

Natural Return

Constructed wetlands are being used to recreate natural systems at Blackalls Park



The Ward Street wetland involved the removal of a concrete channel

Local residents and users of Fennell Bay will notice improvements in water quality with the completion of a major wetland project at Ward and Todd Streets.

The project also included the installation of commercial stormwater quality improvement devices at Elizabeth Street and Lake Road.

Lake Coordinator Jeff Jansson engaged Lake Macquarie Council to undertake the project at a cost of \$308,000.

Construction Coordinator Neil Wellham said the new wetland area would have long term benefits for Fennell and Edmunds Bay.

“The project consists of a sediment-trap, a mini-wetland and structures to handle the overflow of stormwater. The wetland is designed to filter sediments and nutrients from the run-off before it reaches the Lake.”

During periods of rain, the stormwater flow collects things like gravel from road shoulders, silt, leaves, animal faeces and other nutrients.

“The original wetlands and drainage lines provided a natural filter for this material, but when these areas were concreted the filtration was lost. What we are trying to do in the Fennell Bay area is to recreate the natural systems,” said Neil Wellham.

Construction of the Ward Street wetlands actually involved the removal of a section of concrete channel.

Lake Macquarie and Catchment Coordinator Jeff Jansson, said the wetland areas were an example of the soft-technologies which the Premier’s Taskforce on Lake Macquarie had recommended for implementation in 1999.



Welcome to the first edition of Living Lake Macquarie for 2001.

The Lake Macquarie Project Management Committee is looking forward to a busy year of physical works, scientific monitoring and education programs to make this a landmark time for Lake Macquarie and the catchment.

Already this year, work has commenced on the stabilisation of Salts Bay. New constructed wetlands at Blackalls Park are nearing completion. We are also funding a number of scientific monitoring programs around the Lake, such as the monitoring of macro-algae by Australian Museum Business Services.

The importance of these programs should not be underestimated. Thanks to effective monitoring and studies of the dynamic nature of the Lake environment, we now have a far greater appreciation of the natural processes at work. As a result, we now give preference to the use of soft-technologies over hard engineering solutions.

We will be asking you to take part in our second community survey in July. This study will take just ten minutes of your time, but it provides us with invaluable feedback and highlights the issues which are important to the local community.

We are also planning a major expansion of the Living Lake Macquarie web site which will feature new interactive elements to give you more input into the issues facing the Lake.

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Peter Nelson 

Noxious Weed Invades The Lake

The noxious weed *Caulerpa taxifolia* has been found in the waters of Lake Macquarie, the NSW Department of Fisheries announced recently. Small sites have been identified on the northern side of Pulbah Island, Crangan Bay and Chain Valley Bay. The weed is very hardy making it capable of spreading into new areas easily. A ten millimetre strand of *Caulerpa* can live for up to ten days out of water. Director of Fisheries Steve Dunn said education on the risk of spreading the weed was critical. "People should check their anchors and fishing equipment on a regular basis. Any fragments should be sealed in a bag and disposed of well away from waterways, preferably in a garbage bin." 🗑️

Trail Bikes Ride Rough Shod Over Lake

Some trail bike enthusiasts in Lake Macquarie pose a threat to water quality and the local environment, according to Lake Macquarie & Catchment Coordinator, Jeff Jansson. Jeff Jansson called on the local riders to be more responsible in their use of local fire trails and electricity easements. "I'm sure the trail bike riders around the catchment area don't realise the threat they pose to the water quality in Lake Macquarie. The main problem is the localised erosion and changes to surface run-off areas which can be caused by bikes riding in sensitive areas. During periods of heavy rain, like we have experienced during the last month, all this displaced soil finds its way into the Lake with stormwater." Jeff Jansson said community awareness was the key to minimising impacts on the Lake environment. "The aim is not to stop people enjoying leisure interests altogether – but we need to balance our recreational pursuits with environmental responsibility." 🗑️

All Systems Go at Salts Bay

The stabilisation of Salts Bay has begun in earnest with Lake Macquarie & Catchment Coordinator Jeff Jansson carrying out a formal progress inspection of the work in early May.

The NSW Department of Public Works and Services have been appointed to manage the project. The works will help protect one of the last remaining areas of littoral rain-forest in the catchment. The natural environment below Lambton Parade and through to Black Neds Bay is unfortunately rare in the area. The works will also provide protection to the sensitive wetland areas which lie just behind in Black Neds Bay. Spokesperson Richard Lack said: "This work is to be completed at a cost of \$600,000, and includes beach nourishment and rock-groyne construction." "The beach nourishment work will see 32,500

cubic metres of sand taken from areas around the entry to Black Neds Bay, Mats Point Groyne and the channel. It will be used to build up eroded foreshore areas at Salts Bay." "The existing rock groyne has been extended by 25 metres and an additional 40 metre rock groyne has already been constructed." As well as the protection of the local environment, the stabilisation of Salts Bay will be good news to the scores of local people who enjoy the area each year. An additional 5-6 metres of beach has already been replaced as a result of the dredging completed at the mouth of Black Neds Bay. The work is scheduled for completion in the middle of July. 🗑️



