

January 2001

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Abstract

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Keywords

catchment management, Lake Illawarra

Disciplines

Law

Publication Details

This article was originally published as Arcioni, E, Can Catchment Management Deliver Coordination of Resources Management in New South Wales?, *Australasian Journal of Natural Resources Law and Policy* 7(2), 2001, 169-195. Journal information available [here](#).

Can catchment management deliver coordination of natural resource management in New South Wales?

A study of the regulatory regimes applicable to the management of the Lake Illawarra catchment and the operation of the catchment management regime in that area.

ELISA ARCIONI*

ABSTRACT: In this article, the author examines the problem of the lack of integration of natural resources legislation in NSW and the application of a proposed solution – the catchment management regime. The analysis is conducted by using a case study of Lake Illawarra and its catchment. The operation of the planning system, pollution regulation and the Lake Illawarra Authority are discussed, as well as a number of other regulatory regimes being noted briefly. A history is given of the catchment management system as it has been applied in the Illawarra region. The article concludes by identifying the problems in implementing the catchment management system through the recently enacted Catchment Management Boards.

I. INTRODUCTION

Natural resource management in NSW is plagued by a lack of integration and coordination. One proposed solution to these problems is the catchment management regime. This paper discusses the issue of regulatory integration and the application of this regime, by reference to their application to Lake Illawarra in NSW. The regulatory systems discussed are the planning system under the *Environmental Planning and Assessment Act 1979* (NSW), a range of other natural resources legislation, including the *Water Management Act 2000* (NSW); *Soil Conservation Act 1938* (NSW); *Native Vegetation Conservation Act 1997* (NSW), and the *Protection of the Environment Act 1997* (NSW). Pollution regulation is dealt with only briefly. There is a discussion of the operation of the specific statutory authority created under the *Lake Illawarra Authority Act 1987* (NSW).

These systems are analysed by reference to how (or whether) they provide for the rectification of the lake's poor environmental health and facilitate the prevention of future deterioration. The system instituted under the *Catchment Management Act 1989* (NSW) is considered as a possible solution to the lack of integration of the aforementioned regulatory schemes. In order to examine its potential in implementing a coordinated approach to protecting the lake, a comparison is made between the catchment management system as it existed until the late 1990s and the way it currently operates, following recent legislative changes.

II. LAKE ILLAWARRA

Lake Illawarra, traditionally known as Jubbersay,¹ is a shallow coastal lagoon located ten kilometres south of Wollongong, in the Illawarra region of NSW.² The lake forms the

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basin of a large catchment, bounded by an escarpment to the west, the Pacific Ocean to the east and small foothills to the north and south. Most of the lake's catchment is within the local government areas ('LGAs') of Shellharbour and Wollongong, while the upper reaches of the catchment are within the Wingecarribee LGA.

The lake's catchment has changed dramatically since the arrival of white people to the area, which commenced with Bass and Flinders' foray into the lake's entrance in 1796. Clearing began shortly after, with cedar cutters moving through the upper parts of the lake's catchment, gradually clearing areas for timber. Dairying was established on the flood plains, leading to the river flats being cleared. The original sub-tropical rainforest was largely removed, except for small patches on the lake's islands and on the generally steeper and less accessible face of the escarpment. Heavy industry arrived in the area in the 1890s, with a smelter established near the mouth of one of the lake's tributaries – Mullet Creek. However, once the proposal of having the lake as a commercial port fell out of favour, industry moved a few kilometres away to create the vast industrial precinct of Port Kembla. The 19th century also saw commercial fishing commence in the lake. From the 1920s, the area was a popular recreational and tourist destination and residential subdivision began. However, the major expansion of residential development occurred from the 1950s concurrent with the rapid development of heavy industry at Port Kembla in the post war period.³

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Lake Illawarra is today set in a diverse catchment, both geographically and socially. Within the catchment there is urban, agricultural and industrial development, with continuing pressure to increase the urban element. The lake is used by recreational and commercial fishermen and is a water sports venue. Fringed by remnant native vegetation which has survived the drastic clearing of surrounding areas, the lake is also the habitat for a diverse range of native species. It is therefore of great value to the region as a natural resource, offering opportunities for recreational and commercial exploitation, in addition to possessing intrinsic value.

The values attributed to the lake, however, are dependent on the lake's water quality, which is threatened by pollution. The pollution includes eutrophication (nutrient enrichment), which leads to algal blooms and the loss of oxygen for marine life. In addition, there is contamination by waste material which finds its way into the lake body, with obvious visual and ecological impacts. In addition, the loss of seagrass colonies, coupled with siltation, has affected the natural filtration of water entering the lake. Pollution of the lake is caused by catchment runoff, comprising stormwater (both increased volumes of freshwater and the contaminated nature of that water), sewage or other pollution, and the products of erosion of water courses due to development and clearing. These causes of pollution can occur anywhere within the lake's catchment, as watercourses within the catchment drain into the lake.

Regulation of clearing, development, stormwater drainage and the provision of sewage within the lake's catchment has increased over time and currently occurs through a number of poorly integrated regimes. These are examined in turn, before looking to catchment management as a solution to this lack of regulatory integration.

¹ This is the name given the lake by the Dharawal People of the South Coast of NSW: D Kennedy (2001) 4 *Tertangala: Journal of Wollongong University Student Association* 1.

² Lake Illawarra is shallow (1.8-3.8m), max length 7.3kms, max width 5.5kms, surface area 35kms², foreshore length 40kms: See Table 2.11 System data for lake Illawarra C Miller and J Morrison "Lake Illawarra, New South Wales" avail at <<http://data.ecology.su.se/mnode/Australia/llawarra/llawarrabud.htm>>.

³ Soros-Longworth and Mackenzie *Lake Illawarra Waterway Planning Study: prepared for NSW Department of Public Works* (June 1976) p 10; Wollongong City Council and University of Wollongong *Illawarra Lake: an environmental assessment project carried out on behalf of the Council of the City of Wollongong* (September 1976) pp 4-9.

III. THE PLANNING SYSTEM

A. HOW THE SYSTEM IS SUPPOSED TO WORK

In NSW, official land use planning began in the early 1900s, with the sole focus being the urban environment.⁴ Today the state-wide planning system falls under the *Environmental Planning and Assessment Act 1979* (NSW) ('EPAA').⁵ The system covers rural and urban areas, addresses specific issues and establishes broad planning ideals. The planning system revolves around legally binding Environmental Planning Instruments ('EPis')⁶ and Development Control Plans ('DCPs'). The latter add detail but are only legally binding to the extent that they must be "considered" when assessing a development application.⁷

EPis have the potential to affect Lake Illawarra. They regulate future development, through zoning arrangements spelling out what types of development can occur in different areas, as well as establishing development standards. The relevant instruments are:

- *State Environmental Planning Policy 14 (1985)* ('SEPP 14'), which deals with specific coastal wetlands;
- *Illawarra Regional Environmental Plan No. 1* (1986) ('IREP'), containing broad planning statements applicable to the lake's entire catchment;
- three Local Environmental Plans ('LEPs'),⁸ containing controls on development throughout the lake's catchment; and
- *City of Wollongong Development Control Plan No. 39 – Horsley* ('Horsley DCP'), concerning urban development on part of the lake's foreshore.

The provisions of SEPP 14 prevail over the other plans, to the extent of any inconsistency,⁹ and the IREP prevails over the LEPs to the extent of any inconsistency.¹⁰

(i) *State Environmental Planning Policy 14 - Coastal Planning*

SEPP 14 applies to three wetland areas of Lake Illawarra, which prevent silt and pollution from entering the lake.¹¹ SEPP 14 aims to preserve those wetlands¹² by imposing limitations on development within the wetlands and surrounding areas. Activities such as clearing, draining and filling require the concurrence of the Director of Urban Affairs and

⁴ D Farrier, R Lyster and L Pearson *The Environmental Law Handbook* (3rd ed, 1999) p 39.

⁵ *Environmental Planning and Assessment Act 1979* (NSW).

⁶ EPis include State Environmental Planning Policies, Regional Environmental Plans and Local Environmental Plans, although there are proposals for change: see NSW Department of Urban Affairs and Planning *Planfirst: Review of plan making in NSW – White Paper* (2001).

⁷ *Environmental Planning and Assessment Act 1979* (NSW) s 79C(1)(a)(iii).

⁸ *Wollongong City Council LEP 1990, Shellharbour Municipal Council LEP 2000, and Wingecarribee Shire Council LEP 1989.*

⁹ *State Environmental Planning Policy 14* (1985) cl 5; *Environmental Planning and Assessment Act 1979* (NSW) s 36(2).

¹⁰ *Illawarra Regional Environmental Plan No. 1* (1986) cl 5(1); *Environmental Planning and Assessment Act 1979* (NSW) s 36(3).

