

Working to Revive, Renew and Protect the Ecology of Lake Macquarie NSW

Many Hands Produce Results

A combined community effort has yielded environmental, educational and cultural benefits at the Booragul Wetlands site.

Lake Macquarie & Catchment Coordinator, Lake Macquarie City Council, Lake Macquarie City Art Gallery and local school students combined efforts to create the environmentally and culturally friendly Booragul Wetlands project.

In February, 220 enthusiastic Booragul

Wendy Cheek, Principal of Booragul Public School, said students learned about the importance of preventing the entry of storm-water to the lake and the function of wetlands and vegetation as a filter for the lake.

"Students broke into groups to learn about the types of plants they would use and then together with the council workers



Booragul Public School students Ethan Cleary (left) and Jake Ward.

Steve Gillies, Lake Macquarie City Council employee and site construction supervisor, described the Booragul Wetlands project as "a great success".

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"It was wonderful to have community involvement in this project."

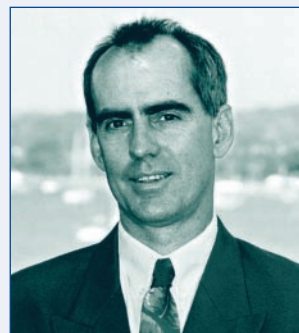
Public School students participated in the final vegetation of the Booragul Wetlands site.

successfully planted over 500 plants. The sense of ownership and pride in the children was certainly evident," Mrs Cheek said.

Much Achieved, Still Plenty To Do

The extension of funding for the Lake Macquarie Project announced by Premier Bob Carr last year means an extra \$8 million dollars worth of improvements can be made to our important lake over the next three years. It proved a timely opportunity to take a look back at the achievements of the first three years of the project and to renew our focus on addressing the source of problems which pose a threat to the future of Lake Macquarie.

Since the Project Management Committee was established in 1999, serious environmental problems at Salts Bay, Fennell and Edmunds Bay have been targeted by large scale public works programs with great success.



Greg Piper
Acting Chairman, Lake Macquarie Project Management Committee

A vast number of small scale projects have been completed, almost undetected, at sites like Warners Bay and in the south of the catchment at places like Gwandalan and Mannering Park. These are not band-aid solutions. The main approach of the Lake Macquarie Project

Management Committee has been and will continue to be to tackle the problem at the source, to find long-term solutions to problems which have caused the health of the Lake to deteriorate. We are now starting to see the benefits of this approach. Water quality at sites near South Creek, Warners Bay and around the western side of the Lake have improved dramatically, marine life is returning to near shore areas once clogged with dead seagrass.

We still have a lot to do as a community to make sure the Lake is kept healthy. I hope you enjoy the first edition of Living Lake Macquarie for 2003. To keep up-to-date with the latest in the Lake Macquarie Project, visit our website www.livinglakemacquarie.org

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Community Role In Navigating The Access Issue

The Lake Macquarie community will get to have a say on the long term management of Swansea Channel later this year.

The Office of the Lake Macquarie & Catchment Coordinator commissioned expert consultants

WBM Oceanics Australia to conduct computer modelling on the hydraulics, sediment transport and navigation in Swansea Channel.

Gillespie Economic, Hassall & Associates also conducted a cost benefit analysis to measure the feasibility of strategies to manage the area. This study compared the cost of dredging and maintenance works against the potential benefits to the regional economy from tourism and associated industry.

The Lake Project Management Committee's objective is to provide some long-term direction for the management of the entrance under the administration of the relevant government authorities once the Lake Macquarie Project is eventually completed.

WBM Oceanics Australia are currently combining the findings of the two technical studies into an adaptive long term management strategy.

"Channel access into Lake Macquarie is a highly emotive issue, one that is close to the hearts of many people in the community."

The findings of both studies will go on public exhibition in the coming months, with copies to be made available at Lake Macquarie City Council, selected local libraries and on-line. Dates for the public exhibition period will be widely advertised once they have been confirmed.

The public exhibition and community information campaign will be an important part of the process to establish a long term management strategy for boating access through Swansea Channel.

