

Project Summary sheet CCA 24

Preparation of Sustainability Assessments of Coastal Lakes.

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Aims: The ecological health of many NSW coastal lakes and waterways is at serious risk as a result of increasing pressure from human activities particularly urban development, land use intensification and changes to natural lake opening regimes. These pressures have had negative impacts on lake ecosystems and water quality with consequences for tourism, recreation, amenity, aesthetic and ultimately regional economies.

In 2002 the NSW Healthy Rivers Commission released an Independent Public Inquiry into Coastal Lakes. The report developed a Coastal Lakes Strategy for the improved management of coastal lakes and their catchments that required the preparation of sustainability assessments and implementation of management strategies.

Following release of the strategy, the NSW Government (February, 2003) released a Statement of Intent (Sol) for coastal lakes in which it outlined a commitment to the completion of sustainability assessments and management strategies for eight priority lakes (Cudgen, Myall, Wollumboola, Burrill, Narrawallee, Coila, Merimbula and Back). The Sol directed that funding for preparation of lake sustainability assessments come from the Comprehensive Coastal Assessment (CCA) program.

This project aimed to:

- Develop and apply a method and model for conducting sustainability assessments that can be transferable to other coastal lake systems and suited to informing the preparation of management strategies.
- Prepare pilot sustainability assessments for the eight priority coastal lakes: Cudgen, Myall, Wollumboola, Burrill, Narrawallee, Coila, Merimbula and Back Lakes.
- Use the information and methods gathered and adopted in associated CCA projects in the coastal lakes assessment.

Findings: Key project findings include:

- Identification and endorsement of a methodology, referred to as the Coastal Lake Assessment and Management (CLAM)* tool, for conducting coastal lake assessments informing management strategies.
- Incorporation of available quantitative and qualitative data into sustainability assessments of seven lakes+, supported by stakeholder consultation and training in the use of the CLAM tool.
- Identification of key constraints, issues, values and objectives for individual lake management strategies.

Ongoing use of the CLAM tools will include:

- Integration of CLAM tools into DNR sponsored lake management strategies.
- On completion of the lake management strategies, preparation of a report to Government on options for applying the Coastal Lakes Strategy to other coastal lakes across NSW.
- Examination of the scope for incorporation of the outcomes of the sustainability assessments into coastal zone management studies.
- Maintenance of a master copy of each lake CLAM tool by DNR so as to facilitate management of approved tool upgrades in relation to new data, lake process links and management priorities.

Conclusion: Coastal lakes sustainability assessments developed through the CCA represent a significant contribution to our understanding of the natural and threatening process for seven coastal lakes identified in the Coastal Lakes Strategy. The general suitability of the approach and methods to sustainable lake management pioneered in this project has since been recognised in the funding of the Northern Rivers Catchment Management Authority to undertake sustainability assessments for sixteen lakes.

*Information for sustainability assessments is encapsulated within customised CLAM tools for each lake system. The CLAM tool is a computer application developed by the Integrated Catchment Assessment and Management Centre of the Australian National University and based on the Integrated Component Modelling System software developed by the CSIRO. Each CLAM tool utilises Bayesian Decision Network techniques to integrate social, economic and ecological values to allow assessment of sustainable lake management.

+Assessments and CLAM tools were completed for all lakes except Lake Wollumboola which is to be completed within the context of the current Department of Planning South Coast Regional Strategy process.

Related CCA projects and references:

CCA 01 - Parr, A. 2004, *Demographic Trends in the New South Wales CCA Study Area*, prepared for the Comprehensive Coastal Assessment (Department of Planning) by the Transport and Population Data Centre, DoP, Sydney, NSW.

CCA 02 - New South Wales Department of Environment and Conservation, 2003, *NSW Comprehensive Coastal Assessment Vegetation Data Audit*, prepared for the Comprehensive Coastal Assessment (DoP) by DEC, Hurstville.

CCA 03 - Troedson, A., Hashimoto, T.R., Jaworska, J., Malloch, K., Cain, L. 2004, *New South Wales Coastal Quaternary Geology*, prepared for the Comprehensive Coastal Assessment (DoP) by the NSW Department of Primary Industries, Mineral Resources, Maitland.

CCA 04 - R.J. Williams, G. West, D. Morrison and R.G. Creese, 2006, *Estuarine Resources of New South Wales*, prepared for the Comprehensive Coastal Assessment (DoP) by the NSW Department of Primary Industries, Port Stephens.

CCA 05 - New South Wales Department of Natural Resources, 2006, *Soil and Land Assessment*, prepared for the Comprehensive Coastal Assessment (DoP) by Natural Resources Decision Support (Soils), DNR, Parramatta.

CCA 06 - New South Wales Department of Natural Resources, 2006, *NSW Coastal Lands Risk Assessment - Summary*, prepared for the Comprehensive Coastal Assessment (DoP) by the NSW Department of Natural Resources, Newcastle.

CCA 07 – NSW Department of Lands, *Crown Land Validation project*.

CCA 08 - New South Wales Department of Environment and Conservation, *Targeted Vegetation Survey for the Far North Coast Planning Region*.

