

# Wicken Fen Group Report No.7 1975

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## ACKNOWLEDGEMENTS

We wish to thank all those who have helped the Group in many ways during the year.

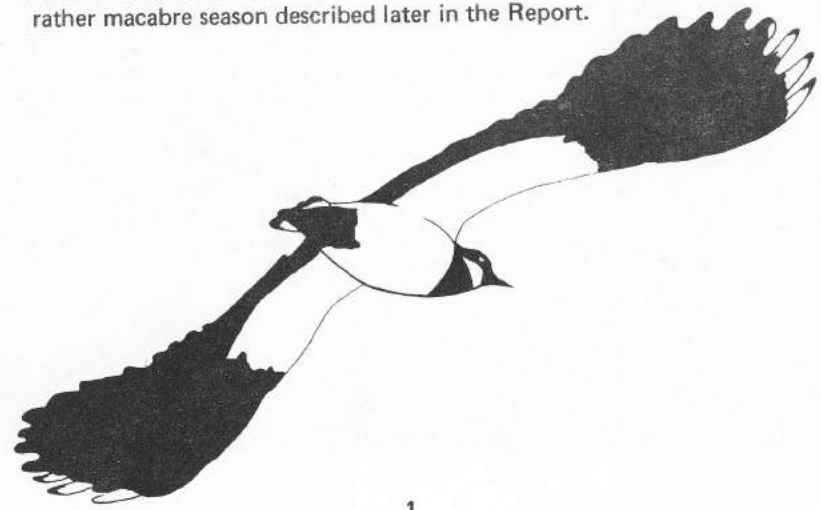
Foremost, we are grateful to the National Trust: Wicken Fen Local Committee for continuing to allow us facilities on the Fen for ringing. The Committee, by waiving access restrictions and by reimbursing the cost of rings used during the year, has given the Group tangible support. To the National Trust Assistant Agent; the Committee Chairman and Secretaries, Dr. John Smart, Dr. Max Walters, Dr. Richard Barnes and John Harvey; the Warden, Lt. Col. Charles Mitchell and to Mr. and Mrs. Wilfred Barnes, the Group is greatly indebted.

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## INTRODUCTION

After seven summers' work the Group has an impressive accumulation of information on the birds of Wicken Fen, especially on the common passerine species to which our ringing programme is addressed. The Group was first formed principally to study Reed and Sedge Warblers and although past Reports have included many contributions on these species, detailed analyses have become more and more difficult over the years as our store of data has grown. The computerisation of our ringing records has been described in earlier Reports and is progressing satisfactorily. As a result, examination of the results of our fieldwork on the Acrocephalus warblers has begun in earnest and this Report includes three papers on Reed Warblers, the production of which was considerably facilitated by automatic data handling. It is hoped the progress will continue and further analysis of the information on Acrocephalus warblers is already under way. Studies of other species in this Report include two papers on the effects of weather conditions on birds and a summary of wildfowl records at the Fen.

The important routine of mist netting coverage continued this season with the modification of reducing many weekends' work to one day's operation instead of two. This results in a relatively small loss of information since far fewer birds are caught on the second day at a site than on the first and saves a good deal of wear and tear on the ringers. The mapping census of birds at the North End of the Fen continued satisfactorily but the Group's nest boxes had a disappointing and rather macabre season described later in the Report.

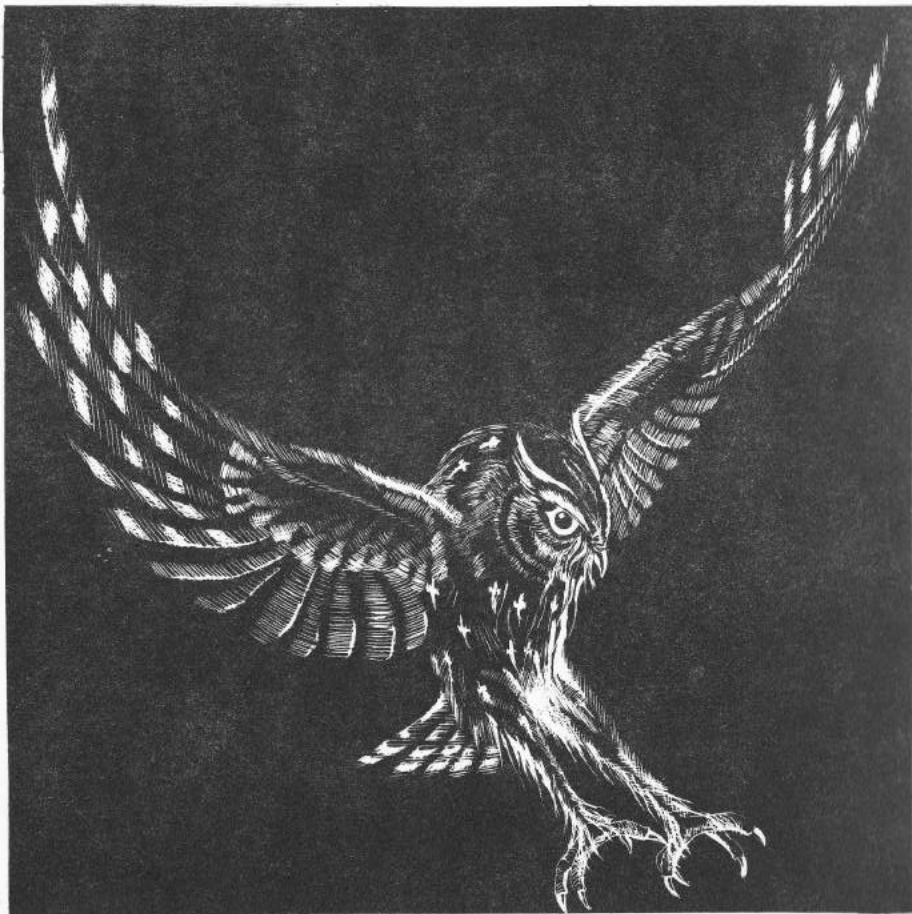


## A REVIEW OF THE YEAR

H.J. Harvey

Members of the Group were present on the Fen for the whole or part of at least 75 days during 1975. Most visits were made between May and September but there were at least two visits in every other month. This review was written in mid-November and does not cover records for the final six weeks of the year.