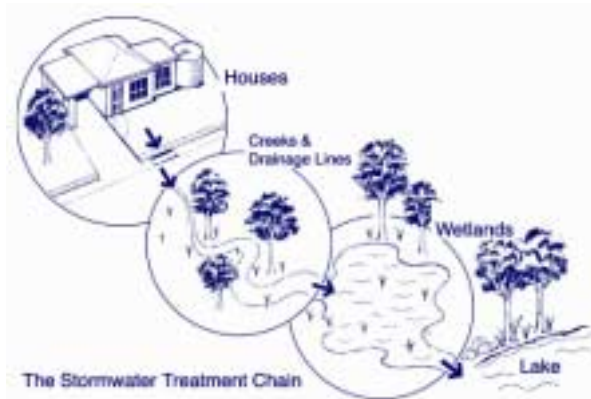
Richard Lack inspects the new rock groyne at Salts Bay

Cont'd from page 1 - "We can never recreate exactly all the features of natural wetland areas, but we know that the mimicking of 'natural' systems like constructed wetlands will be effective in treating stormwater compared to the damage to water quality caused by concrete drainage systems which we have employed in the past. Wetland vegetation provides oxygen to the water which assists in chemical processes to

dispose of nutrients to the atmosphere. It is the nutrient and sediments that cause algal blooms and the build up of smelly black ooze around near-shore areas. We now have a greater understanding of how natural systems work. In past generations we perhaps placed too much importance on the neat and tidy appearance and we changed or manicured the natural environment. But by 'cleaning' it up we disabled the system." 🗑️

Unravelling The Treatment Chain


The Living Lake Macquarie Community Survey 2000 found that 37% of people believed their domestic activities did not impact on the Lake environment.



The Treatment Chain argues that there is a strong link between domestic causes and Lake environmental effects.

Some of the main causes of sediments and nutrients entering the Lake are the use of household detergents, excessive use of garden fertilisers, hosing of driveways and the disposal of domestic oils and refuse into drains. These diffuse sources are collected in stormwater flow, particularly after rain periods. Currently, this flow is channelled directly into the Lake via concrete drainage lines, with less vegetated areas left to filter nutrients and sediments. This results in algae and sedimentation problems in our prized waterways, with more water travelling into the Lake at greater speeds.

Alternatively, the 'treatment chain' adopts a multi-pronged approach. First, we must limit the domestic waste, soils and chemicals which come from home. Next, we need to avoid the use of concrete as a replacement for natural systems like wetlands. The third step is to improve vegetation in natural drainage lines which filter stormwater. Finally, we can assist the natural filtration of sediments and nutrients by providing stormwater quality improvement devices, such as constructed wetlands and sediment traps.

The next time you go to wash your car on the road or hose your driveway oils down the drain, think... 190,000 residents, one Lake. It all adds up to a massive strain on Lake Macquarie. 

Searching For Solutions At Cackle Bay

Manly Hydraulics Laboratory has been engaged to undertake the preparation of a Feasibility Study for Environmental Improvements and Management of Cackle Bay. The eighteen week contract is valued at \$65,580. There is also an option of additional work to the value of \$12,700 dependent upon the findings of Stage One.

Another objective of the brief is to consider the advantages and disadvantages of disturbing sediments contaminated with heavy metals. The issue has been the subject of ongoing debate within the community.

A technical team including marine biologists, engineers, contaminated site auditors and environmental planners has been assembled for the project.

Anyone who has suggestions or feedback about the remediation of Cackle Bay is encouraged to contact Sonja Duncan from the Manly Hydraulics team on 4945 4614



Protecting Aquatic Habitats Sounds Like A Good Plan

At least 280 species of fish can be found in the catchment of Lake Macquarie and there is good news for their future, with the announcement of a Habitat Protection Plan (HPP) for Lake Macquarie to be published later this year.

The Office of the Lake Macquarie & Catchment Coordinator is providing funding support to the NSW Department of Fisheries for the development of the HPP which will become a point of reference for planning bodies and stakeholders in the catchment.


Senior Conservation Manager for NSW Fisheries, Scott Carter, said the HPP will draw on key regulatory and statutory authorities, as well as community consultation to create clear guidelines for the preservation and protection of aquatic habitats.

"The objective is that we will all be singing from the same book when it comes to Lake Macquarie. We acknowledge that there are many separate groups who make decisions which effect the Lake and this can present difficulties.

The HPP will cover key issues such as land clearing, swing moorings, marina developments and industry which result in changes to aquatic habitats and in turn lead to loss of fish stocks and marine-plant life."

Scott Carter said the Habitat Protection Plan was specifically created for the protection of

habitats and not additional issues such as the highly publicised commercial fishing debate. "We are undertaking a thorough consultative process involving peak industry bodies, statutory and regulatory bodies and the community, through the Estuary Management Committee."

