DECLINE OF THE YELLOW-RUMPED THORNBILL IN AN URBAN PARKLAND

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SUMMARY

This paper documents the decline in range and numbers of the Yellow-rumped Thornbill *Acanthiza chrysorrhoa* in the parklands around inner Adelaide between 1974 and 1995. The species was distributed over most of the parklands in 1974, but is now restricted to the southern part, where it survives in small numbers in two areas. Possible causes for the decline, including habitat change, are considered.

INTRODUCTION

The Yellow-rumped Thornbill *Acanthiza chrysorrhoa* is a common bird across southern Australia (Blakers *et al.* 1984), including most of South Australia (SAOA 1985). MacDonald (1973) describes its habitat as open woodlands and various kinds of savannah and notes that it frequently feeds on the ground. Blakers *et al.* (1984) add that it prefers fern-leaved acacias *Acacia* spp., pines *Pinus* spp. and native pines *Callitris* spp.

The species has been consistently recorded over a twenty-one year period from August 1974 to June 1995, in the parklands surrounding the inner city of Adelaide and suburban North Adelaide. This belt of parklands is about 700 ha in area and has a variety of habitats, with many native and introduced trees and large open areas, some of them kept green through the summer by regular watering. Human activity in the area ranges from heavy in some areas where sports are played on weekends, to very light in some other areas.

Counts of all bird species were made along regular transects at approximately monthly intervals for nearly all of this 21 year period. Over the period the Yellow-rumped Thornbills have disappeared from most of the areas where they were recorded early in the survey. This paper documents the decline and disappearance of the species in some parts of the parklands and considers some possible reasons for the change.

METHODS

Six winding transects, each about 6 km long, were established. Figure 1 shows the parklands with these transects.

For each month from July 1975 to June 1995, each transect was walked once, the six visits usually being spread over two days in the first three weeks of the calendar month. No time constraint was placed on the length of a visit, but 80 to 120 minutes were usually spent walking each transect. Minor detours off the transect line were allowed for unusual sightings or for checking doubtful identifications. All identified birds were counted and recorded.

Similar transects were visited at least once a month during the earlier period August 1974 to June 1975, and all species were recorded in smaller areas, but mostly without counts.

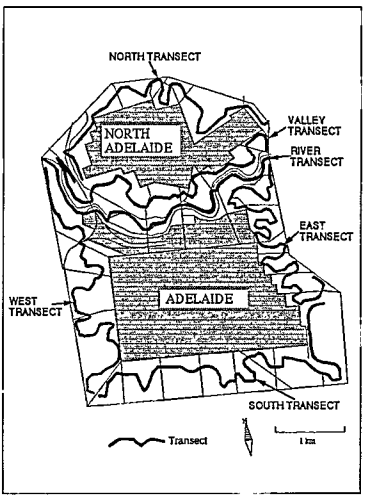

Figure 1. Transects in the Adelaide Parklands.

Details of the exact locations where Yellow-rumped Thornbills were seen were recorded sometimes in the first few years, then consistently in later years.

RESULTS

The sites where Yellow-rumped Thornbills were recorded fell naturally into six distinct groups. Figure 2 shows these groups, labelled A–F.

Table 1 shows the mean of the twelve counts for each year (July–June) in each group of sites, and documents when the Yellow-rumped Thornbills disappeared from various parts of the parklands. In 1974–75 there were birds at sites in all six groups, but they have disappeared from four of the groups, remaining in just two groups in southern areas. The means show that in site group(s):

- A, the species declined rapidly from 1978–79 and was last recorded in 1980–81;
- B and C, the species was recorded only before June 1977;
- D, the species declined from about 1986–87 and was not recorded after June 1993; and
- E and F, there have been fluctuations but no signs of decline.

Monthly records of the numbers and frequency with which Yellow-rumped Thornbills were sighted in each site group provide further details. These follow.

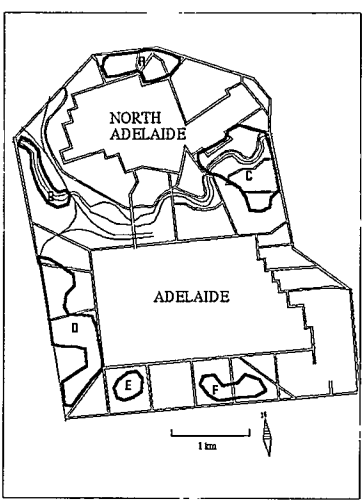

Figure 2. Groups of sites where thornbills were recorded.

Group A

Sites in this group where Yellow-rumped Thornbills were seen were spread over about 600 m and supported various tree species. Up to 15 birds were recorded in 1975–76. From 1978–79, birds were recorded in numbers no more than four, in fewer than six visits each year, and mostly in one site with introduced pine trees and watered lawns. The last record was of a single bird heard calling in November 1980. No breeding was recorded in this area.

Group B

There was only one record here, of birds near the River Torrens in June 1975.