The early part of the year was notable for the heavy rainfall and the Fen was more extensively flooded than for many years. Conditions remained very wet until June when the Fen dried out very rapidly during the hot rainless conditions which, save for some spectacular thunderstorms in August, lasted from May to the end of August. September was damp and windy but dry conditions returned in October. November started very cold with several thick fogs, which were dispersed by a deep depression in the middle of the month.



Visits in January and February were unproductive as regards the numbers of birds caught but small numbers of Bearded Tits, maximum of four on January 11, were seen or heard on most visits and a Hen Harrier was frequently present. Bearded Tits remained until March, with a single bird being heard on 9th, and the Hen Harrier was last recorded on March 25. Both species returned in the autumn.

A valuable survey in February indicated that there were six Tawny Owl and four Long-eared Owl territories on the Fen. Both species were frequently noted later in the year, with two Long-eared being caught in the autumn, and records suggest that both species bred successfully. Little Owl also bred on the Sedge Fen with a nest containing a single pullus being found on June 14, the only other record of this species was of a single bird on September 14. The Barn Owl was the fourth Owl species to be recorded, a single bird being seen on July 19.

April saw the arrival of the first spring migrants and the departure of most winter visitors. First to appear from the south was the Willow Warbler on April 12 with Chiffchaff, Swallow and Cuckoo first being noted on 19th, on which date the last Fieldfares and Goldcrests of winter were observed. April 19 also produced the first of two spring Wheatears, the other on May 10, and three Cormorants were seen. Two more Cormorants flew over the Fen on May 3. Sedge Warblers were numerous by April 27, on which date Yellow Wagtail was also seen and Blackcap heard. Another species noted in April was the Great Spotted Woodpecker with a single bird on 12th, drumming on 19th, and a possible nest being found on 27th. Breeding seems unlikely however for the only subsequent record of this species was of a bird on September 6.

May opened with the first Reed Warbler, Grasshopper Warbler and Lesser Whitethroat on the 3rd, also on this date two separate Marsh Harriers (male and female) were seen. These latter records proved to be the first of an unusual series for, in addition to another sighting on May 4, one or two Marsh Harriers were seen daily from May 23 to May 29 and the autumn produced an immature on September 27 and an adult on October 29. Swifts were first noted on May 10, when a single Comic Tern was also seen, and a Crane flew low over the Fen in an easterly direction on the overcast morning of May 11.

On the Mere, Mallard, Tufted Duck, Pochard, Wigeon and Teal had been seen regularly during the first winter period with large numbers of Wigeon being noted in early February and on April 12, the last spring date on which the species was recorded. Single Pintail and Great Crested Grebe were present on March 26. Great Crested Grebe stayed to breed and nesting must have been early for two well grown young were seen on May 7 and 8. Whether either of these young survived is problematic for only one was seen on May 20 and, although a single bird was reported on June 8, no birds were present when the national Great Crested Grebe Census count was carried out on June 1. Of the duck only the

Mallard was proved to breed but in addition to at least 12 pairs of Mallard there were at least seven pairs of Tufted Duck and eight pairs of Shoveler on the Fen. Shoveler were particularly evident between April 27 and May 23 with pairs in many of the ditches on Adventurer's Fen and one pair in residence on the flooded Sedge Fen on May 20. A pair of Teal were suspected on the Mere on May 8 but the species was not noted by the Group between May 11 and August 23. Similarly single Pochard on May 8 and June 1 were the only Group records between March 26 and October 19, breeding may not therefore have occurred in either species. Gadwall appear from Group records to have occurred only as migrants with records on May 10 (6), August 26 (2) and October 19 (3). Other waterfowl to breed were Mute Swan and Canada Goose, a pair of each species nesting on the Mere; in neither case is breeding success accurately known. Five cygnets were seen on May 20 but no other sightings were recorded until October 19 when three first-year birds and one adult bird were seen and the apparent remains of two long dead Swans were discovered. Two adults and three first-year birds were present on November 16. The pair of Canada Geese were regularly seen between February 23 and June 28 but the only sighting of young was of a single one-third grown gosling on June 28. Since the species was not recorded after this date successful fledging is unlikely.

Breeding waders were once again represented by Lapwing, Snipe, Woodcock and Redshank, and limited mapping of breeding territories was attempted. At least four Lapwing territories were recorded on Adventurer's Fen, with one other on the Sedge Fen, but no young were noted. Lapwing were present in small numbers on most visits to the Fen with a slight passage being recorded in late June. Snipe were more widespread over the Fen than Lapwing with a minimum of ten territories on Adventurer's Fen and seven on the Sedge Fen. Drumming was first noted on February 23 and was last recorded on June 22. Woodcock records, chiefly of roding birds between May 11 and July 4, reached a new peak but probably only involved three pairs. An unusual feature was the number of winter and autumn Woodcock sightings, no birds were seen between July 4 and August 29. The wet conditions were particularly suitable for Redshank which were recorded from February 3 onwards. At least five pairs held territory on Adventurer's Fen and one pair, most unusually, on the Sedge Fen. Breeding success appears to have been limited with young (2) being seen at only one site and possibly being present at another, the rapid drying of the Fen in the summer and nest destruction by cattle were possibly contributory factors to this relative failure. In view of the dry conditions of July and August the early last date of July 18 is not surprising.

Among the passerines few breeding season observations stand out. Pairs of Yellow Wagtails were seen regularly at two sites, with pulli being ringed at one, and a single bird was seen once in a third area, it is possi-

ble therefore that three territories were occupied. Breeding birds were seen regularly up to July 13 with the only subsequent record being of a single bird on August 8. Since this latter bird occurred on the same day as the third Wheatear of the year it could conceivably have been a migrant rather than a local bird. Grasshopper Warblers appear to have been more common than in 1974 with reeling birds being noted at four locations on Adventurer's Fen and at two on the Sedge Fen. Although up to three Cuckoo territories may have been occupied fewer Reed Warbler nests than in 1974 were found containing young Cuckoos. Of the 49 Blackcaps ringed during the year 19 were ringed between June 27 and July 13, possibly indicating juvenile dispersal or early passage at this period.

