

Birds of the Para Wirra Recreation Park, and some comparisons over forty years.

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Abstract

The Para Wirra Recreation Park is a large and varied bushland reserve near Williamstown, Mount Lofty Ranges, NE of Adelaide, South Australia. From May 2002 to April 2006 the birdlife was surveyed in a series of 150 long walks to find what birds were present and assess their status. A brief status summary is given for each of the 93 species detected. The park has undergone expansion and other changes since its opening in 1962, with some possible changes to its birdlife. The results of the survey were compared with published data from broadly similar surveys in 1963-5 and 1973-5. The principal conclusions were that over the last 40 years four species may have increased, 16 are now seen less often, and there has been some reduction in the variety of irregular visitors to the park. Many past and present records are of birds of the surrounding environment rather than of the park itself.

INTRODUCTION

The Para Wirra Recreation Park is a 1409 ha area of bushland in the northern Mount Lofty Ranges, 30 km NE of Adelaide, South Australia. Together with contiguous vegetation it forms part of the third largest remaining block of native vegetation in the ranges and has high conservation and recreational significance. Since the parks opening over 40 years ago it has been extended several times, there have been changes in the degree and type of public use, and there has been residential development on neighbouring lands. These changes, and the general decline of many species in the Mount Lofty Ranges, make the current status of the birds in the park of considerable conservation interest. The Humbug Scrub Wildlife Sanctuary, which is enclosed by the park, was omitted from the survey.

The park birdlife was extensively surveyed from May 2002 to April 2006 to thoroughly explore the whole area and ascertain which birds were present, where, when and in what numbers. The results were compared with those of broadly similar surveys undertaken in 1963-1965 (Clarke 1967) and 1973-1975 (Ford and Paton 1976). They were also compared with the 'Para Wirra Recreation Park Bird List 2000' produced by the park office and based on reports by various observers from 1962-2000.

THE PARK

The history of the park during European occupation ranges from gold mining in the 19th century to some use for agricultural purposes, principally grazing, prior to the dedication of part of it as public land in 1962. Clarke (1967) gives some historical details on the founding of the park and what was known of its birdlife prior to its dedication. Since dedication there have been numerous changes to the vegetation and landscape, principally regrowth in cleared areas, new plantings, the provision of roads, tracks and other public facilities, and some subdivisional activity in areas adjoining the park plus expansion to its present size (Para Wirra Recreation Park Management Plan 1993). All these changes affect birdlife to some degree.

The general topography of the park is shown in Figure 1. It ranges from 137 m to 328 m above sea level, most of it lying above the 240 m contour, and is almost entirely covered by eucalypt woodland of varying height and density. South Australian Blue Gum, *Eucalyptus leucoxylon*, Pink Gum, *E. fasciculosa*

