

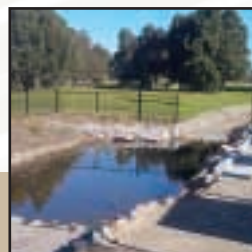


The Office of the Lake Macquarie & Catchment Coordinator

Annual Report **2001 - 2002**

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Introduction

This year brought to an end the first three years of the integrated program for the environmental management of Lake Macquarie.

The Lake Macquarie Project Management Committee was established to implement the recommendations of the Premier's Taskforce on Lake Macquarie, tabled in 1999. These recommendations and the entire management framework have been developed according to five broad objectives, which the Lake Macquarie Project Management Committee uses as a consistent reference point for management decisions and strategy development:

1. To contribute to a healthy environment for the community and a significant regional recreational resource
2. To maintain a healthy ecosystem
3. To develop a relationship of stewardship between the people living within the catchment and the lake itself
4. To enhance sustainable economic activity working in harmony with the community and environment
5. To integrate the management of the lake and its catchment and related activities within a single coherent management framework.

The implementation of stormwater quality improvement strategies and sediment controls, as outlined in the 'Physical Works' section of this report, along with extensive foreshore stabilisation and erosion prevention strategies, have been completed to achieve the first two objectives of the program.

While some of these works have been carried out on-site, such as Salts Bay and various locations around Warners Bay, the majority of works have been concentrated higher up in the catchment in a bid to treat the problem at the source. The Project Management Committee has made a conscious decision in this area to support long-term strategies that prevent further incidents of environmental problems, rather than committing ongoing funding to clean up areas where the problem becomes a visible one attracting media and public attention.

The program has also incorporated an extensive community education and reporting program, to inform the community of the cause and effect linkages as expressed in the 'treatment chain' model of environmental management. By promoting this philosophy, the Project Management Committee is empowering the community to make a positive contribution to improving the lake, by adjusting domestic activities which can cause environmental harm in the lake. The results of the second Community Survey, published in October 2001, show that these strategies have been successful. Not only has community awareness grown to the extent that the lake's health is now ranked equal with crime as the most significant issue facing the community, but the awareness of domestic habits on water quality and general environmental health has grown considerably.

While the Project Management Committee is charged with focussing primarily on environmental issues, it has also contributed to enhancing sustainable economic activity wherever possible. This has extended to the allocation of savings in some areas of the program toward maintenance of channel access into Lake Macquarie, as well as support of key planning instruments such as the Lake Macquarie Draft Local Environment Plan and its promotion of the principles of Water Sensitive Urban Design.

The establishment of the Project Management Committee, bringing together representatives from key government departments, community representatives and related professionals, continues to integrate the management of the lake into a coherent framework. The strong relationship with key community groups like Landcare is a tribute to the effectiveness of the whole-of-government approach recommended by the Premier's Taskforce Report.

The Lake Macquarie Project Management Committee has 13 members representing the critical stakeholders in Lake Macquarie and its sub-catchments. Members and the capacity of their individual representation are:

| Name | Title | Organisation |
|--|---|--|
| Mr Bob Gardiner | | Community Rep |
| *Mr Doug Sneddon Mr Matthew Crozier | Regional Coordinator | Planning NSW |
| **Cr Greg Piper | Acting Chairperson - Councillor | Lake Macquarie City Council |
| **Mr Peter Nelson | Chairperson | Community Rep |
| Mr John Fisher | 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 & Wildlife Service |
| Mr Michael Kerr | Regional Manager - Hunter | Environment Protection Authority |
| Cr Neil Rose | Councillor | Wyong Shire Council |
| Mrs Cathy Cole | Regional Director - Hunter | Department of Land & Water Conservation |
| Mr Ian Kiernan | | Ex-Officio Member |
| Mr Bob Wilson | | Ex-Officio Member |
| Prof Bruce Thom | | Ex-Officio Member |

* Doug Sneddon departed in his role as Regional Coordinator of Planning NSW half way through the 2001/2002 financial year. He was replaced in this capacity and therefore in his role on the Lake Macquarie Project Management Committee by Matthew Crozier.

** Peter Nelson resigned his position as Chairperson of the Committee in February 2002 due to a change in his employment situation. Lake Macquarie City Councillor, Greg Piper, has performed the role of Acting Chairperson since that time.



Cr. Greg Piper
Acting Chairperson
Lake Macquarie Project
Management Committee

The Honourable John Aquilina, MP
Minister for Fair Trading
Minister for Land and Water Conservation

Level 31 Governor Macquarie Tower
1 Farrer Place
Sydney NSW 2000

Dear Mr. Aquilina,

I am pleased to present to you the Lake Macquarie Project Management Committee Annual Report 2001/2002.

The Lake Macquarie Project Management Committee has strived to find the appropriate balance between public works, environmental monitoring programs, communication and education with local communities in the Catchment area.

The expenditure of the Lake Levy and matching State Government funds is in accord with a program prepared with the input of many people through the Premier's Taskforce into Lake Macquarie and is broadly consistent with the goals of the Estuary Management Plan developed by Council's Estuary Management Committee.

The approval of the proposal to continue the Lake Levy and the announcement by Premier Bob Carr (MP) in May, of a further \$3.9 million in funding will ensure that an extra \$8 million worth of work can be completed during the extended stage of the project.

I believe this is a show of faith, not only in the progress made by the committee during its first three years, but also in the process of broad consultation which has allowed input from many interested and committed persons and groups.

As Acting Chairperson of The Lake Macquarie Project Management Committee, which oversees this expenditure, I have witnessed first-hand the great contrast between the opinions of various key stakeholders in Lake Macquarie. It is a tribute to the quality of this region's greatest natural resource that this community interest is so passionate.

While the Committee is determined to achieve the objectives set out in recommendations made by the Premier's Task Force Report (1999), we have been able to redirect savings on some projects to address key issues of concern within the community, such as boating access through Swansea Channel.

However, there has been considerable criticism of the Project Management Committee in particular, for failing to act quickly and decisively on the issue of boating access. While problems in the channel are acknowledged and the Committee is aware of the public

debate, the committee, relying on understandings from contemporary scientific studies, maintains the issue is predominantly one of lifestyle and economic benefits through tourism, rather than one of environmental protection. This distinction is one that has caused some confusion or contention for some key stakeholders within the community.