Autumn migration began on June 21 with an early Curlew, another was seen on July 5. Three records of single Greenshank included an early bird on July 10 with the others being on the more normal dates of August 8 and August 26. The final wader migrants recorded were two Golden Plover on August 30. The only passerine migrants noted were the Yellow Wagtail and Wheatear already mentioned, on August 8, and a single Whinchat on October 4.

Migrating Swallows formed a roost on the Mere rather than in the Reed Bed as in previous years. The roost was first noted on August 29, when several hundred birds were present, and built up steadily to about 5000 birds on October 3. Very few birds were present on October 11 and the last Swallow of the year was one seen on November 1. Starlings formed another notable roost on the Mere. This was first noted on June 21 when it was estimated to contain about 300 birds but it had increased to 2 - 3000 by the end of July and to an estimated 5000 by mid-August. Estimates for September and October were in terms of tens of thousands of birds and in foggy weather on October 25 a part of the roost was estimated at 25,000. By this time at least 50,000 birds may have been present.

August and September saw the departure of most summer migrants with the last Lesser Whitethroat being recorded on August 29 and last Chiffchaff and Willow Warbler on September 13. Spotted Flycatcher, Turtle Dove and Sedge Warbler were last seen on September 20 but Sand Martins were noted on October 3 and Reed Warblers were present in small numbers until October 19. Also on October 19 a single Blackcap was caught, the only record after September 13.

October also saw the return of many winter visitors. Redwing and Fieldfare were very numerous on October 11 when there were also appeared to have been an influx of Blackbirds and Song Thrushes. Numbers of all four species had declined by the end of the month when much of the berry crop had been stripped. Bramblings were noted on October 19 and 29 and Goldcrests on October 25, when a Great Grey Shrike was

also present. Bearded Tits were seen or heard on several dates after October 19 but only in small numbers. In addition to the Marsh Harrier already mentioned, on October 29, an unidentified Harrier was seen on October 19, a Hen Harrier was reported on 2 4th and a Sparrowhawk on 29th. Wigeon had joined Mallard, Tufted Duck and Shovelers on the Mere by November 16.

### Notes on other species

**Grey Heron** Single birds noted on most visits but no large numbers as in some years.

**Water Rail** Heard as usual in February but also on June 20.

**Great Black-backed Gull** A single bird on January 11.

**Common Gull** Singles on June 22, August 30 and September 13 but possibly under-recorded.

**Black-headed Gull** Small numbers seen on most visits but never more than 10 recorded.

**Kingfisher** Recorded between May 3 and September 19 with two birds together on several occasions.

**Jay** Seen frequently in the Reed Bed area.

### RECOVERIES

The following list covers all recoveries and controls of birds more than 10 km from the place of ringing, notified to the Group by the B.T.O. since the last report.

Rather few very long-distance movements occurred, but the list shows several interesting features. The Kingfisher records show that young birds are locally mobile, and also rather vulnerable, perhaps to traffic. The four Swallow recoveries are of birds ringed in the huge roost at the Wicken Fen reedbed in autumn 1973. The Jersey bird might have been on migration back to Britain while the other three were probably at their breeding areas, two of these being quite close to Wicken.

The Acrocephalus Warblers continue to provide recoveries. JS17554 is the Group's first Warbler recovery from Spain. JS17139 is an interesting bird, having been controlled in Morocco in its first winter, and subsequently being recaptured at Wicken in each of the following two summers.

The Bearded Tit recoveries from Norfolk include one bird ringed as a juvenile in July at Wicken. The other, JS85378, has spent successive winters in different parts of East Anglia.

The two Greenfinches show substantial movements between wintering and summering areas, while the two Redpolls confirm that a more modest migration may occur for some populations of this species. The woods at Sawston Hall support a large winter flock of Redpolls; this may be the reservoir for a number of the birds subsequently breeding at Wicken Fen.

Key to symbols and terms in the list:

- 1—bird ringed as nestling
- 2—bird ringed as full-grown, age unknown
- 3—bird ringed in the calendar year of hatching
- 4—bird ringed in the year following hatching or later
- 5—bird ringed in the year following hatching
- m—male
- f—female
- x—found dead
- +—shot
- v—controlled (caught alive and released)

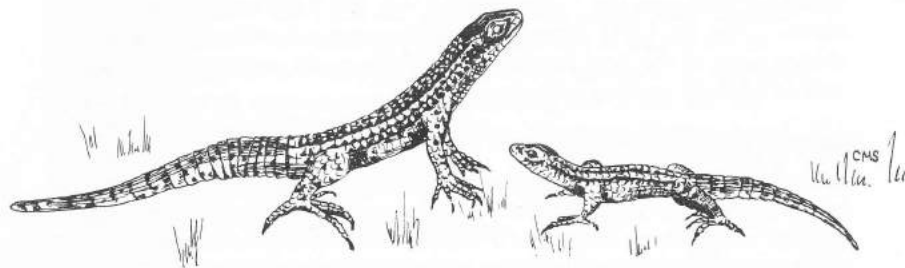
<b>Kingfisher</b>	SE85655	3	11.7.73	WF	
		x	1.7.74	near Burwell (Cambs)	5 km E
	SE85672	3	27.7.74	WF	
		x	14.10.74	near Burwell (Cambs)	5 km E
	SE85678	3	21.6.75	WF	
	x	2.9.75	near Hauxton (Cambs)	23 km SSW	
<b>Swallow</b>	JS17489	4m	22.9.73	WF	
		v	17.5.75	Jersey (C.I.)	375 km SW
	JS17544	3	14.9.73	WF	
		x	1.7.75	Newmarket (Suffolk)	11 km SE
	JS17807	3	22.9.73	WF	
	vm	1.6.75	Dartford (Kent)	95 km S	
	JS17968	3	22.9.73	WF	
	x	23.6.75	Shelford (Cambs)	21 km SSW	
<b>Wren</b>	526638	3	28.9.73	WF	
		x	6.4.75	Over (Cambs)	17 km W
	822096	2	31.8.74	WF	
	x	8.11.74	Cottenham (Cambs)	10 km W	
<b>Reed Warbler</b>	JR11520	1	14.6.74	Fowlmere (Cambs)	
		v	14.6.75	5.7.75 WF	28 km NNE
	JS17139	3	8.9.73	WF	
		v	3.11.73	Inezgane (Morocco)	2600 km SSW
		v	20.7.74	WF	
		v	17.8.75	WF	
	JS17554	3	9.9.73	WF	
	+	6.9.75	Zumaya (Spain)	1020 km SSW	
<b>Sedge Warbler</b>	JV47103	3	18.7.75	WF	
		v	21.8.75	Rádipole (Dorset)	270 km SW
	JJ92816	3	7.7.73	WF	
	v	5.7.75	Maldon (Essex)	70 km SSE	

