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Bennett's Lake Waterbirds

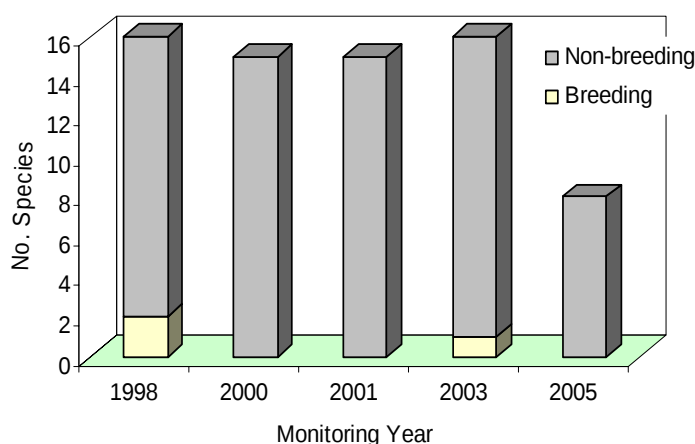
The Wheatbelt Wetlands Monitoring Program

The Wheatbelt Wetlands monitoring program commenced in 1997 with 5 wetlands and was expanded to 25 wetlands by 1999. Bennett's Lake was first surveyed in 1998. 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 Bennett's Lake in late Winter (August), Spring (October) and Autumn (March) of each sampling year since 1998, i.e. 1998, 2000, 2001, 2003, and 2005.

Waterbird Species Richness at Bennett's Lake



A total of 25 species have been recorded since monitoring began. During the monitoring period Bennett's Lake has ranged from a shallow (<1.2 m) saline wetland (40-216 mS/cm) to a deep (>2 m) brackish (5-20 mS/cm) lake. Despite this, species richness has remained relatively constant from year to year. Richness was substantially lower in 2005 when the lake held water for autumn only. Records of successful breeding were restricted to the Australian Shelduck and Grey Teal.

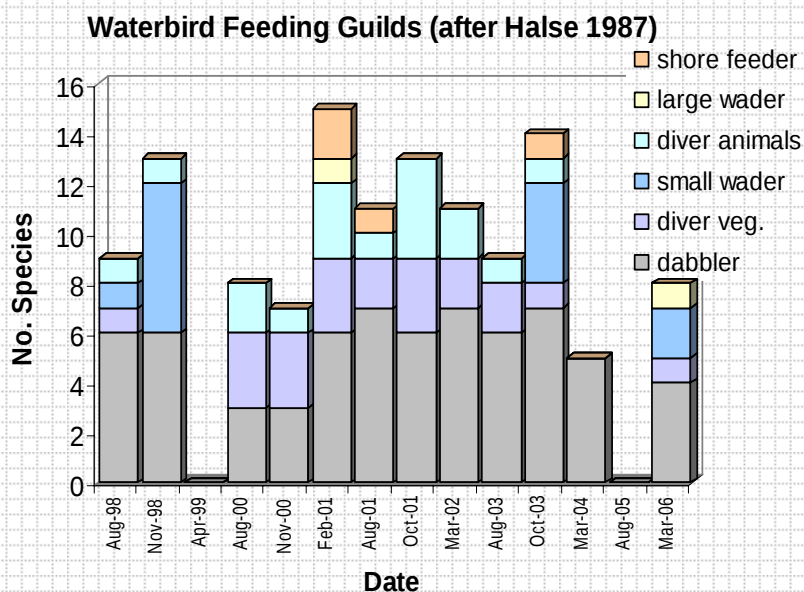
The species richness recorded for individual surveys showed a strong negative correlation with salinity ($r = -0.81$ df 12, $p < 0.001$). No species were recorded when lake water reached salinities of 120mS/cm (approximately twice seawater), however, at 113mS/cm 1765 birds including 975 Australian Shelduck and 747 Grey Teal were recorded.

Waterbird abundance varied greatly, with a recorded maximum of 2364 individuals in Spring 2003. Generally abundance was greatest in autumn when water was probably less common in the surrounding landscape and Bennett's Lake became an important refuge.



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Lake Bennett's Waterbirds



The distribution of waterbird richness across feeding guilds gives an indication of the available niches for waterbirds at a wetland. The waterbird community at Bennett's Lake was dominated by species of dabbling ducks on most occasions. This reflected the availability of invertebrates and submerged macrophytes as food for these species and the absence of shallows or shoreline for other feeding guilds. When depth was low, small waders and shore feeders were present although represented by only a small number of species. The extensive beds of submerged macrophytes which were present during all but the lowest water levels enabled persistence of a number of diving species such as the Musk duck, Blue-billed duck and Eurasian Coot

TABLE 1 Waterbird species list for Bennett's Lake compiled from three surveys each sampling year except 1998 and 2005 when dry conditions resulted in fewer surveys. % Occurrence is the proportion of surveys, with depth greater than 0 m, for which the species was recorded

Species	1998	2000	2001	2003	2005	%Occur.
Australian Shelduck	√	√	√	√	√	100.0
Grey Teal	√	√	√	√	√	100.0
Black Swan	√	√	√	√	√	83.3
Hoary-headed Grebe	√	√	√	√	0	83.3
Eurasian Coot	√	√	√	√	√	83.3
Pink-eared Duck	√	√	√	√	√	75.0
Australasian Shoveler	√	√	√	√	0	58.3
Hardhead	√	0	√	√	0	58.3
Pacific Black Duck	√	√	√	√	0	58.3
Musk Duck	0	√	√	√	0	58.3
Little Pied Cormorant	0	√	√	0	0	33.3
Blue-billed Duck	0	√	√	0	0	33.3
Red-capped Plover	√	0	0	√	√	33.3
Australian Wood Duck	0	√	√	√	0	25.0
Chestnut Teal	√	0	0	√	0	16.7
Australasian Grebe	0	√	√	0	0	16.7
White-faced Heron	0	√	0	0	√	16.7
Hooded Plover	√	0	0	0	√	16.7
Red-kneed Dotterel	√	0	0	√	0	16.7
Red-necked Stint	√	0	0	√	0	16.7
Little Black Cormorant	0	0	√	0	0	8.3
Australian White Ibis	0	√	0	0	0	8.3
Black-winged Stilt	0	0	0	√	0	8.3
Common Greenshank	√	0	0	0	0	8.3
Sharp-tailed Sandpiper	√	0	0	0	0	8.3

Further reading:

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.