

WATERBIRDS OF MANNING LAKE BEFORE, DURING, AND AFTER THE SPRING FAIR 28 OCTOBER 2001

Background

Manning Lake is an ephemeral freshwater lake of about eleven hectares comprising a body of open water surrounded by a fringe of well-aged paperbarks with a sedge understorey. The whole lake is encircled by the grass and Tuart trees of Manning Park.

Each year in October a Spring Fair is held in Manning Park. Components include rides, food, displays and loud music. In the evening there are fireworks.

Some local residents have expressed concern to the Cockburn City Council that the fair and in particular the fireworks, have a detrimental effect on the waterbirds of Manning Lake.

This study was designed to find out whether the fair and/or the fireworks do adversely affect the waterbirds.

Method

The core of the study was a series of bird counts done before and after the fair. The fair was on Sunday 28 October. Although it is impossible to count the birds of this lake with complete accuracy due to the size of the lake plus the cover provided by paperbarks and sedges, it was possible to follow a standard procedure so that the counts were comparable. The core counts were begun at 6.30 am and completed by 9.00 am. with the circuit starting from the same place and continuing in the same direction. Note was made of bird species, numbers and of breeding. Binoculars and a telescope were used.

Additionally, a count was made in the afternoon during the fair. Observations of bird behaviour were made during the fireworks display.

Silver Gulls, which tended to come and go, were counted from the southern end of the lake at the commencement of each survey.

Results

Results of the morning surveys are shown in Table 1 and 1a (species and numbers), and Table 2 (breeding species and number of broods). The fair was on 28 October. The morning survey on 28 October was during preparations for the fair.

An annotated list of species is provided as Appendix 1.

Manning Lake on the afternoon of 28 October 2001

Table 1:

Waterbird species and numbers on Manning Lake between 28 and 30 October 2001

Waterbird species and numbers on Manning Lake

Numbers include adults plus independent young birds

SPECIES	DAY (in October 2001) Surveys 6.30 to 9.00 am					
	24	25	26	28	29	30
BLACK SWAN <i>Cygnus atratus</i>	2	2	2	2	2	2
BLUE-BILLED DUCK <i>Oxyura australis</i>	3	-	-	-	1	-
MUSK DUCK <i>Biziura lobata</i>	2	2	3	1	2	-
PINK-EARED DUCK <i>Malacorhynchus membranaceus</i>	-	2	-	-	-	-
GREY TEAL <i>Anas gracilis</i>	30	28	31	39	39	28
AUSTRALIAN SHELDUCK <i>Tadorna tadornoides</i>	4	2	6	4	4	4
HARDHEAD <i>Aythya australis</i>	3	4	-	2	1	1
PACIFIC BLACK DUCK <i>Anas superciliosa</i>	37	41	46	38	33	34
MALLARD <i>Anas platyrhynchos</i>	-	-	1	-	-	-
AUSTRALASIAN SHOVELER <i>Anas rhynchotis</i>	6	1	4	1	1	-
DOMESTIC / FERAL DUCK Mixed origins	3	1	2	2	-	2
AUSTRALASIAN GREBE <i>Tachybaptus novaehollandiae</i>	5	13	10	9	5	8
LITTLE PIED CORMORANT <i>Phalacrocorax melanoleucos</i>	-	-	1	-	1	-
WHITE-FACED HERON <i>Ardea novaehollandiae</i>	3	3	4	2	3	2
RUFIOUS NIGHT HERON <i>Nycticorax caledonicus</i>	1	-	-	-	1	-
YELLOW-BILLED SPOONBILL <i>Platalea flavipes</i>	-	-	-	-	1	-
AUSTRALIAN WHITE IBIS <i>Threskiornis molucca</i>	1	-	2	4	1	1
DUSKY MOORHEN <i>Gallinula tenebrosa</i>	9	10	9	9	9	5
PURPLE SWAMPHEN <i>Porphyrio porphyrio</i>	4	3	5	6	5	5
EURASIAN COOT <i>Fulica atra</i>	66	67	53	47	49	53
COMMON GREENSHANK <i>Tringa nebularia</i>	2	-	-	-	-	-
SILVER GULL <i>Larus novaehollandiae</i>	65	61	39	78	180	96

Table 1a: Manning Lake waterbird numbers and species tally - daily totals and percentage change. (Brackets indicate reduction)

Category	Day (in October 2001)					
	24	25	26	28	29	30
Waterbirds excluding Silver Gulls	181	179	179	166	158	145
% change from previous survey	-	(1.1)	0	(7.2)	(4.8)	(8.2)
Silver Gulls	65	61	39	78	180	96
% change from previous survey	-	(6.1)	36	100	130.7	(46.6)
No. of species including Silver Gulls	18	15	16	15	18	13
% change from previous survey	-	(16.6)	6.6	(6.2)	20	(27)

Numbers of waterbirds (excluding Silver Gulls) declined during the study period, from 181 to 145. The decline was gradual though accelerating with the biggest change between 29 and 30 October. An equal difference of 13 between 26 and 28 spanned two days.