Bearded Tit	JS85378	4f	19.1.74	WF	
		v	13.2.75	Titchwell (Norfolk)	72 km NNE
	JV44319	3f	28.7.74	WF	
Long-tailed Tit		v	18.1.75	Kings Lynn (Norfolk)	48 km N
	526684	3	WF		
Greenfinch		x	5.12.74	Cottenham (Cambs)	10 km W
	BH54926	5m	23.7.72	WF	
		v	10.3.75	Cheddar (Somerset)	240 km SW
Redpoll	BR27969	5f	15.3.75	Thursley (Surrey)	
		v	10.5.75	WF	142 km NNE
	KB28734	3	15.12.74	Sawston (Cambs)	
Bullfinch		vm	6.6.75	WF	22 km NNE
	KB28769	3f	15.12.74	Sawston (Cambs)	
		v	19.4.75	WF	22 km NNE
Bullfinch	JV81591	5f	14.3.75	Milton (Cambs)	
		v	28.6.75	WF	11 km NE

SPECIES RINGED (1.12.74 - 30.11.75)

	Sites A,B & E	Sites F,G, J & K	1975 Total	Grand Total 1968-1975
Mallard	—	—	—	5
Kestrel	—	—	—	1
Red-legged Partridge	—	—	—	6
Water Rail	—	—	—	1
Moorhen	—	—	—	6
Lapwing	—	—	—	8
Snipe	—	2	2	66
Jack Snipe	—	—	—	1
Woodcock	—	1	1	5
Redshank	—	5	5	8
Woodpigeon	—	3	3	11
Turtle Dove	1	1	2	23
Collared Dove	—	—	—	6
Cuckoo	—	1	1	22
Little Owl	—	—	—	1
Tawny Owl	1	—	1	10
Long-eared Owl	—	3	3	5
Swift	—	—	—	7
Kingfisher	1	7	8	82
Great spotted Woodpecker	—	—	—	2
Lesser spotted Woodpecker	—	—	—	5
Skylark	—	—	—	8
Swallow	3	503	506	2475
House Martin	—	—	—	10
Sand Martin	—	12	12	13
Jay	—	1	1	13
Great Tit	8	11	19	272
Blue Tit	98	54	152	1003
Coal Tit	—	—	—	4
Willow Tit	3	4	7	171
Long-tailed Tit	5	43	48	392

Tree Creeper	2	1	3	55
Wren	25	63	88	904
Bearded Tit	—	—	—	28
Mistle Thrush	—	—	—	3
Fieldfare	—	9	9	36
Song Thrush	32	75	107	1272
Redwing	—	20	20	88
Blackbird	11	58	69	907
Whinchat	—	1	!	5
Redstart	—	—	—	6
Nightingale	—	—	—	9
Robin	20	18	38	661
Grasshopper Warbler	1	4	5	101
Great Reed Warbler	—	—	—	1
Reed Warbler	33	338	371	3203
Sedge Warbler	23	155	178	1923
Blackcap	17	32	49	642
Garden Warbler	4	4	8	103
Whitethroat	—	3	3	143
Lesser Whitethroat	2	30	32	208
Willow Warbler	13	34	47	893
Chiffchaff	3	7	10	255
Goldcrest	—	3	3	24
Spotted Flycatcher	3	9	12	131
Pied Flycatcher	—	—	—	1
Dunnock	34	86	120	1354
Meadow Pipit	—	—	—	14
Tree Pipit	—	—	—	1
Pied Wagtail	—	—	—	8
Yellow Wagtail	—	2	2	6
Red-backed Shrike	—	—	—	1
Starling	—	—	—	11
Greenfinch	12	65	77	393
Goldfinch	8	21	29	370
Linnet	2	20	22	250
Redpoll	19	38	57	1044
Bullfinch	50	93	143	1322
Chaffinch	4	11	15	247
Brambling	—	1	1	26
Corn Bunting	—	—	—	11
Yellowhammer	4	—	4	72
Reed Bunting	8	160	168	1748
House Sparrow	—	—	—	1
Tree Sparrow	25	3	28	1022
TOTALS	475	2015	2490	24145



## WING LENGTH OF REED WARBLERS

C.J.R. Thorne

An earlier analysis of the Wicken Fen Group's 1969 – 1973 retrap data for Reed Warblers showed that adult birds increased in wing length year by year, and also gave indication of a significant abrasion of the primary wing feathers during the summer (1). That analysis had been carried out manually, but during the past two years all the Group's Reed Warbler data has been punched onto cards (2). A computerised sorting programme has been written by Dr. M.A. Message; this produces the individual re-trap history for each bird, and assembles the grouped retraps in a single print out. The sorting programme has made it possible rapidly to analyse the consolidated 1969 – 1975 data, involving approximately 5400 handlings. The present paper extends the work carried out earlier (1) and confirms the results obtained.

### Annual wing length increase of individual birds

All adult birds which were caught at Wicken in more than one year were analysed to determine whether there was a significant change in wing length from year to year. All wing lengths recorded for one bird in one year were averaged, to give the mean value for that year; this value was then compared with the mean value for any other year in which the same bird was caught. Intervals of one year, two years, three years etc. were used for the comparison. As a control, changes in wing length of adult birds caught more than once in a single month were also analysed. It was assumed that little real change in wing length would have occurred over this short period of time (the recapture interval averaged 3.45 days for these birds) and that this group of birds would serve as a control for human errors in measurement, variation between measurers etc.

Table 1 shows the results obtained. Same month recaptures show a small, and statistically insignificant, decrease in wing length (possibly however, genuine and related to abrasion – see below). But birds caught after intervals of one, two, three and four years show a significant increase in wing length over these periods. The significance was assessed by paired T-tests against a null hypothesis. Increase in wing length seems to be sustained over a period of several years, although in statistical tests only the 1 year versus 2 year ( $P < 0.02$ ) and 1 year versus 3 year ( $P < 0.01$ ) differences are statistically significant. The declining value of the final column in the Table might indicate that the rate of increase declines with time.

