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TOOLIBIN LAKE RECOVERY TEAM

ANNUAL REPORT

1995

**Prepared by K J Wallace
Chair of the Toolibin Lake Recovery Team**

**Department of Conservation and Land Management
P O Box 100, NARROGIN, WA, 6312**

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SUMMARY

In 1995 the momentum for recovery established in 1994 has been maintained. Major advances have been the implementation of:

- ◇ Works to by-pass low volume, high saline flows around the body of the Lake.
- ◇ On-floor works that enable establishment of more extensive groundwater pumping whether or not the Lake is filled.
- ◇ Establishment of the Toolibin Alley Farming Trial.
- ◇ Continued revegetation and remnant protection works by local landholders.

These works would not have been possible without the earlier period of planning, design and research.

The great value of the Recovery Team and Technical Advisory Group as forums for decision-making and developing inter-disciplinary action has continued.

INTRODUCTION

Toolibin Lake lies about 200 km south-west of Perth at the top of the Northern Arthur River Catchment. This Catchment drains into the Blackwood River, a major south-western river for which a State Government sponsored Catchment Coordinating Group has been established. The nature reserves including and adjoining Toolibin Lake are managed by the Department of Conservation and Land Management (CALM) on behalf of the National Parks and Nature Conservation Authority (NPNCA).

Toolibin Lake is the first in a series of nine lakes and the only major lake in the chain which has not become saline. The Lake and its environs provide important breeding habitat for a variety of waterbirds, and is one of the last inland freshwater lakes in the south-west. It is the only inland lake which has retained a sheoak/melaleuca association across significant parts of the lake floor. Toolibin Lake is classified as a "Wetland of International Importance" under the Ramsar convention.

The Lake is seriously threatened by salinisation and the condition of the Lake and its environs have deteriorated. Without significant, urgent action, the Lake will be rapidly salinised.

In November 1992 consultants prepared a Recovery Plan for Toolibin Lake and surrounding nature reserves using resources from both the Australian Nature Conservation Agency (ANCA) and CALM. At its meeting of 15 January 1993 the NPNCA endorsed this plan and its implementation by an appointed Recovery Team under the general guidance of CALM's Director of Nature Conservation.

Given the complex nature of the issues to be managed, a Technical Advisory Group (TAG) was also established to advise the Recovery Team on recovery actions.

RECOVERY TEAM

During 1995 the Recovery Team met on 20 September 1995. Members of the Team at the close of the year were:

Mr John Blyth (Scientific Adviser, WATSCU, CALM)
Mr Grant Davenport (Farmer, member of the Lake Toolibin Catchment Committee)
Mr Peter Helsby (Regional Water Resources Officer, Water Authority of Western Australia)
Ms Elsa Dexter (ANCA)
Mr Jim Lane (Principal Research Scientist, CALM)
Mr Gordon McDougall (Farmer, member of the Lake Toolibin Catchment Committee)
Mr Doug Sawkins (District Leader, Department of Agriculture, Narrogin)
Mr Ken Wallace (Regional Manager, CALM, Chair).

There has been only one change in membership during the year. Ted Rowley, a valuable member who made a vital contribution during the writing of Part 1 of the Recovery Plan and initial decision-making, has been replaced by Doug Sawkins.

Technical Advisory Group

The Technical Advisory Group met on 20 September and 14 November 1995. Members of the Group are:

Mr David Bicknell (Revegetation Development Officer, Department of Agriculture)
Dr Ray Froend (Research Officer, Water Authority of Western Australia)
Dr Richard George (Research Officer, Department of Agriculture)
Dr Stuart Halse (Senior Research Scientist, CALM)
Mr Ken Wallace (Regional Manager, CALM, Chair).

Membership of this group has not changed.

RECOVERY PLAN STATUS AND FUNDING

Plan Status

During 1994 the Recovery Team completed revising the Recovery Plan. The revised Plan was endorsed by the Corporate Executive of CALM on 13 September 1994 and by the NPNCA on 9 September 1994. The introductory sections added to the Plan provide important new information in relation to goals, strategies, values and Plan administration.

The revised Recovery Plan was officially launched by Hon. Kevin Minson MLA, Minister for the Environment and Disability Services, on 11 October 1994. The launch was undertaken at Toolibin Lake, and received wide coverage in the Western Australian media.

The Recovery Plan is current until September 2003, a term of 10 years. This term is consistent with other management plans produced by CALM.

Plan Funding

Effective implementation of the Recovery Plan is dependent on works in the Toolibin Catchment as well as those more directly aimed at the Lake's immediate environment. Works implemented by the Toolibin Catchment Committee are therefore very important. While the Recovery Team and Catchment Committee have overlapping memberships and communicate well, they are each responsible for their own actions. Some resources, for example those of Alcoa, have been channelled through the Catchment Committee rather than the Recovery Team. Although the resulting actions are relevant to the implementation of the Recovery Plan, they should be credited to Alcoa and the Catchment Committee, not the Recovery Team.