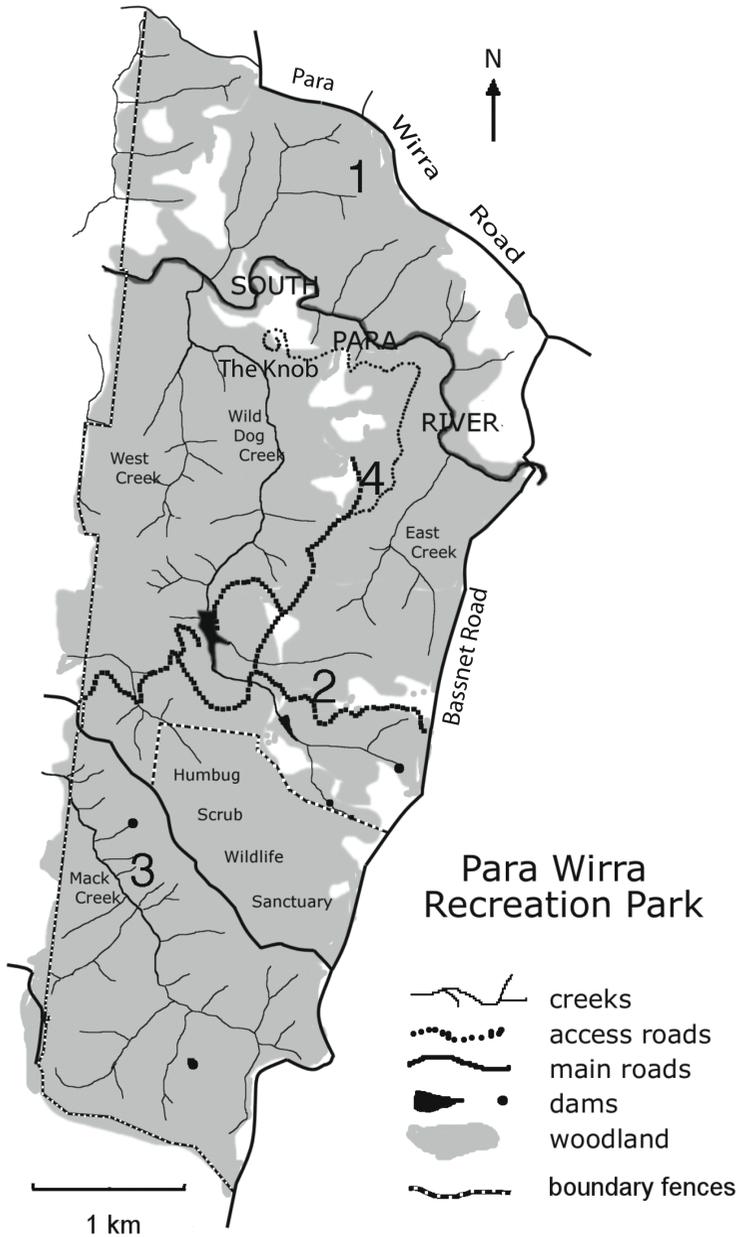


Figure 1. The Para Wirra Recreation Park, Mount Lofty Ranges, Williamstown, South Australia. Numbers refer to: 1 Quarry Track Gate; 2 Wirra Picnic Area; 3 Ruins Track crosses Mack Creek; and 4 Gawler View Picnic Area.

and Long-leaved Box, *E. goniocalyx*, are the principal species with various other more localised eucalypts, such as River Red Gum, *E. camaldulensis*, along major watercourses. There are scattered occurrences of Native Pines, *Callitris spp.*, Hakeas, *Hakea spp.* and many other trees and shrubs. The understorey varies from sparse to dense according to soil type and position and typically contains patches of Golden Wattle, *Acacia pycnantha*, and of Grass Trees, *Xanthorrhoea spp.* Ground cover is a rather thin mixture of grasses and small plants, many introduced, and there are some large areas of both closed and open scrub. There are only two open spaces of significant size within the park, a recreation area in the central section near the Gawler View Picnic Area and north oval (Figure 1, location 2) and a large naturally grassed area in the northern eastern section. Smaller open spaces occur irregularly as gaps in the widespread woodland.

The South Para River winds through a steep sided valley in a generally WNW direction, separating the northern section from the central section of the park. A southern section consists of the deep valley of Mack Creek, separated from the central section by the ridge of Humberg Scrub Road. These two watercourses have many tributaries of varying size, each with its own steep-sided gully. As a result the park has an undulating topography with few areas of level ground. The creeks and river may flow after rain, but are dry for much of the year except for a few unconnected pools in sheltered places. There are two major areas of permanent open water formed by dams on Wild Dog Creek (Figure 1). 'The Lake', with a surface area of about 3 ha, has parking and picnic facilities and is a focal point for visitors. Further upstream a more secluded smaller pond is surrounded by woodland, with no conspicuous paths to it. Both dams lack emergent or fringing vegetation and neither supports any permanent population of waterbirds. A few small dams are scattered through the park, most of them dry for most of

the time (Figure. 1). Annual rainfall is usually in the 500 mm to 700 mm range and maximum daily temperatures are around 15° C in winter and >30° C in summer, with frequent large variations.

The Management Plan (1993) contains a more detailed description of the geology, climate and vegetation of the park plus some information on its fauna.

SURVEY METHODS

The survey consisted of a series of 150 exploratory walks from May 2002 to May 2006, covering all publicly accessible areas of the park. Species sightings and related observations such as weather, times and routes were recorded on a pocket tape recorder and were transcribed later to a computer for analysis.

To monitor geographical differences and to localise the sightings the total area was divided into 13 contiguous 'localities'. Visits were spread as evenly as practicable across localities and across months of the year so that each locality was visited on several occasions at different seasons. The surveys used the network of walking tracks, but most areas without tracks were also surveyed. A typical visit would start within an hour of sunrise, last for about 3-5 hours with a walk of 3-5 km over 1-3 adjacent localities. There were a few visits at other times, generally shorter and timed to finish at dusk, plus one during darkness to several peripheral parts of the park. A few localities received less than optimal coverage due to difficult terrain or the long walks needed to reach them.

It was not considered useful or practicable to record the numbers of all birds seen though exact counts of sightings and numbers were recorded when of particular interest. To obtain some indication of numbers, after a visit each species was allocated to one of five levels of observability based on the number of distinct sightings of individuals or cohesive groups. The

observability status of each species (on a per visit basis) follow the criteria in SAO 2008.

On many occasions birds were detected but remained unidentified, usually because of fleeting glimpses or of unrecognised calls. Such events were recorded only if the details were of particular interest.

DATA ANALYSIS

Pattern of visits

Morning visits comprised 70% of the total, the remainder being in the late afternoon, except for a few shorter visits during the main part of the day or the evening. The mean interval between visits was 9.4 days, with a range of 2 - 62 days. Over the four years there were three atypical intervals of 43, 53 and 62 days but these gaps were in different years and were covered in other years. The visits had a mean duration of 3.5 hours, with a range of 1.0 hours - 9.3 hours. Even geographical coverage of the park would have required 11 to 12 visits to each locality: in fact, there were between 8 and 18. Even coverage in time would have required 13 visits over the four years in each month: actual counts of visits per month varied from 8 to 24. The differences are probably of little significance given that visit patterns differed from year to year and significant changes in the bird life are unlikely to occur on a monthly basis.

