

Lake Macquarie Improvement Project Wins National Award

The project established to improve the environmental health of Lake Macquarie has been recognised as one of the most successful of its kind in Australia, taking out the prestigious National Thiess River prize.

The prize, of \$150,000, was announced at the International Riversymposium held in Brisbane in September. It is the largest award in its field, presented in partnership by the International River foundation (IRF) and the River festival. Mayor of Lake Macquarie and Lake Macquarie Improvement Project Chairperson, Greg Piper, said the award is recognition of the excellent results the project has achieved since it began in 1999.

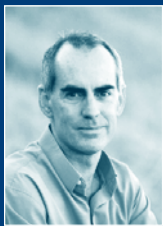
"The Lake Macquarie Improvement Project has been a finalist in the National Thiess River prize three times, so we are very pleased to take out the prize this year," Cr Piper said.

"This project reflects a change in thinking where we have tried to preserve and replicate natural systems.

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Booragul Wetland



Greg Piper
Chairman,
Lake Macquarie
Project Management
Committee

Welcome

Welcome to the latest edition of the Living Lake Macquarie Newsletter. It is with great pleasure that I report that the Lake Macquarie Improvement Project has taken out the top award in the prestigious Thiess National River prize for waterway improvement. The award is in recognition of the innovative work that has taken place to improve the environmental health

of Lake Macquarie, in addition to the successful arrangement of managing the project in a partnership between Lake Macquarie City Council, Wyong Shire Council, the State Government and the local community.

The Project's success largely reflects a new understanding of natural systems and the role they play in a sustainable and healthy environment. We have achieved great improvements in the Lake's health by concentrating on the catchment and restoring or replicating the way nature works, rather than using traditional hard engineering methods to fight natural processes.

We have been a finalist for this national award - and the International version - for three years running. It is a great honour to finally win. The \$150,000 prize money will be invested in further environmental work.

Congratulations and thank you to everyone who has contributed to this important project. I feel proud of everyone, including the Project Management Committee, the staff and the Landcare volunteers, all who have dedicated many hours to the environmental improvement of Lake Macquarie.

For more information on the Lake Macquarie Improvement Project go to: www.livinglakemacquarie.org I hope you enjoy this edition of the Living Lake Macquarie newsletter. ✨

Greg Piper

Mayor of Lake Macquarie
Chairman, Lake Macquarie Project Management
Committee

Lake's Latest

RECENT PROJECTS

- **Raggatt Cres, Edgeworth**
Installation of a gross pollutant trap and channel works including riffle ponds and revegetation to improve water quality and habitat of Cocked Hat Creek.*
- **Racecourse Road, Teralba**
Creebank stabilisation including riparian planting and rock fillets to encourage natural vegetation regrowth.*
- **Upper Winding Creek, Waratah Ave, Charlestown**
Creation of vegetated riffle ponds to promote creek restoration, together with planting of over 8,000 native species to improve water quality.*
- **Fullers Creek Wetland, Bonnells Bay**
Restoration of a wetland area that contains areas of important saltmarsh vegetation.*
- **Kilaben Creek, Kilaben Bay**
Joint project with Kilaben Bay Landcare Group involving structures, and planting to prevent sediments from eroding tracks entering Kilaben Creek.*
- **Southampton Avenue & Earswick Crescent Buttaba**
Installation of two gross pollutant traps to remove sediments from stormwater flows entering Secret Bay.

CURRENT PROJECTS

- **Alexander Parade, Arcadia Vale**
Foreshore stabilisation works and creation of a sloping beach to prevent erosion and assist with improving the lake ecosystem.
- **Sheppards Creek, Valentine**
Creek Stabilisation involving rock fillets and riparian restoration/planting to encourage natural vegetation regrowth and improve water quality.
- **William Street, Cardiff**
Construction of a wetland to improve the water quality of Winding Creek, and provide a possible water source for irrigating nearby sporting fields.
- **Hely Avenue, Fennell Bay**
Foreshore stabilisation works and creation of a sloping beach to prevent erosion and assist with improving the lake ecosystem.
- **Thomas & Macquarie Streets, Barnsley (Flaggy Creek)**
Creebank restoration works to prevent erosion, planting and rockwork.
- **Swansea Flats & Myuna Bay**
Two salt marsh areas are being recreated to improve water quality and break down built up seagrass wrack. ✨

