

Tambellup Water Reserve Biological survey planning

Summary of Habitat Management assignment by Wendy Bradshaw August 2003

Introduction

The Shire of Tambellup has approximately 12% native vegetation remaining, of which only 24.5% occurs on public lands (Shepherd et al, 2002). The Tambellup Water Reserve No. 2 is by far the largest reserve in the shire, being 688ha in total (Mercer, 1996). This is the only area of bushland that I am aware of reasonably close to my home that contains at least four different habitats within a reasonable distance of each other, and is the reason I chose this site for survey work.

Method

Desktop survey

The desktop survey entailed the following steps:

1. Attempted to map vegetation associations (by hand) from aerial photograph, using previous personal ground-truthing experience.
2. Plotted a reconnaissance route in study area.
3. After carrying out reconnaissance, accessed information regarding threatened flora and fauna from Threatened Flora Officer, Katanning Department of Conservation and Land Management (Dept of CALM), as to conservation status of vegetation associations and plants in the study area.
4. Contacted Dept of CALM Woodvale for results of fauna surveys carried out under the Salinity Action Plan in the Water Reserve.
5. Spoke to neighbouring farmer to obtain anecdotal experience with fauna emanating from the reserve.
6. Attempted to contact ex long-serving CALM Reserves Officer for the area regarding representativeness of plant communities in the reserve system.

Reconnaissance

The reconnaissance was carried out on 8 August, 2003, after desk top survey had been completed. The process was as follows:

- Went to wetland site, roughly in the middle of the reserve as my starting point, armed with second copy of aerial photograph, sketch map of vegetation associations and compass.
- Checked locations of vegetation associations as I walked, adding or correcting information as necessary. Took notes on habitat and observations of flora and fauna as I walked, following compass bearings with regular checks on my aerial photograph to ensure I was following the plotted route.

Within the Water Reserve, I have identified (using Specht, 1970) at least seven distinct plant associations, and many more when including ecotones. Major habitats include woodlands, wetland, forest and scrubland. A number of disused, regenerating gravel pits exist which I have classified as special habitat (FRM, 2003).

The wetland is man-made, originally constructed to supply water for steam trains, after which it was - and still is - used to supplement domestic consumption for the town water supply. This is fed mainly by two cleared water catchments. The current water level in the dam is very low, and a lot of rushes and other wetland plants that are normally partly submerged are well out of the water.

Some parts of the water reserve were grazed in the early 1900's, prior to being classified as a water reserve. There is still evidence of old fences to be seen. A few non-invasive weeds coexist with the bush, such as *Briza maxima* (Blowfly grass). Thicker infestations of weeds occur in small patches, and mostly appear to be associated with rabbit diggings. Discovered community of what I believe to be *Casuarina glauca* which is a recognized weed in WA, growing around a water hole. This is a suckering sheoak from South Australia, and has spread to within the confines of the wet area in the vicinity of the water hole. They are well established and my guess is that they were planted by early settlers.

The water reserve is surrounded by broad acre agriculture based on cereal and sheep enterprises.

Flora and fauna observed

The habitats, plant associations occurring within each habitat, and fauna observed during my reconnaissance are listed in table 1 below. Fauna observations include by sight, sound, or sign such as tracks or scats. Notes are also included on significant habitat observations.

Table 1: Habitats, vegetation associations and fauna observations

Habitat type and notes	Vegetation association Observed within habitat with notes on understorey strata	Animals observed with notes on habitat
Wetland	A range of wetland plants, including <i>Baumea articulata</i> and <i>Villarsea sp.</i> can be found growing in the water and A native water lily, <i>Ottelia ovalifolia</i> (Paczkowska, Chapman, 2000), was observed by myself and a wetland plant specialist (Tamman, L, 2000) flowering in the dam in March, 2000.	Ducks and gilgies have been observed in the wetland. Kangaroos, blue wrens, frogs – seen/heard living in rushes. The water level of the dam is currently very low.
Woodland	Fringing vegetation of wetland - <i>Eucalyptus occidentalis</i> woodland. <i>Melaleuca spp.</i> mid stratum dominant <i>Baumea articulata</i> lower stratum dominant. <i>Euclayptus wandoo</i> woodland Scattered mid-stratum plants with dense lower-stratum plants such as grasses, lilies, orchids. <i>Allocasuarina huegelliana</i> low woodland – very few mid stratum species, dense lower-stratum plants such as lilies, grasses. <i>Acacia acuminata</i> low woodland understorey as above. Very interesting to note one plant of <i>Hakea preissii</i> growing in this community.	Termite mounds on higher ground, rabbit diggings, bullants, possible echidna digging at ant nest, rufous tree-creeper, magpies, western rosellas, golden whistler, racehorse goanna hollows. <i>E. wandoo</i> contains many hollows and drops hollow logs on the ground. I have observed brush tail possums in the water reserve at previous times, and seen their scratch marks on trunks of these trees. Fox prints on meat ant nest.