¹¹ The three wetlands areas being: Windang Estuary, Wollingurly Wetlands and a large proportion of the Macquarie Rivulet Delta.

¹² *State Environmental Planning Policy 14* (1985) cl 2.

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Planning ('the Director') before development consent can be given.¹³ In granting concurrence, the Director must consider the direct impact on water quality,¹⁴ as well as indirect impacts through the protection of native vegetation¹⁵ and general measures to protect the environment.¹⁶

However, despite SEPP 14 having the primary objective of protection, it is not an absolute safeguard for the wetlands. Detrimental development may be justified on the grounds that there is "no feasible alternative",¹⁷ and while the SEPP provides for "consideration" of a development's impact on the lake's water quality, there is no requirement to veto development which would be harmful.¹⁸ In addition, there are a number of more general problems in relation to the application of SEPP 14. These include inaccuracies in mapping the wetlands subject to development restrictions, leading to uncertainty of what land is actually subject to the SEPP.¹⁹ Also, there is concern that where landowners ignore the requirement for development consent in order to clear, their subsequent actions can result in the wetland being deleted from SEPP 14 as it no longer meets the original vegetative criteria.²⁰

(ii) *Illawarra Regional Environmental Plan No. 1*

The IREP applies to all the LGAs within Lake Illawarra's catchment.²¹ Rather than regulating a specific part of the catchment, the IREP attempts to protect the lake by requiring LGAs to consider the impact on the lake's water quality when evaluating development applications within the catchment. However, this only arises when the LGA considers that a proposed development would have a "potential adverse impact on the lake".²² Once this threshold is reached, consideration of water quality is then only one consideration among many. There is no specified weight to be given to protection of the lake, over the competing interests of providing public access to the lake foreshores²³ and satisfying the need for urban development.²⁴

¹³ *State Environmental Planning Policy 14* (1985) cl 7(1). These activities are "designated development" for the purpose of *Environmental Planning and Assessment Act 1979* (NSW) s 29 - see *State Environmental Planning Policy 14* (1985) cl 7(3), therefore attracting environmental assessment in the shape of an environmental impact statement under *Environmental Planning and Assessment Act 1979* (NSW) s 78A.

¹⁴ *State Environmental Planning Policy 14* (1985) cl 7(2). Considerations include "the surface and ground water characteristics of the site on which the development is proposed to be carried out and of the surrounding area, including salinity and water quality".

¹⁵ *State Environmental Planning Policy 14* (1985) cl 7(2)(a)(iv).

¹⁶ *State Environmental Planning Policy 14* (1985) cl 7(2)(b), (c). Restoration works also require the concurrence of the Director, the only specific consideration being the adequacy of the restoration plan which is lodged by the applicant - *State Environmental Planning Policy 14* (1985) cl 7A(3).

¹⁷ *State Environmental Planning Policy 14* (1985) cl 7(2)(e). Consider Justice Bignold's comments in *Myall Koala and Environment Support Group v Great Lakes Shire Council* (unreported, Land and Environment Court, Bignold J, 17 October 1990).

¹⁸ *State Environmental Planning Policy 14* (1985) cl 7(2).

¹⁹ P Adams "Wetlands and wetland boundaries: problems, expectations, perceptions and reality" (1992) 11(2) *Wetlands* 60; G Winning, J King and S Bailey "How wide is a wetland boundary?" (2000) 18(2) *Wetlands* 64.

²⁰ K Fook "Protect wetlands: the disastrous tale of SEPP 14" (1993) 37(4) *National Parks' Journal* 11.

²¹ *Illawarra Regional Environmental Plan No. 1* (1986) cl 4, being the City of Wollongong, the Municipality of Shellharbour and the Shire of Wingecarribee. However, it is not a plan devoted entirely to the catchment of Lake Illawarra as it also regulates development in the City of Shoalhaven and the Municipality of Kiama.

²² *Illawarra Regional Environmental Plan No. 1* (1986) cl 108. This is also a specific consideration when the development is reclamation of the lake - *Illawarra Regional Environmental Plan No. 1 1986* (NSW) cl 109. This is a requirement which accords with the IREP's general objective of protecting water bodies: *Illawarra Regional Environmental Plan No. 1* (1986) cl 105(c).

²³ *Illawarra Regional Environmental Plan No. 1* (1986) cls 105(b), 107, 110(2), 114.

²⁴ *Illawarra Regional Environmental Plan No. 1* (1986) cl 11(g).

(iii) *Three Local Environmental Plans*

SEPP 14 and the IREP have roles to play but, being the most detailed EPIs which affect the lake, it is the LEPs which drive most of the development decisions in the lake's catchment. The three relevant LEPs (Shellharbour, Wollongong and Wingecarribee) adopt the common approach of zoning. Councils establish "zones", such as "residential", "rural", "industrial", or the more recent "environmental protection" zones. They do not necessarily cover one area of land each, but are categories of land within which disparate parcels may fall. Certain types of development within each zone are characterised as permitted without consent, permitted only with consent, or prohibited entirely and each zone has specific objectives to inform the type of development which can take place within that zone. Individual properties are then designated a zone, with the consequent restrictions on development.

The upper parts of the catchment are covered by the *Wingecarribee Shire Council LEP 1989* (NSW) ('WLEP') and *Wollongong City Council LEP 1990* (NSW) ('W'GLEP'), with a majority of those areas falling under rural or environmental protection zones ('EP zones').²⁵ In the WLEP, the zonal objectives are to protect those areas.²⁶ However, a broad range of development in the EP zones²⁷ is allowed with consent, including rural industries and agriculture.²⁸ No DCPs have been established to prescribe the standards required for development,²⁹ but there are strict controls on granting consent to clearing and local industries, which are mirrored in the W'GLEP in relation to residential development.³⁰ These controls address erosion, siltation and runoff, which impact upon water quality of the lake downstream.³¹ The Wingecarribee Shire Council is also involved in a strategic planning exercise for the whole of that shire, which may lead to further incorporation of considerations relating to impacts on the water quality of Lake Illawarra.³²

Land closer to the lake, including the foreshore, is covered by the *Shellharbour Municipal Council LEP 2000* (NSW) ('SLEP') and the W'GLEP, both of which have general aims of preventing environmental degradation.³³ The W'GLEP incorporates, almost verbatim, the water quality provisions of the IREP outlined above,³⁴ with the consequential threshold problem and balancing of competing interests. The W'GLEP also has the capacity to place restrictions on building close to the lake's foreshore.³⁵

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²⁵ See the *Wingecarribee Shire Council Local Environmental Plan* (1989) maps for details regarding Macquarie Rivulet and for the *Wollongong City Council Local Environmental Plan* (1990) see Map 04.

²⁶ *Wingecarribee Shire Council Local Environmental Plan* (1989) Zonal objectives 7(a) 1(a) and 7(b) 1(a).

²⁷ These are a general Environmental Protection Zone 7(a) and an Environmental Zone (Landscape Conservation) Zone 7(b).

²⁸ *Wingecarribee Shire Council Local Environmental Plan* (1989) Zone 7(a) cl 3.

²⁹ As envisaged in *Wingecarribee Shire Council Local Environmental Plan* (1989) Zone 7(a) cl 1(b): pers comm, Geoff Lawrence, Planner with the Wingecarribee Shire Council, May 2001.

³⁰ *Wollongong City Council Local Environmental Plan* (1990) cl 14(1)(f), (g).

³¹ In relation to clearing, consent is dependent on the minimisation of soil erosion and water pollution through siltation or otherwise: *Wingecarribee Shire Council Local Environmental Plan* (1989) cl 15(3)(b), and the maintenance of parts of the existing vegetation: cl 15(3)(e). In relation to rural industries, consent is dependent on adequate measures to dispose of runoff without contaminating watercourses: cl 16C(3)(b), and the possible establishment of a vegetated riparian area: cl 16C(3)(d).

³² Pers comm, Geoff Lawrence, Planner with the Wingecarribee Shire Council, May 2001.

³³ *Wollongong City Council Local Environmental Plan* (1990) cl 4(b), SLEP cl 2(f).

³⁴ *Wollongong City Council Local Environmental Plan* (1990) cl 18.

³⁵ *Wollongong City Council Local Environmental Plan* (1990) cl 19(4). This is achieved by the establishment of a "foreshore building line" on an individual property, with development prohibited between the line and the lake. At present there are none in place around Lake Illawarra. For an indication of the possible distances which would be protected by such a "line", see the Wollongong Development

In contrast, neither the SLEP, nor any Shellharbour DCPs, address the protection of Lake Illawarra,³⁶ although the provisions of the IREP provides some overriding protection by requiring consideration of impact on water quality. The SLEP seems to focus on maintaining the residential and recreational values of the foreshore and lake body, rather than addressing possible degradation of the lake's water quality.³⁷ There are some small parts of the foreshore which are zoned under an EP (Wetlands) zone, where conservation of the environmental values is an objective, but no guidance is provided on how to achieve that aim. The LEPs applicable to the lake's catchment therefore do provide limited consideration of water quality problems, in the form of zoning restrictions or objectives.

