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Results from Banding Eurasian Coots in Victoria, 1953—1977

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Results obtained during banding of Eurasian Coot *Fulica atra* in Victoria (3 177), South Australia (413) and New South Wales (32) between 1953 and 1977 are summarised, as are details of subsequent recoveries. Coots on the lake system of the Serendip Wildlife Research Station, Victoria (where trapping was more regular) were also counted between September 1969 and October 1977. Trap totals were higher in October, and between March and June. Only 65 coots banded in Victoria have been recovered, 45 at the original banding site. The average distance travelled by the other 20 birds was 295 km (± SD 230) and only four coot moved more than 500 km. Distant recoveries were usually on or near coastal wetlands. Recoveries (2% of banded birds) were usually made within a year of banding and, though 50% were found dead, few (5.6%) were reported as shot. Mean weights of birds caught at Serendip increased between June and November. Counts made there were variable (maximum in May), but the numbers were not related to water-level or recent rainfall. Presumably coot, which use some wetlands as non-breeding habitat, disperse there in response to local conditions elsewhere.

Introduction

In some countries where the coot is important in annual hunting harvests, various aspects of the specie's ecology has been reported (e.g. Gullion 1952; Jahn and Hunt 1964; Visser 1974, 1976). However, although Eurasian Coot are found widely throughout Australia, they have been little studied. This note summarises data obtained on coot during studies on other waterfowl.

Method

Between 1953 and 1977 coot were caught in grain-baited traps at 19 sites in Victoria, at Bombala in New South Wales and at Yalkuri in South Australia, during waterfowl-banding operations conducted by the Fisheries and Wildlife Division, Victoria. At the Serendip Wildlife Research Station (38°01′ S., 144°25′ E.), near Geelong, many coot were weighed on banding and recapture. Some were examined fluoroscopically to determine the incidence of lead shotgun pellets (see Norman 1976), and wing chords were measured occasionally. Only bands issued by the Fisheries and Wildlife Division, Victoria and recoveries relating to their return from dead birds are considered in this paper.

The numbers of coot on the Serendip lake were recorded monthly between October 1969 and October 1977 and comparison is made with the water level in the main lake, usually recorded within 24 hours of the count (other levels were obtained by extrapolation). Rainfall data used below were collected on the Station.

Results

Banding, recapture and recovery totals

A total of 3 177 coot was banded in Victoria between 1953 and December 1977. Of these, 933 (29.4%) were caught at Lake Rosine in 1960-1961, 904 (28.5%) at Serendip (1953-1977), 506 (15.9%) at Lake Muirhead (1956-1960) and 383 (12.1%) at Lake Martin (1957-1962). A further 413 were banded at Yalkuri, S.A. and 32 at Bombala, N.S.W.

Details from the more extended period of trapping at Serendip are summarised in Table 1, which also shows capture and recapture totals per trap-day. Totals are given for two periods, 1953-1969, when intervals between trapping sessions were irregular, and 1969-1977, when birds were trapped for two and a half days every fourth week.

The percentage distribution of banding totals shows maxima in March and May, though these were modified by trapping effort. Captures of unbanded birds were higher in October (1953-1969) and March (1969-1977), and catches of all birds (both banded and unbanded) were higher in March to May (1969-1977) or June (1953-1969) and October (1953-1969). The irregularity of trapping at sites other than Serendip resulted in the recaptures of few banded birds. Even at Serendip most birds were recaught within four weeks of banding (50 of 70 recaptures); only five were recaught more than 26 weeks after banding.

Of the coot banded in Victoria, only 65 (2.0%) had been recovered by December 1977, 45 (69.2%) of the recoveries at the original banding site. For those recovered away from the banding site the average distance travelled was 295 km (± S.D. 230, range 12-725 km), seven were recovered between 200 and 500 km and four moved more than 500 km. In general, recoveries were made near or on larger wetlands near the coast in Victoria and New South Wales (though one coot released near Serendip was recovered at Broken Hill). Most birds (82% of 61) were recovered within 12 months of banding, though the elapsed time for one bird was 63 months. Shooting provided few recoveries (5.6% of the 54 recovered by known methods); most birds were found dead (50%) or were killed (by predators) in traps or nets (37%).