Through a commitment to a broad range of physical works, including extensive foreshore remediation works throughout the catchment and the implementation of stormwater improvement strategies such as constructed wetlands, direct action has been taken to address issues which effect the environmental health of the lake.

Much of the works completed have focused on works in the upper catchment areas, aimed at stopping sedimentation and nutrient enrichment at the source. Repairing and restoring natural systems such as wetlands and vegetated drainage lines allows stormwater run-off to be filtered more effectively before it reaches the lake.

The task of communicating the strategy, the scope of activity and the environmental issues central to repair of the lake is challenging, given the contrasting interests and opinions of the key stakeholders. Our Community Survey results, which are highlighted in this report, suggest that we are making progress in these efforts.

In announcing the funding extension, Premier Carr said that “the work so far on improving Lake Macquarie’s health has been a real community effort. It has been a model partnership between the State and Local governments, industry and the community”. I believe this to be true.

Further, Premier Carr said that he wanted to see the lake regarded worldwide as “the cleanest, the very best, the world’s best” lake with an urbanised catchment. I, along with the individual members of the Project Management Committee, believe this to be a realistic long-term objective and worthy and important goal to pursue.

The Committee’s continued work and commitment will ensure the continued success of efforts to revive, renew and protect the ecology of Lake Macquarie.

Yours Sincerely,

Cr Greg Piper

**Acting Chairperson
Lake Macquarie Project Management Committee**

Physical Works

The Lake Macquarie Project Management Committee committed \$1.3 million to physical works throughout the catchment, during the 2001-2002 financial year. This expenditure represents approximately 60% of the overall project budget, reflecting the importance that is placed on active initiatives to rehabilitate the lake.

Spending on physical works includes a wide range of activities both large and small. While large scale projects such as the stabilisation of Salts Bay are highly visible to the local community, the majority of works are localised and of a smaller scale, carried out on behalf

of the Project Management Committee, often by Council staff.

The Lake Macquarie Project Management Committee has continued in its approach of focussing on works in parts of the catchment. Put simply, this is a strategy aimed at treating the problems at the source. Research has shown that the sediment loads and stormwater run-off coming from the catchment is a major contributor to decreasing water quality in the lake. It is the belief of the Committee that the current strategy provides the best path to improve the health of Lake Macquarie.

Foreshore Protection and Erosion Prevention

Salts Bay

The Salts Bay Stabilisation Project was completed in May, bringing to an end the works which commenced in 2000-2001. The project included groyne construction, beach nourishment (using sand reclaimed from dredging), rock maintenance work and further maintenance dredging at the mouth of Black Neds Bay.

Finishing touches included plantings on the sand dunes, taking the project cost close to the original budget of \$600,000. Waterways Authority of NSW have agreed to monitor the entrance to Black Neds Bay to determine the extent to which shoaling will be a problem.

Pelican Foreshore

Foreshore erosion was identified as a key issue in the Estuary Management Plan, in the recommendations made by the Premier's Task Force, in media coverage and State Parliament.

Pelican foreshore is a site that has been the cause of community concern for some time. However, regular surveys show that while nuisance erosion does occur here, this can be replaced by natural growth, meaning the site could not be prioritised as an urgent or major erosion problem.

Lake Coordinator Jeff Jansson attended a meeting of the Pelican Progress

Association to discuss the problem. While members of the community are eager to see larger works carried out, as pre-empted in the Task Force Report, they did express an interest in being involved in small-scale work in the interim.

The recently completed upper beach revetment of low profile rock-work will address the problem of upper beach erosion. This has also been supported with revegetation of the area, though this work was of a minimal nature due to the high recreational use and requirements for access to the water's edge. The Landcare area facilitator agreed to assist the community by funding the supply of plants. The cost to place the rock-work and prepare the ground for planting was approximately \$23,000.

Wyong Shire

A comprehensive construction program valued at \$373,000 was approved for implementation over two years in the Wyong Shire area. Construction costs increased this slightly and this was covered by Wyong Shire Council. Details of the project include:

- Summerland Point - \$112,500 for five rock lined sediment control pits, a precast concrete gross pollutant trap and foreshore stabilisation at the boat harbour.
- Gwandalan - \$89,500 for construction of two rock lined sediment control pits, upgrade of an

existing pit and stream bank stabilisation.

- Chain Valley Bay North - \$20,000 for two rock lined sediment control pits and embankment stabilisation.
- Mannering Park - \$170,500 for a constructed wetland and two rock lined sediment control pits.
- Chain Valley Bay South - \$10,000 for three sediment control pits and revegetation of exposed area.

Lake Macquarie

Foreshore Protection and Erosion Prevention strategies were implemented throughout the Lake Macquarie City area to the value of \$640,000 in 2001-2002.

Examples of the completed works include:

- Major bank stabilisation work with rock at Flaggy Creek near Government Road, Barnsley (\$21,000)
- Foreshore stabilisation for reserve at Balmoral (adjoining boat ramp) consisting of a natural shaped beach of river shingles, upper beach revetment and plantings of endemic species (\$26,000)
- Stabilisation of pipe outlet pond (rock and vegetation) and some stabilisation of Flaggy Creek bank on reserve behind Nelson Road, Barnsley (\$17,800)
- Foreshore stabilisation and vegetation at Shingle Splitters Point (\$34,000)
- Foreshore stabilisation and vegetation at Rathmines Reserve (\$60,000)
- Foreshore stabilisation and vegetation works at Paley Crescent, Belmont South (\$20,500).
- Foreshore stabilisation and vegetation on the reserve at Dora Creek (\$20,500)



Pelican Reserve foreshore stabilisation works

In addition, funding for a number of other projects was approved in 2001-2, including:

- Stabilisation works using conglomerate rock to the upper beach area near the new jetty at Green Point (\$51,000)
- Foreshore stabilisation and vegetation work at Lakeside Parade, Brightwaters (\$10,000)
- Rock stabilisation works on South Creek at the end of Punt Road at a cost of (\$9,700)
- Sediment investigations and concept design for the stabilisation of foreshore land at 'Stinky Corner', Warners Bay (\$3,635)

Stormwater Treatment and Management Devices

Constructed Wetlands

Constructed wetlands aim to mimic natural processes like filtration and absorption, to assist in improving water quality in Lake Macquarie. A number of constructed wetland projects have been completed or are currently under construction throughout the catchment:

- Constructed wetland at Ward Street, Blackalls Park (\$75,176)
- Constructed wetland at Todd Street, Blackalls Park (\$138,842)

- Constructed wetland at First Street, Booragul, including some foreshore stabilisation and beach construction (\$300,900)
- Constructed wetland at Lake Street, Bolton Point (\$149,865)
- Constructed wetland at TC Frith Avenue, Speers Point (\$76,530).