B. HOW THE PLANNING SYSTEM DOES (NOT) WORK AND POSSIBLE IMPROVEMENTS

Under the current planning system, in so far as it covers Lake Illawarra's catchment, there is no general scheme to address threats to the water quality of the lake. The IREP does entrench a general consideration of the issue and SEPP 14 aims to protect a few of the lake's wetlands. However, there are few constructive guidelines for the achievement of those aims in the three relevant LGAs. This is partly due to the structure of the LEPs.

Although the use of zones is not required under the EPAA, it is a common feature in LEPs. The zoning system applies restrictions to disparate parcels of land and fails to implement a strategic plan for an area. In order to incorporate considerations of the lake's water quality throughout the plans, a common objective could be inserted in every zone, as has been done in the *Kiama LEP 1996* (NSW). Each zone has the common objective: "to ensure that development and land management practices do not have an adverse effect on water catchments, water quality, land surface conditions and important ecosystems such as streams, estuaries and wetlands." Alternatively, reform of the planning system could take place by changing the structure of LEPs to place-based planning rather than zone-based planning.³⁸ This would involve a geographical area having a standard set of development guidelines rather than each property within an area perhaps falling under different zones and therefore subject to different development restrictions.

The restrictions and guidelines contained in the existing LEPs only apply when a development is proposed. Therefore, their usefulness is restricted as they fail to take a proactive role in rectifying existing problems. Under the EPAA, LEPs can be made to achieve *any* of the objectives of that Act, which are very broad³⁹ and, arguably, extend to such proactive management.⁴⁰ This has not been done to date.

Despite these problems, there are positive recent changes in approach, especially in the Wollongong LGA. One such change is the DCP written to address the inevitable urban

[Control Plan No 9, which contains guidelines for residential development restrictions, set at 30 metres from the foreshore of any major waterbody \(see p 18\).](#)

³⁶ Pers comm (regarding Development Control Plans), personnel, Technical Services division, Shellharbour Council, 16 May 2001.

³⁷ The main zones around the lake are Residential 2(a), which makes no mention of the impact on the lake either directly or indirectly through sedimentation, runoff etc, and Open Space Zone 6(a), which has objectives of identifying "areas where recreational opportunities for the ... community are provided" and enabling "the public enjoyment of [those] areas": s 43(2)(a), (b).

³⁸ This is the proposal of the NSW Department of Urban Affairs and Planning (2001) note 6, above pp 5, 21.

³⁹ The objectives of the *Environmental Planning and Assessment Act 1979* (NSW), in s 5, include: "to encourage ... the proper management, development and conservation of natural and man-made resources ... the protection of the environment." Plans can also be made for "protecting, improving or utilising, to the best advantage, the environment": s 26(1).

⁴⁰ [It should be noted that existing uses will always be protected from new regulation under the Act.](#)

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expansion to the west of the lake.⁴¹ This development has the potential to detrimentally affect Lake Illawarra through the increased amount of runoff to be produced, due to its proximity to the lake and the area's susceptibility to flooding.⁴² Therefore, a DCP was developed to provide guidance in reducing those risks. Strategies include on-site detention of water,⁴³ sedimentation reduction, soil erosion controls⁴⁴ and vegetation enhancement.⁴⁵

The DCP seems to be a comprehensive guide to sensible development, combining the need for urban expansion and protection of water quality, and incorporating a monitoring requirement to determine the effectiveness, or otherwise, of the strategies.⁴⁶ While it is an improvement in strategic planning, the DCP does not have statutory force, apart from a requirement that it be "considered" when granting development consent.⁴⁷ To ensure the approach given in the DCP is actually applied to all development in the area, meeting the requirements of the DCP should be mandatory.

The planning system as it is currently constituted only addresses the risks of future development, ignoring the rectification of existing degradation of the lake. It lacks a strategic plan and does not cover the entire regulation of the catchment. However, there is a range of additional legislative schemes and policies, which are either being implemented in the area in addition to the planning system, or which have the potential to be used to protect the lake's water quality.

IV. OTHER REGULATORY SCHEMES

State policies and strategies applicable to the lake include the Environment Protection Authority's ('EPA') *Interim Water Quality and River Flow Environmental Objectives*,⁴⁸ along with principles and guidelines which have developed from the Healthy Rivers Commission's ongoing *Independent Inquiry into Coastal Lakes*.⁴⁹ A number of community groups participate in programs to monitor or improve the lake's health and foreshores.⁵⁰ In addition, there is a range of relevant natural resource management and pollution legislation, outlined below.

A. NATURAL RESOURCES LEGISLATION

Natural resources legislation in NSW has the potential to covers aspects of activities within the lake's catchment which have an impact on the water quality of the lake. This

⁴¹ *City of Wollongong DCP No. 39 – Horsley* .

⁴² This is acknowledged by the DCP itself – *City of Wollongong DCP No. 39 – Horsley* cls 6.1, 7.1.

⁴³ See *City of Wollongong DCP No. 39 – Horsley* cl 6.3 for details.

⁴⁴ Both in the construction phase and in terms of general design for dwellings and their ~~curtilage~~: *City of Wollongong DCP No. 39 – Horsley* cls 6.3 (c), 6.4. Also see Figures 5A and 5B of the DCP.

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⁴⁵ *City of Wollongong DCP No. 39 – Horsley* cls 10.0 – 10.4. In relation to vegetation enhancement, this objective is to be achieved through "concept plans" proposed by the developer and approved by the council. Remnant woodland is to be preserved and mapped, landscaping is to be done by either maintaining the existing areas, or extending the vegetation to include reintroduction of the original species or species likely to have occurred in the area. Plantings are to be coordinated with any water retention ponds, to aid both revegetation and screening/filtering of runoff water.

⁴⁶ *City of Wollongong DCP No. 39 – Horsley* cl 6.3.

⁴⁷ *Environmental Planning and Assessment Act 1979* (NSW) s 79C(1)(a)(iii).

⁴⁸ Environment Protection Authority *Interim Water Quality and River Flow Environmental Objectives* (1995), especially the Objectives for Coastal Waters.

⁴⁹ Healthy Rivers Commission *Independent Inquiry into Coastal Lakes : Issues Paper* (October 2000).

⁵⁰ These community programs include: monitoring through the Streamwatch initiative, funded by Sydney Water; and community restoration works such as those undertaken by the Oak Flats Community Landcare Group and Brooks Creek Bushcare Group, which are organised and financially supported by local government, with labour provided by volunteers.

includes utilising the provisions of the *Water Management Act 2000* (NSW) to manage water use through a water management plan and applying the available environmental protection provisions,⁵¹ those of the *Soil Conservation Act 1938* (NSW) to prevent soil erosion and land degradation,⁵² and those of the *Native Vegetation Conservation Act 1997* (NSW) to protect vegetation in the catchment through a regional vegetation management plan.⁵³

However these systems have not been put in place within the lake's catchment and therefore remain theoretical options for protection only. A Water Management Committee ('WMC') under the *Water Management Act 2000* (NSW) has been established for the Shoalhaven/Illawarra, but its current brief is limited to the Kangaroo River and is restricted to an examination of water quantity and water flow issues rather than water quality.⁵⁴ Any future role of the WMC or other statutory committees in managing the lake will probably occur under the umbrella of a catchment management plan, to be discussed below. In addition to the natural resources legislation, which has not been fully exploited in relation to the lake's catchment, there is pollution legislation.

B. POLLUTION, POLLUTION, POLLUTION

Pollution of the lake's water is caused by stormwater, sewage overflows and other general discharges into water courses which drain into the lake. The impact of stormwater on water courses has been officially recognised and, following an EPA directive,⁵⁵ led to the creation of the Lake Illawarra – Shellharbour Coastal Stormwater Management Plan Committee.⁵⁶ This was followed by the development of a Stormwater Management Plan, which is in the process of being implemented by local councils.

In relation to both sewage and general pollution, the *Protection of the Environment Operations Act 1997* (NSW) ('PEOA') is the relevant legislation and is administered by the EPA and local government.⁵⁷ Under that Act, pollution of water courses which drain into the lake fall within the general prohibition of polluting waters⁵⁸ and if this section is contravened, there may be a prosecution by the EPA.⁵⁹ Alternatively, actions within the catchment may be

⁵¹ *Water Management Act 2000* (NSW) s 16(1)(a).

