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# Living

LAKE MACQUARIE

WORKING TO REVIVE, RENEW AND PROTECT THE ECOLOGY OF LAKE MACQUARIE

## Lake Macquarie finalist in International and National Environment Award

Lake Macquarie has received international acclaim for environmental management after being announced as one of four finalists for both the National and International Thiess Riverprize.

Judged by a panel of Australian and international experts, the prestigious Riverprize is awarded each year to a project that demonstrates outstanding efforts in the restoration and protection of waterways and catchments.

Awarded at the International Riversymposium in Brisbane in September, Lake Macquarie was



### Stoney Creek

the only waterway restoration project to be named as a finalist for both awards. Facilitated by the Office of the Lake Macquarie and Catchment Coordinator, the Lake Macquarie Improvement Project has used innovative techniques to pioneer an integrated whole-of-government model for improving estuary health.

Since the project began in 1999, the approach, based on restoring natural systems, has

resulted in an improvement in water quality, reduction in algae, an increase in seagrass coverage, rehabilitation of foreshore and the protection of once endangered natural wetlands.

Lake Macquarie and Catchment Coordinator, Jeff Jansson, said the project has gained unprecedented support and interest from the local community.

“This has seen a dramatic increase in the number of Landcare groups working to improve the local environment. The latest community survey has also indicated that a majority of the local community believes the Lake environment has improved over the last five years,” Mr Jansson said.

Cr Piper explained that the key to success was coming up with a sustainable plan of management which balanced economic viability, environmental stewardship and social needs.

“The integrated approach has ensured that, as well as addressing immediate environmental issues, long-term strategies are put in place and where possible the needs of the community are also met,” Cr Piper said.

“It is very encouraging to receive recognition through the prestigious Riverprize award. This is a great opportunity for Lake Macquarie to receive international exposure and become known for best-practice in environmental management,” he said. 📧

## Working Together For the Lake's Health



Greg Piper  
Chairman,  
Lake Macquarie  
Project Management  
Committee

Welcome to the 11th edition of the Living Lake Macquarie newsletter.

It is a great pleasure to report that all of the hard work of the committee in partnership with the community on our most valuable natural asset, Lake Macquarie, has received international acknowledgement with the Lake Macquarie Improvement Project being named a finalist in both the national and international Thiess RiverPrize.

Activities like the cost-effective implementation of a large works program and the development of pro-active community education has positioned Lake Macquarie as a leader in environmental restoration. Early signs of improvements are now being confirmed, with monitoring data recording positive changes in water quality and other ecological indicators.

The results of the latest community survey show a pleasing response and increasing belief that improvements are being achieved.

However, the project is now facing some new challenges. A change in Government funding means the project now has to seek and compete with normal funding programs.

CONTINUES ON PAGE 2.



# Lake's Latest

## Recent Projects

- Installation of a trash rack within Coked Hat Creek at Main Road, Edgeworth.
- Foreshore stabilisation works at The Parade, Belmont.
- Swan Bay southern entrance improvement works and main channel maintenance dredging.
- Creek bank stabilisation and riparian restoration works at Coked Hat Creek, Edgeworth and Cockle Creek, Barnsley.
- Stormwater improvement works at Watkins Street, West Wallsend.

## Current Projects

- Riparian rehabilitation and bush regeneration activities along 1,100m section of Dora Creek.
- Development of Water Quality Management Plan for Shepherds Creek sub-catchment.
- Retrofit of a stormwater treatment device at Spinnaker Ridge Way, Belmont.
- Development of restoration plans for priority wetlands at Swansea, Bonnells Bay, Morisset, Myuna Bay, Pelican and Marks Point.
- Foreshore stabilisation works at The Esplanade, Warners Bay.

## Upcoming Projects

- Feasibility assessment and conceptual design study for saltmarsh re-construction sites in Lake Macquarie.
- Installation of a gross pollutant trap and removal of stormwater sediment delta at Sealand Road, Fishing Point.
- Creek bank stabilisation and riparian restoration works at entrance to Plains Gully Creek, Swansea.
- Stormwater improvements and riparian restoration activities within drainage channel at Bulgonia Road, Brightwaters.
- Foreshore stabilisation works within reserve at Noarmunga Crescent, Gwandalan.

# Measuring Water Quality

Water quality indicators are used to scientifically back up improvements in water quality witnessed by the community.

Activities that reduce the amount of sediments and nutrients washing into the Lake via stormwater run-off have assisted in improving water quality in Lake Macquarie. These activities include the construction of wetlands, the installation of stormwater treatment devices, bush regeneration and an increased awareness by the local community. Low levels of catchment run-off over the past few years has also assisted in achieving these rapid improvements in water quality. The Lake body generally has low nutrient concentrations, good water clarity and excellent dissolved oxygen levels.

