LAKE TOOLIBIN NATURE RESERVES
MANAGEMENT PLAN GUIDELINES

1. LAKE CONDITION MANAGEMENT:

Refer to the final report of the North Arthur River Wetlands Rehabilitation Committee.

1.1. Purchase of land along western edge of Lake Toolibin. Agreement has been reached with the landowner for the purchase of this land - a strip of approximately 120m along the length of the Lake margin. In addition land to the west and north west of Lake Dulbining (including the north west corner of the lake) has been included; plus the area about the inflow channel to Lake Toolibin; plus a 50m strip along the south side of this lake; plus an area about the eastern and north eastern edge of Lake Walbyring (see attached plan).

1.2. Revegetation. Areas of ex-farmland included in the reserves are to be replanted. The technique involves deep ripping, mounding on lowland areas, and planting out with species local to the area. Seed is collected locally off the reserves and the plants grown in Departmental Nurseries. Species are planted into habitat appropriate to those species. Broadcasting of understorey species will be done over the lake bed.

1.3. Ground water pumping. Investigations are being made by the committee into the possibility of establishing a series of bores in the lake bed to pump ground water out, and hence keep the water table below the lake bed.

1.4. Inflow diversion. Low volume but high salt load inflows occur from the North West Creek and drain on the western side. The feasibility of constructing a drain through the farm lowland to the west of the lake will be assessed. The drain will divert some inflow, and three of the farm drains to the south past Lake Walbyring, to discharge into the already salt affected Lake Taarblin.

2. REVEGETATION:

2.1. Ex-farmland. Refer to 1.2. above.

2.2. Borrow Pits. All sand pits and gravel pits on reserves in the area have been shaped and ripped. These pits were generally small in size and will be left to regenerate by natural means. If regeneration is not progressing as desired then seedlings will be raised and planted into the areas.

3. REGENERATION:

3.1. The progress report of December 1986 on the Lake Toolibin Vegetation Study by Dr. E. Mattiske supports observations by District staff in that area of the fringe vegetation is becoming over-mature and breaking down. Regeneration of these areas by patch burning is recommended. The vegetation types specifically mentioned are the sheoak-banksia woodlands and the Melaleuca thickets. Also mentioned are the salmon gum, and york gum - jam communities, but the techniques for the regeneration of these areas are not as well understood. An experimental burn of a sheoak-banksia area, on a road reserve within the Nature Reserve area, will be carried out in the autumn of 1987. The results from this will assist in the planning of further burns in the reserve.

3.2. An area of mixed woodland that was chained prior to acquisition into Lake Dulbining Nature Reserve was burnt in 1978. This area is regenerating vigorously (refer to Dr, Mattiske's report, 1986). This may be a method of regenerating woodland, but a major area of concern is the short term effect on the ground water during the period when the root systems of the regenerating plants are penetrating to depth. Further investigations are required before this technique can be employed on a large scale.

4. INTRODUCED AND DECLARED PLANT AND ANIMAL CONTROL:

4.1. Rabbit control. Rabbits are known to exist in the sandy soils, particularly around Lake Toolibin. They also inhabit old bulldozer heaps along firebreaks. Heap burning has taken place down the east side to destroy these habitats. Rabbit control down the west side has been postponed pending the outcome of the land purchase process. Rabbit control down this side will be necessary for revegetation success.

5. FIRE:

5.1. Firebreaks. A firebreak extends down the east side where the reserve has a vegetation fringe wide enough. A firebreak also extends across the north of Lake Dulbining Nature Reserve. A series of roads complement these firebreaks to provide protection to the reserve. When the land purchase down the west side occurs a firebreak will be created.
Access for illegal shooters is a problem with firebreaks and thought will be given to restricting access to them, while not compromising four wheel drive fire fighting vehicles.

5.2. Prescribed burning. Burning will be restricted to regeneration burns rather than fire protections burns, although these can be both achieved with particular burns.

6. WILDLIFE MANAGEMENT:

6.1. Kangaroos. Kangaroos are currently causing a problem to Departmental, and adjacent private, attempts to establish trees. This is through grazing and trampling damage. It is proposed that the population be monitored during this phase of tree establishment in the area, and that the population be culled to an acceptable level for this period. It is regarded that no long term ill effects will occur to the population, yet it may assist in enhancing the value of the habitat.

7. RECREATION:

7.1. Duck shooting. refer 6.1.

7.2. No picnic/barbeque sites are in existance on these reserves, nor has there been any pressure for such. Recreation is limited to passive pursuits.

8. RESEARCH AND MONITORING:

8.1. Continued monitoring of water levels and quality.

8.2. Continued assessment of the vegetation plots.

8.3. Investigations by the Department of Agriculture, Narrogin into the surface hydrology of the catchment.

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CONTRIBUTION TO THE SUBMISSION FOR FUNDS FOR THE WICKEPIN SOIL CONSERVATION DISTRICT

Freshwater lakes in the Western Australian agricultural areas are a rarity as a consequence of the current trend of salinization of these landscapes. Such lakes are however highly prized in a conservation sence as they provide the major sites for water fowl breeding, and are also therefore, of paramount importance to the duck shooting recreational industry.

Salting of lakes systems can be enhanced in two ways, both related to the clearing of the bushland of the appropriate catchment. The direct effect of this clearing is on the raising of the saline water table which causes an increase in the water salinity of the lake. The more indirect effect is by the great increase in surface water runoff on the cleared catchment, which enhances the waterflow into the lakes. This increased flow is detrimental due to the salt accumulation as a consequence of the movement over the salt affected landscape, and also due to the increased flooding effect on the lowland areas and the lake vegetation.

Most, but not all, native water fowl are able to utilize any quality water source for summer refuges, but are dependant on freshwater lakes for breeding. The majority of water fowl require freshwater to drink, and this becomes important during breeding before the young are able to travel to fresh water supplies. The more critical aspect of water quality however is related to appropriate food sources for the breeding water fowl. Freshwater invertebrates are the source of essential proteins for these birds, and especially the downy young.

The conservation of vegetation on and about lakes is also important for shelter and resting sites during breeding, quite apart from the desirability to preserve examples of

the vegetation types associated with freshwater lakes. Even transient changes in the water salinity which causes plant death will have a long term effect on the vegetation and the nursery status of the lake.

Lake Toolibin is an ephemeral, freshwater lake near the head of the North Arthur River Wetlands System. It is one of the few freshwater lakes remaining in the south west Agricultural Region, and the most important wetland water fowl nursery remaining in the Western Australian Wheatbelt. Lake Toolibin is a vegetated lake, which makes it ideal for the range of nesting requirements found in water fowl populations. Indeed most water fowl recorded in the Central Great Southern Province have been recorded at Lake Toolibin, with over half of these and the terrestrial avi-fauna, being noted breeding in this area. Included in the breeding records are the rare Freckled Duck and the Great Egret.

The vegetation on Lake Toolibin is dominated by the Swamp Sheoak (Casuarina obesa), Flooded Gum (Eucalyptus rudis) and Paperbarks (including an undescribed species of Melaleuca). These species are variously salt sensitive and will die off should the salinity rise too much in the lake. Already areas of Sheoak in the south western sector are degenerating and it is therefore obvious that without effective conservation practices aimed at reducing the salt input into this lake system, Lake Toolibin is in danger of being transformed into a desolate skeleton forest of dead trees like Lake Taarblin to the south. Should this be allowed to occur then a valuable asset to the region and beyond, would be lost forever.

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