### Summer wing length decrease of individual birds

Wing lengths recorded for individual adult birds caught on more than one occasion in a single summer were analysed. Measurements for a single bird caught more than once in the same month were averaged; this value was then compared with the mean value for any other month in

Table 1. Change in wing length of individual adult Reed Warblers caught in more than one summer at Wicken Fen.

Recapture interval	Sample size	Mean of Change (mm)	Standard Error of Mean (mm)	Significance of Change (T test)	Change per year (mm)
same month	761	-0.045	0.049	not	-
1 year	248	+0.521	0.087	$P < 0.001$	+0.52
2 years	109	+0.906	0.126	$P < 0.001$	+0.45
3 years	35	+1.249	0.224	$P < 0.001$	+0.42
4 years	15	+1.378	0.374	$P < 0.01$	+0.35
5 years	3	+2.667	1.114	not	-
6 years	1	+1	-	-	-

the same summer in which that individual bird was caught. Intervals of one, two and three months were compared; the control again being of birds caught after very short intervals (in the same month).

Table 2. Change in wing length of individual adult Reed Warblers caught in more than one month in a single summer at Wicken Fen.

Recapture interval	Sample size	Mean of Change (mm)	Standard Error of Mean (mm)	Significance of Change (T test)	Change per day (mm)
same month (3.45 days)	761	-0.045	0.049	not	(-0.013)
1 month (27.2 days)	322	-0.305	0.072	$P < 0.001$	-0.011
2 months (52.1 days)	135	-0.610	0.103	$P < 0.001$	-0.012
3 months (86 days)	25	-0.873	0.288	$P < 0.01$	-0.010

Table 2 shows the data. Monthly intervals were chosen for analysis, but the average interval between recaptures in separate months is always less than the expected multiple of total days in a month. This is because of the weighting in favour of shorter intervals (there being a finite chance of a bird dying, emigrating etc. – this chance increasing with the increased number of days available); the true average interval between recaptures is shown in brackets in the first column. A significant decrease in wing length is shown by the Table; this decrease appears to be fairly steady at all intervals examined, averaging 0.012 mm per day over the whole period (May – August). The T-test significance shown in column 5 is against the null hypothesis. The one month and two month decreases also differ significantly ( $P < 0.02$ ).

### Mean wing length of the Wicken population

Harvey (2) showed that the mean wing length of adult Reed Warblers at Wicken changed in the course of the summer. The mean fell by almost

2 mm from May to August; the explanation offered was that of abrasion combined with an alteration in the sex ratio of the birds caught (more males in the spring, more females in late summer).

In an attempt to discover more about the sex ratio of catches, the Reed Warbler breeding population was studied. This population was defined as those birds caught at Wicken as adults at least once in a June or a July — birds caught only before June or caught only after July were excluded, because they could have included passage (unsexable) birds. The individual retrap history of each bird was examined; if a bird was recorded as having a valid brood patch on any occasion it was scored as a female, if never, as a male. The catches of these birds were analysed by half-month periods for the years 1969 — 1974, any individual bird being scored only once for any half month in one year.

Table 3. Catches of adult Reed Warblers of the Wicken breeding population, by half-month periods

Period	Total number caught	Males (no brood patch)		Females (brood patch recorded)		Mean wing length (mm)	SD (mm)	% males
		number caught	Mean wing length (mm)	number caught	Mean wing length (mm)			
May I	34	27	65.6	2.1	7	64.6	1.6	79
May II	131	92	65.6	1.7	39	64.5	1.6	70
June I	258	208	65.0	1.7	50	63.5	1.6	81
June II	234	173	64.6	1.7	61	63.3	1.3	74
July I	371	247	64.8	1.6	124	63.3	1.5	66
July II	330	214	64.4	1.5	116	62.9	1.5	65
August I	152	105	64.6	1.6	47	63.0	1.3	69
August II	45	26	64.5	1.6	19	62.9	1.7	58
September I	10	6	65.3	1.2	4	62.6	1.1	60
Totals	1566	1099	64.8		467	63.3		70

The results are displayed in Table 3, and show an apparent imbalance in the sex ratio of catches at all times in the summer. It may be that a number of the females caught never showed a brood patch, thus casting doubt on the sexing method and increasing the number of "males", but by restricting the sample to those birds found at the Fen in June and July, this problem should have been minimised. Furthermore, the mean wing length for the "males" in Table 3, 64.8 mm, is very close to the value of 64.7 mm calculated for males by Bibby (3). Therefore it is unlikely that the group contains any large number of females.

The male : female ratio of the catches shows evidence of a decline through the season, from a high point of about 4 : 1 in early May and early June to about 1.5 : 1 in August/September. If the difference in mean wing length between the sexes is 1.5 mm (Table 3) or 1.8 mm (3), a change in sex ratio from 4 : 1 to 1.5 : 1 would result in a decrease of 0.3 — 0.4 mm in the mean wing length of the whole population.

Table 3 also shows a decline in the wing length of both males and females during the summer. The decrease is not linear with time, being fastest early in the season, but amounts in total to a loss of about 1.1 mm in males and 1.6 mm in females (mid May to mid August figures used).

### Conclusions

Analysis of a large amount of retrap data has allowed proof to be obtained of an increase in adult Reed Warbler wing length from year to year. The rate of increase may decline as individual birds age, but in early years is of the order of + 0.5 mm per year (0.8% per year). Although adult birds of many species are commonly reported to have longer wings than those of the first year, there is very little published evidence for further growth during adulthood. Pienkowski and Minton (4) showed growth in the Knot, while Sutter (5) and van Balen (6) provided less conclusive evidence for some growth in adult Greenfinches and Great Tits respectively.

Abrasion rates studied from retraps (Table 2) indicate a steady loss of about 0.3 mm per month. Analysis of whole population averages (Table 3) suggests a less regular loss, greatest early in the season, cumulatively amounting to 1.1 — 1.6 mm over three months. The abrasion rates represent an average loss of 0.5 — 0.8% in wing length per month, of the same order as that reported in a study on the Cardinal (7).