Acting Chairman of the Lake Macquarie Project Management Committee, Greg Piper, said the studies would provide up-to-date data and expert opinion to encourage informed debate on the issue.

"Channel access into Lake Macquarie is a highly emotive issue, one that is close to the hearts of many people in the community."

"We need to be informed in order to achieve the best possible outcome, and that means balancing the environmental, economic and lifestyle aspects of managing the Channel." Mr Piper said that while the access issue was one that would outlive the Project Management Committee, it was important that temporary dredging strategies were in harmony with those agreed on for the longer term.

"We have previously redirected savings in other areas of the Project to alleviate some of the more urgent dredging needs around the Lake entrance."

"Our current budget includes \$700,000 to continue maintenance dredging, to address the worst areas and keep the area as safe as possible for boats going in and out of the Lake, until such time as there is clear direction to justify more funding." 🌿

What Is A Healthy Lake?

Ask five people to describe a "healthy lake environment" and you're likely to get five very different answers.

At one extreme, a healthy Lake Macquarie is clear blue water (picture perfect), ideal for swimming and enjoying life on the weekend. The other is a fully functional ecosystem, complete with mud flats, salt marshes and saline wetlands. For most people, the reality is somewhere in between.

There are plenty of examples of shallow bays around the Lake where the current idea of a "healthy Lake Macquarie" is under question. The fact is that while saline wetlands, salt marshes and mud flats play an important role in the Lake's ecosystem, they are not always attractive areas for swimming, fishing or boating.

There is no doubt that settlement around Lake Macquarie and the development of the area over recent years has accelerated some of the changes in the natural environment.

But not all change is bad. Where once rotting seagrass drove away marine life near the entrance to South Creek (Eleebana), a return



A return to natural sloping beaches has improved water quality near South Creek, Warners Bay.

to naturally sloping beaches has brought clear water again and with it, juvenile fish, crabs and other tiny animals. At locations that were known for their white sandy bottoms over the years, salt marshes and mud flats are emerging. Many of the changes that occur in the Lake would have happened (albeit at a much slower rate) even if European development had not

occurred within the catchment.

We are still only scratching the surface in our understanding of the complex nature of the Lake Macquarie ecosystem.

While we should continue to identify problems and implement strategies to improve the environment, we should also be thankful to live beside such a dynamic natural asset. 🌿

Lake Foreshore Near South Creek Comes 'Back To Life'

Local residents have described the current state of the area surrounding the entrance to South Creek, Eleebana as 'the best in memory', following works implemented by The Office of the Lake Macquarie & Catchment Coordinator.

For years this area has suffered from the combined effects of severe bank erosion and rotting seagrasses, which gathered in near shore areas causing offensive odours and harming marine life.

But since The Office of the Lake Macquarie & Catchment Coordinator completed an extensive foreshore stabilisation and re-vegetation program in April, 2001, water quality has improved and the area is once again rich with aquatic life.

Rick Towndrow, a resident of the area for 43 years and a member of the Responsible Fishing Association in Lake Macquarie, said he has never seen the area near the entrance to South Creek in a healthier state.

"My early memories of the area are of built-up dead weed. We used to try to shovel it out and at one point we even brought a tractor down to clear it up."

Mr Towndrow says residents like the late Bert Bowerman, in memory of whom Bunya Park, Eleebana, is dedicated, worked tirelessly to keep the local environment in good health. Now, he says, the local environment is undergoing a revival, thanks to the Lake Macquarie Project.

"I am a keen fisherman and I get out on the Lake whenever I can. The water quality around South Creek is fantastic and it's obvious that the marine life is coming back as a result."

The foreshore stabilisation project near South Creek involved the input of shingles, or small



Clockwise from top left: Lake foreshore near South Creek before the foreshore stabilisation project, with dead seaweed build-up near the shoreline; since the works were completed the water quality has improved and the aquatic life has returned; Rick Towndrow & Alan Keff inspect seagrass wrack near the entrance to South Creek; in October 1961, Bert Bowerman (deceased) on his tractor, Peter Goodwin (deceased) and Rick Towndrow using a tractor to pull dead seaweed from the water. Photos courtesy of Rick Towndrow.

rocks, as well as a gentle sloping beach.