* SOME FUNDING RECEIVED FROM HUNTER- CENTRAL RIVERS CATCHMENT MANAGEMENT AUTHORITY

Lake Macquarie Improvement Project Wins National Award

The cooperation of the government agencies and the community has seen Lake Macquarie's water quality improve considerably. The \$150,000 prize money will contribute to the project and allow us to continue the great work of everyone involved."

Riverprize Judging Panel Chair, Professor Paul Greenfield, said the improvements made to Lake Macquarie's long term sustainability were outstanding and those involved in delivering the project should be very proud of their efforts. "The Lake Macquarie Project Management Committee has been working towards improving the health and ecological sustainability of Lake Macquarie for a number of years and as a direct result has seen some important increases in seagrasses and improved water quality," Professor Greenfield said. "The project also initiated a dedicated team to implement community education and engagement programs which has developed a permeating culture of green living and positive changes in behaviour throughout the community.



Lake Macquarie representatives with other 2008 Riverprize finalists

"It's an honour to reward a project that has done such a brilliant job taking water issues into its own hands and delivering such exceptional results..."

It's an honour to reward a project that has done such a brilliant job taking water issues into its own hands and delivering such exceptional results," he said.

The other finalists for this year's National Thieess Riverprize were Derwent Estuary, Derwent Estuary Program, Tasmania; Swan River, Swan River Trust, Western Australia; and Tweed River,

Tweed Shire Council, New South Wales.

Lake Macquarie was also a finalist in the 2008 International Thieess Riverprize along with fellow finalist Swan River, Swan River Trust, Australia and the winner St Johns River, St Johns River Water Management District, United States of America.

On-ground physical works achieved to date include:

- Installation of 58 stormwater treatment devices to reduce sediment and nutrient loads entering Lake Macquarie;
- Rehabilitation of more than 32km of Lake foreshore and creek bank areas to reduce erosion and reinstate approximately 70.3ha of riparian and wetland vegetation;
- Removal of 6,000m³ of organic sediment from Lake Macquarie to eliminate nutrients sources, increase natural flushing, and improve recreational amenity;
- Rehabilitation of 14 priority natural wetlands; and
- Planting of approximately 30,000 endemic plants per annum (on average).

The holistic strategy of the Lake Macquarie Improvement Project includes:

- Remediation works to address causes of estuary problems and restore natural systems;
- Undertaking water quality monitoring to determine trends;
- Establishing guidelines for best practice land use and stormwater management; and
- Community education and engagement programs that raise awareness and influence behaviour to minimise human impact. ✨

Riffle Ponds Offer Cost-Effective Solutions

A new cost-effective approach to treating stormwater run-off is becoming one of the most popular methods to help improve water quality in Lake Macquarie.

The method, known as a riffle pond, involves the creation of a series of shallow vegetated ponds with rockwork between them, as a means of filtering stormwater run-off. Whilst riffle ponds work similar to a wetland, their cost can be considerably less and they are more suited to constricted locations.

The riffle ponds, together with the planting of vegetation, assist in removing impurities, especially nutrients from the catchment's stormwater flows and prevent them from entering the Lake.

Whilst the pond has a stilling affect on the water, the water plants (called macrophytes) carry out a number of complex physical,

“In creating the riffle ponds we are trying to mimic a natural watercourse...”

biological and chemical processes in a natural way to help improve water quality entering the Lake.

One important part of this treatment process is the oxygenation of the water to promote de-nitrification (the removal of nitrogen) into the atmosphere. The riffle ponds assist with this

process, as do the plants themselves.

“In creating the riffle ponds we are trying to mimic a natural watercourse,” Lake Macquarie and Catchment Coordinator, Jeff Jansson said. Native vegetation is also often placed along the banks of streams and ponds, known as ‘riparian’ vegetation, to further assist in improving water quality. Not only does the vegetation bind the bank and filter direct run-off, it provides complex ‘in-stream processes’ through shading and ecosystem enhancement that reduces the nutrients within the water.

