Department of Environment and Conservation

Our environment, our future

SUMMARY ANNUAL REPORT

THREATENED SPECIES AND/OR COMMUNITIES RECOVERY TEAM

PROGRAM INFORMATION	
Recovery Team name	LAKE BRYDE RECOVERY TEAM
Reporting Period (Calendar Year)	**Calendar year 2007**

Current membership

	Member	Representing
1. Chair	**Greg Durell, District Manager- Great Southern** **(replacing Bruce Bone)**	Department of Environment and Conservation
2. EXEC OFFICER	**Natalie Nicholson, Lake Bryde Recovery Catchment Officer**	Department of Environment and Conservation
3.	**Peter Lacey, Program Leader Nature Conservation**	Department of Environment and Conservation
4.	**Bethea Loudon, Conservation Officer Flora**	Department of Environment and Conservation
5.	**Dale Fitzgerald, Lake Bryde Assistant Conservation Officer**	Department of Environment and Conservation
6.	**Specific Landholders**	Catchment landholders

Dates meetings were held	No meetings in 2007.
One to two paragraph summary of achievements suitable for *WATSNU*	Between January 2006 and January 2008 six monthly monitoring of the TEC on Lake Bryde and East Lake Bryde was postponed due to inundation. Rainfall within the Lake Bryde Recovery Catchment in January 2006 resulted in flooding of the lower areas of the catchment. Approximately 245.8mm of rainfall was recorded between 3 January and 14 January 2006. The subsequent flooding disrupted implementation of actions planned for the Lake Bryde Recovery Catchment during the 2006/07 financial year. Much of the valley floor of the recovery catchment was inundated for several weeks and significant wetlands held water for approximately 18 months. Lake Bryde water level in January 2007, 12 months after the flood event was still 1.05m. East Lake Bryde had 0.40m water level in April 2008.

List of actions undertaken by Recovery Team (from actions in 'Unwooded Fresh Water Lakes of the Southern Wheatbelt of Western Australia' IRP92 2001-2006)	**1. Write a full Recovery Catchment Plan** **2. Assess and monitor the condition of the community** **3. Obtain and monitor changes in hydrological information** **4. Manage water quality and ensure stability in hydrological regimes** **5. Explore options for catchment revegetation** **6. Obtain biological and ecological information on the major components of the community** **7. Preserve genetic diversity of the major components of the community** **8. Conduct further surveys** **9. Disseminate information** **10. Determine the extent of weed invasion, design and implement weed control program** **11. Develop and implement a translocation proposal** **12. Seek to vest Lake Bryde Nature Reserve in the Conservation Commission of WA**
KEY ACTIONS	
Action 1	**Write a full Recovery Catchment Plan:** A draft Recovery Catchment Management Plan for Lake Bryde Recovery Catchment was completed in December 2007. The Recovery Plan will incorporate TEC actions and management strategies, following up from the IRP. The management plan and actions will be developed further in 2008.
Action 2	**Assess and monitor the condition of the community:** Monitoring of representative permanent quadrats on the lake beds of Lake Bryde and East lake Bryde is completed in summer and winter each year. Due to the lakes holding water there was no monitoring of these quadrats in 2007. Plans are to continue monitoring existing quadrats and establish additional quadrats to replicate sites and provide a more comprehensive representation of TEC recruitment and condition.
Action 3	**Obtain and monitor changes in hydrological information:** Hydrological information is obtained by monitoring groundwater bores on the lake bed and fringing vegetation. Readings are taken once a month. Surface water monitoring loggers are placed on the lake beds and at the inflow points to the lakes. These loggers are continuously recording surface water depth and flow events. Rainfall events are recorded using continuous loggers at 4 locations in the catchment.