⁵² *Soil Conservation Act 1938* (NSW) s 4C.

⁵³ *Native Vegetation Conservation Act 1997* (NSW) s 25.

⁵⁴ The current focus is the Kangaroo River water sharing scheme: pers comms, David Farrier, chair of the Shoalhaven/Illawarra Water Management Committee, 24 May 2001 and Bill Mowbray, member of the Southern Catchment Management Board and the Shoalhaven/Illawarra Water Management Committee, 17 May 2001.

⁵⁵ *Protection of the Environment Operations Act 1997* (NSW) s 12, following the state government's initiative of the Waterways Package and the allocation of \$A60 million over three years to a Stormwater Trust Fund.

⁵⁶ Including Wollongong and Shellharbour City councils, the Lake Illawarra Authority, the Illawarra Catchment Management Committee, Sydney Water, the Roads and Traffic Authority, the Environment Protection Authority and the NSW Department of Land and Water Conservation.

⁵⁷ LGAs are the appropriate regulatory authority for non-scheduled activities, the EPA for scheduled activities such as sewage treatment systems. The EPA also regulates a number of specific sites in the catchment, including the disused Tallawarra Power Station to the south west of the lake, the Wongawilli coal stream and the Whytes Gully land fill sites: pers comm, Anne Clarke, EPA, Wollongong District Office, 18 May 2001.

⁵⁸ *Protection of the Environment Operations Act 1997* (NSW) s 120, "waters" clearly includes any of the watercourses in the Lake Illawarra catchment, and "pollution of waters or water pollution" is also incredibly broad, so most activities within the catchment would come within the potential scope of s 120.

⁵⁹ *Protection of the Environment Operations Act 1997* (NSW) s 217(1). However, considering the EPA's Prosecution Guidelines, there is a greater emphasis on "options to prevent, control, abate or mitigate any harm to the environment ..." and prosecution is used as only part of the EPA's overall strategy – EPA Prosecution Guidelines cls 3.5, 3.6.

subject to a variety of notices such as clean-up notices⁶⁰ and prevention notices⁶¹ requiring works to avoid a pollution incident. At present there is little evidence that these options are being pursued.

In relation to pollution caused by sewage overflows, a licensing system is in place under the PEOA. The catchment of Lake Illawarra contains a high proportion of the area serviced by three sewage systems: 4% of the Wollongong sewerage system (to increase with residential development to the southwest of the city's centre), 72% of the Port Kembla system and 53% of the Shellharbour system⁶² with a correspondingly high number of sewage overflows allowing excess nutrients into the lake's water system.⁶³ The overflows have been identified as "diffuse-source pollution" and licenses are required under the PEOA.⁶⁴

Following an EIS process,⁶⁵ the EPA issued licences for the systems affecting the lake.⁶⁶ The licences do not prohibit overflows, as they are an inevitable part of the system, but they do require better management through a Pollution Reduction Program.⁶⁷ This is a welcome approach by the EPA. However, there are problems in achieving the desired outcomes because of uncertainty concerning the accuracy of the scientific models used and the economic barriers to implementing the "best available technology". The "best available technology" is the approach of the EPA, which requires individuals and companies to install the most effective technology which is available, but which is also "economically affordable".⁶⁸

V. THE LAKE ILLAWARRA AUTHORITY

A. HISTORY OF THE AUTHORITY

The state of Lake Illawarra's environment has long been the subject of community concern. Numerous scientific studies were conducted in the 1970s and 1980s before a

⁶⁰ *Protection of the Environment Operations Act 1997* (NSW) Part 4.2 and prevention notices: Part 4.3.

⁶¹ *Protection of the Environment Operations Act 1997* (NSW) Part 4.3.

⁶² The catchment of the lake is described as the Regional Environmental Zone "Lake Illawarra" in the Sydney Water *Licensing Sewerage Overflows Environmental Impact Assessment* (June 1998) Sydney Water (June 1998) p 2-1 of Chapter "Illawarra GA".

⁶³ One guesstimate is that there are less than 100 designed overflows and a few hundred undesigned overflow points discharging into the lake: pers comm, Andrew Cooldridge, EPA, Wollongong District Office, 25 May 2001.

⁶⁴ Sewage overflows are caught by the definition of "sewage treatment systems". They are "premises-based" operations listed under *Protection of the Environment Operations Act 1997* (NSW) Schedule 1, s 5 and therefore require licences under s 48. In addition, under the *Clean Waters Act 1970* (NSW), the lake and its tributaries were classified as Class C (Controlled Waters), another reason that the overflows from the Shellharbour and Port Kembla systems must be licensed. The classifications have been retained despite the overhaul of the water management system through the *Water Management Act 2000* (NSW): *Protection of the Environment Operations Act 1997* (NSW) s 326, Schedule 5 cl 6.

⁶⁵ Sydney Water (June 1998) note 62 above.

⁶⁶ The licences were issued under *Protection of the Environment Operations Act 1997* (NSW) s 55. They were challenged by Sydney Water in the Land and Environment Court in 2000 and the conditions have subsequently been amended: pers comm, Andrew Cooldridge, EPA, Wollongong District Office, 25 May 2001.

⁶⁷ See for example the Shellharbour system licence – Environment Protection Licence No 211 PRP 105 cls 105.1 – 105.9.

⁶⁸ Pers comm, Michael Muston, environmental consultant to the EPA regarding licensing, 24 May 2001.

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concerted effort was made to address the environmental disaster it had become.⁶⁹ The need for coordinated management of the lake has been well-recognised (and much debated) and became the subject of two studies in 1976.⁷⁰ From one emerged a recommendation for a joint local council aldermanic committee, covering the LGAs of Shellharbour and Wollongong, to advise those councils on lake management. This recommendation was adopted and the Lake Illawarra Management Committee was created in 1978. This body was later merged into the catchment management system, which is discussed below.⁷¹ From the other study, conducted on behalf of the Department of Public Works ('DPW'),⁷² emerged legislation which established the Lake Illawarra Authority ('the Authority').⁷³

B. LEGISLATIVE OUTLINE OF THE AUTHORITY – WHO, WHAT, WHERE & HOW.

The Authority was created to improve the environment of Lake Illawarra,⁷⁴ which was acknowledged as a valuable resource.⁷⁵ To meet this objective, the lake body and foreshores⁷⁶ were vested in the Authority in fee simple,⁷⁷ and the Authority was charged with carrying out works within those geographical confines.⁷⁸ The works are restricted to:

- removal of organic and inorganic build-up in the lake;
- deepening channels and bays;
- establishing filters at the entry points of streams and drains;
- landscaping;
- establishing recreational facilities;
- conducting reclamation of land; and
- general “works for the protection of the environment”.⁷⁹

The Authority is made up of ten members,⁸⁰ including representatives from local government,⁸¹ state government departments⁸² and the catchment management body.⁸³ Funding

⁶⁹ D Allen *A Report on Land Use in the Catchment Area of Lake Illawarra* (March 1974).

⁷⁰ Soros-Longworth and Mackenzie (June 1976) note 3 above and Wollongong City Council and The University of Wollongong (September 1976) note 3 above.

⁷¹ Pers comm, Anne Clarke, secretary of the Lake Illawarra Management Committee from the early 1980s, currently at the EPA, Wollongong District Office, 18 May 2001. The study in question was: Wollongong City Council and The University of Wollongong (September 1976) note 3 above.

⁷² Soros-Longworth and Mackenzie (June 1976) note 3 above.

⁷³ *Lake Illawarra Authority Act 1987* (NSW).

⁷⁴ *Lake Illawarra Authority Act 1987* (NSW), the long title.

⁷⁵ NSW *Parliamentary Debates (Hansard)* Legislative Assembly, 18 November 1987, p 16268 (Mr Brereton, Second Reading Speech.): “The ... Authority will be formed to clean up the lake, and transform it into an attractive recreational and tourist resource.”

⁷⁶ Bounded by the mean high water mark of Lake Illawarra and the entrance of the lake: *Lake Illawarra Authority Act 1987* (NSW) Schedule 1, s. 5(1).

⁷⁷ *Lake Illawarra Authority Act 1987* (NSW) s 17(1).

⁷⁸ *Lake Illawarra Authority Act 1987* (NSW) s 10, Schedule 2. The Authority need not carry out the works itself, as it has the power to enter into contracts: s 10(1), (2), leases or licences: s 13, or acquire property: s 18, for the purpose of carrying out the works.

⁷⁹ *Lake Illawarra Authority Act 1987* (NSW) s 10, Schedule 2.