Similarly, CALM, with funding under the Commonwealth Farm Forestry Program, is using Toolibin as an oil mallee trial site. While this work contributes to the recovery of Toolibin, its goal is to develop a commercial industry that contributes to sustainable land use through productive use of woody vegetation. A second project aimed both at the recovery of Toolibin and the achievement of broader land use goals is the Toolibin Alley Farm Trial (TAFT). CALM has continued its funding for this project. The use

of the Toolibin recovery process as a means for, concomitantly, achieving sustainable land use goals at a much broader level is an important aspect of recovery works.

Apart from on-going management commitments, CALM has made a special allocation of \$96 100 to work at Toolibin during the 1995/96 financial year. This amount includes the TAFT. Proposed expenditure for 1995/96 is shown in Attachment 1.

As with previous annual reports, the account here of recovery actions is aimed at describing implementation of the Toolibin Lake Recovery Plan by whatever means and is not a summary of the Recovery Team's activities alone. To avoid giving offence, care should therefore be taken with any statements or inferences based on this report that ascribe credit to individuals or groups.

Resources and assistance from the following groups have contributed to plan implementation over the 1995 calendar year:

Agriculture Western Australia (AgWA)
Alcoa
ANCA
BankWest *Landscape* Conservation Visa Card
CALM
Commonwealth Farm Forestry Program
Narrogin Land Conservation District Committee
National Landcare Program
Normans Lake Catchment Group
Toolibin Catchment Committee
Toolibin Catchment landholders
Water Authority of Western Australia (WAWA)
Wickepin Shire Council.

RECOVERY PLAN ACTIONS

For ease of referencing, numbers used below refer to those of the Implementation Schedule in the Recovery Plan.

1. Groundwater Pumping

Apart from a period when both experimental bores were shut down while Lake floor works were implemented, these bores have been maintained. ANCA funds have also covered survey and initial works to establish an additional six production bores in the floor of the Lake. Work on these has progressed to the point that, even if the Lake fills, work can proceed.

Approval has now been received from the Commissioner of Soil and Land Conservation to establish a full groundwater pumping scheme (total of eight bores). This proposal had previously received approval from the Department of Environmental Protection. While some downstream landholders have expressed concern at the pumping proposal, there has been extensive liaison with these individuals in cooperation with Agriculture WA. Downstream effects will be monitored and the

feasibility of salt harvesting investigated. Pumping and its impacts will be reviewed regularly.

Groundwater pumping to lower saline water tables is becoming increasingly common in agricultural areas. Toolibin provides an important opportunity to explore options available for management of such projects. The importance of Toolibin as an area for experimental management at a landscape scale is emphasised.

2. Surface Water Control

Toolibin Catchment landholders have extended works on grade banks. These works are aimed at reducing waterlogging and, with other works, eventually decreasing recharge of groundwater.

3. Lake Outlet Control and 'Separator'

During 1995 a 'Separator' was established in the floor of the Lake. This structure, which consists of a bund along the western side of the Lake and an inlet control structure, will enable low volume, highly saline water flows to be passed straight to Taarblin Lake, a nature reserve that is already salinised. This major structure is extremely important as one of the major emergency actions to protect the Lake. Construction of the Separator was a major engineering work.

4. Lake and Reserve Revegetation

No specific work has been undertaken in this area, and none was proposed in the short term. However, the construction of a bund for the 'Separator' will provide an opportunity to test revegetation in the floor of the Lake (variation on the proposed gilgai mounds proposed in the Plan). It is planned to collect seed for this work during 1996.

5. Catchment Revegetation

The Toolibin Catchment Committee was successful in winning a National Landcare Program grant to fund a Revegetation Strategy for the Toolibin Catchment. A consultant began work on the strategy in 1994. Officers from AgWA and CALM are also involved along with landholders. This is an important project and the final product, a revegetation manual for landholders, is now complete. The manual will be released in early 1996.

Under the CALM-Commonwealth Forestry Program oil mallee project, 120 000 eucalypt seedlings were planted in the Toolibin Catchment in 1995. This project occurs on freehold land and is a cooperative project with landholders. Under the TAFT 36 000 seedlings were planted in 1995. A Research Project Plan is available for those interested in this project.

Oil mallee plantings in 1994	Oil mallee plantings in 1995	Toolibin Alley Farm Trial Plantings in 1995	Total plantings 1994 to 1995 under CALM sponsored projects
67000	120000	36000	223000

Landholders have also undertaken other revegetation in 1995. Figures on both catchment revegetation and remnant vegetation protection by landholders are given in Attachment 2.

6. Agronomic Manipulation

See item (2) above. This work is aimed at increasing crop production and consequent increase of water use.

7. Decision Support System

The first steps towards this system will be taken with the development of a groundwater model for pumping in 1996.

8. Monitoring and Reporting

Now that initial emergency works - the Separator and groundwater pumping - are in hand, monitoring will become a major component of work in 1996. Baseline information has been collected for many years. It is now appropriate that biophysical changes be examined, documented and reported. It is also appropriate to establish new, and more comprehensive protocols, for monitoring work.