The number of Silver Gulls was far more uneven with a low of 39 on 26 October and a high of 180 on 29 October. Numbers of Silver Gulls had already built up on the morning of the fair, were highest the day after the fair and were still elevated on 30 October.

The number of bird species ranged from 18 to 13, with 18 species being recorded both on the 24 and the 29 October.

Many waterbirds move from lake to lake in search of food and only those breeding are anchored to one lake. Only ten species were observed during every survey, and of those, six were recorded as currently breeding. Silver Gulls were by far the most restless birds, coming and going with a much greater frequency than any other species. On 26 October Grey Teal were a little more restless than usual with four seen to leave the lake, and three to move in. Waterbirds often move about at night.

Table 2: Waterbird breeding on Manning Lake between 24 and 30 October 2001

Note that 'active nest' does not include nests under construction. In the case of all the waterbirds found to be breeding, 'active nests' refers to nests in which eggs are being incubated, as chicks leave the nest on hatching. Most of the broods were dependent young.

Waterbird breeding on Manning Lake - number of broods						
Broods include active nests and clutches of dependent young						
SPECIES	DAY (in October 2001)					
	24	25	26	28	29	30
BLACK SWAN	1	1	1	1	1	1
GREY TEAL	4	2	2	3	-	2
PACIFIC BLACK DUCK	3	3	1	4	3	2
AUSTRALASIAN SHOVELER	-	-	-	1	-	-
DUSKY MOORHEN	3	3	2	2	3	3
PURPLE SWAMPHEN	2	1	1	1	1	1
EURASIAN COOT	10	11	11	12	9	10

Seven species were breeding which is almost one third of the species recorded in the survey period.

Additionally, an Australasian Grebe was observed on a nest on 30 October but would have been laying rather than incubating as the birds had been nest-building the day before. The nest was at the southern end of the lake, close to the fairground.

During the afternoon of the fair

This survey, between 1.45 pm and 4.00 pm was incomplete. Despite the very loud music and other noise and the many people about, birds on the lake were feeding and resting in a normal manner. The swans were present. No new species were recorded. Broods of six species were observed with their parent birds.

The Fireworks

Observation from the eastern verge of the lake began at 7.10 pm and ended after the fireworks at 8.25 pm.

After darkness fell, birds were swimming about on the lake despite the loud noise of the fair. Three of the swans glided south and a grebe skittered northwards, calling. The nearby grebes are nest-building and have been very active and anxious since 25 October.

The fireworks began with a bang. Silver Gulls called and wheeled about. Some ducks called and took to the air. Three swans swam very fast northwards. Throughout the fireworks a few waterfowl swam about as before and a grebe continued to behave anxiously . One swan swam south quite fast but not at top speed.

After the fireworks, more waterfowl soon ventured out into the body of the lake.

Fireworks over the lake

Water level

Throughout the survey period, there was no rain. There was often wind, including a fresh sea breeze on most afternoons which would speed up evaporation.

The water level was receding. From 26 to 30 October (inclusive) in one site on the northern end, 30 cm more land became exposed. It is not known what loss of water this represents but it would probably be substantial.

Pacific Black Duck in shallow water near the lake edge

Discussion

Silver Gulls responded to the opportunity of a food bonanza provided by the fair, their numbers increasing dramatically.

Although there was an overall decrease of 19.8% in the number of waterbirds (excluding Silver Gulls) over the survey period this could not be attributed to the fair or the fireworks. Before the fair got underway (from 24 to 28) there was a decrease of 8.2%. There was a decrease of 4% between the morning of the 28 and 29 October i.e. the period when the fair and the fireworks took place. A greater decrease (of 8.2%) was recorded between 29 and 30 October.

The number of bird species ranged from 18 to 13, with 18 species being recorded both on the 24 and the 29 October. There was no demarcation at the time of the fair.

During the week of the survey period the lake became a little smaller and more shallow. It seems most likely that the changes in species present and bird numbers have more to do with available food and shelter offered by this lake as compared to other nearby lakes.

Manning Lake is clearly an important breeding area for several species of waterbird. There was no sign that breeding birds were adversely affected by the fireworks. Some of the broods were harder to find on the morning after the fireworks. However the swans were all present and together. No Grey Teal were found but the next day two broods were seen. These ducklings are most commonly amongst the fringing vegetation and are often very well hidden. After 26 October only one female shoveler was seen on Manning Lake so it is probable that the lake became less suitable for shovelers. It became clear why the one female had remained behind on 28 October when she appeared with six ducklings of an estimated age of four days. A female shoveler was seen on 29 October and again on 3 November near where the female with brood had been seen on the 28 October and was more than likely the same bird. It is highly likely that the brood is still present though often concealed in the fringing vegetation. A grebe was observed on a nest on 30 October at the southern edge of the lake very near the fair ground.

One of the Purple Swamphen chicks was not seen again after 24 October.

IN SUMMARY

It was found that neither the fair nor the fireworks adversely affected the waterbirds of Manning Lake.

Additional comment

Local residents and the lake

Whilst doing the surveys I was spoken to by several passers by. Almost everyone was very interested in the welfare of the swans and relieved that the swan family had withstood the events of the 28 October. Other concerns were the effect of the noise and the litter on all the birds, not just waterbirds, and the effect on breeding birds.