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comes primarily from the local councils, matched dollar for dollar by the NSW government and supplemented by a variety of grants.⁸⁴

C. THE PRACTICAL OPERATION OF THE AUTHORITY – COMPLIMENTS & CRITICISMS

The Authority was created following over a century of land clearing, urbanisation and heavy industry operating in the lake’s catchment.⁸⁵ By the 1980s, the bottom of the lake, shallow areas, original swamps and entrance had been degraded or reclaimed.⁸⁶ As a consequence, rectification of the compromised state of the lake’s water quality and foreshores was to be a considerable task. The Authority embarked on its task and to date has undertaken numerous projects and undoubtedly improved the lake’s environment.⁸⁷ The projects have included:

- establishing recreational facilities;
- beautification and foreshore protection;
- dredging;
- algae harvesting;
- establishing a permanent entrance; and
- installing filters to screen water entering the lake.⁸⁸

Despite the admirable achievements of the Authority, there remain issues relating to its membership, overall approach and the effectiveness of its management of the lake, which challenge the status quo. The first issue is membership. A state policy move to incorporate community input into planning decisions led to calls for greater representation of the local community in the Authority’s membership.⁸⁹ To date these demands have not been met.⁹⁰

⁸⁰ Appointed by the Minister of Lands and Water Conservation: *Lake Illawarra Authority Act 1987* (NSW) s 6(3).

⁸¹ Shellharbour and Wollongong City Councils.

⁸² NSW Fisheries & the Department of Land and Water Conservation.

⁸³ *Lake Illawarra Authority Act 1987* (NSW) s 6(4) refers to the Illawarra Catchment Management Committee. The Act has not been amended to recognise the disbandment of the Illawarra Catchment Management Committee and the creation of the Southern Catchment Management Board, discussed below. However, the previous Illawarra Catchment Management Committee member, Bill Mowbray, has retained his position on the Authority and is also now a member of the Southern Catchment Management Board.

⁸⁴ Lake Illawarra Authority *Annual Report 1999-2000* pp 19-20.

⁸⁵ See the detail given in Part II above.

⁸⁶ Soros-Longworth and Mackenzie (June 1976) note 3, above pp 19-30.

⁸⁷ This has been acknowledged by various groups, including the Authority itself: Lake Illawarra Authority (1999-2000) note 84, above and a government committee: Standing Committee on Public Works *The Lake Illawarra Authority* (Report No. 3 November 1996) pp 1,131.

⁸⁸ Lake Illawarra Authority (1999-2000) note 84, above pp 1, 7-15.

⁸⁹ In 1996, the Standing Committee on Public Works received terms of reference to examine the Authority, relevantly: “Whether the current structure and membership of the Lake Illawarra Authority sufficiently represents the local community and the government.” The Standing Committee’s subsequent report recommended representation of local sailing clubs, local environmental groups and the local community generally – Standing Committee on Public Works (1996) note 87, above p 11.

⁹⁰ Standing Committee on Public Works *Follow-up Inquiry into the Lake Illawarra Authority Report and the NSW School Facilities Report* (Report No. 52/5, November 2000).

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Although the community representation was not increased, and, indeed, there are practical difficulties in doing so,⁹¹ there were amendments to include a representative from the ICMC, Fisheries and the DLWC.⁹² As an alternative to increased community representation, the Authority has attempted a practice of community consultation in relation to major projects.⁹³ This approach, while laudable as a voluntary standard practice, involves consultation only at the end of the planning process and has not been accepted by the local community as an opportunity for true input.⁹⁴ However, increased community involvement is a consideration in the development of the Authority's proposed Plan of Management for Lake Illawarra.⁹⁵

The effectiveness of some of the works commenced by the Authority has also been questioned and suggestions made that the works have not all achieved their stated aims. For example, the recent entrance works to improve a constant flow of water between the ocean and the lake and the algae harvester to reduce the amount of algal build-up along the foreshores.⁹⁶ However, the criticism has to be considered against practical reality. It is unlikely that scientific models will be perfect, and in the absence of complete scientific data, the Authority must still attempt to rectify the lake's degradation. A choice must therefore be made between waiting for further information and being seen to be doing nothing, or acting according to a judgement of the circumstances and risking criticism for failing to achieve the perfect outcome.⁹⁷

Another criticism of the Authority is that it operates under an outdated brief that seeks to improve the lake by re-engineering its natural processes rather than addressing the source of the problems.⁹⁸ The perception of an "engineering" focus is attributable to the fact that the DPW was initially responsible for the Authority. The DPW is a department historically biased towards the completion of engineered "works". It was established in the mid-1800s for the sole purpose of the provision of "public works". Its list of functions, even in the early 1990s, includes the design, construction and maintenance of works. In relation to its conservation functions, they are undertaken by specialised *engineering* sections within the department and its conservation functions have been summarised as "coastal and civil engineering".⁹⁹ In addition, the very wording of the section defining the Authority's functions suggest such a bias.

⁹¹ Pers comm, Douglas Prosser, Chairman of the Lake Illawarra Authority, 25 May 2001. For discussion on the practical difficulties of public participation: R Gomez-Fort, D Macpherson and J Cameron "Public Participation in Integrated Catchment: More than Lip Service?" (1997) 4(2)*The Australasian Journal of Natural Resources Law and Policy* 211 at 216-219, which identifies the problems of decreased efficiency due to time requirements, that such involvement may favour "vocal minority groups rather than the groups most in need of empowerment", and that representatives are often limited in "resource management and conflict resolution skills".

⁹² *Statute Law (Miscellaneous Provisions) Act (No 2) 1999 No 85* (NSW), Schedule 2.

⁹³ Pers comm, Douglas Prosser, Chairman of the Lake Illawarra Authority, 25 May 2001.

⁹⁴ Standing Committee on Public Works (2000) note 90, above and see Carson and Gelber *Ideas for Community Consultation: A discussion on principles and procedures for making consultation work: A report prepared for the NSW DUAP* (February 2000).

⁹⁵ Pers comm, Douglas Prosser, Chairman of the Lake Illawarra Authority, 25 May 2001.

⁹⁶ Consider the numerous articles in the local press, for example in *Lake Times*: "Development works raise concerns at Lake" (7 November 2001) p 3, "Lagoon unsafe for swimming" (3 October 2001) p 1, "Lake myths: letter to the editor" (13 June 2001) p 3; and in the *Wollongong Advertiser*: "Entrance works up for award" (12 September 2001) p 1, "Tell the truth about the Lake George: letter to the editor (23 May 2001) p 12. A community group has developed, in opposition to the Authority, which calls itself the "Save Lake Illawarra Action Group: Suburbs united for a quality lake".

⁹⁷ As one past member of the Authority has stated, "to take no action is to take strong action": pers comm, Associate Professor Malcolm Harris, 25 May 2001.

⁹⁸ Standing Committee on Public Works (1996) note 87, above p 7.

⁹⁹ See the Public Works Heritage Group, Public Works Department, NSW *A guide to the history of the Public Works Department, NSW PWD Report No. 89008* (1991) pp 29-84.

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However, with the DLWC assuming responsibility for the Authority in 1995, the result is expected to be an adoption of a more modern natural resources approach,¹⁰⁰ acknowledging the sources of the problems and working to change them, together with a policy of encouraging ongoing research on the lake. Evidence of that change can be found in the activities of the Authority extending beyond completion of “works”, to community education¹⁰¹ and monitoring of the lake’s water quality.¹⁰²

More fundamental is the criticism that the Authority addresses only the symptom of water quality degradation, not the causes.¹⁰³ As has been noted, the causes extend to the boundary of the lake’s catchment. Therefore, it is logical that an authority with the objective of improving the lake should look to that broad geographical area when attempting to manage the problems from which the lake suffers. Indeed, the Authority has recently acknowledged the importance of a catchment approach,¹⁰⁴ and has been involved in discussions with Councils and the Southern Catchment Management Board.¹⁰⁵

However, the Authority does not have the *power* to complete works beyond the lake foreshores, being restricted to works within a prescribed region.¹⁰⁶ This understanding of the Authority’s limited powers could be challenged if the general power to carry out “works for the protection of the environment”¹⁰⁷ were interpreted as extending beyond that area. However, there are practical difficulties with such an extended approach, as much of the Authority’s funding is tied to specific works along the foreshore or within the body of the lake.¹⁰⁸ Nor does the Authority have any regulatory powers.

The Authority has therefore restricted its actions to the lake body and foreshores. It has focused on the rectification of the shoreline and protection of the lake from further pollution, by installing filters at the lake’s edge. The Authority is indeed the best body to do this: under the Lake Illawarra Authority Act it owns and controls the areas concerned, has accumulated expertise and has guaranteed funding arrangements to carry out those works. The Authority further justifies its approach by stating that other bodies are responsible for management beyond the lake’s foreshores.¹⁰⁹ Such bodies could include local councils operating within the planning system described above. The Authority’s only role beyond the lake’s shores is that of liaising with relevant agencies.