Whilst, there are a number of indicators that help determine the quality of the Lake environment, some examples include:

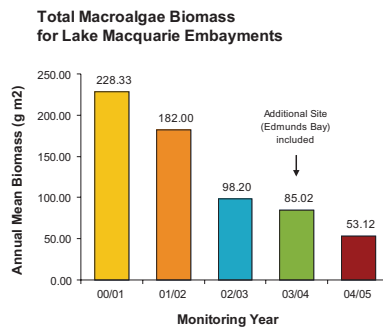
**Seagrass coverage:** as water clarity improves

seagrass coverage (the foundation of the lake's ecosystem) improves. From the Year 2000 to 2006 there has been a 41% increase in the area of seagrass bed coverage based on annual monitoring.

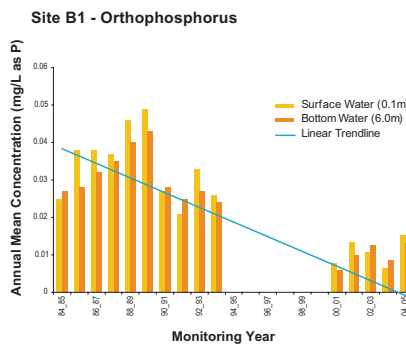
**Macroalgae Biomass:** the annual mean biomass for the Years 2000/2001 to 2004/2005 has seen a reduction of 77%.

**Chlorophyll 'a':** an indicator of phytoplankton or microalgae in the water column has reduced at site B1 by 62% over the last 15 year period.

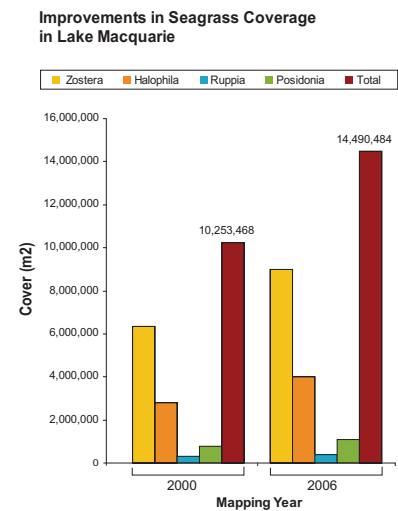
**Orthophosphate:** a component of the nutrient load into the lake has reduced at site B1 by 51% over the last 15 year period. 📉



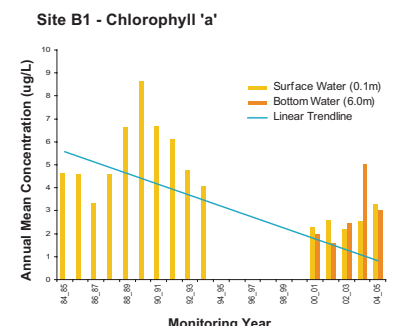
### • Macroalgae Biomass



### • Orthophosphorus Levels



### • Seagrass Coverage



### • Chlorophyll 'a' Levels

## Working Together For the Lake's Health

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This means that the cost-efficiencies available in planning a large program may also be reduced.

For more information on Lake Macquarie Improvement Project go to [www.livinglakemacquarie.org](http://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

# Residents Believe Health Of Lake Is Improving

Residents of Lake Macquarie are optimistic about the health of the Lake and believe that the environment is improving, according to a Community Survey Report.

The Community Survey Report, commissioned by the Office of the Lake Macquarie & Catchment Coordinator, provides a snapshot of local community views towards the environmental health of Lake Macquarie.

Lake Macquarie & Catchment Coordinator, Jeff Jansson said the community is increasingly positive about the health of the Lake.

“When asked a series of questions on the health of the Lake environment, the majority of respondents believe that it had improved over the last five years” He said.

Mr Jansson stressed that although residents were witnessing improvements that the work is still far from over.

“The revitalisation of Lake Macquarie is an ongoing process and there is still work to do. It is important that residents and Lake users ensure that they continue to do their part to limit their impact on the Lake,” he said.

One of the findings also indicated that residents are placing an increased importance on improving water quality by treating storm water run-off before it enters the Lake using devices such as wetlands.

“The results of the survey show that residents are starting to understand the importance of specific environmental issues,” Mr Jansson said. The information gathered from the survey assists in directing education programs and reviewing performance.

The research project involved a survey of 600



**View over Lake Macquarie from Booragul Constructed Wetlands**

randomly selected respondents within the Lake Macquarie and Catchment area. Responses were obtained during June and July. The report was compiled by FordComm Consulting on behalf of the Office of the Lake Macquarie & Catchment Coordinator.