CCA 09 - New South Wales Department of Environment and Conservation, 2004, *NSW Comprehensive Coastal Assessment Fauna Habitat Data Audit*, prepared for the Comprehensive Coastal Assessment (DoP) by the NSW Department of Environment and Conservation, Hurstville.

CCA 10 - NSW Department of Environment and Conservation, 2005, *Comprehensive Coastal Assessment Aboriginal Cultural Heritage Data Audit*, prepared for the Comprehensive Coastal Assessment (DoP) by the NSW Department of Environment and Conservation, Hurstville.

CCA 11 - New South Wales Department of Environment and Conservation, 2006, *Decision Support Tools for Biodiversity Conservation: Biodiversity Forecasting Toolkit*, prepared for the Comprehensive Coastal Assessment (DoP) by the NSW Department of Environment and Conservation, Armidale.

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CCA 13 - Marshall, N. Murphy, P. Burnley, I., 2004, *Coastal Population Movements: Review of Factors*, prepared for the Comprehensive Coastal Assessment (DoP) by Highwood Consultants, Sydney, NSW.

CCA 14 - Neirinckx, A. 2006, *Guide to Economic Data and Methods for CCA*, prepared for the Comprehensive Coastal Assessment, DoP, Sydney.

CCA 15 - O'Brien, B. 2005, *Analysis of Economic Development Strategies*, prepared for the Comprehensive Coastal Assessment (DoP) by Highwood Consultants, Sydney, NSW.

CCA 16a - Fenton, M. 2003, *Social Attributes of the Coastal Study Area: An Approach to the Integration of Social and Environmental Assessments in Coastal Land Use Planning*, prepared for the Comprehensive Coastal Assessment (DoP) by Environment and Behaviour Consultants, Townsville, QLD.

CCA 16b - Fenton, M. 2004, *Social Attributes of the Coastal Study Area: Tweed Demonstration Project*, prepared for the Comprehensive Coastal Assessment (DoP) by Environment and Behaviour Consultants, Townsville, QLD.

CCA 17 - Baginska, B., Lu, Y., Mawer, D., & Pritchard, T. 2004, *Linking Land Use Decisions to Nutrient Exports*. prepared for the Comprehensive Coastal Assessment (DoP) by the Department of Environment and Conservation, Sydney.

CCA 18 - Sanderson, B.G., Coade, G., Robson, B., Davies, P. and Baginska, B. 2006, , 2006, *Response of Estuaries and Coastal Lakes to Total Nitrogen Loading*, prepared for the Comprehensive Coastal Assessment (DoP) by NSW Department of Environment and Conservation, Sydney.

CCA 19 - Department of Natural Resources, 2006, *Flushing of Estuaries and Intermittently Closed and Open Lakes and Lagoons*, prepared for the Comprehensive Coastal Assessment (DoP) by Patterson Britton Partners, Sydney.

CCA 20 - New South Wales Department of Environment and Conservation, 2006, *Wetlands of High Conservation Value and their Threats in the Tweed Catchment*, prepared for the Comprehensive Coastal Assessment (DoP) by the Department of Environment and Conservation, Sydney.

CCA 21 – NSW Department of Planning, *Coastal Lands Protection Scheme*.

CCA 22a - Gillespie, R. and Clarke, M. 2005, *Economic Values of Natural Resources and Natural Environments on the NSW Coast*, prepared for the Comprehensive Coastal Assessment (DoP) by Gillespie Economics, Sydney.

CCA 22b - Altman, J. Gray, M. and Halasz, N. 2004, *Economic Value of Wild Resources to the Indigenous Community in Coastal New South Wales: The Wallis Lake Catchment Case*, prepared for the Comprehensive Coastal Assessment (DoP) by The Australian National University, Canberra, ACT.

CCA 23a - Letcher, R. and Weidemann, S. 2004, *Modelling Economic- Ecological Impacts in NSW Coastal Catchments – Feasibility Study*, prepared for the Comprehensive Coastal Assessment (DoP) by the Australian National University, Canberra, ACT.

CCA 23b - Letcher, R. and Weidemann, S. 2004, *Modelling Economic- Ecological Impacts in NSW Coastal Catchments – Wallis Lake Prototype Description*, prepared for the Comprehensive Coastal Assessment (DoP) by The Australian National University, Canberra, ACT.

CCA 24 - New South Wales Department of Natural Resources, 2006, *Preparation of Sustainability Assessments for Coastal Lakes*, prepared for the Comprehensive Coastal Assessment (DoP) by NSW Department of Natural Resources, Wollongong.

CCA 25 - Drapes, K., 2004, *Tourism Data for the Coastal Zone*, prepared for the Comprehensive Coastal Assessment (DoP) by Kristina Drapes Project Management, Sydney.

CCA 26 - Andrews, G., Daylight, C., Hunt, J. 2006, *Aboriginal Cultural Heritage Landscape Mapping of Coastal NSW*, prepared for the Comprehensive Coastal Assessment (DoP) by the Department of Natural Resources, Sydney.

CCA Guidebook – New South Wales Department of Planning, 2006, *The CCA Integrated Decision Framework: A guide for sustainable land use planning*, prepared for the Comprehensive Coastal Assessment (DoP), Sydney.

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