Gross Pollutant Traps (GPT)

- The construction of a commercial GPT with a vegetated drainage swale was completed at Ridley Street, Edgeworth at a cost of \$52,321.

Management Plans and Investigative Works

Fennell & Edmunds Bay

Local firm, Umwelt Pty Ltd, was appointed as the consultant for preparation of a management plan for improvements to Fennell and Edmunds Bay. This phase, valued at \$51,105, involved extensive community consultation.

Umwelt conducted a public workshop in August 2001 to facilitate community input into the future management of the site. Many worthwhile suggestions were included in the draft management plan for improving Fennell/Edmunds Bays.

The draft plan was placed on public exhibition for a period of 28 working days during February and March 2002. While a formal design would be required for some of the works, it was anticipated that many of the actions (such as foreshore stabilisation and revegetation) would be able to proceed as soon as the plan was completed.

During the exhibition period a "drop-in" community information session was held at the Landcare Resource Centre, Fassifern. Summary brochures were available on request with the full document available in libraries, Council's Administration Centre and on the Committee's web site.

A small number of submissions were made in response to the draft plan, resulting in some minor changes being

made. Design work commenced in June on implementation of the Management Plan for Fennell/Edmunds Bay. The actual project is likely to cost \$1.5million.

The Project Management Committee believes that the community consultation process was a considerable success, and provides a strong endorsement for the whole-of-government approach to future catchment management.

Coon Island

Webb McKeown were engaged to prepare a management plan to address foreshore erosion at Coon Island. This site is a cause for major concern within the community.

The draft plan was placed on public exhibition for 28 working days during May and June 2002, following release by the Minister for Land & Water Conservation.

The Project Management Committee has allocated \$300,000 for foreshore stabilisation at Coon Island.

Cockle Bay

Manly Hydraulics Laboratory were engaged to prepare a management plan to address serious erosion and sedimentation issues in Cockle Bay.

The draft plan was placed on public exhibition for 28 working days during May and June 2002, following release by the Minister for Land & Water Conservation.

The Project Management Committee has allocated \$1.8 million for improvements to address the problems at Cockle Bay.

Urban Stormwater Initiative

The Urban Stormwater Initiative (USI) "Integrated Riparian / Wetland Systems for Stormwater Treatment in Lake Macquarie" is a project being funded by the Commonwealth Government and the Project Management Committee. The initiative is designed to implement strategies to improve the management of stormwater run-off throughout hotspot sub-catchments within the City.

Approvals have been received for three devices at:

- Karen Avenue, Glendale;
- Awaba Road, Toronto West; and
- Kahibah Road, Morisset.

Further designs have been prepared for devices at Government Road, Barnsley and Bay Road, Bolton Point.

An education campaign was also launched in local areas to inform the community about the strategies and how they will improve stormwater management and water quality in Lake Macquarie.

Dredging

Channel Entrance - Swan Bay

Boating access into Lake Macquarie emerged as a highly contentious issue during 2001-2. In particular, the ‘dog-leg’ at Swan Bay was identified as a major navigation hazard.

The issue of boating access into Lake Macquarie is not strictly an environmental problem and the Project Management Committee had no specific budget allocation for the channel. However, given the importance in maintaining safety in Lake Macquarie, the Committee decided that savings made in other areas of the project would be redirected to assist in finding a solution to the channel access issue.

The Committee sought proposals to conduct modelling of the main upstream channel, with the aim of developing short and long term options to address the navigation problems caused by the construction of the second opening into Swan Bay.

WBM Oceanics were successful in winning the contract to model the available options and were asked to recommend a solution for improving the main channel at the second (constructed) opening into Swan Bay.

While the modelling project continued, the Project Management Committee held a special meeting in May to discuss key issues with community representatives. The event involved an inspection of key

sites by boat and included a briefing by WBM Oceanics on progress with the modelling project. Representatives of interest groups from within the local community attended. The Project Management Committee believes the community involvement was beneficial for all parties involved. The Committee was able to identify issues of concern to the local community and outline the thinking behind management strategies and funding decisions. The Project Management Committee believes these positive working relationships are critical to the success of the Lake Macquarie management strategies.

The merits of both short and long term solutions will be evaluated according to a cost benefit analysis and other measures. While the Committee has committed funding of \$500,000 to address the problems associated with the ‘dog leg’ and ensure safe navigation, the environmental imperatives need to be weighed up against recreational and economic desires, to determine to what extent funding is committed to any longer term solutions which may be recommended.

Other Sites

Funding of \$131,099 was committed to undertake maintenance dredging throughout the catchment. Work has been completed at sites such as:

- Bareki Road, Eleebana
- Lakeside Close, Bonnells Bay
- Dandaraga Road, Brightwaters
- Kilaben Road, Kilaben Bay
- The Esplanade Speers Point
- The Esplanade, Warners Bay
- Brooks Parade, Bonnells Bay
- Princess Street, Bonnells Bay

Carry Over Projects

The Project Management Committee was granted with a one-year extension with no further funding, (seperate to the three-year funded extension being undertaken concurrently) to complete three major projects which had carried over beyond

the period of the three-year action plan. These projects included Fennell Bay, Cockle Bay and Coon Island.

The extended period was required due to longer periods being devoted to scientific investigation, a commitment to community consultation and the determination of the committee to develop sustainable long-term solutions for sites identified for action in the Premier’s Task Force Report on Lake Macquarie.