"The sloping beach allows the dead seagrass to be flushed out of the Lake naturally, rather than clogging up the near shore areas and destroying the water quality," said Rick Towndrow.

"The live seaweed which is so important as a source of food and protection for marine life is much healthier."

With more than \$2.8 million in improvement projects scheduled for 2003-2004, Mr

Towndrow says the future of Lake Macquarie is looking bright again.

"I think this area of the Lake is better now than it was 43 years ago, certainly healthier than I can ever remember it."

"The members of The Responsible Fishing Association would like to congratulate Jeff Jansson and everyone involved in the Lake Macquarie Project for their efforts so far and on the work planned for the next 18 months."

LAKE MACQUARIE PROJECT MANAGEMENT COMMITTEE

Mr. Bob Gardiner	Community Representative	
Mr. Matthew Crozier	Regional Planning Co-ordinator	Department of Infrastructure, Planning and Natural Resources
Clr. Greg Piper	Acting Chairperson	Lake Macquarie City Council
Mr. Charlie Dunkley	Acting Regional Manager Hunter/Inland	Waterways Authority
Mr. John Diplock	Principal Manager, Recreational Fishing	NSW Fisheries
Mr. Tom Bagnat	Regional Manager, Central Coast Hunter Range	National Parks Service
Mr. Michael Kerr	Regional Manager, Hunter	Environment Protection Authority
Clr. Neil Rose	Councillor	Wyong Shire Council
Mrs. Cathy Cole	Regional Director, Hunter	Department of Infrastructure, Planning and Natural Resources
Mr. Ian Kiernan		Ex-Officio Member
Mr. Bob Wilson		Ex-Officio Member
Prof. Bruce Thom		Ex-Officio Member
Mr. Tony Farrell	Group Manager Strategy	Lake Macquarie City Council
Mr. Jack Garaty	Community Representative	
Mr Don Cameron	Community Representative	

Capital Works Feast For Lake Entrance Area

More than \$800,000 in capital works are planned for the entrance area of Lake Macquarie during 2003, as part of the environmental improvement program managed by The Office of the Lake Macquarie & Catchment Coordinator.

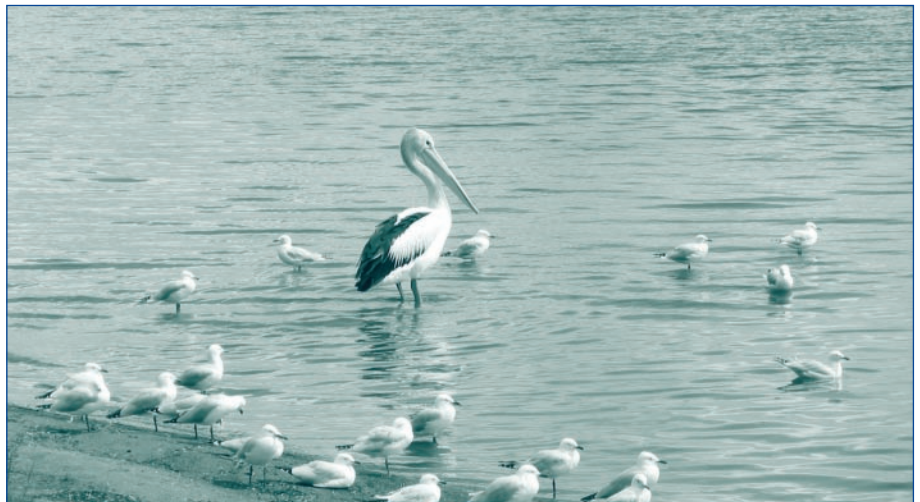
Projects either underway or awaiting approval in the area include rock groynes at Naru Point and Coon Island (\$160,000), foreshore stabilisation between Naru Point and Pelican Beach (\$250,000), rock-work along Swansea Channel (\$250,000) and the installation of a sediment trap and vegetated swale at Caves Beach, to improve the water quality in Black Ned's Bay (\$100,000).