SPECIES RECORDS

The summaries give the sighting frequency, as a percentage, seasonal status and evidence of breeding for each species detected in the survey. Sighting frequency (sf) is the percentage of surveys on which each species was detected, (Number of visits on which the species was seen / total visits) x 100. Resident means only that sightings were recorded in all seasons. Taxonomy follows Christidis and Boles as in SAO (2008).

Emu *Dromaius novaehollandiae* 31%. **Br.** Moderately common resident after reintroduction. Scattered throughout the central and northern sections of the park in small numbers. One sighting in the southern section. Nesting and young accompanied by an adult were noted.

Australian Wood Duck *Chenonetta jubata* 7%. Uncommon visitor, late winter to summer. Two to twelve occasionally seen at the lake, the upper dam, the South Para River and the southern section.

Grey Teal *Anas gracilis*
Vagrant. Two on the upper dam after a very wet period, September 2004.

Pacific Black Duck *Anas superciliosa* 21%. **Br.** Moderately common resident and visitor in small numbers. Regular at the lake, usually one or two, occasionally elsewhere. Found with newly hatched chicks on creeks distant from the lake.

Australasian Grebe *Tachybaptus novaehollandiae* 3%. Rarely observed autumn/winter visitor. Isolated appearances at the lake and the upper dam, April to September.

Common Bronzewing *Phaps chalcoptera* 61%. **Br?** Common resident October to April, fewer May to September. Usually singly but up to five seen feeding together. No nests or young recorded but persistent calling on many spring/summer visits suggesting breeding activity.

Brush Bronzewing *Phaps elegans* 20%. **Br?** Moderately common resident, fewer June to September. Mostly single birds but up to three seen together. Evidence of possible breeding as for Common Bronzewing.

Peaceful Dove *Geopelia striata* 42%. Common resident, widely distributed. Winter records less frequent, possibly because of reduced calling.

Tawny Frogmouth *Podargus strigoides* 1%. Rarely observed, only two sightings, one bordering Wild Dog Creek, October 2004, (Figure 1) two together in Hamlin Gully, north of Mack Creek, (Figure 1, location 3) October 2005.

Australian Owlet-nightjar *Aegotheles cristatus* Vagrant? One record, a single bird in May 2003. May be uncommon resident, a neighbouring resident stated he had often seen owlet-nightjars at night.

Australian Darter *Anhinga novaehollandiae* 3%. Rarely observed transient, one at the lake briefly, December 2003. Stayed a few minutes after a preliminary circle overhead and being disturbed by visitors.

Little Pied Cormorant *Microcarbo melanoleucos* 8%. Uncommon visitor, usually singly, seen at the lake and upper dam.

Great Cormorant *Phalacrocorax carbo* Rarely observed visitor. An immature bird at the lake, February 2005; four flying low up the valley of the South Para River, April 2005.

Pied Cormorant *Phalacrocorax varius* Vagrant, seen once at the upper dam, May 2006.

White-necked Heron *Ardea pacifica* Rarely observed transient, seen passing overhead September 2004.

White-faced Heron *Egretta novaehollandiae* 10%. Uncommon visitor in the summer months, not recorded May to September. Usually singly, on occasions two together.

Australian White Ibis *Threskiornis molucca* 2%. Rarely observed transient, singles seen at the lake, December 2003 and November 2005, and at the South Para River, February 2004.

Square-tailed Kite *Lophoictinia isura* Rarely observed visitor, a single bird present

October 2005 to February 2006. (Editors Note: breeding was recorded in the park in 2010 and there is now evidence of previous breeding in the Williamstown area of the MLR).

Whistling Kite *Haliastur sphenurus* Rarely observed visitor, singles seen July 2003 and December 2004.

Brown Goshawk *Accipiter fasciatus* 13%. Br. Moderately common. Mainly a late winter to mid-summer resident. Successful breeding recorded. Seen in all three sections of the park.

Collared Sparrowhawk *Accipiter cirrocephalus* 4%. Rarely observed visitor, September to February. Seen in all three sections of the park.

Wedge-tailed Eagle *Aquila audax* 8%. Uncommon. Intermittent sightings, sometimes two birds. Usually soaring but also seen in the valleys and perched in a tree.

Little Eagle *Hieraetus morphnoides* Rarely observed transient, seen once, October 2004, at the road crossing of the South Para River.

Nankeen Kestrel *Falco cenchroides* 2%. Rarely observed. Four scattered sightings of single birds passing over (July and November 2002, April 2004 and November 2005).

Australian Hobby *Falco longipennis* Rarely observed transient, seen along the western boundary ridge, February 2005.

Peregrine Falcon *Falco peregrinus* 4%. Br. Rarely observed spring/summer visitor. All sightings in the valley of the South Para River, between September and February. Successful rearing of two young recorded.

Painted Button-quail *Turnix varius* 10%. Br? Uncommon, probably resident but no sightings June to August. Two adults accompanied by three smaller juveniles suggestive of breeding in the park.