¹⁰⁰ Mr Porter of the DLWC, in evidence before the Standing Committee of Public Works: Standing Committee on Public Works (1996) note 87₄ above p 20.

¹⁰¹ For example, the production of pamphlets explaining the works of the Authority: “Creating Wetlands to improve water quality in Lake Illawarra” (undated). Also see Lake Illawarra Authority (1999-2000) note 84₄ above pp 16-17.

¹⁰² Lake Illawarra Authority (1999-2000) note 84₄ above pp14-15.

¹⁰³ Standing Committee on Public Works (1996) note 87₄ above p 7.

¹⁰⁴ Lake Illawarra Authority (1999-2000) note 84₄ above p 3, see Lake Illawarra Authority (undated) note 101₄ above and Lake Illawarra Authority “Response to the Standing Committee of Public Works Report on the Lake Illawarra Authority” (December 1996) pp 2ff.

¹⁰⁵ Pers comms, Doug Prosser, Chairman of the Lake Illawarra Authority, 25 May 2001 and Brian Dooley, Executive Office of the Lake Illawarra Authority, 23 May 2001.

¹⁰⁶ The region is prescribed by *Lake Illawarra Authority Act 1987* (NSW) s 5 definition of “development area”, as described in Schedule 1 to include basically the area of the lake “bounded by the mean high water mark of Lake Illawarra and bounded at the entrance of that Lake” by a generally straight line near the entrance itself. This restriction was noted in the debates for the *Lake Illawarra Authority Act 1987* (NSW): NSW *Parliamentary Debates (Hansard)* Legislative Assembly, p 16763, (Mr Petersen, Member for Illawarra), raising the concern that the Authority has no power over the planning of urban development around the lake.

¹⁰⁷ Definition of “development works” in *Lake Illawarra Authority Act 1987* (NSW) Schedule 1, s 10.

¹⁰⁸ For example, the Sydney Water *Water Grants Program*, which funded the creation of artificial wetlands in Kully Bay in 1993.

¹⁰⁹ Lake Illawarra Authority (December 1996) note 104₄ above p 1.

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VI. INTEGRATION

The planning system and the Lake Illawarra Authority, as discussed above, regulate specific parcels of land within the lake's catchment, and the lake's body and foreshore respectively. The additional legislative schemes and policies briefly noted regulate specific causes of pollution which impact on the lake's water quality, including sewage and stormwater. Overall coordination, however, appears to be lacking. None of the systems contains a catchment-wide strategic plan which attempts to coordinate the efforts of the particular system and the other regulatory participants. The need for such integration has been noted in relation to environmental law in its application throughout NSW,¹¹⁰ as well as in relation to the specific concern of protecting Lake Illawarra.¹¹¹

The limited coordination that is formally required is focused on consultation. Communication between the local councils in the lake's catchment is to occur where an individual development would have an adverse impact on the lake, presumably allowing for a cumulative impact to be considered.¹¹² Within the planning system, consultation is required between consent authorities and the Authority, when development by a party other than the Authority is to occur within the lake body or on its foreshores.¹¹³ Government bodies have come together in relation to the specific issue of stormwater, and cross-membership on some agencies, such as the Authority, has been entrenched, as has representation of interested parties such as councils, government departments and the fishing industry. However, there is no legislative requirement that the plans of one body be incorporated into the strategies of another.

This attempt at integration through mandatory consultation has, however, been supplemented by informal practices. The Authority also directly approaches issues when members are interested and has been involved in discussions with Sydney Water regarding the specific problem posed by sewage.¹¹⁴

Integration conducted outside legislative requirements is also evidenced in the strategic approach adopted by the NSW Department of Urban Affairs and Planning ('DUAP'), in relation to at least one development near the lake: the Kembla Grange Living Centres Project.¹¹⁵

This project will involve the development of a strategic plan for the site, limited in scope and detail only by time and funding restrictions.¹¹⁶ The plan should then be incorporated

¹¹⁰ D Farrier, A Kelly, M Comino & M Bond "Integrated Land and Water Management in NSW: Plans, Problems and Possibilities" (1998) 5(2) *The Australasian Journal of Natural Resources Law and Policy* 153 at 153.

¹¹¹ D Allen (March 1974) note 69, above pp12-13, Soros-Longworth and Mackenzie (June 1976) note 3, above pp 94 – 118, Wollongong City Council and The University of Wollongong (September 1976) note 3, above pp 122-131.

¹¹² *Illawarra Regional Environmental Plan No. 1* (1986) cl 108(a).

¹¹³ *Lake Illawarra Authority Act 1987* (NSW) s 14.

¹¹⁴ Pers comms, Douglas Prosser, Chairman of the Lake Illawarra Authority, 25 May 2001 and Brian Dooley, Executive Officer of the Lake Illawarra Authority, 23 May 2001.

¹¹⁵ The Centres Project is a state government initiative whereby funds are directed at areas within NSW where development is required for the creation of employment opportunities in conjunction with urban expansion. The Kembla Grange project is one of a number across the state: pers comm, Dr. Roslyn Muston, facilitator for the Living Centres Kembla Grange Project and environmental consultant, 25 May 2001. A more cynical interpretation of the project is that it constituted a pre-election attempt at strengthening the Labor Party's Illawarra vote.

¹¹⁶ Funding is guaranteed until the end of the 2003 financial year: pers comm, Crispin Buttriss, team leader of the Living Centres Illawarra group, 25 May 2001.

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into the state planning system.¹¹⁷ DUAP argue that it has attempted integration of all regulation and catchment issues through applying an advisory structure involving every government department, community group and authority relevant to the area.¹¹⁸ This example will be a testing ground for that model of integration and, if successful, has the potential to be applied more widely.

However, apart from these recent attempts, the integration and coordination in relation to issues which impact upon the lake has not been effective. The solution which will be examined below is the catchment management system. There are some doubts as to the appropriateness of this approach for the management of all natural resources¹¹⁹ but for the management of a water body, such the lake, it is clearly the most obvious choice.

VII. CATCHMENT MANAGEMENT

A. THE DEVELOPMENT OF CATCHMENT MANAGEMENT

Catchment management is a State policy, known as Total Catchment Management ('TCM'). It is defined as "the coordinated and sustainable use and management of land, water, vegetation and other natural resources on a water catchment basis so as to balance resource utilisation and conservation",¹²⁰ involving "coordinating community and government efforts within a catchment".¹²¹ The regional or catchment approach to natural resources management is not new,¹²² emerging in NSW in the 1970s with an Inter-Departmental Committee¹²³ and new zones within the planning system.¹²⁴ The catchment approach was formally introduced by Neville Wran in 1984.¹²⁵

The state TCM movement was mirrored at a local level, with a community group for Lake Illawarra emerging in the 1970s. The group understood the link between actions in the catchment and the lake's poor state, but did not have the funds or scientific knowledge to implement changes in practices.¹²⁶ Following the 1976 local council report on the lake,¹²⁷ the group became a joint aldermanic committee of Wollongong and Shellharbour councils - the Lake Illawarra Management Committee ('LIMC').¹²⁸

¹¹⁷ Pers comm, Crispin Buttriss, team leader of the Living Centres Illawarra group, 25 May 2001.

¹¹⁸ The Wollongong Living Centres Organisational Structure outlines the consultative process – a community reference group is at the centre, surrounded by technical advisory groups consisting of an Illawarra Social Planning Coordination Group, Infrastructure Coordination Group, Sustainability Assessment Technical Advisory Group and Illawarra Regional Employment Planning Working Group. These five groups then feed into the main Advisory Committee.

¹¹⁹ For example, for issues of weed control, feral animals or migratory species, a bioregion or geographical boundary is more suitable. There are also issues of social boundaries required to create an effective unit of management: House of Representatives Standing Committee on Environment and Heritage *Report of the Inquiry into Catchment Management* (December 2000) pp 36-40.

¹²⁰ *Catchment Management Act 1989* (NSW) s 4.

¹²¹ The DLWC website: <www.dlwc.nsw.gov.au/care/index.html> (accessed 18 April 2001).

¹²² The earliest mention of this approach is in the early 1900s in relation to agricultural lands: House of Representatives Standing Committee on Environment and Heritage (2000) note 119 above p 24.

¹²³ Chaired by the Commissioner of the Soil Conservation Service, with a brief to develop strategies for the major catchments in NSW: A Clarke, *Implementation of Total Catchment Management* (undated).

¹²⁴ D Farrier, A Kelly, M Comino and M Bond (1998) note 110 above p 165.

¹²⁵ NSW *Parliamentary debates (Hansard)* Legislative Council, 22 November 1989, p 13111 (JR Hallam).