Lake Macquarie and Catchment Coordinator, Jeff Jansson, said the works were part of an intensive program scheduled for 2003.

"The Project Management Committee has identified some high priority projects. The projects will limit bank erosion and improve water quality by treating the source of the problem."

"The projects will limit bank erosion and improve water quality by treating the source of the problem."

"One example of this is the works being undertaken by consultants WBM Oceanics at Pelican. This area was identified as being



Improved water quality will encourage bird and aquatic life back to the entrance to Lake Macquarie

in need of improved foreshore protection to minimise erosion in the Lake Macquarie

the recommendations of the Premier's Taskforce Report on Lake Macquarie.

NSW Premier Bob Carr announced an extension of the program in May 2002, describing it as a "model partnership between the State and local governments, industry and the community".

Estuary Management Plan."

The Lake Macquarie Project Management Committee was formed in 1999 to implement

Many Hands Produce Results: Continued from page 1.

"It was wonderful to have community involvement in this project. Since the job has been completed there have been visible improvements to the ecosystem of the Lake," Mr Gillies said.

Workshops explaining the construction and placement of the wetlands site were held for students and they were also introduced to local Aboriginal 'water' stories. This provided the inspiration to construct a series of ceramic totems. Debbie Abraham, of Lake Macquarie City Art Gallery, explained why the totems were placed in clusters at the entry to the wetlands.

"Each totem represents a student's sense of place, and will be their personal marker in the place," she said.

The educational benefits of the wetland site continue with Lake Macquarie High School deciding to officially 'adopt' the Wetland under Council's Adopt-a-SQID (Stormwater Quality Improvement

Device) Program.

The Program commenced in August 2000 and there are currently 15 Adopt-a-SQID groups across the city, with over 350 residents and school children involved. John Kilpatrick, Mayor of Lake Macquarie, said the primary aim of the program is to involve the community in protecting the health of local waterways.

"By monitoring the Booragul Wetlands under the Adopt-a-SQID Program it is hoped that students at Lake Macquarie High School will learn more about catchments and stormwater, help raise community awareness of water quality issues and help Council to manage stormwater more effectively," Mayor Kilpatrick said.

Lake Macquarie and Catchment Coordinator, Jeff Jansson, described the Booragul Wetlands project as a perfect example of the whole-of-government approach recommended by the Premier's Taskforce Report on Lake Macquarie.



Students and staff prepare for planting at Booragul.

"It shows what can be achieved when various levels of government and the community join forces toward protecting and improving our environment," he said. The Booragul Wetlands project is part of the broader Cockle Bay upgrade that is addressing sediment and associated pollution problems to protect the environmental health and recreational amenity of Cockle Bay and the adjacent areas of Lake Macquarie.

Introduction

The map on the following page shows the proposed work program of the Lake Macquarie Project Management Committee over the next two years, to June 2005.

The Lake Macquarie Project Management Committee was established to implement the recommendations of the Premier's Taskforce on Lake Macquarie, formed in 1999 to address the issues contributing to the degradation of the Lake environment. These include sedimentation and nutrient enrichment from stormwater run-off.

The emphasis of the work program is to treat the problem at the source, by addressing the cause of the Lake's problems arising from its catchment and foreshore. It also includes removal of some sediment and ooze from a number of bays, as well as some maintenance and navigation dredging of the entrance channels.

The Lake Macquarie Project Management Committee is responsible for the oversight of the implementation of \$18 million of environmental improvements to the Lake, which are delivered through the Office of the Lake Macquarie and Catchment Coordinator. The work by the Office of the Lake Macquarie and Catchment Coordinator is integrated with, but additional to the existing activities of Government agencies and Councils with regard to estuary and catchment management.

The range of activities undertaken by the Office of the Lake Macquarie and Catchment Coordinator include the implementation of the work program, increasing community understanding and awareness of the Lake and its catchment and scientific monitoring of key environmental indicators.

Stormwater treatment devices can range from pre-cast concrete boxes that capture or filter coarse sediment and litter, to constructed wetlands and vegetated swales (watercourses) that remove finer sediments and nutrients through natural physical, chemical and biological processes.