Some people expressed great affection for the lake. It is clearly enjoyed on a daily basis by many local residents.

The cleanup

The post-fair cleanup was underway early on the morning of 29 October. The grassy area was being done very thoroughly. Quite a lot of litter was amongst the vegetation at the western side of the lake and also in the water. The next day (30 October) it was still there. The litter included plastic bags, food wrappers, and spent fireworks containers.

One local resident went by on the 29 October with two plastic bags filled with litter from the edge of the lake. But there was a lot left as there had been a strong south-westerley breeze in the afternoon.

Although the bird population of Manning Lake appears not to be adversely affected by the fair and fireworks as they are occurring, it is important that they do not suffer from after effects. It is also important that residents who have such a strong affection for the lake can see that its values are being protected.

Recommendations

1. It is not known how much fireworks litter landed in the lake though several spent cartridges and wrappers were seen at the edge. A condition of having the fireworks display should be that the fireworks shells do not fall into the waters of the lake including the vegetated fringe area.
2. Cleaning up the lake after the Spring Fair should be a priority. It should include wading in to retrieve items that have been blown out of reach from the edge.

This litter from the fair was still in the lake on 3 November

APPENDIX 1: ANNOTATED LIST OF SPECIES

Black Swan: Breeding. One family comprising 2 adults and 5 well-grown cygnets. By the end of the survey period, the young birds were flexing their wings but were not seen to fly. All swans were present and together on 29 and 30 October.

Blue-billed Duck: A diving duck usually found in deeper and more permanent water. Observed on two days, one before and one after the fireworks.

Musk Duck: A low-profile diving duck more common in deeper more permanent water. A female was recorded on all but the last day of the survey and seen again on 2 and 3 November.

Pink-eared Duck: Present on one day only. A nomadic duck often found in floodwaters.

Grey Teal: Breeding. The second most common duck. Very young ducklings.

Australian Shelduck: A large richly coloured duck often found on salt lakes.

Hardhead: A diving duck often attracted to deeper lakes with plentiful aquatic vegetation. Manning Lake has plentiful aquatic vegetation but is becoming shallower each day so it is expected that this species would leave the lake very soon.

Pacific Black Duck: Breeding. By a narrow margin the most common duck on Manning Lake during the survey. Well adapted to suburban parks and gardens.

Mallard: A male was seen once. It has striking plumage and is an introduced duck from the northern hemisphere.

Australasian Shoveler: Breeding. On 24 October six birds were observed including a male. On 28 October a female was observed with six small ducklings. No other shovelers were present and no others have been recorded since. Presumably the same bird was seen the next day in the same area but without the ducklings. Although she was not seen on 30 October, she

was there again on 3 November. It is very likely that the ducklings were concealed in the nearby vegetation.

Domestic/feral Duck: Up to three of these ducks of mixed heritage were observed on most days. They are usually together. Not located the day after the fireworks.

Australasian Grebe: Breeding (though not quite in time for the survey). There was an influx of these small birds on 25 October when additional nest sites were being selected and territories hastily established. Some had already begun nest-building. One was seen on a nest on 30 October. During an incomplete survey early on 2 November two more completed nests with sitting birds (probably laying) were observed.

Little Pied Cormorant: Only one bird recorded on two days (26 and 29). They are numerous in some local lakes and so it would seem that Manning Lake does not offer their preferred food which is fish.

White-faced Heron: A total of five individuals were observed but never all on the one day. They were two adults and three newly independent young birds. It could be assumed that the adults had raised the young birds at Manning Lake. It is probable that the young birds were present all the time but were not all found.

Rufous Night Heron: Difficult to observe as they roost by day. Although only a single adult bird was seen on two occasions in different parts of the lake, it is probable that Manning Lake is currently home to more than one of these birds.

Yellow-billed Spoonbill: One bird on 29 October. More may return when the lake is a little more shallow.

Australian White Ibis: Feeding on the grass surrounding the lake or roosting in the paperbarks.

Dusky Moorhen: Breeding. Three clutches of young chicks observed most days. These birds are usually amongst the sedges and paperbarks or swimming not very far out. Occasionally

they feed out on the grass. The change in numbers over the survey period reflects in part the difficulty of finding all these birds among the vegetation rather than simply a fluctuation in numbers.

Purple Swamphen: Breeding. They often feed out on the grass or among the sedges. One brood (a single chick) was not seen again after 24 October and likely met with misadventure.

Eurasian Coot: Breeding. The most common waterfowl in Manning Lake during the survey breeding prolifically. Chicks of various ages were seen including some that hatched out during the survey period. Both parent birds tend the chicks. At least one was still incubating on 3 November. There was some overall decline in number of adult birds over the survey period.

Common Greenshank: It was unexpected to see these long-distance migrants from the northern hemisphere as they are usually attracted to shallower water. It was not surprising that they did not return during the survey period.

Silver Gull: These birds scavenge effectively on human's food and so built up in numbers over the period of the fair.