size and existing remnant vegetation are used to determine properties suitable for revegetation, with the aim of achieving the best possible outcomes for the significant government funding invested in the region. Water levels are also a major consideration.

Higher water levels often cause shoreline erosion, so planting vegetation offshore in the form of reed beds and on the lake edges becomes important to prevent erosion, provide habitat for fish and birds, and to remove nutrients and silt.

The Community Nurseries Network

One of the major success stories of the Vegetation Program has been the creation of the Community Nurseries Network, which since 2009 has propagated hundreds of thousands of the plants used for revegetation projects throughout the CLLMM region.

The nurseries are operated by community groups, the Ngarrindjeri, school groups and Landcare groups at locations including Clayton, Strathalbyn, Narrung, Raukkan and Hindmarsh Island.

The number of plants grown by the community nurseries increases every year as their capacity and expertise increases. In 2012, the nurseries propagated more than 357 000 plants from 127 species. In 2009, they grew half that number, and across a much smaller range of species.

The network meets regularly to share information and provide support for each other, and they work closely with the Goolwa to Wellington Local Action Planning Association (which co-ordinates community planting activities) and the Department of Environment, Water and Natural Resources (DEWNR).

Volunteers are at the heart of the Community Nurseries Network.

Members of the community including retirees, students, job seekers and the disabled help to propagate the plants, water and care for them, and transport them to planting sites.

The network has also delivered training opportunities for the community across topics and skills including seed collection and planting.

One of the key aims of the Vegetation Program is to make sure the community has the necessary skills and knowledge to carry on the revegetation activities well beyond the life of the CLLMM Recovery Project.

Fencing

Fencing is used to protect areas of revegetation from pests, and to prevent livestock from accessing lake shorelines, especially those that have been revegetated.

The Vegetation Program provides funding for landholders to construct fences and stock watering points, while the Ngarrindjeri have an important role in providing heritage advice for fencing projects.

Since 2009, more than 180 km of fencing has been erected, and more than 170 stock watering points have been established.



Native seedling stock community nursery

Pest and weed control

Pest animals and weeds pose a significant threat to the CLLMM region's environment.

Pests can reduce biodiversity through competition, can increase the risk of fire and can result in a loss of economic output.

Therefore, pest and weed control is an integral part of the Vegetation Program.

Pest and weed control is vital to protect revegetated sites from pests, preserve existing native vegetation from the threat of invasive species, and preserve important habitat for the region's native animals and birds.

The Vegetation Program's pest and weed work is guided by a Habitat Management Plan, which was developed in association with the community and Natural Resource Management (NRM) Boards.

The plan sets out the pest species that are priorities for control and identifies priority areas for protection

Monitoring and research

Revegetated sites are monitored after planting to assess the survival rates of the plants.

Monitoring indicates an over all survival rate of about 70 per cent, despite the range of challenges confronting the Vegetation Program, such as degraded sites and fluctuating water levels.

At some sites, the survival rate is closer to 100 per cent, but that also means that at other sites, the plants have not fared so well.

This is why the Vegetation Program is constantly reviewing a range of issues such as the species of plants being used. Research is also being undertaken to optimise the Vegetation Program's outcomes. The research includes trialing site preparation methods, and the propagation of difficult species.

Getting involved

The Vegetation Program is delivered in partnership with the community and the CLLMM region's traditional owners, the Ngarrindjeri.

Many hundreds of people of all ages from throughout the Coorong and Lower Lakes region have already become directly involved in projects to restore and protect their environment.

If you are interested in volunteering to help collect seeds, propagate plants, get involved with planting, or undertake monitoring activities, please contact the Lakes Hub on (08) 8537 0808 or via its website at: www.lakeshub.com.au

You can also contact the Goolwa to Wellington Local Action Planning Association at: <u>www.gwlap.org.au</u>



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Working with region's land managers

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To date, more than 120 species of native sedges, groundcovers, shrubs, and some trees have been grown for the Vegetation Program, with all native seed collected from around the Lower Lakes.

Species selection, and the best places to plant each species, is an important part of the planning process. Individual site plans are based on information collected by the community and the NRM industry, and connect existing site conditions with the growth requirements of each native species.

It is important to note the Vegetation Program is not a tree-planting program. Of the more than 740 000 plants planted during the 2012 vegetation work, just 9 per cent were trees.

Futher information

Department of Environment, Water and Natural Resources **T:** (08) 8204 1910

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