A measurable change in the sex ratio of catches occurs during the summer months at Wicken. This, together with the abrasion rates estimated, could account for most of the decrease in mean population wing length, in confirmation of the earlier conclusions of Harvey (2).

### References

- 1) Thorne, C.J.R. (1973) WFG Report 5 : 33
- 2) Harvey, H.J. (1974) WFG Report 6 : 7
- 3) Bibby, C.J. (1969) WFG Report 1 : 33
- 4) Pienkowski, M.W. & Minton C.D.T. (1973) Bird Study 20 : 63
- 5) Sutter E. (1946) Orn. Beob. 43 : 81
- 6) van Balen J.H. (1967) Ardea 55 : 1
- 7) Blake C.H. (1971) Bird Banding 42 : 295

## SEXING JUVENILE REED WARBLERS

Rhys Green

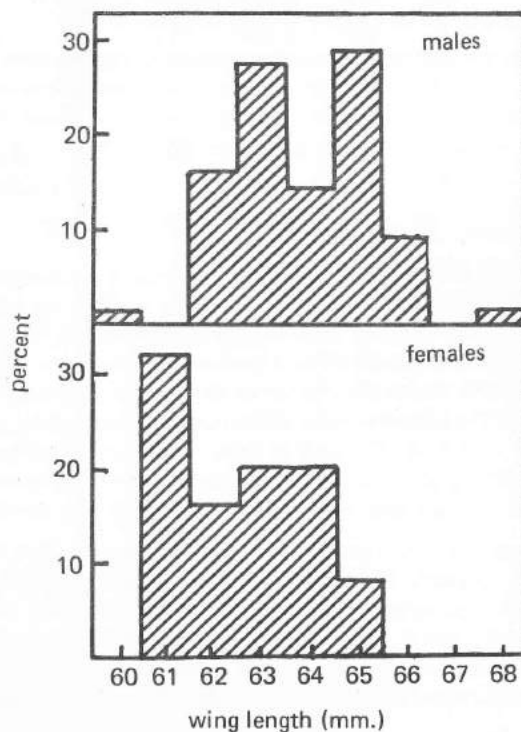
In birds there are sometimes important differences between the sexes in mortality, timing of migration etc. so that methods of sexing birds in the hand are useful tools to those interested in bird biology. Adult birds can often be sexed by reference to plumage characters or structures like brood patches or cloacal papillae. Juvenile birds pose a problem because there is usually no sex difference in plumage characters, and reproductive characters have not yet been developed. The Reed Warbler is one of the many species in which the sexes differ in wing length as adults (1,2). This note examines the possibility that this difference is present in juveniles and can be used to sex them as is possible in the Reed Bunting (3).

89 Reed Warblers ringed as juveniles and caught in subsequent years as adults were divided into two groups.

- 1) birds caught as adults with a brood patch or a wing length of 62 mm. or less.
- 2) all other birds.

The first group should consist almost entirely of females and the second

Figure 1. Wing lengths of juvenile Reed Warblers.



group of males with some of the larger females which lacked brood patches. The juvenile wing lengths of these two groups are compared in Figure 1. Two birds (one from each group) with juvenile wing lengths of 54 and 57 mm. are excluded as they were probably caught with their wing feathers incompletely grown. Table 1. shows mean wing lengths and standard deviations for the two groups and shows that there is a clear difference in wing length between them ( $P < 0.001$ ). The standard deviations are similar to those for adult wing length (1,2) indicating that the birds were trapped with their wing feathers fully grown. However, the mean wing lengths are shorter by 1.6 – 2.2 mm. than for adults at Wicken in the spring suggesting that the wing feathers grown in the first complete post juvenile moult in Africa are considerably longer than those grown in the nest.

Table 1. Means and standard deviations of juvenile Reed Warbler wing lengths.

	mean (mm)	standard deviation
known females	62.4	1.48
others	63.9	1.46

There is a good deal of overlap in juvenile wing length between the sexes, assuming that there are not too many females in the second group. If juveniles with wing lengths of 62 mm. or less were sexed female and those with wing lengths of 64 mm. or more were sexed male, this would result, (in a population with equal numbers of males and females), in 24% of the birds sexed female being, in fact, male, 27% of birds sexed male being in fact female and 23% of the birds being left unsexed. These criteria, though far from providing a reliable sexing method, may prove of use in some types of work on sex differences.

### References

- 1) Bibby, C.J. (1969). WFG Report 1 : 29 – 32.
- 2) Thorne, C.J.R. (1975). WFG Report 7 : 10
- 3) Reynolds, A. (1974). Rye Meads Ringing Group Report 7 : 44 – 52.





## THE SURVIVAL RATE OF ADULT REED WARBLERS

Rhys Green

The Reed Warbler is the most numerous bird breeding in and around the Reed Bed on Adventurers Fen and large numbers are handled by the Group each year. Bibby (1) examined the information available on survival rates of Reed Warblers in 1971. This paper updates that work and discusses some of the problems involved in estimating survival rates.

The information used is from the Reed Bed and adjacent areas, (sites F, G, K and J; see map on back cover) for 1969 – 1974. Mist netting was carried out on about half the breeding season weekends in 1969 and on nearly all weekends in the other years. The analysis was facilitated by the use of a computerised sorting programme.

**Table 1. Numbers of Reed Warblers ringed as adults at the Reed Bed and numbers recaptured in subsequent years.**

ringed		retrapped				
		1970	1971	1972	1973	1974
1969	<b>108</b>	21	18	6	4	1
1970	<b>157</b>	26	11	5	2	
1971		<b>203</b>	18	12	4	
1972			<b>188</b>	20	10	
1973				<b>188</b>	13	

figures in bold type are numbers of birds ringed

Table 1 shows the numbers of Reed Warblers ringed as adults at the Reed Bed in each year and the numbers of these birds retrapped in each subsequent year. The failure of a bird to be caught in a year after ring-ing does not necessarily mean that it has died. Some birds change breed-ing site from year to year and may therefore move away from the catch-ing area. However of 138 Reed Warblers ringed as adults at the Reed Bed and caught in two or more seasons only 8 moved to the near-est sizeable Reed Warbler colony which is 1.2 km. away at the North End of the Fen and is netted regularly every year (2). A more common reason for a bird's apparent absence from the catching area is that it has evaded capture. Hence the figures in Table 1 need to be adjusted to allow for trapping efficiency if survival estimates are to be made.