Galah *Eolophus roseicapillus* 73%.

Common resident, most numerous May to November; usually one or two roosting.

Sulphur-crested Cockatoo *Cacatua galerita* 8%.

Uncommon visitor to NW and SE, records scattered over eight months in four years.

Rainbow Lorikeet *Trichoglossus haematodus*

Rarely observed transient, three in flight, January 2006.

Musk Lorikeet *Glossopsitta concinna* 61%. Br?

Common resident, numbers fluctuate widely, sometimes absent for long periods.

Purple-crowned Lorikeet *Glossopsitta porphyrocephala* 15%.

Moderately common, irregular visitor, possibly resident. Easy to overlook among the many Musk Lorikeets. Flocks of 20-30 noted on several occasions, June 2004 to May 2005.

Crimson (Adelaide) Rosella *Platycercus elegans* 94%.

Common resident.

Red-rumped Parrot *Psephotus haematonotus* 12%.

Moderately common; predominately a spring/early summer visitor.

Mulga Parrot *Psephotus varius*

Rarely observed transient, a pair perched near Quarry Track gate (Figure 1, location 1), October 2005.

Elegant Parrot *Neophema elegans*

Rarely observed transient, one seen in December 2003.

Horsefield's Bronze-Cuckoo *Chalcites basalus* 7%.

Uncommon spring/summer visitor. All sightings November to January.

Pallid Cuckoo *Cacomantis pallidus* 2%.

Rarely observed late spring and summer visitor, recorded November 2004 and January 2006.

Fan-tailed Cuckoo *Cacomantis flabelliformis* 12%. Br?

Moderately common summer visitor, with single records in May, July and August. Birds in immature plumage seen twice.

Southern Boobook *Ninox novaeseelandiae* 3%.

Rarely observed, possible resident. Five sightings in October/November and April/May.

Laughing Kookaburra *Dacelo novaeguineae* 53%. Br.

Common resident. Young seen with adults.

Sacred Kingfisher *Todiramphus sanctus* 5%.

Uncommon spring/summer visitor, all records October to February. Single birds seen in widely separated locations.

Rainbow Bee-eater *Merops ornatus* 12%.

Moderately common late summer/autumn visitor, records January to March. Sometimes numerous but does not stay long.

White-throated Treecreeper *Cormobates leucophaeus* 14%.

Moderately common resident, widely distributed. Prefers lower creek valleys, particularly in the southern section near Mack Creek (Figure 1, location 3). Not seen in the northern section.

Brown Treecreeper *Climacteris picumnus* 24%.

Moderately common resident. Distribution sometimes overlapped with White-throated Treecreeper but prefers drier habitats.

Superb Fairy-wren *Malurus cyaneus* 91%.

Common, widely distributed, resident.

White-browed Scrubwren *Sericornis frontalis* 16%. Br?

Moderately common with a patchy distribution. Probably resident but not recorded June to August. Mixed parties of adults and juveniles were seen.

Weebill *Semicornis brevirostris* 71%.

Common resident.

Striated Thornbill *Acanthiza lineata* 22%. Br.
Moderately common resident. A pair observed tending a nest, November 2005.

Yellow Thornbill *Acanthiza nana* 13%.
Moderately common resident.

Yellow-rumped Thornbill *Acanthiza chrysorrhoa* 18%.
Moderately common, spring/summer, few autumn/winter records.

Buff-rumped Thornbill *Acanthiza reguloides* 61%. Br?
Common widespread resident, the commonest thornbill.

Brown Thornbill *Acanthiza pusilla* 6%.
Uncommon, probably resident, nine sightings scattered across the year.

Spotted Pardalote *Pardalotus punctatus* 6%.
Uncommon autumn/winter visitor. Nine sightings of single birds all March to September. May have been overlooked amongst commoner Striated Pardalotes.

Striated Pardalote *Pardalotus striatus* 88%. Br?
Common to abundant everywhere. Seen entering and leaving apparent nesting holes.

Eastern Spinebill *Acanthorhynchus tenuirostris* 29%.
Moderately common resident or visitor seen in small mobile flocks. In the first 19 months of the survey Eastern Spinebills were encountered on only three visits yet in the remaining 29 months they were seen on 41 visits.

Yellow-faced Honeyeater *Lichenostomus chrysops* 67%.
Common and widespread, mid April to mid December, few sightings outside this period. One of the three commonest honeyeaters with Crescent and New Holland Honeyeaters.

White-plumed Honeyeater *Lichenostomus penicillatus* 28%.
Moderately common resident, rather localised around the lake, along the South Para River, or lower Wild Dog Creek.

Red Wattlebird *Anthochaera carunculata* 90%.
Common resident, less numerous December to March.

Tawny-crowned Honeyeater *Glyciphila melanops* 2%.
Rarely observed winter/spring visitor, staying only a few weeks.

Crescent Honeyeater *Phylidonyris pyrrhopterus* 79%. Br?
Common resident, numerous and widespread. Seen and heard less frequently November to February. One of the three commonest honeyeaters.