¹²⁶ Pers comm, Anne Clarke, secretary of the LIMC and ICMC, currently at the EPA, 18 May 2001

¹²⁷ Wollongong City Council and The University of Wollongong (September 1976) note 3 above.

¹²⁸ The LIMC was created under *Local Government Act 1919* (NSW) s 521.

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The LIMC established a TCM sub-committee, comprising Engineering, Health and Planning officers from local government, and representatives from all relevant state agencies.¹²⁹ The TCM group and state policy efforts came together in July 1989, when the LIMC organised the first TCM conference in NSW.¹³⁰ There was nation-wide and cross-sector participation¹³¹ and in November of the same year, the *Catchment Management Act 1989* (NSW) ('CMA') was passed by the NSW Parliament.¹³²

B. THE CATCHMENT MANAGEMENT ACT 1989 (NSW) – COMMITTEES & BOARDS.

The CMA aims to rectify degradation, promote sustainable use of resources and provide high-quality water in each catchment,¹³³ to be achieved through the framework of a state coordinating committee, local Catchment Management Committees ('CMCs') and Catchment Management Trusts.¹³⁴ The CMCs were to be the engine of catchment management throughout most of the State by coordinating community, government and industry efforts to improve catchment health.¹³⁵ In 1991, the LIMC merged into the Illawarra CMC ('ICMC'), becoming a committee focusing on a wider geographical area.

Following a review of TCM in 1997, the framework was changed by dismantling most of the CMCs and creating 18 Catchment Management Boards ('Boards').¹³⁶ These Boards are, at present, formally created as Catchment Management Trusts.¹³⁷ They are to "promote a healthy and productive catchment system" through "protection", "restoration" and incorporating "ecologically sustainable use ... of resources".¹³⁸ To do this, the Boards have the following functions:

- "identify the critical opportunities, problems and threats" associated with the natural resources within the catchment;
- "identify the critical first order objectives and targets for the management of natural resources";
- "develop management options, strategies and actions to address the identified objectives and targets";

¹²⁹ A Clarke "Lake Illawarra Total Catchment Management Committee" (undated) p 1.

¹³⁰ The conference was named "TCM in NSW – Is it Working?", held at the University of Wollongong, 13 July 1989.

¹³¹ The Minister for Agriculture and Rural Affairs, Ian Armstrong MP, opened the conference. Speakers included Rick Farley - Executive Director of the National Farmers' Federation, Jane Elix – National Land Degradation Coordinator of the Australian Conservation Foundation, Choon-Hooi Teoh - Senior Policy Coordinator of the NSW Department of Water Resources (as it then was) and Sandy Booth - State Director of catchment management, NSW Soil Conservation Service. There appears no evidence however of participation by secondary industry.

¹³² This legislation was introduced by the NSW government, with the specific involvement of the Soil Conservation Service. The TCM conference did not initiate the development of the *Catchment Management Act 1989* (NSW), but it certainly brought together all interested parties and consolidated the move toward such a scheme.

¹³³ *Catchment Management Act 1989* (NSW) s 5(1).

¹³⁴ *Catchment Management Act 1989* (NSW) s 5(2).

¹³⁵ ICMC ICMC: *Coordinating TCM in the Illawarra* (undated).

¹³⁶ This occurred under the *Catchment Management Regulation 1999* (NSW).

¹³⁷ *Catchment Management Regulation 1999* (NSW) cl 3(1).

¹³⁸ *Catchment Management Regulation 1999* (NSW) cl 5, *Catchment Management Act 1989* (NSW) s 26.

- “assist in developing a greater understanding within the community” of catchment management; and
- “initiate proposals for projects ... and assess projects” for the achievement of the catchment targets.¹³⁹

The Boards are to report to the Minister for Land and Water Conservation (‘the Minister’) within twelve months of their establishment.¹⁴⁰ Within that period, the Boards, as Trusts, must prepare a “corporate plan for the achievement of the purpose” for which they were created.¹⁴¹ Taken together, this has been commonly understood to mean that a Catchment Management Plan (‘Plan’) is to be developed within the first 12 months of a Board’s existence, incorporating the results of the first three functions listed above.¹⁴² Once the Plan is approved by the Minister,¹⁴³ who can control the exercise of the Boards’ functions,¹⁴⁴ the Boards are legislatively empowered to undertake the programs within the Plan.¹⁴⁵ Within this framework, the Boards have wide powers to take action to achieve their statutory purpose, but this does not include control or regulatory powers.¹⁴⁶ Catchment Management Trusts, including the Boards, can theoretically levy “catchment contributions” to carry out works.¹⁴⁷ However, this is subject to the Minister declaring the respective area a “catchment contribution area”,¹⁴⁸ an action which is a politically risky.

Following these structural changes to the catchment management system, the ICMC was disbanded and the Southern Catchment Management Board (‘SCMB’) was established. It covers an enormous geographical area, encompassing the management areas of the former Hacking River, Illawarra and Shoalhaven CMCs.¹⁴⁹

C. THE SOUTHERN CATCHMENT MANAGEMENT BOARD HAS A PLAN (ALMOST)

The SCMB produced a briefing paper in May 2001, outlining its work in developing targets for the catchment,¹⁵⁰ which was followed by a series of public consultation meetings to explain the planning process. This was followed by the release of a discussion paper containing draft targets.¹⁵¹ In October 2001, a draft “blueprint” for catchment management (‘Blueprint’) was released for comment.¹⁵²

¹³⁹ *Catchment Management Regulation 1999* (NSW) cl 7(1).

¹⁴⁰ *Catchment Management Regulation 1999* (NSW) cl 7(2).

¹⁴¹ *Catchment Management Act 1989* (NSW) s 28(1).

¹⁴² See for example the Department of Land and Water Conservation’s own website announcing the changes to the catchment management system: <www.dlwc.nsw.gov/care/cmb.html> (accessed May 2001).

¹⁴³ *Catchment Management Act 1989* (NSW) ss 29, 30(1)(a).

¹⁴⁴ *Catchment Management Act 1989* (NSW) ss 6, 24.

¹⁴⁵ *Catchment Management Act 1989* (NSW) s 30(1)(a).

¹⁴⁶ See *Catchment Management Act 1989* (NSW) s 27, for example: s 27(1)(a) “provide, construct, operate, manage and maintain works and buildings, (b)... deal with property ... (c) enter into contracts ...”.

¹⁴⁷ *Catchment Management Act 1989* (NSW) s 40.

¹⁴⁸ *Catchment Management Act 1989* (NSW) s 39(1).

¹⁴⁹ *Catchment Management Regulation 1999* (NSW) cl 4(n).

¹⁵⁰ Southern Catchment Management Board *Briefing Paper* (Version 1, May 2001).

¹⁵¹ These included targets for water management, biodiversity management, weed management, coasts and estuaries management and development environment targets: Southern Catchment Management Board *Community Discussion Paper: Draft Targets* (July 2001).

¹⁵² Southern Catchment Management Board *A blueprint for the sustainable use and enjoyment of our natural resources: Draft for comment* (October 2001).

The Blueprint is intended to be the basis of the Plan for the southern catchment area. It is described as the “foundation for a long-term program”.¹⁵³ Once accepted by the NSW government, it is to be the “basis of governmental programs [and]...serve as a basis for ‘bids’ for resources to implement works within the region”.¹⁵⁴ The Blueprint is to operate through the following programs :

- Water;
- Coasts, Lakes and Estuaries;
- Sustainable Land Use;
- Biodiversity; and
- Developed Environment.

The programs are to coordinate existing and future attempts to enhance the catchment area and provide for better use and enjoyment of the natural resources contained therein. For each program, the SCMB has identified a “catchment target”, which is an objective target to be achieved within a specified timeframe. Beneath this are “management targets”, which outline the specific actions to be taken in order to achieve that primary aim. These are broken into “projects and actions”. “Lead” and “supporting” agencies have been designated for each program and are given the task of implementing them. These agencies include State government departments, local councils and “other agencies as required”, which could include the Lake Illawarra Authority.

Therefore, the CMA does not establish a new regulatory regime. Rather, it builds upon existing systems and creates a coordinating framework within which the Authority, councils, the EPA and other bodies mentioned above, may work together to manage natural resources like Lake Illawarra.