Once completed the plan will go on exhibition for public comment. The HPP is subject to approval by the Minister for Fisheries and Mineral Resources, Eddie Obeid and is due for consideration in October this year. 

Umwelt Focuses On Fennell and Edmunds Bay

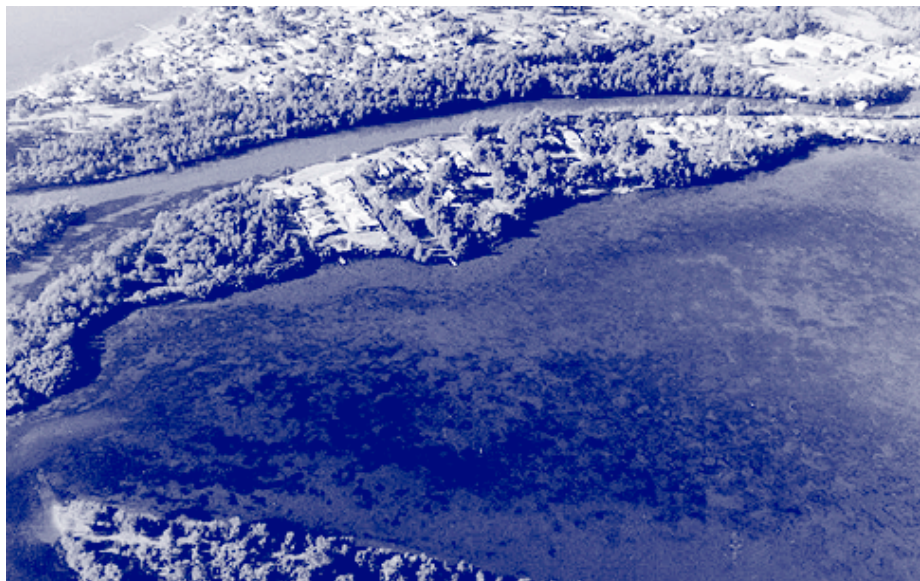
Local environmental consultancy Umwelt Australia is seeking community input for the preparation of a plan to restore water quality, recreation and ecological health to Fennell and Edmunds Bay.

The Environmental Remediation Plan was identified as a high priority in the Premier's Task Force Report on Lake Macquarie in 1999. Umwelt Project Manager Pam Dean-Jones said community input would be an integral part of the planning process.

"We are asking the local community to contribute their thoughts on the local environmental issues that need to be considered. A clear understanding of community concerns and solution ideas is an important part of the plan."

Scientific investigations of the natural processes affecting the health of the Bays were completed last year. Umwelt have been appointed to prepare a management plan to set out appropriate measures to improve the health of estuarine bays in the area.

The plan will focus on issues like the accumulation of black ooze, odour, poor water quality, dwindling fish stocks, loss of habitat,



Edmunds Bay will be the focus of the Environmental Remediation Plan

reduced navigability, poor amenity for swimming and the loss of natural foreshore vegetation.

Some of the possible initiatives being investigated include improved stormwater and waste-water management, flow diversions to

improve flushing, harvesting of dead seagrass and macro-algae, dredging works and the planting of new seagrass beds.

Anyone with suggestions for the future of Fennell and Edmunds Bay should contact Pam Dean-Jones at Umwelt, on 4950 5322.

Lake Latest

www.livinglakemacquarie.com

- The total funding commitment from the Office of the Lake Macquarie & Catchment Coordinator for stabilisation, rehabilitation and revegetation works up to May is \$692,017.39. This funding is for projects involving foreshore vegetation and stabilisation works which are important for the filtration of sediments and nutrients from stormwater.

- After close work with Lake Macquarie City Council and Landcare, The Office of the Lake Macquarie & Catchment Coordinator has been involved in attracting an additional \$450,000 Commonwealth funding for the expansion of the program to install stormwater treatment facilities in the catchment. The increased funding will assist with mini-wetland projects, foreshore revegetation schemes and stormwater quality improvement devices.

- Approval has been given for a new wetland area at Warners Bay. The Office of the Lake Macquarie & Catchment Coordinator has committed \$37,300 in funding to convert a former stormwater detention basin near Aurora Court into a mini-wetland area to also treat and remove contaminants from stormwater.

- Egis consulting is well advanced in their study of planning and land development processes, to find ways to strengthen measures to protect remaining foreshore vegetation and wetland areas in the catchment. The study is part of the drive to build conservation and protection of the local environment into legislation which covers planning and land development. It will also result in improved mapping of wetland areas which will make them easier to manage in the long-term.

- Umwelt have completed a study of seagrass areas near Galgabba Point at Swansea Flats, following reports of degradation of seagrass meadows. While the study found that the joining of some outlying dredge spoil islands had occurred, water flows were still satisfactory and the seagrass meadows were found to be in good condition. Some minor maintenance dredging between the islands is being investigated.

- Newcastle based FordComm have been appointed to conduct phase-two of the Community Education and Reporting program. FordComm will expand the Living Lake Macquarie web site and produce a teacher resource kit for local primary and secondary schools as part of the 2001 program. 🌱