New Holland Honeyeater *Phylidonyris novaehollandiae* 74%.
Common and widespread resident. One of the three commonest honeyeaters.

Brown-headed Honeyeater *Melithreptus brevirostris* 29%.
Moderately common resident, mobile, sightings irregular, usually in small flocks.

White-naped Honeyeater *Melithreptus lunatus* 20%.
Moderately common resident or visitor, irregular sightings of noisy mobile flocks in central section.

White-browed Babbler *Pomatostomus superciliosus* 35%.
Common resident, somewhat localised.

Varied Sittella *Daphoenositta chrysoptera* 8%.
Uncommon resident or irregular visitor with no seasonal pattern.

Black-faced Cuckoo-shrike *Coracina novaehollandiae* 30%.
Moderately common resident; sightings irregular, few April to June. Often seen singly but also parties of up to five.

Golden Whistler *Pachycephala pectoralis* 46%. Br?
Common widely distributed resident.

Rufous Whistler *Pachycephala rufiventris* 35%. Br?
Common widely distributed summer visitor, September to March. Immature birds seen several times.

Grey Shrike-thrush *Colluricincla harmonica* 75%.
A common and widely distributed resident.

Dusky Woodswallow *Artamus cyanopterus* 4%.
Rarely observed summer and autumn visitor, December to early May. Flocks seen high overhead also thought to include Masked and/or White-browed Woodswallows.

Grey Butcherbird *Cracticus torquatus* 5%
Uncommon, autumn and winter. Heard eight times February to June.

Australian Magpie *Cracticus tibicen* 94%.
Common resident. Occasionally found in the woodland interior but commoner in the open.

Grey Currawong *Strepera versicolor* 92%. Br.
Common resident, widespread, mostly single birds. Adult observed with two brownish and downy juveniles.

Grey Fantail *Rhipidura albiscapa* 62%. Br?
Common resident, records in all months, but long periods with no or very few sightings. Commonly found in the lower levels of valleys and gullies. Usually one or two but up to five seen. Often tame, hawking closely around an observers head, particularly brownish juveniles.

Willie Wagtail *Rhipidura leucophrys* 2%.
Rarely observed, only two definite records (May 2002, May 2004). Heard on four other occasions.

Australian Raven *Corvus coronoides* 9%
Uncommon visitor, March to October. Three in April and June 2004, October 2005 were positively identified on the basis of size, conspicuous gular pouch, and slower and heavier movements compared with Little Raven.

Little Raven *Corvus mellori* 54%.
Common 'resident', occurs widely and regularly.

Restless Flycatcher *Myiagra inquieta*
Vagrant summer visitor. Only two records February 2005 and January 2006, both in the central section near Wild Dog Creek.

Magpie-lark *Grallina cyanoleuca*
Vagrant, surprisingly only a single record, November 2002.

White-winged Chough *Corcorax melanorhamphos* 65%. Br.
Common resident. Groups of 5 to 15 at nests with young and there were many old nests.

Jacky Winter *Microeca fascinans* 6%.
Uncommon resident or infrequent winter visitor. All records of 1-2 birds in March-September except one in November, mainly from the North Oval to the Knob (Figure 1, location 4).

Scarlet Robin *Petroica boodang* 24%. Br?
Moderately common resident. Records spread throughout the year but sometimes not encountered for months.

Hooded Robin *Melanodryas cucullata* 4%.
An uncommon resident or autumn to spring visitor. Seven sightings scattered across the year at various locations, three near the Quarry Track gate (Figure 1, location 1).

Silvereye *Zosterops lateralis* 26%.
Moderately common resident, few January-May.

Welcome Swallow *Hirundo neoxena* 14%.
Moderately common resident or visitor, usually seen hawking over or near water. May be under-reported as most surveying is in woodland.

Tree Martin *Petrochelidon nigricans* 21%. Br.
Moderately common resident or frequent visitor, most frequent July-December. Sometimes flocks ~50. In January 2005 observed three young being fed by adults.

Bassian Thrush *Zoothera lunulata*

Song recorded in Hamlins Gully, north of Mack Creek, (Figure 1, location 3) April 2004.

Common Blackbird *Turdus merula* 14%.

Uncommon resident, sightings of single birds scattered and infrequent.

Mistletoebird *Dicaeum hirundinaceum* 18%.

Moderately common resident, sightings irregular. Several records of pairs but mostly single birds.

Red-browed Finch *Neochmia temporalis* 18%.

Moderately common resident, recorded only occasionally, but in all months of the year and from widely separated locations.

Diamond Firetail *Stagonopleura guttata* 5%.

Uncommon, probably resident, but not seen May, August to October, December and January. Mainly singles but groups of three to four. Mainly where Quarry Track crosses the South Para River.

European Goldfinch *Carduelis carduelis*

Uncommon visitor or transient, seen once, a flock of five, March 2004, east of the Wirra Picnic Ground (Figure 1, location 2).