Appropriate scientific investigation is regarded as essential in order to streamline the physical works, essentially by ‘getting it right, first time’. In this instance, the old adage ‘measure twice, cut once’ has been applied to ensure that funding is distributed to finding effective solutions.

The Committee is committed to community consultation, in line with the local community’s status as key stakeholders in the future of the lake. The environmental issues involved at sites such as Fennell Bay and Cockle Bay are very complex and require the understanding of the local community in order to conduct meaningful consultation. The Project Management Committee feels this investment in time will ensure the best long-term outcome for each of the sites approved as carry-over projects.



Wetland Basin, Speers Point

Communication and the Community

Ford Communication Pty Ltd was appointed for Phase Two of the community education and reporting functions at a contract price of \$47,195.50.

The structured components included expansion of and updates to the existing web site, a Teacher Resource Kit for primary and secondary schools throughout the catchment and a repeat of the Community Survey carried out in 2000.

Community Survey

The Living Lake Macquarie Community Survey involved random telephone surveys of 600 homes from the Lake Macquarie catchment area, and included a range of questions on lake issues and perceptions of its environmental health. The survey period was from 13-22 August, repeating the survey questions used in March 2000.

Comparisons with the March 2000 survey results provide a way of measuring shifts in perceptions and awareness within the local community. The results of the survey will be used as a key reference in the future planning of community education and reporting programs.

The Community Survey Report, released on 1 November, contained some encouraging findings. When asked to list the top three issues affecting the local community, 27.1% of respondents included the 'lake, beach and waterways'. The result was considerably different from the March 2000 study, where the lake ranked third at just 10%. The response made the lake the biggest issue of concern in the community, equal with crime which also registered 27%.

This position reflects the growing



Wetland Under Conversion/construction, Warners Bay

awareness of environmental issues within the catchment. The findings suggest that efforts to address gaps in community awareness and understanding are proving successful.

The Survey also reported strong gains in awareness within the younger age groups (18-24), and increased optimism that lake health is on the improve. More than 50% of respondents in all age groups expected the quality of the lake to improve, with only 21% expecting a decline.

Print Media Advertising Campaign

An intensive six-week print media awareness/education campaign was undertaken during November and December in partnership with Rural Press (through the Newcastle Star) and Rafferty's Resort, located at Cams Wharf.

Rafferty's supported the campaign by providing an accommodation package as a prize, in a reader competition designed to increase traffic to the web site. The strategy included a weekly column written by Lake Coordinator Jeff Jansson, as well as a 15cm X three column advertisement

which highlighted key environmental issues.

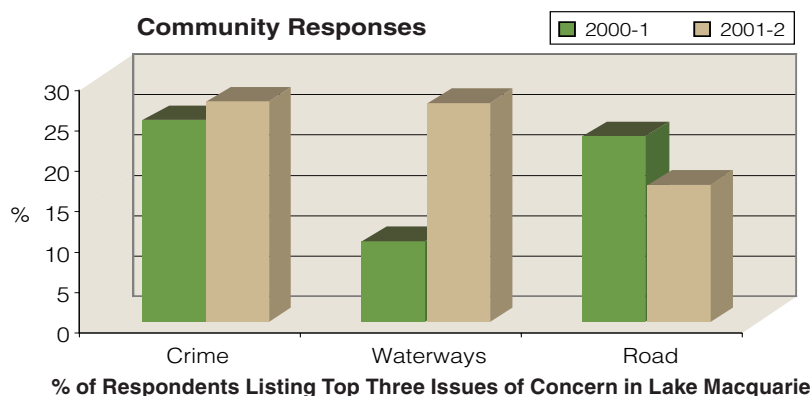
The campaign was well received within the community and resulted in approximately 2000 additional visits to the Committee's web site. The Newcastle Star editorial department also reported receiving a number of letters from the community in response to the published material, indicating a keen interest within the community on the state of the lake.

Teacher Resource Kit

The Teacher Resource Kit was aimed at taking the issues facing Lake Macquarie into classrooms throughout the catchment area, by creating a product which addressed existing syllabus guidelines and was tailored to suit the curriculum at both primary and secondary level.

The Department of Education was consulted in producing the 48-page booklet and a CD-Rom, containing in-class work-sheets and additional resource material. Each of the eight key topic areas was illustrated and supplemented by at least one recommended task to encourage students to learn more about their local environment through practical experiments or field activities.

The Teacher Resource Kit was released on World Environment Day (5 June), with a free copy (both book and CD Rom) provided to all schools in the lake catchment. The Kit provided work sheets for both primary and secondary level students



Living Lake Macquarie Newsletter

Two editions of the Living Lake Macquarie newsletter were produced as part of the second community education and reporting contract. The first issue was distributed at the end of May 2001, with the second following in January 2002.

The newsletter follows an established format, including a column by the Committee chairperson, a series of articles on topical stories on the lake environment and an educational section. It is distributed free to 74,000 homes within the Lake Macquarie catchment.

The 2001 Community Survey found that 30% of respondents could recall reading the newsletter. Given that the last issue had been produced more than three months prior to the survey period, this percentage recall is quite high.

The newsletter provides an opportunity to keep the local community up-to-date with the projects being undertaken on behalf of the Project Management Committee, as well as announcements of appointments for new projects. Importantly, it also acts as a way of reinforcing the key messages of the communication strategy.



Flaggy Creek stabilisation works



Balmoral Foreshore Reserve Stabilisation Works

Pamphlet/Poster Series

In 2000/2001 a series of five information pamphlets and posters were produced for distribution throughout libraries, interest groups and schools. In 2001/2002, one additional poster was created, on the subject of the constantly changing dynamics of the lake environment. The objective of the pamphlet was to position the lake as a living thing, which could be effectively managed but never frozen in time.

A localised version was also created for the Dora Creek area, based on the pamphlet advising on the role of vegetation in improving water quality. The pamphlet was distributed by the Dora Creek Catchment Group.

Community Presentations

Lake Coordinator Jeff Jansson honoured five formal invitations for speaking during 2002, while handling numerous

general enquiries on lake issues. These included presentations to community groups such as the 'Concerned Anglers' and conferences such as the 'Hunter and Coastal Regional Historical Convention' held in March.