Foreshore stabilisation and vegetation is carried out to prevent foreshore erosion on public lands. It normally consists of construction of a natural sloping beach and planting of native species. The vegetation also provides a filter for run-off into the Lake.

While high levels of exposure to wave action in some areas mean that rock work is needed, endeavours are made to mimic nature as much as possible.

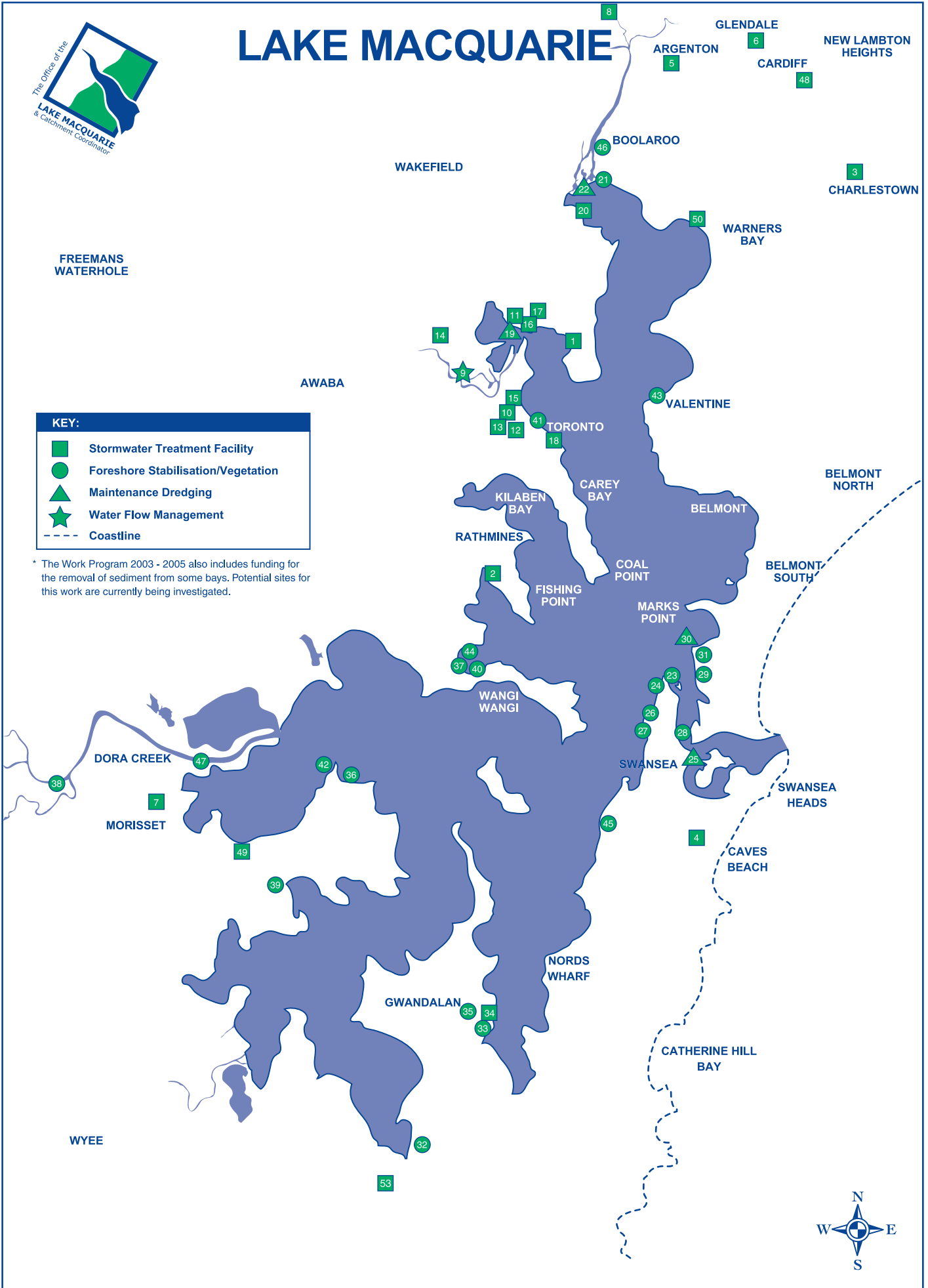
For more information, visit our website
www.livinglakemacquarie.org