SPECIES OBSERVABILITY STATUS

Over the four years 23 species were rated as common, 25 as moderately common, 17 as uncommon, 23 as rarely observed, and 5 species as vagrant. This grouping generally matches sighting frequency ranges of >35% equivalent to common (C), 10%-35% as moderately common (MC), 5%-9% as uncommon (U), < 5% rarely observed (RO), and one or two sightings (V). Residential and seasonal status is more subjective: for example a few scattered sightings across a year may represent a resident in small numbers, a bird with a localised distribution, or an occasional visitor.

Within the park many birds are mobile,

their locations at any time depending on the distribution of flowering plants and other environmental variables. The mean species count per visit was 23, the counts varying widely with the time of year, time of day, immediate weather conditions and the route chosen. The number of species seen in a visit of average duration varied from eight on a warm, humid, still and overcast afternoon in April 2003 to 42 early on a fine sunny day in October 2004. A rapid decline in activity was often noticeable on hot summer days: many times considerable early morning activity had almost completely ceased on the return journey over much the same ground two to three hours later. Daytime visitors to the park during summer might well see very few birds.

COMPARISONS WITH EARLIER SURVEYS

The results of the survey were compared with the surveys of Clarke (1967) and Ford and Paton (1976) for indications of long term changes. The differing circumstances of the three surveys and the broadness of the data categories mean that the comparisons are necessarily only approximate. The terms common, moderately common and uncommon used in this survey are considered equivalent to the terms abundant, common/frequent and occasional used in the Clarke (1976) and Ford and Paton (1976) papers. Rare in previous studies is treated as equivalent to 'rarely observed' in this study and vagrant and transient are considered the same in all surveys and are grouped as vagrant.

General considerations

Tree and general vegetation is probably denser than it would have been during the previous surveys (Clarke 1967; Ford and Paton 1976) and there is less human intrusion. Sunday visitors do not approach the 2000 or so mentioned by Ford and Paton (1976) and there are few weekday visitors. Most now congregate at the few areas where public facilities still exist and few venture further. Thus the park environment is slowly

changing to a more closed and less disturbed state, though subdivisions along the parks borders may have had some small negative effects. The properties are generally 'bush blocks' but they have brought human activity and environmental change to adjacent regions with possibly mixed results for some birds. For example, the more frequent appearance of Australian Wood Duck is probably related to the increase in dams on adjacent properties. Less positively, cats have been seen in the park at least twice, not a good sign for small birds, and unleashed dogs are sometimes present.

The surveys differed markedly in their coverage. Clarke (1967) took a series of long walks covering the central section moderately

closely in a wet and cool period, Ford and Paton (1976) concentrated their observations at eight sites, also in a wetter than usual period, while the long walks of the present survey were more thinly scattered, over a wider area, with both wet and cold and hot and dry periods. Clarke (1967) made approximately 90 visits in 18 months, and Ford and Paton (1976) 60 visits in 17 months. The 150 visits in 48 months of this survey equates to about 56 visits for a comparable 18 month period. These visit densities may be regarded as an approximate measure of observer effort, which was roughly equivalent in all three surveys, though this survey was over a longer period.

Overall variations in the bird population

Clarke (1967) lists 106 species, Ford and Paton

Table 1. Species observed in 1963-65 (Clarke 1967) and 1973-75 (Ford and Paton 1976) that were not observed in this survey. Their highest status in one of the two previous surveys are indicated using the observability status classifications in SAO 2008.

Species	Status	Species	Status
Chestnut Teal	RO	Southern Whiteface	C
Northern Mallard	MC	Singing Honeyeater	RO
Hoary-headed Grebe	RO	Little Wattlebird	MC
Rock Dove (Feral)	C	White-fronted Chat	U
Spotted Dove	RO	Black Honeyeater	RO
Crested Pigeon	C	Black-chinned Honeyeater	MC
Spotted Nightjar	RO	White-winged Triller	U
White-throated Needletail	RO	Crested Shrike-tit	MC
Little Black Cormorant	U	Masked Woodswallow	U
Brown Falcon	MC	White-browed Woodswallow	U
Dusky Moorhen	RO	Grey Butcherbird	U
Black-fronted Dotterel	C	Red-capped Robin	RO
Masked Lapwing	C	Rufous Songlark	U
Cockatiel	MC	Common Starling	C
Budgerigar	RO	House Sparrow	C
Black-eared Cuckoo	RO	Australasian Pipit	MC
Red-backed Kingfisher	RO	European Greenfinch	U

(1976) list 98 and there were 93 species in this survey, with a total of 130 species overall. I have omitted uncertain identifications from earlier studies which reduces the numbers to 98, 97, 93 and 125, and these are the figures used in the following comparisons. Both sequences appear to indicate a small decline in variety over the last 30 years. Seventy species were listed in all three surveys leaving 55 that were omitted from at least one list. Forty one of these were never rated higher than 'uncommon', and 24 were 'rarely observed'. The two earlier surveys (Clarke 1967; Ford and Paton 1976) collectively listed 34 species not recorded in this survey, which found 10 species not recorded in the two earlier surveys. It is highly unlikely that over a period of 40 years 44 species have either disappeared from the park or become new additions. Of these 44 species 29 were rated no higher than rarely observed or uncommon and 20 were rarely observed or vagrant. Thus the lists contain a high proportion of birds one would expect to see seldom and reflect the differing circumstances of the surveys as much as any significant change in the birdlife between them.