The engagements were seen as an opportunity to meet face-to-face with members of the community who were often involved in activities closely related to the health of the lake.

Presentations to the Concerned Anglers Group and other community groups in particular, have proven highly effective in opening the lines of communication and identifying issues of concern within the community.

Monitoring

Macroalgae

Monitoring of macroalgae continued during 2001-2002. A comparison of macroalgae biomass for April this year compared to April last year showed a dramatic increase. However, a review of rainfall data for the fortnight prior to sampling showed that rainfall had almost doubled this year. This factor was a major contributor to the higher than average levels. These results demonstrate the enormous impact that stormwater run-off has on lake water quality and data shows that higher levels of macroalgae are found near urbanised areas, with major differences in comparison to undeveloped areas.

The last round of macroalgae monitoring identified some species of macroalgae not previously identified in the lake as well as a new species of ceramium found in Fennell Bay.

Bathing Areas

Hunter Water Laboratories were appointed for another year of water monitoring for bathing areas at a total cost of \$35,083.

Generally the weekly monitoring of indicator bacteria (faecal coliform) at the various sites around the lake were excellent. The Swimming Pool at Sunshine consistently delivered perfect results, even during periods of heavy rain.

The Lake Macquarie Project Management Committee called for a review of future monitoring programs due to the belief that weekly testing of indicator organisms in swimming areas is health based and should be addressed by Local Government. Eventually it was decided that this weekly monitoring program would cease, to avoid the duplicating with Council monitoring.

Sediment Sampling

Pacific Power International in conjunction with CSIRO were engaged to carry out sediment sampling at six sites to a value of \$28,175. The sampling program involves monitoring and detailed analysis of near shore sediments. The sampling is repeated after 12 months to identify any trends or changes.

Data Interpretation

Dr Bradley Eyre, from Southern Cross University (Centre for Coastal Management) was engaged in October

to undertake a review of all water monitoring data captured on the lake since 1994, with a brief to report on the health status of the lake and examine any discernible trends.

The draft "report card" was approved by the Project Management Committee before being produced as an A4 (printed two sides) information leaflet for distribution throughout the community.

Bradley Eyre's report broke the lake into eight main components:

- Lake middle
- Lake entrance
- Southern Lake margin
- Central Lake margin
- Northern Lake margin
- Dora Creek
- Pourmalong Creek
- Kilaben Creek
- South Creek
- Cockle Creek.

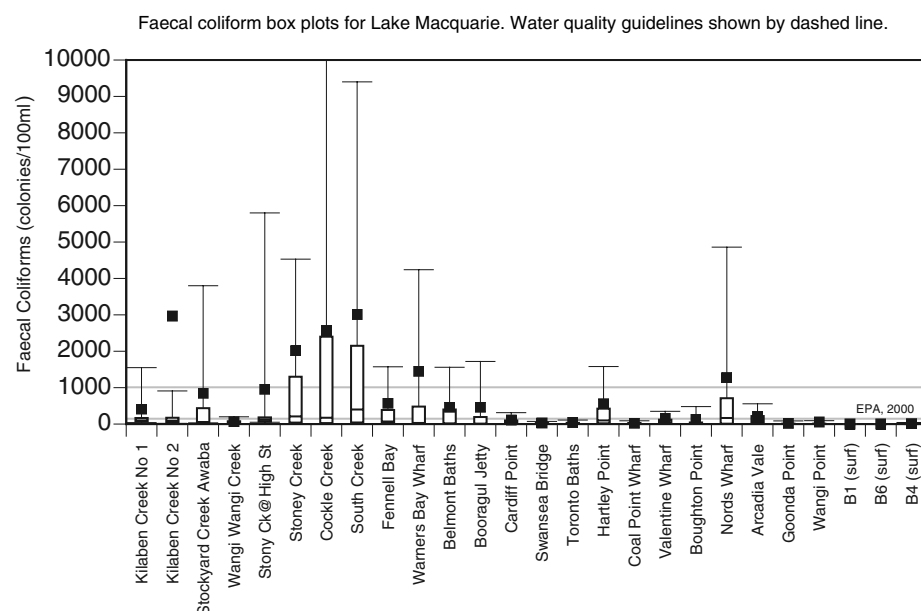
The University analysis found that water quality in the main body of the lake was generally good. However, while deep water areas such as the channel entrance were found to be in very good health, water quality around the shoreline areas left more room for improvement. Unfortunately, those near shore areas are the most visible to the casual observer. Less water volume and urbanised catchments means that these areas provide more concentrated sites for flashpoints like algal blooms and

unsightly black ooze.

The lake's major tributaries were also generally found to be in a poor state of health. Of the creeks included in the report card the best grading was 'marginal'. These areas tend to be more volatile than deeper water areas. With less water volume the tributaries are more dramatically affected by events like periods of large rainfall. However, the lake's tributaries often bear the brunt of urban run-off, so poor results at these sites are a warning that we still need to improve stormwater management higher up in the catchment. The study found that these creeks experienced high sediment loads and elevated nutrient levels, which cause things like algal blooms that hinder the growth of aquatic plants and affect water quality.

Much of the works completed during the life of the project have focused on works in the upper catchment areas, aimed at stopping sedimentation and nutrient enrichment at the source. Repairing and restoring natural systems such as wetlands and vegetated drainage lines allows stormwater run-off to be filtered more effectively before it reaches the lake.

Bradley Eyre's report suggests that this strategy is achieving positive results throughout the Lake. In his report, Dr Eyre stated: "Overall nutrient loads to Lake Macquarie appear to be remaining constant (but not increasing) despite an increase in urbanisation, which most likely reflects nutrient load reduction strategies that have been implemented."



General

Personnel

Mr Peter Nelson resigned as the Chairperson of the Project Management Committee in February due to a change in his employment situation. Councillor Greg Piper, then deputy Chairperson, currently fills the role in an acting capacity.

Funding and Program Extension

Following the visit of Minister John Aquilina to Lake Macquarie in February 2002, the State Government agreed in principle to a 12-month extension, without additional funding, to finalise three major projects (Fennell Bay, Cockle Bay and Coon Island).

