



Annual Report 1999-2000



Cooperative Research Centre
for Freshwater Ecology

Established under the Australian Government's Cooperative Research Centre Program



VISION

The Cooperative Research Centre for Freshwater Ecology exists to improve the health of Australia's inland waters.

MISSION

The Cooperative Research Centre for Freshwater Ecology (CRCFE) provides ecological understanding to improve inland waters by collaborative research, education and resource management.

OBJECTIVES

To conduct high quality research that contributes to scientific understanding of aquatic ecosystems.

To provide stress-response relations for a variety of natural and human-induced disturbances on aquatic ecosystems.

To use research findings to provide better predictive tools and strategies for those using and managing land and water resources; to work collaboratively with managers in the conduct and implementation of our research.

To provide an avenue to international science to ensure relevant new approaches and techniques are available in Australia, and to contribute our work internationally.

To exploit the synergies available within the CRCFE from the range of scientific disciplines represented by conducting effective collaborative research that looks at whole ecosystems.

Cover images

Trout Cod, *Macchullochella macquariensis*,
an endangered native fish.
Photo: G Schmida

Purple swamphen (Western form).
Photo: A Tatnell

Paperbark swamp, Northern NSW.
Photo: A Tatnell

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Cooperative Research Centre for
Freshwater Ecology

The Cooperative Research Centre for Freshwater Ecology is a collaborative venture between:

ACTEW Corporation

CSIRO Land and Water

Department of Land and Water Conservation, NSW

Department of Natural Resources, Queensland

Department of Natural Resources and Environment, Victoria

Environment ACT

Environment Protection Authority, NSW

Environment Protection Authority, Victoria

Goulburn-Murray Rural Water Authority

Griffith University

La Trobe University

Lower Murray Water

Melbourne Water

Monash University

Murray-Darling Basin Commission

Sunraysia Rural Water Authority

Sydney Catchment Authority

University of Canberra

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Wetlands in the Murray-Darling Basin that are of international importance & listed under the Ramsar Convention

State	No	Wetland	Area in ha
SA	1	Coorong and Lakes Alexandrina and Albert	140 500
	2	Riverland, including Chowilla Floodplain System	30 600
Vic	3	Hattah-Kulkyne Lakes	1 018
	4	Lake Albacutya	10 700
	5	Kerang Lakes	9 172
	6	Gunbower Forest	19 450
	7	Barmah Forest	28 500
NSW	8	Macquarie Marshes Nature Reserve	18 200
ACT	9	Ginini Flats, Namadgi National Park	125
Qld	10	Currawinya Lakes National Park	151 300

Important wetlands of 5 000 ha or more in extent (excluding the Ramsar sites)

State	No	Name, Location	Area in ha	
NSW	11	Lake Goran, Liverpool Plains	6 000	
	12	Lower Gwydir Wetlands, Lower Gwydir River and Gingham Watercourse	102 120	
	13	Menindee Lakes, Lower Darling River, near Menindee	45 000	
	14	Narran Lakes, Terminal drainage of Narran River	10 000	
	15	Talyawalka Anabranh & Teryawynia Creek, Darling River between Wilcannia and Menindee	H /variable	
	16	Paroo Overflow, Paroo-Warrego Riverine Plains	720 000	
	17	Yantabulla Swamp, Paroo-Warrego Riverine Plains	37 200	
	18	Darling Anabranh Lakes, Darling River Plains on Great Anabranh	269 000	
	19	Lowbidgee Floodplain, Murrumbidgee River between Maude and Balranald	200 000	
	20	Lake Cowal-Wilbertoy Wetlands, Lachlan River Floodplain between Forbes & West Wyalong	29 000	
	21	Booligal Wetlands, Floodplains of Lachlan River distributaries	5 000	
	22	Great Cumbung Swamp, Lachlan River Floodplain near Oxley	50 000	
	23	Lachlan Swamp, Mid Lachlan River	6 600	
	24	Lake Brewster, Lachlan River Floodplain	6 114	
	25	Koondrook and Perricoota forests, River Murray, between Moama and Barham	31 150	
	26	Millewa Forest, River Murray, between Tocumwal and Barmah	33 636	
	27	Werai Forest, Along Edward and Niemur rivers	11 234	
	28	Lake George, Between Canberra and Goulburn	15 000	
	Vic	29	Lake Hindmarsh, North-west of Jeparit	15 600
		30	Lake Tyrrell, North-west of Sea Lake	20 860
		31	Lindsay Island, Near Mildura	15 000
		32	Wallpolla Island, Near Mildura	9 200
		33	Lake Hume, Near Albury-Wodonga	18 465
		34	Lake Dartmouth, On Mitta Mitta River	5 990
		35	Lower Goulburn River Floodplain, Below Goulburn Weir	13 000

Source: ANCA 1996.