The Office of the Lake Macquarie & Catchment Coordinator first trialled this type of work in 2004 and has recently completed two more installations of riffle ponds at Waratah Ave, Charlestown and between Main Road and Raggatt Street, Edgeworth. More will be constructed to mimic the natural systems and improve the quality of water entering Lake Macquarie. ✨



Lake's Latest

UPCOMING PROJECTS

- **Wilton Close, Warners Bay**
Installation of a gross pollutant trap and a series of riffle ponds to remove sediments from stormwater flow.
- **Bulgonia Rd, Brightwaters**
Foreshore stabilisation works and creation of a sloping beach to prevent erosion and assist with improving the lake ecosystem.
- **Regal Way, Valentine (Gatts Farm Reserve)**
Channel modifications involving replacing sections of concrete channel with a natural alternative, rock sour protection, and re-establishing vegetation to improve water quality.
- **Dobson Street, Swansea (Caravan Park Reserve)**
Foreshore stabilisation work and creation of a sloping beach to prevent erosion and assist with improving the lake ecosystem.
- **Boronia Street, Bolton Point**
Maintenance dredging will be conducted early 2009 to remove sediment accumulation from stormwater outlets to improve seagrass coverage and enhance natural habitats. ✨

Works Underway to Improve Long-term Future of Sheppards Creek

In an effort to improve the long-term water quality of Sheppards Creek, a program of strategic catchment works is being implemented as part of the Lake Macquarie Improvement Project.

A Water Quality Management Plan was prepared on behalf of the Office of the Lake Macquarie and Catchment Coordinator following concern over water quality. The sub-catchment of Sheppards Creek, 5.5km² in area, is one of the most heavily

urbanised sub-catchments of Lake Macquarie. The Creek rises in the eastern limits near the intersection of Violet Town Road and Tingira Drive and flows in a westerly direction until it meets the estuarine limit near Macquarie Drive at Valentine. It then follows a northerly

alignment before discharging to Lake Macquarie near the centre of Croudace Bay. Ongoing works began in 2007 to implement some of the recommendations of the report, with a number of additional projects being planned over the next nine months.

Works that have already been completed include:

- The installation of a bed control structure located near the upstream end of St Johns Drive, Valentine to limit creek bed and bank erosion. Combined with the planting of native vegetation on the creek bank, a more stable environment is created offering greater water quality and biodiversity values.
- The re-vegetation of degraded creek banks with local native species, upstream from Croudace Bay road, to improve the condition of the riparian area. Native plants provide stability to the creek bank and help reduce sediment from entering the water.
- Rock fillets have been installed on the lower reaches of Sheppard Creek to protect the creek bank from boat wash and wind waves. The fillets also provide an area for natural regeneration of native plants to occur. The native plants help to improve water quality and restore habitat for aquatic species.



This native riparian (fringing) vegetation on Sheppards Creek is important for good water quality

Future projects currently under planning include:

- The replacement of a concrete dish drain in the upper catchment (Gatts Farm Reserve off Regal Way, Valentine) to recreate a more naturally flowing path to improve water quality by restoring the environmental health of this drainage channel.
- The removal of section of a concrete channel off Macquarie Drive to construct a series of vegetated ponds and mimic the flow patterns of natural watercourses. This will assist in improving the quality of water entering Sheppards Creek. ✨



Native vegetation in drains and watercourses undertakes many complex processes to filter out pollutants from stormwater before it enters the Lake.

Without it, Lake Macquarie is vulnerable to excessive levels of sediments and nutrients, which can create major problems for the balance of the Lake's ecosystem. Fringing native vegetation along the banks of watercourses can also be very effective in improving water quality.

Planting and protecting native vegetation in and around drainage lines will promote a healthier Lake Macquarie for future generations to enjoy.



THE OFFICE OF
THE LAKE MACQUARIE
& CATCHMENT
COORDINATOR

Our Lake. Our Future. Ours to Protect

www.livinglakemacquarie.org