The Minister for Local Government approved Lake Macquarie City Council's request to continue the special rate levy for a further three years. This provides Council's matching contribution to the Premier's announcement of Government funding and finalises the approvals for the project to continue.

Where the report of the Premier's Task Force on Lake Macquarie was very specific on spending of funds, there will be greater discretion given to the

Project Management Committee for the extended program. A broad Action Plan was developed based on implementing the recommendations made in the Task Force Report; the Lake Macquarie Estuary Management Plan; and later identified needs. This was reviewed by a Working Group of the Project Management Committee and submitted to the Minister for Land and Water Conservation.

The Project Management Committee is charged primarily with addressing and investigating environmental issues within the lake. While the Committee has been able to redirect savings from some elements of the project to fund activities to address issues of intense public interest, the environmental benefit from the allocation of funding and resources is the priority of the program at all times. Throughout the program, the Project Management Committee has been sensitive to community issues and attempted to balance environmental, economic and lifestyle concerns as much as its brief will allow.

The Committee is aware of some criticism by the boating sector over the balance between water-based works

and catchment-based works. This issue has been aggravated by the problems with the main boating channel at the constructed Swan Bay opening and the fact that no specific funds were identified for the main channel in the Task Force report.

There is also considerable community pressure for boating access to be improved in some shallow bays, as well as pressure for removal of the build up of ooze around the immediate shoreline of these areas.

The Project Management Committee believes that the majority of the pressure for dredging is based on the community's recreational and aesthetic needs rather than environmental needs. Given the objectives of the Project Management Committee are focused on environmental improvement, it is difficult to justify large expenditure from the project budget for these issues, irrespective of the merits of individual cases. The Committee will however, consider undertaking works at some badly affected bays.



Constructed Wetland Lake Street, Bolton Point

**Independent audit report to the
Office of the Lake Macquarie & Catchment Coordinator**

Scope

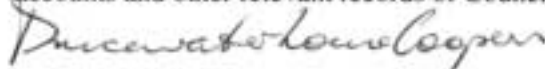
We have audited the attached "Statement of Financial Performance and Statement of Financial Position" for the Office of the Lake Macquarie & Catchment Co-ordinator for the year ended 30 June 2002. Council is responsible for the preparation and presentation of the Statement of Financial Performance and Statement of Financial Position and the information contained therein. We have conducted an independent audit of the Statement of Financial Performance and Statement of Financial Position in order to express an opinion to the Office of the Lake Macquarie & Catchment Co-ordinator on its preparation and presentation.

We disclaim any assumption of responsibility for any reliance on this audit report or on the financial report to which it relates to any person other than the Office of the Lake Macquarie & Catchment Co-ordinator for any purpose other than that for which they were prepared.

Our audit has been conducted in accordance with Australian Auditing Standards. Our procedures included examination, on a test basis, of evidence supporting the amounts disclosed in this statement. The procedures have been undertaken to form an opinion as to whether, in all material respects, the attached Statement of Financial Performance and Statement of Financial Position is in accordance with the books, accounts and other relevant records of Council.

Audit opinion

In our opinion, the attached Office of the Lake Macquarie & Catchment Co-ordinator Statement of Financial Performance and Statement of Financial Position is in accordance with the books, accounts and other relevant records of Council.



PricewaterhouseCoopers
Chartered Accountants



W M Russell
Partner

Newcastle
22 October 2002

Office of the Lake Macquarie & Catchment Coordinator

Statement of Financial Performance

For year ended 30 June 2002

| | 2002 \$ | 2001 \$ | 2000 \$ |
|--|------------------|------------------|------------------|
| Revenues | | | |
| Contributions - DLWC Supplementary | 2,025,000 | 2,025,000 | 1,400,000 |
| Contributions - DLWC - Administration | 101,170 | 102,813 | 91,869 |
| Contributions - LMCC | 1,107,860 | 1,028,426 | 202,787 |
| Contributions - Wyong Shire Council | 200,000 | 89,314 | 10,686 |
| Contributions - Hunter Water | 14,000 | 14,000 | 14,000 |
| Contributions - In-Kind | 678,940 | 225,200 | 519,914 |
| Interest on Investments | 16,805 | 13,045 | 6,250 |
| | 4,143,775 | 3,497,798 | 2,245,506 |
| Expenses | | | |
| Completed Works - Note (1) | 2,164,700 | 1,995,504 | 456,637 |
| Works In-Kind - Note (2) | 678,940 | 225,200 | 519,914 |
| | 2,843,640 | 2,220,704 | 976,551 |
| Surplus Funds for the year ended 30/06/2002 | 1,300,135 | 1,277,094 | 1,268,955 |

See Note (3) for Work Commitment For Expenditure

Office of the Lake Macquarie & Catchment Coordinator

Statement of Financial Position

As at 30 June 2002

| | 2002 \$ | 2001 \$ | 2000 \$ |
|--------------------------------------|------------------|------------------|------------------|
| Current Assets: | | | |
| Investments | 3,811,644 | 2,561,121 | 1,268,956 |
| Receivables | 41,008 | 12,032 | 7,205 |
| Total Current Assets | 3,852,652 | 2,573,154 | 1,276,161 |
| Current Liabilities: | | | |
| Creditors | 38 | 20,675 | 776 |
| Total Current Liabilities | 38 | 20,675 | 776 |
| Net Current Assets | 3,852,614 | 2,552,479 | 1,275,385 |
| Non Current Assets | 0 | 0 | 0 |
| Total Non Current Assets | 0 | 0 | 0 |
| Non Current Liabilities | 0 | 0 | 0 |
| Total Non Current Liabilities | 0 | 0 | 0 |
| Net Assets: | 3,852,614 | 2,552,479 | 1,275,385 |
| Total Equity | 3,852,614 | 2,552,479 | 1,275,385 |

Note (1) Office of the Lake Macquarie & Catchment Coordinator Completed & Works In Progress