## Community invited to Participate in Plan

Residents of the Shepards Creek sub-catchment have the opportunity to help improve the local environment by participating in the development of a Water Quality Management Plan for the area.

The catchment includes the suburbs of Valentine, Eleebana, Croudace Bay, Tingira Heights and Floraville and is home to over 2,500 residential and commercial properties. Development of the area over the past 20 years has created issues such as the quality and quantity of stormwater entering the creek, along with sedimentation, bank

instability, weed infestation and the loss of native vegetation.

The first phase of the project will focus on identifying and quantifying these pressures in order to prioritise an appropriate management response.

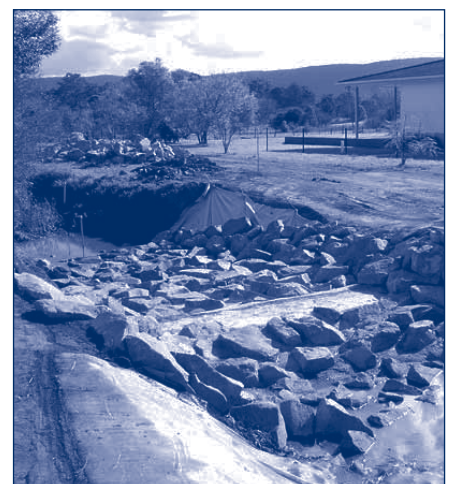
Community Consultation began in September.

## Improvement Project Nearing Completion At West Wallsend

In an effort to help improve water quality running into Lake Macquarie, a series of natural features have been reinstated in Drysdale Creek, West Wallsend.

The project is more than 175 metres in length and includes the construction of a series of riffle ponds, the construction of two bed control structures, the channel dimension expanded to reduce flooding risk and extensive re-vegetation.

“The works will treat storm water run-off by creating a series of shallow vegetated ponds (riffle ponds) and will also prevent erosion by placing rock work and vegetation along the creek bank,” Lake Macquarie & Catchment Coordinator Jeff Jansson said. The riffle ponds together with the planting of vegetation have been designed to collect sediment and reduce nutrients from the catchment’s storm water flows. They will also filter out other impurities and elements, preventing them from entering the Lake. “Over 12,000 individual plants will be



**Works underway in West Wallsend**

planted at the site including native tree and shrub species, groundcovers and aquatic plants,” Mr Jansson said.

The project undertaken by The Office of the Lake Macquarie & Catchment Coordinator and supported by the Hunter-Central Rivers Catchment Management Authority, is worth over \$132,000.



# Partial Closure of Swan Bay Southern Entrance Completed

The partial closure of the southern entrance to Swan Bay is now complete, assisting with long term channel navigation for boat users entering and leaving Lake Macquarie.

The works, valued at \$1.48 million, were carried out by Neumann Contractors and involved over 44,000 cubic metres of sand being dredged.

Hydrosurveys had shown that the main Channel had changed rapidly and significantly over the past year causing problems for larger keeled yachts. "The partial closure will help minimise shoaling near the former 'dog-leg' and improve the longevity of dredging carried out in Swansea Channel," Mayor Greg Piper, Chairman of the Lake Macquarie Project Management Committee said.

"The works are part of a longer term strategy for the navigation of the Channel, and finalise the program of channel works adopted by the Lake Macquarie Project Management Committee, leaving it to concentrate on environmental improvement projects," Cr Piper said.

This was the second major project undertaken by the Office of the Lake Macquarie Project Management Committee as part of the long term strategy to address access to Lake Macquarie. The strategy was developed after detailed scientific



Swan Bay

investigations and extensive stakeholder consultation.

The Southern Entrance to Swan Bay was created in the mid 1990s by local private sand extraction operations in order to assist in improving water quality within the Bay. Although the entrance started as a relatively narrow channel, it quickly expanded to a width of 250 meters due to strong tidal

currents that were being redirected from Swansea Channel through Swan Bay. Simultaneously with the expansion of the southern entrance was significant shoaling in the main navigation path through Swansea Channel and the creation of a 'dog-leg', which has since been removed with dredging works. 📍

## Lake Macquarie Gets New Look Online



The Office of the Lake Macquarie and Catchment Coordinator has launched a new look website, providing local students and the community with a wealth of information on Lake Macquarie.

The comprehensive website includes current up-to-date data on the environmental health of Lake Macquarie and features such as a student support link and teacher resource kit.

Lake Macquarie & Catchment Coordinator Jeff Jansson said the website had been set up as a resource not only for students but for the whole community.

"Community awareness of the issues affecting Lake Macquarie and an appreciation of how natural systems work are major steps in protecting such an important asset for future generations," Jeff said. 📍

The website is: [www.livinglakemacquarie.org](http://www.livinglakemacquarie.org)