REGIONAL MANAGER
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BRIEFING NOTES FOR NPNCA - LAKE TOOLIBIN NATURE RESERVE

Lake Toolibin (24556) and the surrounding lakes - Dulbining (9416) and Walbyring (14398), are important wetlands for water birds in the wheatbelt of Western Australia.

Lake Toolibin in particular is relatively fresh, and is suitable as a breeding ground for water birds, including the rare Freckled Duck, Great Egret, Yellow-Billed Spoonbill, Rufous Night Heron, and Great Cormorant. A total of 41 waterbird species have been recorded at Lake Toolibin, with 24 of these being known to have bred there. This is a higher number of breeding species than in any other wetland in the region; and at only one other inland lake (Lake Wannamal) has a larger number of species been recorded.

Increased salinity and a consequent decline in the water quality and health of the fringing vegetation was evident in the early 1930s. Records of perch in the early 1960s indicate that water quality was reasonable until that time.

A research study by the Department of CALM, the Water Authority of W.A., the W.A. Department of Agriculture and the Mines Department was commenced in 1977. The findings of this study are that Lake Toolibin is threatened by increasing salinity, which will alter the food supply for the waterbirds and kill the Casuarina and Melaleuca vegetation which grows around the fringes and in the bed of the lake.

The study concluded that much of the salt originates from salt affected land on farming properties in the surrounding catchment, particularly to the north of reserve 24556. This salination can be linked with clearing of the native vegetation for agriculture. Currently, about 95% of the catchment is cleared.

Watertable measurements since 1977 have shown that the saline watertable under the flats surrounding Lake Toolibin is rising at about 100 mm per year. As the watertable now lies at 1500-2000 mm below the lake bed, the chances of more land becoming salty and the quality of the surface water in the lake deteriorating further, is very real indeed. It is estimated that prior to clearing the surrounding catchment for agriculture, the watertable was 12 to 15 metres lower than the current configuration.

MANAGEMENT FOR PROTECTION AND REHABILITATION

In 1985 a programme was commenced with the objective of reducing the flow of saline water into the lake, and lowering the watertable of saline groundwater beneath the lake. The following work has been carried out:

1. Catchment Rehabilitation

Through the Wickepin Land Conservation District, landowners within Lake Toolibin catchment area have planted trees on both sandy watertable re-charge areas and salt affected and water-logged areas. Approximately 50 000 trees (mainly Eucalyptus occidentalis and Casuarina obesa) have been planted over 400 hectares.

In 1988, the Department of CALM purchased 127.4 hectares for addition to the lake reserves. About half of this area is natural bushland. The remainder was planted to trees (E. loxophleba; E. wandoo; Melaleuca spp; Casuarina obesa) in 1986, 1987 and 1988. A small area on the eastern side of Lake Toolibin was scarified to promote natural regeneration.

2. Saltwater Diversion

In 1987 a drain was constructed along the western side of Lake Toolibin to re-direct water from private property drains. This saline water now flows south, and to the west of Lake Walbyring.

3. Groundwater Pumping

Pumping from a test bore commenced in late 1988. This work is being conducted to test the feasibility of lowering the watertable under the lake by this method. The saline outflow is being delivered by 50 mm pipeline for a distance of 4 kilometres to the highly saline Lake Taarblin.

4. Natural Vegetation Protection

The regeneration of Casuarina obesa on the lake bed is being hampered by heavy grazing pressure from western grey kangaroos. In 1988/89 some roos were culled to reduce their impact on the young seedlings.

PROPOSED WORKS AND FUNDING REQUIRED (1989/90 - 1991/92)

To consolidate the measures already taken, and to ensure that Lake Toolibin is restored to a satisfactory condition for waterbird habitat, the following works are proposed.

1. Research and Monitoring

Trials established in 1983 to determine factors which affect germination and survival of Casuarina obesa regeneration on the lake bed, will continue to be measured. Funds are available under existing budget allocations for this work.

2. Groundwater Pumping

The operation of the existing pump unit and monitoring of nearby groundwater levels will continue if funds are made available. During 1989/90 $3 500 is required to maintain pumping. This amount has not been allocated to the Region or District.

It is considered highly desirable that a further pump be established during 1989/90. This would require additional funds totalling $36 500.

Results from this work could then be assessed during Autumn 1990, and the extent of the pump field required to protect the lake established. It should be noted that, in the longer term it is expected that re-vegetation would prevent the need for continued pumping from bores.

3. Saltwater Diversion

Additional drain construction on private property to the north of Lake Toolibin so that saline water is diverted away from the lake, but flows of relatively fresh water are channelled into the reserve would be beneficial. The cost of this work is estimated to be approximately $20 000, some of which should be met by the landowners who will also benefit directly from the work on their land.

No funds are available.

4. Control of Weeds and Animal Grazing

Weed control work and kangaroo culling/rabbit poisoning programme will need to be conducted to protect natural regeneration of tree and understorey vegetation. Approximately $2 000 per year is required for this work, of which $500 only is available for 1989/90.

5. Information Sign

It would be desirable to establish an information bay on a roadside near the reserve, with details of the management programme and the importance of the reserve for nature conservation. A facility of this type would help to improve the community's understanding of the impact of land use on conservation values. Approximately $1 000 is required for this work.

No funds are available.

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