An estimate of trapping efficiency can be made if we assume that a bird which was caught in (say) two years but not in an intervening year was present but evaded capture. The proportion captured of birds known to be present, using this assumption, has been calculated for each year and the results are shown in Table 2. No trapping efficiency estimate is available for 1974 but as the tabulated values are consistent and the trapping effort was similar in the four years 1970 – 74 it has

**Table 2. Trapping efficiency**

year	number known present	number caught	trapping efficiency
1970	23	10	0.43
1971	24	10	0.42
1972	29	12	0.41
1973	22	11	0.50
average			0.44



been allotted the average of the available values in the following calculations. It will be shown later that there is a difference in apparent survival between that in the year after ringing and that in later years so these survival rates are calculated separately. The survival of birds ringed in (say) 1971 to 1972 is estimated by;

$$\frac{r_{71, 72}}{n_{71} e_{72}}$$

where  $r_{71, 72}$  is the number of birds ringed in 1971 and recaptured in 1972

$n_{71}$  is the number of birds ringed in 1971

$e_{72}$  is the efficiency of trapping in 1972

The rate of survival to 1972 of birds present in 1971 but ringed in previous years is estimated by;

$$\frac{(r_{69,72} + r_{70, 72}) e_{71}}{(r_{69,71} + r_{70, 71}) e_{72}}$$

These survival estimates, (expressed as percentages), are shown in Table 3. Both sets of estimates show considerable year to year variation. The

Table 3. Survival rates, 1969 – 73.

	survival between years indicated %				
	1969-70	1970-71	1971-72	1972-73	1973-74
newly ringed birds	45	40	21	26	16
previously ringed birds	—	89	39	50	48

high rate of survival of previously ringed birds present in 1970 to 1971 is particularly noteworthy. In all years the apparent survival of newly ringed birds to the next year is less than that of birds ringed in previous years. This discrepancy might be due to a proportion of the birds ringed each year being visitors to the catching area for a short time while moving to or from breeding sites elsewhere and probably not recurring at the Fen in subsequent years, at least not as established breeding birds. The birds retrapped from previous years are very likely all to be established breeders. This possibility has been examined by dividing each years' newly ringed birds into those caught in only one week of the season and those caught in two or more weeks and calculating survival

Table 4. Survival relative to number of capture weeks in year of ringing.

	survival between years indicated %				
	1969-70	1970-71	1971-72	1972-73	1973-74
birds caught in one week	42	41	11	13	9
birds caught in two or more weeks	52	34	38	50	48

rates for the two groups separately. The second group should consist mainly of birds which are breeding or attempting to breed and should therefore have a higher apparent survival rate than the first group which should include any transients. Table 4 shows that, except in 1970 – 71 the survival rates of the two groups differ in this way. It is interesting to note that, again with the exception of 1970 – 71, the survival rates of newly ringed birds caught in two or more weeks of the year of ringing are similar to those of birds ringed in previous years. This supports the idea that both of these groups consist mainly of established breeding birds. The anomolous results for 1970 – 71 cannot be explained satisfactorily at present. However both Bibby (1) and Robertshaw (3) have noted unusual features of the 1970 season for Reed Warblers and associated this with the burning of the Reed Bed which took place in May of that year.





Bibby (1) found that birds ringed in May were less likely to return to the Fen in later years than those ringed subsequently. This tendency is examined further by calculating the proportion of newly ringed birds caught in only one week of the season which returned in subsequent years for consecutive four week periods through the breeding season. Table 5 shows that, except in 1970, there was a strong tendency for the return rate of birds ringed in the first four week period to be lower than that of birds ringed later in the middle of the season. In 1969 and 1970 the return rate of birds ringed in the first period is much higher relative

**Table 5. Survival relative to time of capture.**

year of ringing	percentage caught in subsequent years			
	May 1-28	May 29- June 25	June 26- July 23	July 24- Aug. 20
1969	26	29	50	24
1970	28	25	27	28
1971	0	4	23	2
1972	0	9	8	10
1973	0	4	4	7

to that of birds ringed later in the season than in the other three years. These results suggest that many of the transient birds are on spring passage. The difference between 1969 and 1970 and 1971, 1972 and 1973 suggests that fewer transient birds were trapped in the first two years than in the other three. This conclusion is supported by the following observations.

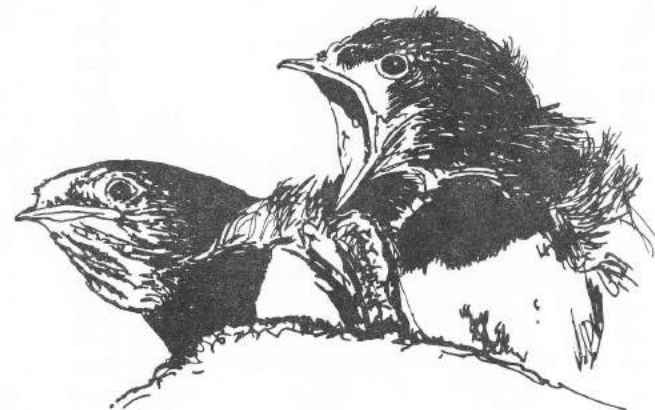
- 1) The apparent survival rates of birds ringed in 1969 and 1970 were higher than those of birds ringed in 1971, 1972 and 1973.
- 2) In 1969 and 1970 there was little difference between the survival rates for birds caught in one week of the season and those caught in two or more weeks, whereas in the other years this difference was marked.

Differences between years in the numbers of transient birds caught might arise from variations in timing and duration of spring passage, in the numbers of birds attempting to find breeding territories for the first time and other factors but further work is required before interpretation of these differences is possible.

In conclusion, it seems that attempts to find the proportions of birds returning to an area in years subsequent to ringing are complicated by variable and sometimes large numbers of birds which visit the catching area briefly and are unlikely to return. The survival rates of birds which had been ringed at the site in previous years and those which were caught in more than one week of the year of ringing were similar, except in 1970 which was unusual in several other respects. The results suggest an average annual survival rate for adult Reed Warblers of 43 – 57% with considerable variation between years.