Four of the coot banded in South Australia were recovered, as was one from Bombala; of these only one from Yalkuri was recovered away from the banding site (200 km).

TABLE 1

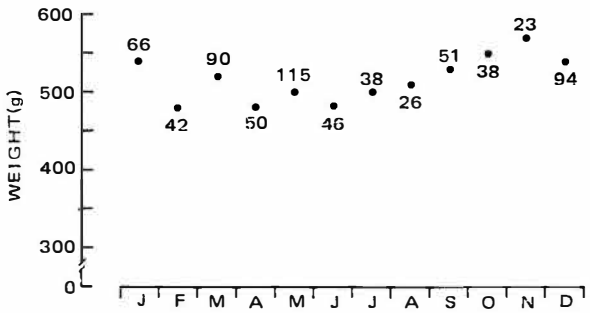
Banding totals (as %) for Eurasian Coot at Serendip, 1953-1977, compared with trapping effort (number per day)

	MONTH												Total coot banded
	J	F	M	A	M	J	J	A	S	O	N	D	
Percentage of total													
1953-1969	13.3	8.2	10.1	9.7	26.2	3.6	0.2	0	0.8	9.3	4.8	13.9	497
1970-1977	4.4	8.4	23.8	13.0	17.4	6.1	5.4	3.4	5.7	2.9	3.9	5.4	407
all years	9.3	8.3	16.3	11.2	22.2	4.8	2.5	1.5	3.0	6.4	4.4	10.1	904
Catch per day (new bandings)													
1953-1969	0.5	0.4	0.6	0.3	0.7	0.3	0.1	0	0.6	2.9	0.5	1.1	
1970-1977	0.7	1.4	3.2	1.8	2.3	0.9	0.9	0.6	0.9	0.5	0.7	0.9	
all years	0.5	0.6	1.3	0.6	0.9	0.5	0.6	0.6	0.8	1.4	0.6	1.1	
Catch per day (all birds)													
1953-1969	1.5	1.2	2.6	1.8	2.4	3.4	1.7	0	0.7	4.7	0.7	1.7	
1970-1977	1.2	1.8	4.7	2.9	3.6	2.6	2.3	2.6	3.0	0.9	0.8	1.3	
all years	1.4	1.3	3.2	2.0	2.6	3.1	2.0	2.6	2.5	2.4	0.7	1.6	

Weights and weight changes

The mean monthly weights of all coot caught at Serendip between 1953 and 1977 are given in Figure 1. Apart from an increased mean weight between June and November (525 g, n = 316) no trend was apparent, perhaps a result of the inclusion of varying proportions of unidentified juvenile birds which also may have contributed to the fluctuation of monthly weights between January and May (500 g, n = 363). For the 323 birds weighed on first capture the mean weight was 510 g (± S.D. 70.9, range 305-725 g).

Whilst the length of wing chords generally increased with weight, initially at least, the correlation was poor (r = 0.543) and the inability of separating juveniles from adults, and males from females negates further analyses. The mean wing chord for newly-caught birds was 184 mm (± S.D. 8.1, range 162-200 mm, n = 323).