	<i>Eucalyptus astringens</i> woodland – a very simple community with very little understorey in a mature stand.	At least 50% leaf litter cover under all woodlands.
Scrubland	<i>Eucalyptus falcata</i> open scrub – dense, biodiverse mid-strata plants, scattered low-strata plants including spreading low shrubs and lilies to name a few.	Lots of small birds – blue wrens, fantails, honey-eaters, gerigone, lots of digging in soft soil such as racehorse goanna, possible rabbit diggings.
Gravel pit	<i>Allocasuarina huegelliana</i> low open woodland	Few ants nests. Topsoil not replaced after gravel extraction. Half ripped after extraction and half not. Ground much softer in ripped area, with greater plant densities.
Forest	<i>Allocasuarina huegelliana</i> (sheoak) low open forest – very little understorey, few lilies etc.	Very dense ground cover of sheoak needles. Observed a number of small nearly circular diggings in <i>A. huegelliana</i> needles, approx. 10cmx5cm diameter, by 5 cm deep.

Conservation status of flora and vegetation communities

None of the vegetation communities listed above is threatened. There are also no records of any threatened plant species growing in the Water Reserve (pers. comm. B. Loudon, Conservation and Land Management (CALM) threatened flora officer, 2003). Discussion with Mal Graham (CALM Reserves Officer, pers. comm. 2003), regarding representativeness of vegetation communities revealed that based on earlier research carried out by scientists showed that plant community representativeness needed to be determined every 15km due to the highly changing biodiversity of the area. On this basis, in this highly fragmented landscape, all of these communities would be poorly represented.

Fauna richness and declared rare fauna in the area

Due to the highly fragmented landscape it is obvious that the fauna richness is likely to be considerably diminished. However, the size and intactness of the water reserve, with a range of vegetation communities, structural layers and habitats indicate this is likely to be a very important stronghold for many fauna species.

Declared rare fauna in the Tambellup Shire (1996) were:

Carnaby's cockatoo (*Calyptorhynchus baudinii*)

Chuditch (*Dasyurus geoffroii*)

Crested shrike tit (*Falcunculus frontatus*)

Freckled duck (*Stricktonetta naevosa*)

Mallee fowl (*Leipoa ocellata*)

Peregrine falcon (*Falco peregrinus*)

Red-eared firetail (*Emblema oculata*)

Re-tailed phascogale (*Phasgogale caulura*)

Southern brown bandicoot (*Isoodon obesulus*)

Tammar (*Macropus eugenii*)

Western mouse (*pseudomys occidentalis*)

Western whip bird (*Psophodes nigrogularis nigrogularis*)

The last recorded observation of a chuditch was in the Water Reserve in 1989, when a chuditch paw was found in a rabbit trap (Graham, M, 2003, pers. com. 15 August). It is quite possible that red-tailed phascogales may still exist in the water reserve, because there is a high level of representation of their favored habitat, being dense sheoak (*Allocasuarina sp.*) vegetation (Johnson & Thomson, n.d.). These animals are very difficult to detect in the wild (Graham, M., 2003 pers. com. 5 August).

Neighbours comments

Comments regarding fauna observations on the neighbouring property related to kangaroos moving into which-ever neighbouring property happened to be in crop that year and foxes observed heading towards the water reserve in the mornings after a night out. Rabbits do not appear to emanate from the water reserve onto their property. (Sadler, J, 2003, pers. com., 12 Aug.). A carpet python had taken up residence in their chook house which was removed and placed in the Water Reserve.

References

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