Department of Environment and Conservation
Our environment, our future

SUMMARY ANNUAL REPORT
THREATENED SPECIES AND/OR COMMUNITIES RECOVERY TEAM

PROGRAM INFORMATION

Recovery Team name	TOOLIBIN LAKE RECOVERY TEAM
Reporting Period (Calendar Year)	Calendar year 2008

Current membership

Member		Representing
CHAIR	**Greg Durell, District Manager-Great Southern**	Department of Environment and Conservation
EXEC OFFICER	**Marie Strelein, Toolibin Lake Recovery Catchment Officer**	Department of Environment and Conservation
	1x	Chair of the Lake Toolibin Catchment Group
	1x	Facey Group Executive Officer
	1x	Shire of Wickepin CEO
	1x	The Manager, Blackwood Basin Group
	1x	The Manager, Species and Communities Branch, Department of Environment and Conservation
	1x	Department of Water
	1x	Department of Agriculture and Food WA
	2x	Landholders

Dates meetings were held in 2008	NIL in 2008 – currently reviewing the makeup of the Recovery Team and developing the team's structure and terms of reference.
One to two paragraph summary of achievements suitable for *WATSNU*	The surface water monitoring network was upgraded in 2007 and further upgrades and rating on the network were achieved in 2008. A report entitled 'Surface water flow redistribution: Toolibin Lake Natural Diversity Recovery Catchment' was completed in April 2008 and describes the program and its future modelling possibilities. The monitoring network and associated research will help achieve the optimum environmental water requirements at

	Toolibin Lake. Other work in 2008 included support for an honours project looking at interactions between surface water and groundwater in valley floor landscapes. Groundwater pumping continued in 2008 following a major service and equipment upgrade. A census of all 400+ bores in the recovery catchment was completed in 2008. The census identified bores that require refurbishment. This information will contribute to a revised plan of groundwater monitoring needs in the recovery catchment. Work has continued on constructing the waterway through Dulbining Nature Reserve. Main sections of the waterway are due for completion in 2009. The waterway addresses the increased salt store developing upstream of Toolibin lake. Specifically, the waterway addresses: • Inundation and severe decline in vegetation health in Dulbining Nature Reserve resulting from inappropriate and incomplete surface water structures; • Salt scalding as a result of poorly defined drainage and evaporation of ponded water in parts of Dulbining Nature Reserve; and • Salinisation and vegetation decline on Dulbining Lake that has occurred due to extended periods of inundation. High rainfall throughout the catchment in July 2008 resulted in large flows of good quality surface water which reached the Toolibin Lake inlet. The diversion gates were closed on 31 July 2008 and approximately 60,000m^3 of water entered the Lake. With no follow up rain the gates were opened again on the 11 of August 2008.
List of actions undertaken by Recovery Team (from actions in Recovery Plan / Management Plan)	1. Altered Bio-geochemical processes 2. Impacts of community values 3. Insufficient ecological resources to maintain viable populations 4. Impacts of problem native species 5. Impacts of introduced plants and animals 6. Detrimental regimes of physical disturbance events 7. Impacts of competing land uses
Action 1	**Altered Bio-geochemical processes** Groundwater pumping - Groundwater pumping continued in 2008 following a major service and equipment upgrade. Surface water management - High rainfall throughout the catchment in July 2008 resulted in large flows of good quality surface water which reached the Toolibin Lake inlet. The diversion gates were closed on 31 July 2008 and approximately 60,000m^3 of water entered the Lake. With no follow up rain the gates were opened again on the 11 of August 2008. Work on the Dulbining waterway continued in 2008. Main sections of the waterway are due for completion in 2009. The waterway addresses the increased salt store developing upstream of Toolibin lake. The waterway specifically addresses:

	• Inundation and severe decline in vegetation health in Dulbining Nature Reserve resulting from inappropriate and incomplete surface water structures; • Salt scalding as a result of poorly defined drainage and evaporation of ponded water in parts of Dulbining Nature Reserve; and • Salinisation and vegetation decline on Dulbining Lake that has occurred due to extended periods of inundation. Revegetation – cost sharing agreements and revegetation plans for two sites were developed in 2008 in preparation for 2009 planting. Monitoring and research - A census of all 400+ bores in the recovery catchment was completed in 2008. The census identified bores that require refurbishment. This information will contribute to a revised plan of groundwater monitoring needs in the recovery catchment. The surface water monitoring network was upgraded in 2007 and further upgrades and rating on the network were achieved in 2008. A report entitled 'Surface water flow redistribution: Toolibin Lake Natural Diversity Recovery Catchment' was completed in April 2008 detailing the program and its future modelling possibilities. Groundwater monitoring on the lake floor and throughout the catchment continues. Other work in 2008 included support for an honours project looking at interactions between surface water and groundwater in valley floor landscapes and Toolibin Alley Farming Trials evaluation of the effects on groundwater levels.
Action 2	**Impacts of community values** The membership and terms of reference for the recovery team are in the process of being updated. A 10 year review and business plan was developed for the catchment as part of an overall State salinity investment update during 2008. Recovery Catchment staff have been liaising closely with the Lake Toolibin Catchment Group, The Facey Group and the Shire of Wickepin to promote and implement recovery actions in the catchment. Three tours were conducted in 2008 involving DEC staff from other regions and a university group.
Action 3	**Insufficient ecological resources to maintain viable populations** The monitoring program for fauna was refined during 2008 and data are now collected and stored more efficiently. Timber trials were maintained during 2008.
Action 4	**Impacts of problem native species** Problem native fauna on DEC reserves were monitored regularly during 2008.
Action 5	**Impacts of introduced plants and animals** Introduced animals on DEC reserves were monitored regularly

	during 2008. The weed control program for Toolibin Lake and the surrounding reserves was maintained during 2008.
Action 6	**Detrimental regimes of physical disturbance events** Firebreaks were maintained in Toolibin Nature Reserve and surrounding reserves in 2008.
Action 7	**Impacts of competing land uses** Reserve management responsibilities including recreation site maintenance were continued during 2008.
Assessment of progress towards meeting criteria for success (from Recovery Plan)	
Assessment against criteria for failure (from Recovery Plan)	
Criteria for success or failure as described in Recovery Plans or Interim Recovery Plans	**Toolibin Lake Recovery Plan 1994:** **Objective:** The objective of the Recovery Plan is to ensure the long-term maintenance of Toolibin Lake and its environs as a healthy and resilient freshwater ecosystem suitable for the continued visitation and breeding success by the presently high numbers and species of waterbirds. **Criteria for success:** **Biological Criteria:** 1. No further deterioration is observed in the health of the vegetation of the lake or the reserves. 2. Successful tree and shrub regeneration in the lake and reserves is established in all vegetation associations. 3. Based upon available data, the lake supports sufficient species richness and numbers of invertebrates to assure waterbird food resources. 4. The numbers and species of waterbird visitation (41 species) and breeding success (24 species) that currently occurs is maintained or improved. **Physical criteria:**

	1. The minimum depth to water table beneath Lake Toolibin and Toolibin Flats in spring, when the lake is dry, should be 1.5m. 2. The maximum salinity of lake water when the lake is full should be 1,000 mg/1 Total Dissolved Salts (TDS). 3. The maximum salinity of inflow to the lake, measured at the Water Authority gauging station 609 009 on the Northern Arthur River, should be 1000 mg/1 TDS during the winter months when the lake is full, 4. The lake bed dries periodically by evaporation, on average once every three years. 5. The levels of nutrients within Lake Toolibin should not cause excessive growths of algae or other aquatic plants, or cause deleterious reductions in dissolved oxygen concentrations in the water. Total phosphorus levels in the water should not to exceed lOOmg/1 unless long-term monitoring indicates that this criterion may be modified.