Source of funding Cash

| | Actual Expend to 30/6/02 | DLWC (Supplementary) | LMCC | WSC | HWC |
|--|-----------------------------|-------------------------|-----------------------|---------------------|--------------------|
| Website fees | \$169.40 | \$84.70 | \$84.70 | | |
| Printing of 2000/2001 Annual Report | \$740.00 | \$370.00 | \$370.00 | | |
| Printing education posters and pamphlets | \$1,170.91 | \$585.45 | \$585.46 | | |
| Printing newsletter issue 4 | \$7,831.82 | \$3,915.91 | \$3,915.91 | | |
| Graphic design - Dora Creek education brochure | \$100.00 | \$50.00 | \$50.00 | | |
| Production of Teacher Resource Kit | \$1,340.73 | \$745.20 | \$495.75 | \$99.78 | |
| Community education and reporting functions 2001/2002 | \$28,603.28 | \$17,441.02 | \$6,976.41 | \$4,185.85 | |
| Lake Macquarie issues education advertisement program | \$4,446.00 | \$2,710.98 | \$1,084.39 | \$650.63 | |
| Distribution of newsletter issue 4 | \$2,812.00 | \$1,714.64 | \$685.85 | \$411.51 | |
| Printing Native Vegetation Protecting Dora Creek Education pamphlet | \$315.00 | \$192.07 | \$76.83 | \$46.10 | |
| Fennell & Edmunds Bay Management Plan | \$44,585.27 | \$22,292.63 | \$22,292.64 | | |
| Design of stormwater treatment devices | \$53,670.20 | \$14,491.91 | \$39,178.29 | | |
| Cockle Bay Management Plan | \$49,205.52 | \$35,585.09 | \$13,620.43 | | |
| Coon Island Management Plan | \$28,763.53 | \$14,381.77 | \$14,381.76 | | |
| Salts Bay Stabilisation Works | \$242,190.91 | \$121,095.46 | \$121,095.45 | | |
| Swan Bay Hydraulic, Sediment Transport & Navigation Study | \$40,127.79 | \$20,063.89 | \$20,063.90 | | |
| Maintenance dredging | \$150,399.63 | \$81,247.88 | \$69,151.75 | | |
| Dredging of Swansea Channel | \$50,000.00 | \$25,000.00 | \$25,000.00 | | |
| Survey channel dredging | \$5,709.52 | \$2,854.76 | \$2,854.76 | | |
| Constructed wetland Ward St, Blackalls Pk | \$6,465.79 | \$2,299.27 | \$4,166.52 | | |
| Flaggy Creek bank restoration, Government Road, Barnsley | \$21,303.04 | \$10,651.52 | \$10,651.52 | | |
| Flaggy Creek bank restoration, Nelson Road, barnsley | \$17,889.48 | \$8,944.74 | \$8,944.74 | | |
| GPT & vegetated drainage channel Ridley Street, Edgeworth | \$52,321.80 | \$19,026.11 | \$33,295.69 | | |
| Stormwater treatment device TC Frith Ave, Speers Point | \$63,283.86 | \$23,012.31 | \$40,271.55 | | |
| Foreshore stabilisation - Belmont South | \$20,458.63 | \$10,229.31 | \$10,229.32 | | |
| Catchment / erosion /stormwater works Gwandalan to Mannering Park | \$293,000.00 | \$156,989.25 | | \$136,010.75 | |
| Constructed wetland Aurora Court, Warners Bay | \$7,735.02 | \$2,946.67 | \$4,788.35 | | |
| Foreshore stabilisation - Warners Bay | \$53,660.29 | \$13,775.30 | \$39,884.99 | | |
| Limited Sediment, Odour and Improvement Investigation - "Stinky Corner" Warners Bay | \$3,635.00 | \$908.75 | \$2,726.25 | | |
| Upper revetment stabilisation Pelican reserve foreshore | \$23,220.88 | \$10,554.95 | \$12,665.93 | | |
| Stormwater / erosion works to various reserves - Landcare | \$300.00 | \$141.18 | \$158.82 | | |
| Contribution to Council for Commonwealth Govt USI project | \$104,651.00 | \$0.00 | \$104,651.00 | | |
| Maintenance of vegetation works | \$64,179.57 | \$32,089.79 | \$32,089.78 | | |
| Foreshore stabilisation - Balmoral near boat ramp | \$25,795.92 | \$12,139.26 | \$13,656.66 | | |
| Foreshore stabilisation works - Rathmines | \$59,690.15 | \$25,952.24 | \$33,737.91 | | |
| Foreshore stabilisation works - Shingle Splitters Point | \$34,174.11 | \$34,174.11 | \$0.00 | | |
| GPT & constructed wetland Lake Street, Bolton Point | \$125,579.54 | \$0.00 | \$125,579.54 | | |
| Maintenance of stormwater treatment devices | \$70,000.00 | \$0.00 | \$70,000.00 | | |
| Foreshore stabilisation Green Point Foreshore Reserve | \$2,686.62 | \$1,168.10 | \$1,518.52 | | |
| Foreshore stabilisation Dora Creek reserve adjacent fire station | \$20,568.19 | \$13,825.56 | \$6,742.63 | | |
| Constructed wetland - First Street, Booragul | \$12,973.05 | \$0.00 | \$12,973.05 | | |
| Constructed wetland - Todd Street, Blackalls Park | \$45,815.23 | \$867.12 | \$44,948.11 | | |
| Refund monies saved - Cockle Bay audit | -\$4,470.52 | \$0.00 | \$4,470.52 | | |
| Bathing Areas Water Quality Monitoring 2000/2001 | \$29,325.00 | \$0.00 | \$26,357.26 | \$0.00 | \$2,967.74 |
| Lake Body Water Quality Monitoring 2000/2001 | \$1,771.33 | \$0.00 | \$438.00 | \$500.00 | \$833.33 |
| Wetland, riparian & littoral vegetation protection plan | \$10,500.00 | \$1,779.48 | \$8,720.52 | | |
| Water quality monitoring of major Lake Macquarie tributaries | \$14,596.68 | \$8,128.90 | \$6,467.78 | | |
| Macroalgae surveys 2001 | \$16,588.64 | \$0.00 | \$15,277.06 | \$1,311.58 | |
| Bathing Areas Water Quality Monitoring 2001/2002 | \$35,083.66 | \$0.00 | \$31,660.86 | \$0.00 | \$3,422.80 |
| Lake body water quality monitoring 2001/2002 | \$14,623.23 | \$0.00 | \$4,450.55 | \$3,814.76 | \$6,357.92 |
| Sediment Monitoring Program | \$660.00 | \$0.00 | \$607.82 | \$52.18 | |
| Water quality status paper | \$13,039.40 | \$6,519.70 | \$6,519.70 | | |
| Wetland monitoring | \$135.00 | \$71.06 | \$54.47 | \$9.47 | |
| Salaries and oncosts | \$111,310.56 | \$111,310.56 | \$0.00 | | |
| Motor vehicle running expenses | \$12,720.00 | \$12,720.00 | \$0.00 | | |
| Mobile phone operating expenses | \$471.35 | \$471.35 | \$0.00 | | |
| Administrative Support | \$53,849.66 | \$0.00 | \$53,849.66 | | |
| Project Management Committee meeting expenses | \$4,562.66 | \$2,281.33 | \$2,281.33 | | |
| Casual environment officer | \$8,364.27 | \$8,364.27 | \$0.00 | | |
| | \$2,164,699.60 | \$896,165.55 | \$1,107,859.65 | \$147,092.61 | \$13,581.79 |