	Location	Brief Description	Year
1	Bolton Point	Wetland	2003
2	Balmoral	Three stormwater pollutant traps and vegetated swale	2003
3	Charlestown	Stormwater pollutant trap	2004
4	Caves Beach	Stormwater pollutant trap and vegetated swale	2003
5	Cardiff	Wetland and stormwater pollution trap	2004
6	Glendale	Sediment trap and vegetated swale	2004
7	Morisset	Wetland and stormwater pollutant trap	2004
8	Edgeworth	Stormwater pollutant trap and bank erosion protection	2004
9	Blackalls Park	Two culverts to improve water flows	2003
10	Toronto	Stormwater pollutant trap	2003
11	Fennell Bay	Stormwater pollutant trap and vegetated swale	2003
12	Toronto	Stormwater pollutant trap	2003
13	Toronto	Stormwater pollutant trap	2003
14	Blackalls Park	Stormwater pollutant trap	2003
15	Toronto	Stormwater pollutant trap	2003
16	Fennell Bay	Stormwater pollutant trap and vegetated swale	2003
17	Fennell Bay	Stormwater pollutant trap and vegetated swale	2003
18	Toronto	Stormwater pollutant trap	2003
19	Fennell/Edmunds Bays	Dredging	2003
20	Cockle Bay	Foreshore stabilisation and vegetation	2003
21	Cockle Bay, Creek entrance	Foreshore stabilisation and vegetation	2004
22	Cockle Creek entrance	Dredge/groyne/spit removal	2004
23	Coon Island	Foreshore stabilisation and vegetation	2003
24	Coon Island (western side)	Groyne construction and beach nourishment	2003
25	Black Neds Bay	Maintenance dredging	2003
26	Swansea Flats	Foreshore stabilisation	2003
27	Swansea Flats	Removal of silt fans	2003
28	Entrance Channel	Foreshore protection- western foreshore	2003
29	Pelican	Foreshore protection	2004
30	Main Channel	Navigation dredging	2003
31	Naru Point	Groyne construction	2003
32	Chain Valley Bay South	Watercourse stabilisation	2003
33	Gwandalan	Foreshore stabilisation and vegetation	2003
34	Gwandalan	Wetland	2004
35	Gwandalan	Watercourse stabilisation	2003
36	Balcolyn	Foreshore stabilisation	2003
37	Wangi	Foreshore stabilisation	2003
38	Dora Creek	Foreshore stabilisation and vegetation	2003
39	La Petite Creek, Windermere Park	Foreshore stabilisation	2003
40	Wangi Bay, Stage 2	Foreshore stabilisation	2003
41	Toronto	Foreshore stabilisation	2003
42	Shingle Splitters Point, Balcolyn	Foreshore stabilisation	2003
43	Bennett Park, Valentine	Foreshore stabilisation	2004
44	Wangi Bay, Stage 3	Foreshore stabilisation	2004
45	Wrightson Park, Cams Wharf	Foreshore stabilisation	2005
46	Boolaroo	Foreshore stabilisation	2005
47	Dora Creek	Foreshore stabilisation	2005
48	Cardiff	Stormwater pollutant trap	2005
49	Pendlebury Park, Bonnells Bay	Stormwater pollutant trap and vegetated swale	2005
50	The Esplanade, Speers Point	Stormwater pollutant trap	2005
51	Removal of sediment from tributaries and Bays (sites being investigated)		2004
52	Removal of sediment from tributaries and Bays (sites being investigated)		2005
53	Doyalson North	Wetland	2005

* Other activities not indicated on the map include a lake water quality monitoring program; education and reporting program; seagrass wrack management plan and rehabilitation and enhancement of natural wetlands



LAKE MACQUARIE



Note: This program is an indication of the planned work program at the time of preparation. A number of projects are subject to approval from regulatory authorities and the program may vary due to unforeseen circumstances.