A rough comparison of total numbers can be made by placing species in two groups for each survey, one containing birds recorded as 'abundant', 'common' or 'frequent' ('acf') and one containing birds recorded as 'occasional', 'rare', 'rarely observed' or 'vagrant' ('orv'). Using these groupings 64% of listed species in the 1963-5 survey are in the 'acf' group, 36% in the 'orv' group; in the 1973-5 survey 70% of listed species are in the 'acf' group, 30% in the 'orv' group; and in the 2002-6 survey 43% of listed species are in the 'acf' group, 57% in the 'orv' group.

The differences between 1963-5 and 1973-5 are probably insignificant but the 2002-6 figures imply a reduction in the general abundance of many species although they might also be due to a more conservative assessment of numbers in this survey.

Table 2. Species seen only in the 2002-2006 survey and their ratings.

Species	Status
Australian Darter	RO
Great Cormorant	RO
Pied Cormorant	V
White-necked Heron	RO
Australian White Ibis	RO
Square-tailed Kite	RO
Rainbow Lorikeet	RO
Mulga Parrot	RO
White-browed Scrubwren	MC
Australian Raven	U

VARIATION IN SPECIES ACROSS SURVEYS

Differences in the observability of species detected in the surveys are shown in Tables 1 and 2. Table 1 lists 34 species that were detected in the 1963-5 and 1973-5 surveys but not in the current survey together with the highest status recorded for them. Seven were rated common and seven as moderately common. The notable omissions were Southern Whiteface, *Aphelocephala leucopsis*, House Sparrow, *Passer domesticus*, and Common Starling, *Sturnus vulgaris*. The Southern Whiteface has registered a steady decline from common to moderately common to not observed and appears to be a genuine loss to the park. (Editors comment: Southern Whiteface was a relatively common bird around Adelaide in the early twentieth century). Of the 14 species rated as common or moderately common in earlier surveys, Black-chinned Honeyeater, *Melithreptus gularis*, and Crested Shrike-tit, *Falcunculus frontatus*, are both becoming scarce elsewhere and are a significant loss to the park if they have vanished. The other birds recorded as moderately common on earlier surveys are largely species of other environments, for example Black-fronted Dotterel, *Euseyornis melanops*, Brown Falcon, *Falco berigora*, and Australasian Pipit, *Anthus*

novaeseelandiae, whose appearances would be irregular and infrequent. The remaining 20 species in the table were rated as rarely observed or uncommon in earlier surveys and their absence in the current survey may not be significant.

Table 2 lists 10 species recorded only in this survey and their status. Seven are rated as rarely observed (RO) and represent the chance occurrence of one or two birds in most cases. The Square-tailed Kite, *Lophoictinia isura*, a bird generally scarce in South Australia, was present from October 2005 to February 2006. The White-browed Scrubwren, *Sericornis frontalis*, appears to be an addition to the park but this may be misleading as the sightings were in areas not included in the earlier surveys and it may have been present then.

The 81 birds not listed in Tables 1 and 2 were observed in the present survey and in at least one of the earlier surveys. The status of each was compared across the three surveys for evidence of consistent long-term change (Table 3). To reduce the effects of the difference in circumstances for each survey comparisons were made after each species was rated for an increase or decrease in status. The criteria for increase or decrease were: (a) a difference of at least two levels of abundance between the lowest and highest recorded abundances; and (b) the direction of any indicated change must be the same between successive surveys. Seasonal occurrence was considered too variable to be a decisive factor. Table 3 lists apparent increases and decreases with a brief rationale for each case. Species not included in Tables 1 to 3 are regarded as indeterminate or unchanged.

Many birds appear to have much the same status as 30-40 years ago, or were seen too infrequently for meaningful comparisons. Others appear to have had minor changes in abundance or seasonal status that were within the variability of observation and assessment between the surveys. Table 3 lists four increases

and 16 decreases. For the Brush Bronzewing, *Phaps elegans*, the increase may be illusory, arising from the wider coverage of this survey where its sightings were rather scattered. Four surprising changes were that Willie Wagtail and Magpie-lark were seen so rarely, and that House Sparrow and Common Starling were not seen at all.

THE PARA WIRRA RECREATION PARK BIRD LIST 2000

The *Para Wirra Recreation Park Bird List 2000* lists 137 species seen at the park from 1962 to about 2000 and gives a two or three word summary for each. No details are known of the observations on which the list is based and its data were not used in the comparisons above. Table 4 lists 17 species that appear only on the PW list and gives their observability status. Initially it is surprising that the first two surveys did not record 17 species reported in a period that overlapped those surveys, less so when one considers individual birds. Several are usually associated with more open habitats, two are waterbirds, several wander in response to environmental changes, eight are rated as rare, irregular or uncommon, and three were aviary escapees - though it would be interesting to know how the escapees were identified as such. Thus most of the additional species would be regarded as unusual vagrants or transient visitors rather than as regular components of the Para Wirra bird population. Their absence from survey records further illustrates the difficulty of drawing reliable conclusions from comparisons of disparate lists.