Note (2) Office of the Lake Macquarie & Catchment Coordinator Works In-Kind

| Source of Funding In-Kind Contribution | | | | | | | | |
|---|---------------------------------|-------------------|------------------|------------------|------------------|-------------------|------------------|-------------------|
| Project Description | Actual Expenditure to 30/6/2002 | DLWC | TAFE | Fisheries | Eraring Energy/ | Delta Electricity | Pasminco | Waterways |
| Facilitate Landcare groups/Rivercare projects | \$14,000 | \$14,000 | | | | | | |
| Construction of boat sewage pump-outs | \$512,500 | \$382,500 | | | | | | \$130,000 |
| Water quality monitoring | \$59,400 | | \$25,400 | | \$17,000 | \$17,000 | | |
| Monitoring seagrasses | \$49,000 | | | \$24,000 | \$12,000 | \$13,000 | | |
| Water quality monitoring Cockle Creek | \$20,000 | | | | | | \$20,000 | |
| Monitoring channel (hydrosurvey) | \$18,740 | | | | | | | \$18,740 |
| Monitoring sand shoals - mouth Black Neds Bay | \$4,300 | | | | | | | \$4,300 |
| Monitor boating movement - Swansea channel | \$1,000 | | | | | | | \$1,000 |
| | 678,940.00 | 396,500.00 | 25,400.00 | 24,000.00 | 29,000.00 | 30,000.00 | 20,000.00 | 154,040.00 |

Note (3) Office of the Lake Macquarie & Catchment Coordinator Work Commitment for Expenditure

| Source of funding Cash | | | | | |
|--|-------------------------------|----------------------|---------------------|--------------------|-------------------|
| | Committed Expend to 30/6/2002 | DLWC (Supplementary) | LMCC | WSC | HWC |
| Feasibility Study Cockle Bay | \$24,145.00 | \$20,695.71 | \$3,449.29 | | |
| Management Plan for Coon Island | \$1,282.87 | \$641.44 | \$641.43 | | |
| Swan Bay Hydraulic, Sediment Transport & Navigation Study | \$9,457.55 | \$4,728.77 | \$4,728.78 | | |
| Hydrosurveys - Channel and Swan Bay | \$12,620.00 | \$6,310.00 | \$6,310.00 | | |
| Maintenance dredging | \$25,385.52 | \$9,066.26 | \$16,319.26 | | |
| Stormwater treatment device TC Frith Ave, Speers Point | \$13,246.14 | \$4,816.78 | \$8,429.36 | | |
| Foreshore stabilisation - Belmont South | \$2,041.37 | \$1,020.69 | \$1,020.68 | | |
| Constructed wetland - First Street, Booragul | \$287,926.95 | \$111,550.01 | \$176,376.94 | | |
| Wyong Council Works 00/01/02 | \$80,000.00 | \$43,010.75 | | \$36,989.25 | |
| Warners Bay Foreshore Rehabilitation Stage 4 | \$77,805.00 | \$19,451.25 | \$58,353.75 | | |
| Sediment Detention Device - Punt Road, Warners Bay | \$9,700.00 | \$3,695.24 | \$6,004.76 | | |
| Contribution to Council for Commonwealth Govt USI project | \$35,408.00 | \$0.00 | \$35,408.00 | | |
| Maintenance of vegetation works | \$55,820.43 | \$27,910.21 | \$27,910.22 | | |
| Design Guidelines for LMCC Foreshore Works | \$1,000.00 | \$470.59 | \$529.41 | | |
| GPT & constructed wetland Lake Street, Bolton Point | \$24,285.46 | \$0.00 | \$24,285.46 | | |
| Maintenance of stormwater treatment devices | \$20,000.00 | \$0.00 | \$20,000.00 | | |
| Foreshore stabilisation Green Point Foreshore Reserve | \$48,313.38 | \$21,005.82 | \$27,307.56 | | |
| Foreshore stabilisation Dora Creek reserve adjacent fire station | \$431.21 | \$431.21 | \$0.00 | | |
| Forshore stabilisation works - Lakeview Pde, Brightwaters | \$10,000.00 | \$0.00 | \$10,000.00 | | |
| Habitat Protection Plan NSW Fisheries | \$40,000.00 | \$20,000.00 | \$20,000.00 | | |
| Integrated catchment & estuary management model | \$35,000.00 | \$17,437.72 | \$14,448.40 | \$3,113.88 | |
| Wetland, riparian & littoral vegetation protection plan | \$2,471.25 | \$2,471.25 | \$0.00 | | |
| Lake body water quality monitoring 2001/2002 | \$7,310.48 | \$0.00 | \$2,224.93 | \$1,907.08 | \$3,178.47 |
| Sediment Monitoring Program | \$28,175.00 | \$16,209.11 | \$11,965.89 | | |
| Wetland Monitoring | \$28,000.00 | \$14,736.84 | \$11,298.25 | \$1,964.91 | |
| | \$879,825.61 | \$345,659.66 | \$487,012.36 | \$43,975.12 | \$3,178.47 |



Office of the Lake Macquarie & Catchment Co-ordinator
www.livinglakemacquarie.org