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case study 24: great lakes - new south wales

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**executive summary**

Great Lakes Council (GLC) provides a good example of a small, semi-rural local authority faced with the task of sustainably managing shallow lake and estuarine systems of high national environmental value. The outstanding recreational and aesthetic qualities of these lake systems attract both an increasing number of residents and substantial numbers of visitors each year. Faced with the need to devise and implement effective plans for ecologically sustainable development, GLC has developed partnerships with adjacent local authorities, New South Wales state agencies and the Australian Government, as well as their own residents and local industry.

Financial assistance from the State and Australian Government agencies and an environmental levy of ratepayers are providing crucially needed funds to devise priorities to begin to understand and implement the changes needed to protect these lake systems.

**introduction**

The GLC area is located on the mid north coast of New South Wales between Port Stephens in the south, Hallidays Point in the north and the foothills of the Great Dividing Range to the west (see [Figure 1](#)).

The Council area is 3,373 square kilometres, comprising both coastal and forested rural hinterland. It is 85 kilometres at its widest point, 62 kilometres north to south, and has a total coastline of 145 kilometres. Forster is the largest town in the Council area and is 320 kilometres north of Sydney and 168 kilometres north of Newcastle.

The Great Lakes Local Government Area (LGA) supports a population of approximately 34,000 residents. With a growth rate of 2.1 per cent, this is expanding at about twice the average rate for New South Wales. There are population surges during holiday periods with over 100,000 tourists visiting the area each year. Tourism injects an estimated \$125 million into the local economy.

Tourism and primary production (oysters, commercial fishing and grazing/timber production) are the major industries in the LGA. The viability and sustainability of all these industries is reliant on a healthy local environment.

The Great Lakes area possesses an outstanding environment of great natural beauty that includes extensive waterways, beaches, national parks, including part of the Barrington Tops World Heritage Area, state forests, rural regions and mountain ranges. These landscapes provide habitat for a high diversity of native plant and animal species. Plant communities include rainforest, moist and dry forests, wetlands and swamps, coastal heaths, seagrass beds, dunal formations and natural grasslands. Preliminary data suggests that over 500 fauna species and 1,200 native plant species inhabit the LGA. These include rare, significant and threatened species.

Wallis and Smiths Lakes, as well as the Ramsar-listed Myall Lakes contain highly diverse and valuable aquatic ecosystems including important seagrass communities. Wallis Lake alone supports the northern-most limit of the seagrass *Posidonia australis* and 20 per cent of the total seagrass communities in New South Wales.

**Figure 1: Great Lakes Region**

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**Table 1: Estuary Characteristics**

Smiths Lake		Myall Estuary		Wallis Lake	
Catchment area	2 km <sup>2</sup>	Catchment area	1660 km <sup>2</sup>	Catchment area	1420 km <sup>2</sup>
Waterway area	11 km <sup>2</sup>	Waterway area	123 km <sup>2</sup>	Waterway area	73 km <sup>2</sup>
Entrance untrained, but intermittently mechanically opened		Entrance open and untrained		Entrance open with twin training breakwaters	

NB: Data from New South Wales Department of Natural Resources – Estuaries of NSW

### pollution issues

GLC is faced with water pollution problems generated primarily from two distinct sources. Stormwater runoff from the urban areas has a significant environmental impact on the shallow lake and estuarine systems, as does the diffuse sediment and nutrient loads that run off from grazing and agricultural lands.

In addition, there is seasonal discharge of severely acid groundwater into Darawakh Creek and then into the Wallamba River in the Wallis Lake catchment. This is the result of agricultural drainage works carried out in the 1960s in an area of about 1000 hectares of mostly freehold land in the Froggalla Swamp, which contained highly-reactive acid sulfate soils.

### management context

The efforts by GLC to protect the environment dominate their website. The Council's Vision is to be "a leader in the provision of infrastructure and services which sustain and enhance the natural environment and achieve a quality lifestyle for residents and visitors." Environmental management issues are important and often the major issues at meetings of Council.

GLC received the prestigious Theiss National Riverprize in 2004. The prize was awarded for excellence in river and catchment management. Recognised for the Wallis Lake Catchment Management Plan and Healthy Lakes Program, Council was considered to have successfully utilised effective community-government agency partnerships to bring about improvements in the health of the lake and catchment.

Currently eight officers are employed in the GLC Natural Systems & Estuaries Branch. The GLC planning and environmental services budget was about \$1.7 million in 2004-2005. This includes Catchment Management Authority and other New South Wales Government project money and a Special Environmental Rate paid by ratepayers. This levy raises some \$650,000 to \$700,000 per annum and places GLC in a much stronger position to deal with its environmental problems than, for example, the Greater Taree LGA immediately to the north.

GLC is currently managing a \$1.8 million Australian government funded *Coastal Catchments Initiative* project. This is aimed at improving water quality in Wallis, Smiths and Myall Lakes.

There are a myriad of management plans and strategies to protect the environmental values of the Great Lakes Region. Most of these documents have the potential to directly or indirectly influence the extent to which land-based sources of pollution adversely impact the estuarine and marine environment.

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GLC is within the New South Wales government's Hunter Planning Region. The Hunter-Central River Catchment Management Authority's 2006 Draft Catchment Action Plan (CAP) of January 2006 is expected to be gazetted before the end of 2006 to replace the 2002 Integrated Catchment Plan for the Lower North Coast. The CAP has targets and policies which relate to wetlands and many of the impacts on water quality.