D. THE PLAN AND LAKE ILLAWARRA

Catchment management may be a good theoretical model for management of the lake, but the practical effectiveness of the system as it applies through the SCMB’s Plan is open to question. The Plan is to cover the management areas of three former CMCs, therefore it must be a very broad framework in order to cover the incredibly diverse management area and all the catchments that exist within it. This questions its value as a tool for the management of Lake Illawarra’s catchment, as compared with the previously detailed and locally-focused work of the ICMC. The concern of too much abstraction was raised with the SCMB, the response being that the Plan has consolidated all three CMCs’ work, but that details have necessarily been lost. Other problems which emerge from the SCMB being created in place of the ICMC is the loss of contact with the community and the loss of public access to the ICMC’s extensive library.¹⁵⁵

The implementation of the Plan may bring the high level of abstraction into some local focus, through specific projects for the lake. The Plan and the previous work of the ICMCs will be compared in order to predict whether the implementation of the Plan will achieve better integration of lake management issues than previous attempts.

¹⁵³ As above p 3.

¹⁵⁴ As above.

¹⁵⁵ SCMB community information session, 17 May 2001.

D. IMPLEMENTATION

(i) *The Illawarra Catchment Management Committee*

A solution for the fragmentation of regulation within the Lake's catchment was supposed to emerge from the responsibility placed on the ICMC to coordinate catchment management in the Illawarra.¹⁵⁶ The ICMC engaged in consultation with all interested parties in the Illawarra catchments¹⁵⁷ and, building on the work of the aldermanic LIMC,¹⁵⁸ accumulated a great deal of information. The ICMC developed management plans, policies and strategies to achieve a full integration of catchment issues for the lake. There were guidelines on the incorporation of TCM in environmental impact assessments under Part 5 of the EPAA, and strategies to incorporate all the regulation in the catchment into the planning system.¹⁵⁹

However, the *implementation* of that ideal integration did not occur. The ICMC, like its predecessor the LIMC, was an advisory body only, which, despite the integration outlined in the plans, could not implement them to achieve integration in practice.¹⁶⁰ Thus it lacked the power to enforce plans and a budget to carry out required projects. The ICMC could only try to persuade the local councils and other authorities to implement the strategies. It had no power of direction.

(ii) *The SCMB's Plan – implementation assured?*

Implementation of the catchment management approach was difficult under the ICMC. Now that the ICMC has been replaced by the SCMB, will those problems be overcome? As has been noted, the Plan is to have two layers – the overarching Plan developed and coordinated by the SCMB, and five programs within that Plan. These programs are the vehicle by which catchment management is to be implemented.¹⁶¹ Assuming the Plan and its programs do cover the issues relating to Lake Illawarra's water quality, how is that implementation to occur in practice?

Once again, the coordinating body, the SCMB, does not have the budget to take action itself, *unless* the Minister declares the area for a catchment contribution. However, with the identification of a lead agency for each program, those agencies may bear part of the responsibility for implementation. This would be beneficial, as the agencies are repositories of specialist knowledge and resources, with established organisational structures. However, even if this is to be the case, the SCMB does not have the power to *require* a lead agency to implement the program. Nor can action be taken to require the SCMB to carry out its

¹⁵⁶ *Catchment Management Act 1989* (NSW) s 15 (a) – (d).

¹⁵⁷ See for example ICMC, *Management of Urban Watercourse Corridors*, (1994), contributed to by Kiama, Shellharbour and Wollongong councils, the Departments of Water Resources, Conservation and Land Management, Planning, Fisheries, & Public Works (as they then were), Greening Australia, the EPA, the Water Board (as it then was), ICMC community members, Landcare officers and the ICMC.

¹⁵⁸ For example: P Lynch & A Clarke *Preparing Soil and Water Management Plans for urban, industrial and resort developments* (1990).

¹⁵⁹ ICMC *A Catchment Perspective on Reviews of Environmental Factors under Pt V EPAA* (undated), ICMC *Land Rezonings: A Process Analysis* (1993) & ICMC *Guidelines for the preparation of Management Plans for Landcare groups* (1996).

¹⁶⁰ Pers comms, Bill Mowbray, member of ICMC, Lake Illawarra Authority and the SCMB, 18 May 2001, and Douglas Prosser, Chair of the Lake Illawarra Authority, 25 May 2001.

¹⁶¹ Southern Catchment Management Board (May 2001) note 150 above.

functions,¹⁶² despite the CMA stating that once the Plan is accepted by the Minister, it must be given effect by the SCMB.¹⁶³

The SCMB's only legislative power to implement the strategies is through promotion of the issues,¹⁶⁴ initiation of proposals for projects to achieve TCM, and by assessing projects, which are submitted for government funding, against the targets identified by the SCMB.¹⁶⁵ This is given further detail in the Blueprint. The SCMB will "support the ... programs ... with educational and community resources", "ensure the community has access to resources and support for on-ground work" and provide "public accountability for the implementation" of the proposed programs.¹⁶⁶ Like the previous coordinating body, the ICMC, the SCMB is more an advisory committee than a body set up to implement its laudable plans and programs. Implementation of the Plan remains therefore subject to political will.

The Plan may be more powerful than the ICMC's plans, in terms of political momentum, once the Minister approves it in its final form.¹⁶⁷ This will hopefully have some influence with State government departments, although the possibility of 'turf wars' between the departments may restrict any power the Plan will hold regarding its implementation. In the case of the NSW Department of Land and Water Conservation, a departmental directive has already established that the SCMB and its Plan are to be supported.¹⁶⁸ Greater acceptance of the Plan by other agencies, due to continual consultation and therefore agreement and "ownership" of the Plan, may further enhance the prospects of implementation.

In addition, DUAP's proposals for reforming the planning process may ensure implementation of the Plan to some extent. DUAP proposes a system of regional and state strategies, that contain broad policy directives and guidelines, which are to inform plans at a local level.¹⁶⁹ The Plan could be incorporated into a regional strategy and therefore impact on what development can take place throughout the lake's catchment. This may strengthen the chance of implementation of the Plan, by setting out responsibilities, resource requirements and timeframes for achievement.¹⁷⁰ Unfortunately, the responsibility for the enforcement of regional strategies has not been made clear. In addition, the proposed area to be covered by an Illawarra regional strategy¹⁷¹ is even larger than the SCMB, perhaps leading to further abstraction in the strategy and implementation targets .

In the current legislative structure, the catchment management system builds upon the work of the previous CMCs, collapsing all the details into one broad Plan for a large and diverse area. While it does establish a framework for coordination, by identifying the agencies which will bear the main role in implementing each program within the Plan, there is no legislative power to ensure this implementation occurs.

VIII. CONCLUSION

Lake Illawarra is a body of water which has been, and continues to be, subject to detrimental pressures from development in its catchment. The regulatory regimes which

¹⁶² *Catchment Management Act 1989* (NSW) s 27(4)(a).

¹⁶³ *Catchment Management Act 1989* (NSW) s 30(1)(b).

¹⁶⁴ *Catchment Management Regulation 1999* (NSW) cl 7(1)(d).

¹⁶⁵ *Catchment Management Regulation 1999* (NSW) cl 7(1)(e).

¹⁶⁶ Southern Catchment Management Board (October 2001) note 152, above p 19.

¹⁶⁷ *Catchment Management Act 1989* (NSW) s 39(1).

¹⁶⁸ Pers comm, Jane Caldwell, DLWC, Wollongong District Office, 18 May 2001.

¹⁶⁹ NSW Department of Urban Affairs and Planning (2001) note 6, above.

¹⁷⁰ As above pp 31 – 32.

¹⁷¹ As above pp 37, 50.

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surround the lake, controlling the lake body, foreshores and catchment, are fragmented. The Lake Illawarra Authority addresses rectification of existing degradation by removing accumulated pollution and preventing further pollution at the border of the lake body. It is best placed to take on this role due to its legislative powers, proprietary control of the area and guaranteed funding arrangements. However, its limited jurisdiction prevents the Authority from taking an active role in management beyond the foreshores of the lake.

The state planning system has the potential to prevent further degradation by placing controls on development throughout the catchment. However, the three relevant councils in the area do not coordinate their respective plans, and the protective measures within the plans do not ensure the prevention of detriment. The plans do include the consideration of the impact of development on the lake, but only as one consideration among many. Nevertheless, the planning system, if amended, has the potential to control future degradation and ensure a more strategic, proactive and stringent approach. Specific issues of pollution are regulated, and other regulatory regimes exist, but have not been fully implemented in the lake's catchment.

This fragmentation of regulation throughout Lake Illawarra's catchment has led to calls for integration and coordination. Catchment management is one theoretical solution, as it provides a framework within which all the strategies and legislative powers of various bodies may come together.

However, the current structure of the catchment management system does not ensure implementation of any catchment management plan. At present there appears to be some government support for catchment management as an approach to natural resources management, through the creation of catchment management bodies. However, even assuming this continues, the success of integration in the current regime is not assured. There are no regulatory powers to require it, no guarantee of funding to take action and no assurance of the adoption of proactive measures to prevent damage and pre-empt deterioration. All this is dependant on political will. ▼

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