Group C

Sites in this group ranged over about 500 m and straddled the River Torrens. Trees varied greatly in species and density, and most open areas were watered. Records were irregular, and the largest number of birds recorded was five, including three in a thorny hedge enclosing a city council plant nursery. This record was also the last, in February 1977.

There was one breeding record, of adults with juveniles in January 1975.

Group D

This group ranged over about 2 km and included a variety of trees, open areas both watered and unwatered, and a large cemetery. Up to 18 birds a visit were recorded in the first few years, but the numbers declined steadily after that. During the decline, birds became confined to a single site, and the last record was in February 1993.

There were two breeding records: two young in December 1977; and one young in January 1979.

Groups E and F

Group E has unwatered open areas with several groups of pine trees. All records were of birds in or near the pines. Young were recorded in the

Table 1. Mean numbers of Yellow-rumped Thornbills counted in the parklands of Adelaide from August 1974 to June 1995. Each number is the mean of twelve monthly counts for July–June, and "+" indicates presence in 1974–75. Site groups are shown in separate columns, excepting groups E and F which were not distinguished in the records in early years and are left combined.

	Site Groups					
Year	A	B	C	D	E+F	Total
1974–75	+	+	+	+	+	+
1975–76	4.5	–	0.4	5.0	4.5	14.4
1976–77	2.1	–	0.4	4.2	2.8	9.4
1977–78	4.8	–	–	6.2	4.2	15.3
1978–79	0.6	–	–	2.0	5.2	7.8
1979–80	0.6	–	–	1.9	6.7	9.2
1980–81	0.6	–	–	3.8	8.0	12.4
1981–82	–	–	–	6.1	7.7	13.8
1982–83	–	–	–	4.3	5.2	9.5
1983–84	–	–	–	4.2	10.3	14.6
1984–85	–	–	–	3.7	7.8	11.5
1985–86	–	–	–	3.7	8.8	12.5
1986–87	–	–	–	1.8	6.9	8.8
1987–88	–	–	–	1.7	5.2	6.8
1988–89	–	–	–	1.8	7.1	8.8
1989–90	–	–	–	1.2	6.2	7.5
1990–91	–	–	–	2.4	6.6	9.0
1991–92	–	–	–	1.3	5.8	7.1
1992–93	–	–	–	0.3	6.5	6.8
1993–94	–	–	–	–	5.1	5.1
1994–95	–	–	–	–	6.3	6.3

pines in December 1979, January 1982, October 1983, February 1984 and October 1990.

Group F extends over about 500 m and has watered and unwatered open areas adjoining avenues of deciduous trees. All records were of birds in or near these trees. Young were recorded in November 1981 and January 1986, and birds were building a nest in September 1987.

The total numbers of Yellow-rumped Thornbills at sites in these groups did not vary overall from 1974 to 1995.

DISCUSSION

In groups A and D, the declines were similar. After a strong presence over several years, numbers fell and records became less frequent. Birds remained at one site for at least two years after the last record elsewhere in the group.

In group D, there were changes before the decline – numbers in the final "core" site fell and records became more frequent at other sites. There were no breeding records for the last 13 years that the birds were present, but the survey method is not particularly suited to detecting breeding of this species, so later breeding may have been overlooked.

In groups B and C, records were of a few birds only, near the beginning of the survey, so it is not clear whether the birds were at the end of a long decline or merely temporarily present.

Over the time of the survey, there have been many changes in the survey area that might have affected the birds at some of the sites. These include:

- The removal of shrubs, including hedges, in some areas.
- Extensive planting of trees (called "afforestation" by the city council) in some formerly open areas, and installation of trickle irrigation systems for the trees. This occurred in parts of groups A, D and E (but after the disappearance of the species in group A).
- Cessation of horse grazing in a few small areas, including one in group D.
- Reduced maintenance of the cemetery in group D (affecting the growth of weeds there), the relocation of a road, and the recent removal of a city council depot and small rubbish tip nearby.

Some of these changes may have contributed to the decline of Yellow-rumped Thornbills but they do not seem to have affected the range of habitats enough to have eliminated the species. It is possible that some subtle feature of the vegetation, such as the presence of favourable grass species, has affected the distribution and history of the bird in this area.

Most areas of the parklands are deficient in understorey, and exposure to predators may have contributed to the decline of the species.

The highest numbers in site groups E and F occurred several years after the start of the survey. This suggests that birds might have been moving here from group A or other places outside the survey area. It is also possible that numbers were generally higher at the start of the survey because birds were being driven to the parklands by loss of habitat elsewhere around Adelaide.

Paton *et al.* (1994) showed that this species is widespread in the Adelaide region and did not decline in distribution between surveys in 1974–75 and 1984–85, but they did not comment on

possible changes in numbers.

CONCLUSION

The Yellow-rumped Thornbill has declined in numbers and range in the parklands around inner Adelaide since 1974. It was formerly distributed over most of the parklands but is now restricted to the southern part where it survives in small numbers in two areas. The average number counted in the parklands has declined from 14.4 in 1975–76 to 6.3 in 1994–95. While some habitat changes in the area have taken place, these are unlikely to have caused the species to decline.

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