DISCUSSION

This survey detected 93 species showing the park continues to have a varied birdlife, though at times it seemed rather sparse. The latter impression may arise from the significant decline in observable bird activity after the

Table 3. Species with a possible change in status; negative sign indicates decline.

Species	Status	Comment
Australasian Grebe	-	Moderately common in summer to rarely observed
Brush Bronzewing	+	Rarely observed to moderately common resident
Little Eagle	-	Moderately common to rarely observed transient
Purple-crowned Lorikeet	-	Common to uncommon
Red-rumped Parrot	-	Common resident to uncommon spring/summer
White-browed Scrubwren	+	Not recorded in earlier surveys to resident
Weebill	+	Increased abundance in each survey
Yellow Thornbill	+	Rarely observed to moderately common
Horsfields Bronze-Cuckoo	-	Common resident to uncommon spring/summer
Restless Flycatcher	-	Common to rarely observed
Magpie-lark	-	Common resident to vagrant
Jacky Winter	-	Common resident, now uncommon, autumn to spring
Dusky Woodswallow	-	Common resident to uncommon in summer/autumn
Hooded Robin	-	Successive declines, now uncommon, autumn to spring
Willie Wagtail	-	Common resident to uncommon
Welcome Swallow	-	Common to uncommon, seasonal
Mistletoebird	-	Common to uncommon, probably resident
Red-browed Finch	-	Common in two surveys to uncommon
Diamond Firetail	-	Common to uncommon
European Goldfinch	-	Common to rarely observed

usual early morning burst. Twenty-three species were rated as common, 25 as moderately common, and 40 as uncommon or rarely observed. The sections on species records defines these terms and lists the abundance, seasonality and any detected breeding activity for each species. There was positive evidence of breeding for eight species and indications of possible breeding for another 14, usually nest building activity or the appearance of young birds associating with apparent parents. Events of particular interest included isolated occurrences of a Darter a White-necked Heron and a pair of Mulga Parrots plus the successful breeding of Peregrine Falcon, *Falco peregrinus*.

Also notable were the presence of a Square-tailed Kite in the 2005-6 summer, and several sightings of White-browed Scrubwrens all birds not seen in the earlier surveys. Notable absences were House Sparrow and Common Starling and there were unexpectedly few Willie Wagtails and Magpie Larks though Willie Wagtails were present in areas adjacent to the park. The generally dry conditions and lack of muddy shorelines may account for the near absence of Magpie Larks. All four species were rated 'common' in the earlier surveys.

The survey comparisons indicated that in any period of a year or two around 90-100 species

appear in the Para Wirra Recreation Park. Approximately 60-70 are residents or reasonably frequent visitors and 30-40 occur infrequently or rarely, the composition of this latter group varying widely between surveys. Comparing species across surveys provide reasonable evidence for an increase in four and a decline in 16, but the surveys list a high proportion of species rated as uncommon, occasional or rare, complicating attempts to distinguish significant changes from those due to chance. The comparisons suggested a possible decline in species diversity from 1974 to 2006 and possibly some decline in the total numbers of birds.

The geographical position of the park has a bearing on the variability of the species lists. To the west and north-west are the Adelaide Plains, to the north, east and south a variety of wooded country, and a kilometre or so to the east two large bodies of permanent water, the Barossa and South Para Reservoirs. Each area supports species one would not expect to see often in the park but wanderings and interchanges between these areas would explain some of the occasional appearances of birds that are not park residents or regular visitors. Although the 'Para Wirra Park List 2000' was not used in the comparisons, that it contains 17 species not detected in two of the surveys further illustrates the effects of chance in records of bird sightings.

The park remains a valuable conservation reserve and public facility. It has a varied birdlife of considerable interest and must be protected from encroachment by the development activities now taking place around it. The reduction in visitor activities in recent years should assist in returning it to a natural state and may lead to the attraction of species not currently present but often found in similar environments elsewhere. It is unfortunate that the open land to the west was not acquired prior to its recent subdivision. It would have added a new habitat of open grasslands and wooded valleys that would have further enhanced the recreational value, physical

Table 4. Species on the Para Wirra list but not recorded on any of the surveys.

Species	Status
King Quail	aviary escape
Hardhead	U
Great Crested Grebe	RO
Black-shouldered Kite	U
Black Falcon	V
Yellow-tailed Black-Cockatoo	U
Little Corella	U
Australian Ringneck	aviary escape
Scarlet-chested Parrot	aviary escape
Shining Bronze-Cuckoo	U
Barn Owl	resident?
Chestnut-rumped Thornbill	RO
Yellow-plumed Honeyeater	V
White-fronted Honeyeater	U
Skylark	U
Brown Songlark	RO
Zebra Finch	U

attractiveness and conservation importance of the Para Wirra Recreation Park.

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