9. Finances

ANCA funds from Lake Toolibin Project No. 350b have been totally expended, and those from 350a and the most recent allocation will be completely expended during 1996. Attachment 1 provides details of amounts and how they will be expended. These works will complete the initial emergency actions, and will be followed by a period of monitoring to determine whether, and what, further emergency actions are required. It is anticipated that additional groundwater pumping, as envisaged in the Recovery Plan, will probably prove necessary.

The joint commitment of significant funds by both ANCA and CALM have been vital to implement the works to date.

Other

Some actions have been undertaken that do not fall within the Implementation Schedule. These include communication activities.

Team. A brochure on Toolibin, reprinted from an article *Landscape*, was released in 1995. Several copies are enclosed. BankWest *Landscape* Conservation Visa Card and CALM funded this brochure.

Other important events have included the winning of the inaugural Shirley Balla Wetland Conservation Award (awarded by the State Government) by the Toolibin Catchment Committee.

As Chair of the Toolibin Lake Recovery Team and Technical Advisory Group, I take this opportunity to thank members of these groups for their excellent contribution over the past 12 months. I am amazed that we have been able to cover so much ground during the year.

ATTACHMENT 1

Proposed expenditure and works by ANCA and CALM at Toolibin Lake during 1995/96 financial year. These figures do not include the significant funds expended in general management of Toolibin and its projects at a Regional level.

Works required	Money required	Money already available	Additional funds sought from CALM
1. Complete groundwater pumping	90 000	90 000 [ANCA]	0
2. Toolibin Groundwater modelling	20 000	20 000 [ANCA] *	0
3. Taarblin groundwater monitoring (private property and lake floor)	3 000	2 000 [EPB]	1 000
4. Airborne magnetics, Taarblin and Walbyring	12 000	11 400 [ANCA]	600
5. Construct evaporation basins (Taarblin Lake Floor)	5 000		5 000
6. Run, maintain and monitor pumps	10 000		10 000
7. Establish 6 piezometers on eastern side of Toolibin Lake	2 000		2 000
8. Toolibin Alley Farming Trial	32 500		32 500
9. Assess saltwater harvesting	15 000		15 000
10. Monitoring program design and data coll.	30 000		30 000
TOTAL	239 500	123 400	116 100

* These funds are not scheduled to be received from ANCA until the 1996/97 financial year. The amount is shown here given that works will begin in 1995/96, and also to provide a complete picture of major works for which funding is available.

ATTACHMENT 2

Summary of 1995 Works

Lake Toolibin Catchment Committee and Sub-Catchment Groups

Year	Sub-Catchment	Work Done	Notes
1995
1996
1997
1998
1999
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Lake Toolibin Catchment Committee

Activities for 1995

- Won inaugural Shirley Balla Wetland Conservation Award (State award).
- Produced the Toolibin Catchment Revegetation Manual (guide for farmers revegetating).
- Inaugural LTCC newsletter started (2 issues so far).
- Audrey Bird appointed catchment coordinator.
- All landholders were asked for a \$30 contribution to LTCC (about half of the 42 landholders paid).
- Visited by Governor General of WA.
- Visited by Minister for Environment.
- Numerous bus tours from visitors to catchment.

Scrivener Soak Catchment Group (Sub-catchment of Toolibin Lake)

Activities and Projects Completed in 1995

Group Activities 1995

- Formed with 7 members in January.
- Developed coordinated plan to revegetation main creeklines to form a bush corridor as a group.
- Group expanded to 12 members due to interest during the year.
- Bus tour of catchment by members in August.
- Meeting to discuss 1996 direction, projects and priorities for group.

Project Outcomes 1995

- Extended a 65 ha piece of fenced remnant bush by 2 ha with 3,500 seedlings.
- Joined 2 areas of fenced remnant bush (119 ha and 57 ha) with a corridor with 0.25 km fencing and 500 seedlings.
- Fenced 5 ha of Sheoak/Mallee woodland with 1.25 km fencing.
- Bush corridor along creekline involving 6.25 km fencing, more than 5,000 seedlings and 5 members.
- 1000 seedlings along Brown Road as continuation of corridor.
- Approximately 16,000 additional trees and saltbush planted for various other projects.
- 88 km tagasaste and associated fencing on deep sands.

NB: Group received funding help through Gordon Reid Foundation and Alcoa for part of some projects.

West Toolibin Catchment Group (Sub-catchment of Toolibin Lake)

Activities and Projects Completed in 1995

Group Activities 1995

- West Toolibin formed in 1994 and already had an established catchment revegetation and drainage plan.
- Meeting to discuss progress of implementation.
- Meeting to plan 1996 activities.
- Started monitoring catchment drainage plan.

Project Outcomes 1995

- Almost finished the upper catchment drainage work, linking all banks through the main drain.
- Planted 45,000 oil mallees.
- Planted 24,000 tagasaste and other seedlings.
- Fenced 5 areas of remnant bush (50 ha, 81 ha, 40 ha, 33 ha, 8 ha).

NB: Group received funding help through Alcoa, Remnant Vegetation Protection Scheme and Save the Bush Program for part of some projects