CHAIRMAN'S FOREWORD



Dr John Langford
Chairman

Success in achieving another 7 years as a Cooperative Research Centre (CRC) brings with it the hard work of integrating the new partners with the existing partners, and developing a detailed set of research projects from the concepts set out in the first business plan. This has not been made any easier by shortening the life of the old CRC from 7 to 6 years. The ongoing research projects initiated by the existing partners flowed into the 1st year of the new CRC, restricting our ability to start new projects involving the new partners.

Developing a research program of significant integrated projects within the budget constraints, while at the same time meeting the needs of all the partners and making effective use of the in-kind resources contributed to the Centre is proving a challenge to us all. I am pleased at the open and cooperative spirit that prevails around the board table.

The Cooperative Research Centre for Freshwater Ecology continues to have a major input to national policy debates. The Centre has provided valuable input into evaluating the ecological outcomes of the COAG Water Reform Agenda; and the Murray Darling Cap on Diversions.

I would like to take this opportunity to thank Peter Cullen, the Chief Executive, for his commitment to the Centre and his outstanding contribution to the national debates on water policy. I would also like to thank the management team and staff who have supported Peter so ably during the difficult times of review, rebid and now initiating a new CRC and research portfolio with all the accompanying uncertainty.

I greatly appreciate the cooperative spirit of the Board members. Leadership starts at the top, and the cooperation of the Board members is an excellent example for the whole centre.

Finally, I would like to thank the students involved with the centre, both undergraduate and postgraduate; your vitality is an inspiration to us all.

Dr John Langford
Chairman of the Board



*Prof Peter Cullen
Chief Executive*

This year has been a transitional one for the Centre. We have been finalising a number of major research projects from the first CRC while planning in detail the new projects that will start in 2000. It has been a busy and stressful time for many staff. Many researchers are keen to start work on the exciting new projects we are considering. On the other hand, it is critical to our survival as a cooperative organisation that we develop a portfolio of projects that meet the short and longer-term needs of our industry partners.

We also have to try and use the range of skills that have been contributed to the centre. Most of our best researchers know they could deliver better science if they had more resources, and this is true. However our resources are constrained, and there are many competing opportunities. As a result, some people may be disappointed that they do not get the resources they believe they need.

The Board of the Centre has decided that around 20% of available resources should be allocated to knowledge exchange at this time. Our innovative knowledge exchange program is designed to deliver the knowledge we have to our industry partners in ways they can use to manage our water resources for the long term.

It has become apparent that there are a number of important outcomes from the research we undertake:

- New Knowledge - the results of our science that increases our understanding and might influence water management.
- Credibility - as significant generators of new knowledge we are listened to and respected by many interests.
- Graduate Students - building the future capacity of the water industry.
- Problem Solvers - by having groups of staff who operate at the cutting edge of their disciplines we are able to put together teams to help industry partners with a range of problems.

This problem-solving element has been one of the exciting developments in the last year or so as we and our industry partners have discovered the power of joint problem solving. This comes about where the industry partner is not really sure as to the question, but is aware of a general problem. We put together teams of people, roughly half from industry and half from the research community, to work through the issue and define the problem and develop solutions. We have used this approach with the Sydney Catchment Authority with Indicators for the Catchment Audit, the Queensland DNR with developing the WAMP process and with the MDBC on the Sustainable Rivers Audit. Each of these projects is managed and facilitated by one of our Knowledge Brokers – specialists who help synthesise and exchange knowledge with our industry partners.

Life continues to be difficult for our University partners, with the Government continuing its pressure to shift the costs of higher education on to students, and the costs of