Action 4	**Manage water quality and ensure stability in hydrological regimes:** The primary objective of surface water management in the catchment is to minimise the impact of excess water within the landscape. A large scale valley floor surface water engineering project began construction in 2006 and aims to alleviate the immediate risk of continued degradation of biodiversity assets (Lake Bryde included) from excess and unmanaged surface water. Other management options (surface water banks and dams) are being implemented in partnership with neighbouring landowners to retain excess water higher in the landscape. Water quality measurements are recorded intermittently from water in the lakes and from groundwater sampling of the bores on a regular basis. Ground water pumping and surface water diversion at the lakes has not been implemented and there is no plan to do so in the near future.
Action 5	**Explore options for catchment revegetation:** In 2007 110,000 seedlings were planted in the catchment through the Lake Bryde Recovery Catchment cost share incentive program. Revegetation projects are being implemented in partnership with landowners in the catchment to promote agronomic practices that increase water usage and help in lowering the water table. Further options for high water use and salt tolerant species are being explored through a demonstration trial on DEC purchased property in the catchment. A salt tolerant species trial was planted in 2007 to look at responses of 20 different species of local provenance to elevated soil salinity. The aim is to provide a list of suitable species for landholders to incorporate in revegetation projects on low lying, salt affected land.
Action 6	**Obtain biological and ecological information on the major components of the community:** It has been identified there is an urgent need for investigations into current and future impacts of the effects of salinity and waterlogging on this TEC. An investigation to assess seedling response to hyper-saline and waterlogged conditions for *Muehlenbeckia horrida* subsp*. abdita and Tectecornia verrucosa* (the two dominant species in the TEC) began in late 2006 into 2007. Anne Cochrane initiated trials to screen for their response to salinity and waterlogging under controlled off-site conditions. The two species were successfully germinated however the trial had to be postponed due to unforeseen circumstances. Future plans in 2008 are to investigate the biology and ecology of the TEC through examining: ▪ the reproductive strategies, phenology and seasonal growth of the species ▪ population dynamics and recruitment in relation to inundation ▪ soil seed bank dynamics and the role of various disturbances in germination and recruitment
Action 7	**Preserve genetic diversity of the major components of the community:**

	Seed of *Muehlenbeckia horrida* subsp. *abdita* was collected in 2001, 2002, 2003 and 2005 for seed conservation purposes, and is stored at the Threatened Flora Seed Centre. No seed was collected in 2007.
Action 8	**Conduct further surveys:** No further surveys were undertaken in 2007. Aerial photography can be used to locate sites where the species may occur or to which it could be introduced if necessary. Publicity methods such as articles on the community (endangered flora brochure) aid in locating further habitat. Plans to engage a consultant to investigate similar and appropriate habitat sites in 2008.
Action 9	**Disseminate information:** An information sheet, which includes a description of the threatened community, declared rare flora, threats and management actions was produced in 2005. The Endangered Flora of Western Australia brochure for *Muehlenbeckia horrida* subsp. *abdita* was distributed to catchment landholders in 2007. Information regarding the TEC is handed out at Agricultural Field Days in the local area. Poster displays were set up at the 2007 Newdegate Field Day and Wagin Woolorama. Brochures were made available in 2007 from the Katanning DEC office. TEC signs will be erected at the lakes in 2008.
Action 10	**Determine the extent of weed invasion, design and implement weed control program:** A weed control program has not been implemented. There is minimal evidence of weed populations on either lake. Weeds will be monitored on an ongoing basis and appropriate weed control action taken if infestation does occur. Tolerance of the TEC species to herbicide is unknown.
Action 11	**Develop and implement a translocation proposal:** A translocation proposal has not been completed for the major components of this TEC.
Action 12	**Seek to vest Lake Bryde Nature Reserve in the Conservation Commission of WA:** Vesting of Reserve 28667 (Lake Bryde Reserve) changed from the Water Corporation to the Conservation Commission in June 2006. It is now referred to as Crown Reserve 48436 Class C Conservation Park.
Criteria for success or failure as described in Recovery Plans or Interim Recovery Plans	**IRP 92: Objective** To maintain or improve the overall condition of the lake bed community of both Lake Bryde and East Lake Bryde and reduce the level of threat to their survival towards downgrading it from Critically Endangered to Endangered. To abate identified threats and maintain viable *in situ* populations of *Muehlenbeckia horrida* subsp. *abdita* to ensure the long-term preservation

	of the species in the wild. To preserve the genetic material of *Muehlenbeckia horrida* subsp. *abdita* for restocking existing populations or translocation to more secure sites. **Criteria for success** • Maintenance or improvement of the vigour and extent of the community, especially *Muehlenbeckia horrida* subsp. *abdita*. • Reduction of threatening processes as defined in this document, in particular the maintenance of salinity at less than ten parts per thousand. **Criterion for failure** • Continuing increases in salinity of either or both occurrences and significant loss of the number of individuals and populations of *Muehlenbeckia horrida* subsp. *abdita* and other component species or further modification (i.e. reduction in the dominance of shrub species, increase in weed composition) of the community due to increased salinity or other means.