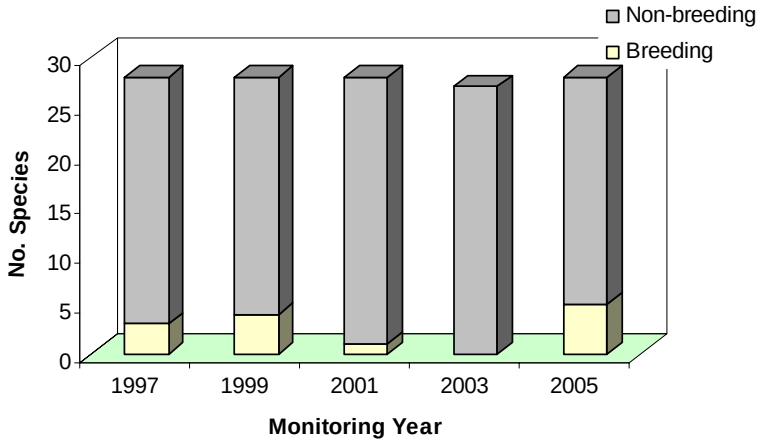
Lake Towerrining Waterbirds

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 Towerrining was first surveyed in 1997 as one of the original pilot wetlands. 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 Towerrining in late Winter (August), Spring (October) and Autumn (March) of each sampling year, i.e. 1997, 1999, 2001, 2003 and 2005.

Waterbird Species Richness at Lake Towerrining



A total of thirty eight species have been recorded at Lake Towerrining during monitoring. Annually species richness is very stable with from 23 to 27 species recorded each year. While breeding habitat is limited several species of duck have regularly bred on the lake.

Five species (Table 1) have been observed on all sampling occasions with a further three species on all but one occasion. The Blue-billed Duck and Hoary-headed Grebe have occurred in large numbers on the lake on several occasions but factors affecting there abundance are not clear.

The constancy of the waterbird fauna at this lake is in part a reflection of the stable water levels observed over the monitoring period. There was no correlation between the number of species and either depth or salinity. However, there was a negative correlation between the number of species breeding and salinity ($r=-0.70$ $df13$, $p<0.05$), i.e., as salinity increased the number of species breeding decreased.

The distribution of waterbird richness across functional feeding groups (overleaf) gives an indication of the broad range of niches available to waterbirds at Lake Towerrining. While dabbling species dominate the guild structure a wide variety of guilds were present for all surveys. During any single survey, six or more feeding guilds were present, with each represented by from one to three species. The adjacent Moodiarrup Swamp which has extensive shallows is particularly important in providing habitat for many of these feeding guilds.

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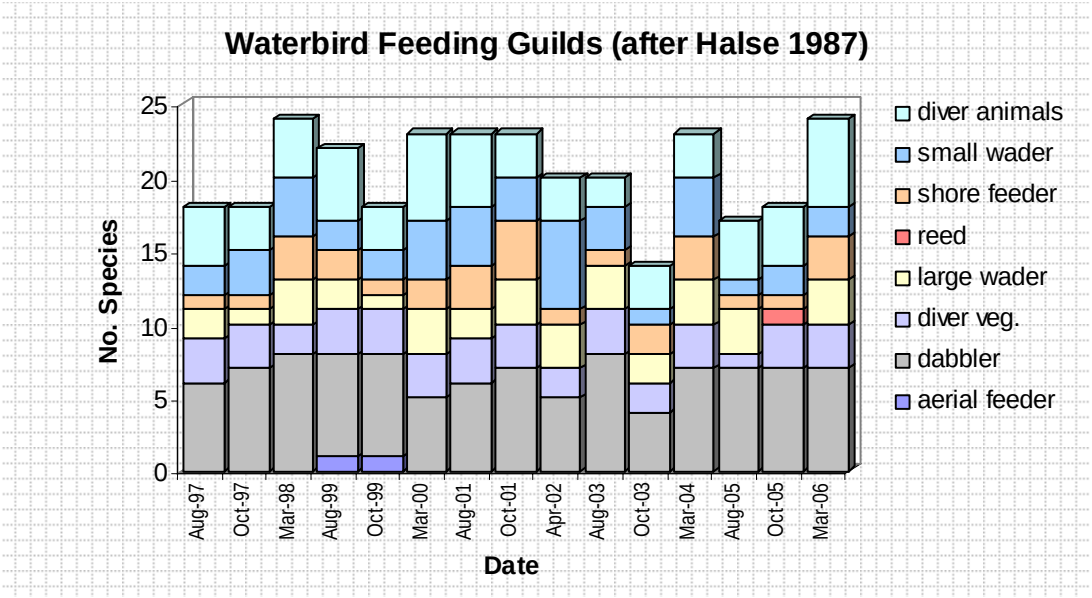

TABLE 1 Waterbird species list for Lake Towerrining compiled from three surveys each sampling year. % Occurrence is the proportion of surveys, with depth greater than 0 m, for which the species was recorded

Species	% Occ.	Species	% Occ.
Australian Shelduck	100	Black-winged Stilt	66.6
Black Swan	100	Great Crested Grebe	46.6
Grey Teal	100	Australian White Ibis	33.3
Hoary-headed Grebe	100	Red-capped Plover	33.3
Silver Gull	100	Freckled Duck	26.6
Australasian Shoveler	93.3	Australasian Grebe	26.6
Little Black Cormorant	93.3	Australian Pelican	26.6
Eurasian Coot	93.3	Straw-necked Ibis	26.6
Pacific Black Duck	86.6	Australian Wood Duck	20
Blue-billed Duck	86.6	Darter	13.3
Musk Duck	86.6	Black-tailed Native-hen	13.3
Great Egret	80	Banded Stilt	13.3
White-faced Heron	80	Red-necked Avocet	13. 3
Hardhead	73.3	Swamp Harrier	6.6
Pink-eared Duck	73.3	Whiskered Tern	6.67
Little Pied Cormorant	73.3	Pied Cormorant	6.6
Black-fronted Dotterel	73.3	Little Grassbird	6.6
Common Sandpiper	73.3	Red-kneed Dotterel	6.6
Yellow-billed Spoonbill	66.6	Red-necked Stint	6.6

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.