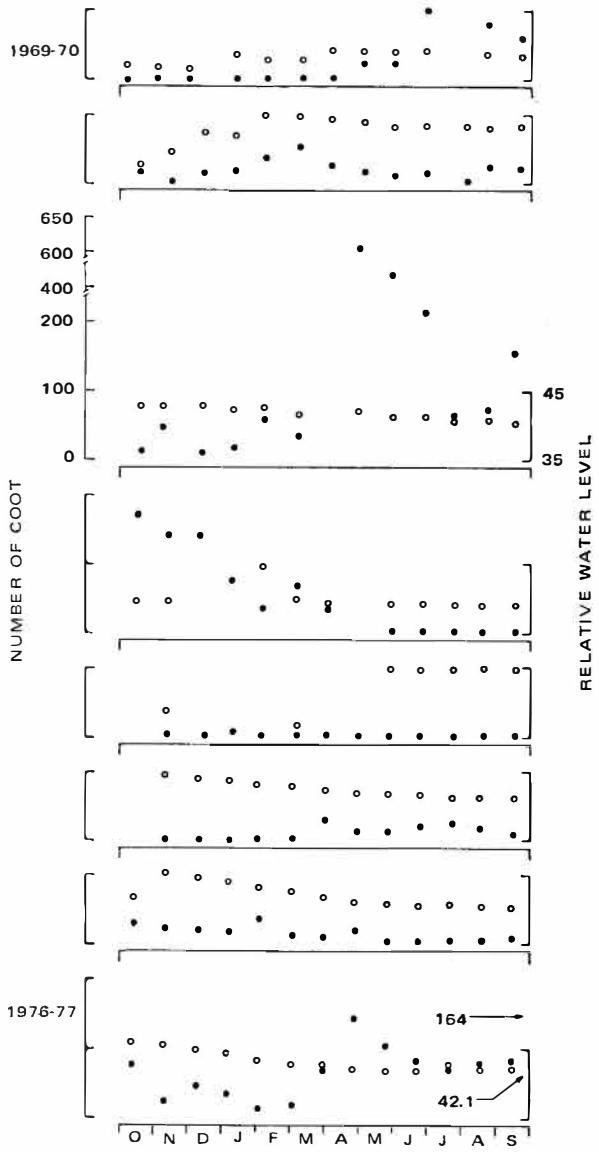
● Figure 1. *Mean monthly weights of coot caught at Serendip, Victoria between 1953 and 1977 (sample sizes indicated).*

Fluoroscopic examination

Norman (1976) reported on the fluoroscopic examination of 603 coot caught between 1953 and 1973, only 9 (1.5%) of which held shotgun pellets. Since 1973, a further 181 have been X-rayed, but none held pellets.

Count totals

The mean number of coot counted at Serendip between September 1969 and October 1977 was 44 (± S.D. 86.2, range 0-605, n = 100). Count totals per month are given in Figure 2, which also shows water levels on the main lake. In general, more coot were present in May (136) and October (67) than in other months (21-51).



● Figure 2. *Numbers of coot at Serendip, Victoria (●) and water level (0), September 1969 - October 1977.*

However, count totals varied considerably from year to year (see Fig. 2). There was no significant linear relationship between numbers and water levels ($r = 0.069$ for counts and levels taken within 24 hours, $n = 67$; $r = 0.01$ for all levels, $n = 94$), nor did numbers show a significant response to rainfall in the preceding month ($r = 0.007$, $n = 100$). Transformation of variables, whilst slightly increasing the regression coefficient, did not produce any significant correlation.

Discussion

The Eurasian Coot is considered to be a nomadic species, preferring larger and deeper waters (Frith 1969, McDonald 1973), and it may be as dispersive as Grey Teal *Anas gibberifrons* (Briggs 1977). Compared with some other waterbirds very few coot are shot (this apparently low level of shooting sustained by coot is also reflected in the low incidence of pellets in body tissues). However, the few recoveries made of Victorian-banded birds do indicate movement from banding sites to coastal areas, or at least to the more permanent wetlands. Since data collected at Serendip do not allow ageing (or sexing) of individual coot, it is not possible to determine relative dispersal in age groups, nor to suggest the age distribution of birds on the lake. Since few coot breed at Serendip, the influxes of birds recorded there were presumably of non-breeding birds moving in from other areas.

Missen and Timms (1974) considered that the numbers of coot recorded at Lake Purrumbete (a deep, volcanic freshwater lake in western Victoria) were higher in autumn and winter, and declined between July and October. At Serendip, where most of the lake is shallow but permanent, counts and banding totals showed major variations between months and years. Indeed, the coefficient of variation of counts at Serendip (196%) resembled that given by Briggs (1977) for a small ephemeral swamp in northern New South Wales (201). However, in contrast to her results, it was not possible to show a significant correlation between numbers and water level, or recent rainfall. Rather it appears that coot moved into the Serendip lake system following dispersal from other areas, and when Serendip provided appropriate food. Presumably fluctuation in numbers in such wetlands depend on conditions prevailing elsewhere. A further examination of the age structure of coot using such wetlands as non-breeding habitat, where they may be the most numerous waterbird (e.g. Missen and Timms 1974), seems appropriate.

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