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Lake Ronnerup Waterbirds

The Wheatbelt Wetlands Monitoring Program

The Wheatbelt Wetlands monitoring program commenced in 1997 with 5 wetlands and was expanded to 25 wetlands by 1999. Lake Ronnerup was first surveyed in 1999. Each wetland in the program is surveyed at least every second year for aquatic invertebrates and waterbirds and water chemistry and ground water parameters are measured. Waterbirds are surveyed using binoculars and a spotting scope to count all birds present. When lake depth is sufficient a small boat is used to gain better access to all parts of the lake. Evidence of breeding is recorded when observed, i.e. broods or nests with eggs, however, nests are not searched for and these data will be incomplete.

Waterbirds were surveyed at Lake Ronnerup in late Winter (August), Spring (October) and Autumn (March) of each sampling year since 1999, i.e. 1999, 2001, 2003, and 2005. A total of 21 species have been recorded since monitoring began.





Logue Coorow Eganu * Blue Gum Walyormouring Campion * Fraser Merredin* PERTH Goonaping Paperbark Norseman * Toolibin Coomelberrup Dumbleyung Altham Bryde Towerrining* Coyrecup Yaalup Kulicup* Noobing Pleasant View Albany

Ronnerup is a moderately large, flat bottomed lake which fills episodically and then dries or remains shallow for several years before filling again. The waterbird fauna of the lake when filled is very different from that found when the lake is nearly dry. Lake Ronnerup filled after summer rains at the end of 1999 and remained at a depth greater than 1m until the end of the 2001 monitoring year. This filling period extended across two sampling years elevating annual species richness despite periods of lower water level in both sampling years. While lake depth and species richness were correlated (r=0.98, df 10. p<0.001) depth and waterbird

abundance were not. This was principally because birds continued to accumulate at the wetland as time progressed after filling, despite falling water levels. Mean abundance was 1659 birds through the period of high water level. During the dry phase of the lake which was sampled in both 2003 and 2005 species richness was low with 2 to 4 species per year and a mean of 1.16 species per survey. Abundance was also low through this period with a mean abundance of 5.16 birds per survey.

In autumn of the 1999 monitoring year six Black species were recorded breeding on the recently Aust risen lake levels. Breeding species included record Spotted Crake, Hoary-headed Grebe and Bluebilled Duck as well as more commonly encountered species, i.e. Grey Teal , Pacific

Black Duck and Pink-eared Duck. The Australian Shelduck was the only other species recorded breeding, when a single brood was recorded in late winter 2001.



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The distribution of species richness across feeding guilds indicates the available niches for waterbirds at Lake Ronnerup. The feeding guilds present were strongly dependent on water depth with small waders and dabblers present at low water levels (< 0.5 m) and a greater diversity of guilds present at greater water Guild diversity depths. was greatest immediately following the filling of the lake, with six guilds represented, in most cases by multiple species each. The presence of species from the reed guild (Australian Spotted Crake and Baillon's Crake) reflects the extent of change, from a simple open water, hypersaline lake to a wetland with a complex flooded margin, because of high water levels.

TABLE 1 Waterbird species list for Lake Ronnerup compiled from three surveys each sampling year except 2002 when the lake was dry for the third survey. % Occurrence is the proportion of surveys, with depth greater than 0 m, for which the species was recorded

Species	1999	2001	2003	2005	% Occurrence
Australian Shelduck					63.6
Hooded Plover	\checkmark			\checkmark	54.5
Australasian Shoveler	\checkmark		0	0	27.3
Black Swan	0		0	0	27.3
Chestnut Teal	\checkmark		0	0	27.3
Grey Teal	\checkmark		0	0	27.3
Pink-eared Duck	\checkmark		0	0	27.3
Hoary-headed Grebe	\checkmark		0	0	27.3
Eurasian Coot	\checkmark		0	0	27.3
Musk Duck	\checkmark		0	0	27.3
Red-capped Plover	\checkmark			0	27.3
Pacific Black Duck	\checkmark		0	0	18.2
Banded Stilt	\checkmark		0	0	18.2
Red-necked Stint	0		\checkmark	0	18.2
Little Pied Cormorant	\checkmark	0	0	0	9.1
Blue-billed Duck	\checkmark	0	0	0	9.1
Nankeen Night Heron	\checkmark	0	0	0	9.1
White-faced Heron	\checkmark	0	0	0	9.1
Australian Spotted Crake	\checkmark	0	0	0	9.1
Baillon's Crake	\checkmark	0	0	0	9.1
Australian Wood Duck	\checkmark	0	0	0	9.1

Further reading:

Cale D.J., Halse S.A. and Walker C.D. (2005) Wetland monitoring in the Wheatbelt of Western Australia: site descriptions, waterbird, aquatic invertebrate and groundwater data. *Cons. Sci. W. Aust.* **5** (1): 20-135 Halse S.A. (1987) *Probable effect of increased salinity on the waterbirds of Lake Toolibin*. Technical Report No. 15. Dept. Conservation and Land Management, Perth Western Australia.