There are numerous additional management plans, strategies and projects that are focussed on better environmental outcomes at the local or catchment scale. Details are available on the GLC website at <http://www.greatlakes.local-e.nsw.gov.au/>. These include:

#### wallis lake catchment

- Wallis Lake Catchment Management Plan - This plan provides a detailed picture of the state of the Wallis Lake catchment.  
(<http://www.greatlakes.local-e.nsw.gov.au/environment/1746/4741.html>)
- Wallis Lake Catchment Management Plan: Devolved Grant - This project engages and assists rural landholders to protect and restore the environment and adopt sustainable land management practices.
- Wallis Lake Estuary Management Plan - This plan addresses issues regarding the social, cultural, environmental, recreational and commercial amenity of the lake.  
(<http://www.greatlakes.local-e.nsw.gov.au/environment/1746/5007.html>)
- Lower Wallamba River: Rivercare Plan - This plan was developed to address erosion issues within the lower Wallamba River.  
(<http://www.greatlakes.local-e.nsw.gov.au/environment/1746/4745.html>)
- Wallis Lake Wetland Management Strategy - This plan was developed to effectively manage wetlands surrounding Wallis Lake with the aim of improving water quality.  
(<http://www.greatlakes.local-e.nsw.gov.au/environment/1746/4746.html>)
- Darawakh/Frogalla Wetland Management Plan - This plan aims to reduce acid sulfate discharge into the Wallamba River.  
(<http://www.greatlakes.local-e.nsw.gov.au/environment/1746/4747.html>)

#### smiths lake catchment

- Smiths Lake Estuary Management Plan - This plan was developed with the intent of achieving "integrated, balanced, responsible and ecologically sustainable use of the lake".

#### port stephens/myall lakes catchment

- The Port Stephens/Myall Lakes Estuary Management Plan - This plan was developed to address water quality issues within Myall Lake and the surrounding environment.

#### stormwater management

- Forster/Tuncurry and Wallis Lake Stormwater Management Plan.
- Wallis Lake Stormwater Source Control Study.
- Hawks Nest Tea Gardens and Bulahdelah Stormwater Management Plan.

#### sediment management

- Gravel Roads Best Practice Erosion Control - This project aims to prevent sediment from gravel roads in the Great Lakes Council LGA from entering waterways.

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### sewage management

- Great Lakes Council On-Site Sewage Management Strategy - This strategy aims to manage and regulate the impact of on-site systems (ie septic, composting, pit and any other) that store, treat and or dispose of sewage and wastewater on-site.

In addition, GLC was one of nine local authorities along the New South Wales coast that participated in the New South Wales Department of Environment and Conservation's *Beachwatch Partnership Program* for recreational water quality monitoring and reporting.

### performance assessment - the state of the environment reports

Local government authorities in New South Wales are required to prepare an annual State of the Environment Report (SoE) under the legislative provisions of the Local Government Act 1993. GLC recognised the need to improve its SoE reporting and produced a SoE report in 2003-2004 using a revised system of reporting. A Supplementary SoE Report was compiled for 2004-2005. The GLC 2005-2006 SoE Report is currently in preparation.

The GLC 2003-2004 SoE Report concluded that while many agencies conducted water quality monitoring activities throughout the LGA, there was *"little or no coordination of sampling methods, parameters and reporting and thus no compilation and analysis as to the health of local waterways"*. The Report concluded that a *"coordinated, scientifically valid and strategic approach"* to water quality monitoring needed to be established *"as a matter of priority"* with Council as the lead agency. The Report recommended that a water quality working group should be established comprising representatives of agencies and groups conducting water quality monitoring in the LGA. First implementation of a targeted strategic water quality monitoring program would be likely to commence in the 2006-2007 reporting period.

The GLC 2004-2005 Supplementary SoE Report noted that an inter-agency sub-regional Water Quality Network had been established in July 2005 in order to develop a central GIS-based water quality repository that would be accessible to all parties via the internet.

The GLC 2003-2004 SoE Report attempted to evaluate the success of the range of structural solutions Council had installed to manage urban stormwater pollution. The overall quantity of litter, sediment and organic matter known to have been captured in stormwater treatment devices totalled 21.4 tonnes. It was concluded that the structural solutions were providing significant protection, but that much work on catchment management and education/awareness was required. The Report noted that the seven constructed wetlands required ongoing water quality monitoring to determine if they were functioning effectively. A maintenance strategy was needed for each stormwater treatment device. Essential monitoring procedures needed to be included in the maintenance strategy for each structure.

The GLC 2003-2004 SoE Report also reviewed the environmental plans and strategies of GLC that were active, operational and in the process of being implemented either with Council as a lead agency or nominated partner. An "extraordinary number" of actions were listed for implementation. Some of these actions had been completed and others had been commenced. Other actions remained outstanding even though the scheduled timeframe from the original report had lapsed.

The GLC 2003-2004 SoE Report recommended that GLC should establish a working group comprising Council staff, councillors, and representatives of relevant agencies and the community to undertake a holistic review of Council's natural resource management systems generally and provide recommendations on gaps, priorities and future directions to ensure that targeted, innovative and best practice environmental management solutions were being implemented. The GLC 2004-2005 Supplementary SoE Report re-iterated the need for this review.