#### References

- 1) Bibby C.J. (1971) WFG Report 3 : 19 – 23
- 2) Bibby C.J. (1973) WFG Report 5 : 18 – 21
- 3) Robertshaw P.T. (1971) WFG Report 3 : 24 – 26

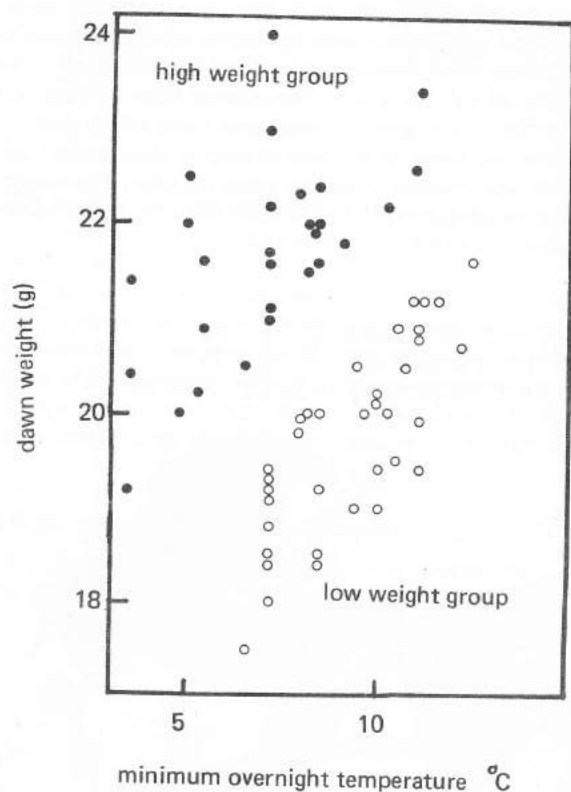


## THE EFFECTS OF OVERNIGHT TEMPERATURE ON DAWN WEIGHTS OF DUNNOCKS

A.K. Naylor

A bird's weight is influenced by many factors. Seasonal weight changes are associated with activities such as breeding and moulting. Diurnal weight changes also occur. Birds which feed during the daylight hours gain weight as they accumulate food in the gut and reserves of fat. At night there is a weight loss as faeces are produced, water vapour is lost from the respiratory system and fat reserves are metabolised. Birds maintain their body temperature within a certain range and expend energy doing so. At night this involves the use of fat reserves. At low ambient temperatures more energy must be expended to maintain the body temperature and more reserves used up. This note examines the effect of overnight temperature on the dawn weights of Dunnocks which are common and regularly caught residents on the Fen.

Figure 1. Dawn weights of Dunnocks caught in June and overnight temperature.



The weights of all Dunnocks caught in the first 90 minutes of daylight were used in this analysis. The Group has no consistent records of overnight temperatures at the Fen so the minimum air temperature recorded in Cambridge was used.

The period April to August has been considered; each month treated separately, since each involves a different temperature range and different dominating events in the birds' lives. Only the data for adults is presented here since juveniles have a random distribution of weights relative to temperature. This is probably because juveniles range from those just out of the nest and therefore incompletely grown and feathered to older fully grown birds.

For each month the data for adults, taken as a whole, shows a low level of correlation between dawn weight and overnight temperature. However there appear to be two clearly marked groups, of birds with relatively high and low weight, in each month, within which the correlation is good. Figure 1. shows the data for June as an example of this. The two groups probably correspond to the sexes since such weight differences are common in birds (1 - 3). However, which weight group corresponds to which sex is not established at the moment. Separate regression and correlation coefficients were calculated for each weight group. An estimated mean dawn weight was also calculated for each weight group for each month adjusted to the approximate average overnight minimum temperature over the period considered. These results are shown in Table 1.

Table 1. Dawn weights of Dunnocks and their relationship to overnight temperature.

	mean weight at 8°C (g)	regression coefficient(g/C°)	correlation coefficient	n
low weight group				
April	21.6	0.32	0.82	28
May	20.4	0.22	0.52	40
June	19.0	0.52	0.79	36
July	18.5	0.47	0.82	20
August	18.9	0.20	0.77	8
high weight group				
April	24.0	0.26	0.62	16
May	23.0	0.14	0.30	22
June	21.9	0.30	0.61	29
July	20.5	0.39	0.75	13
August	21.4	0.40	0.90	9



There is a progressive decline in the adjusted mean weight from April to July for both weight groups with an increase in August which may be associated with the onset of moult (4). In most months there is a significant relationship between dawn weight and overnight temperature, birds having lower weights after cold nights. However the extent to which temperature affects dawn weight varies markedly from month to month as shown by variation in the regression coefficient. In both groups the regression coefficient relating dawn weight and temperature is low in April and May and significantly higher in June and July. Too few birds were caught in August to give reliable estimates. These variations might be associated with changes in roosting habits, body temperature or the insulative properties of the birds' skin and feathers which might make their metabolic rate more sensitive to ambient temperatures. The lower weights of birds in June and July compared with April and May suggest a loss of subcutaneous fat reserves which might have some insulative value. There is also a tendency for the high weight group to have lower regression coefficient values than the low weight group which might also be associated with the levels of fat reserves or with size difference.

In conclusion, overnight temperature conditions appear to have a detectable effect on the dawn weights of Dunnocks. It seems likely that this is due to the influence of temperature of metabolic rate and the utilisation of fat reserves. Further work on the influence of temperature on dusk weights and on the significance of the two weight groups is required.

#### References

- 1) Messent P.R. (1969) WFG Report 1 : 23 - 28
- 2) Davies N.B. et al. (1971) WFG Report 3 : 11 - 16
- 3) Naylor A.K. (1974) WFG Report 6 : 13 - 21
- 4) Thorne C.J.R. (1974) WFG Report 6 : 32 - 37



## THE EFFECT OF WEATHER ON THE PREMIGRATORY WEIGHTS OF HOUSE MARTINS

R.D.P. Milwright

The availability of insect food to aerial feeding birds like the House Martin is markedly affected by the weather (1), but unlike most trans-Saharan migrants this species sometimes breeds into October and is often among the last of the summer visitors to leave its breeding haunts. Hence, at the time of departure on the autumn migration weather conditions are often deteriorating. This paper examines the autumn body weights of adult House Martins caught at a breeding colony at Lode, (7 km. south of the Fen), in relation to the weather.

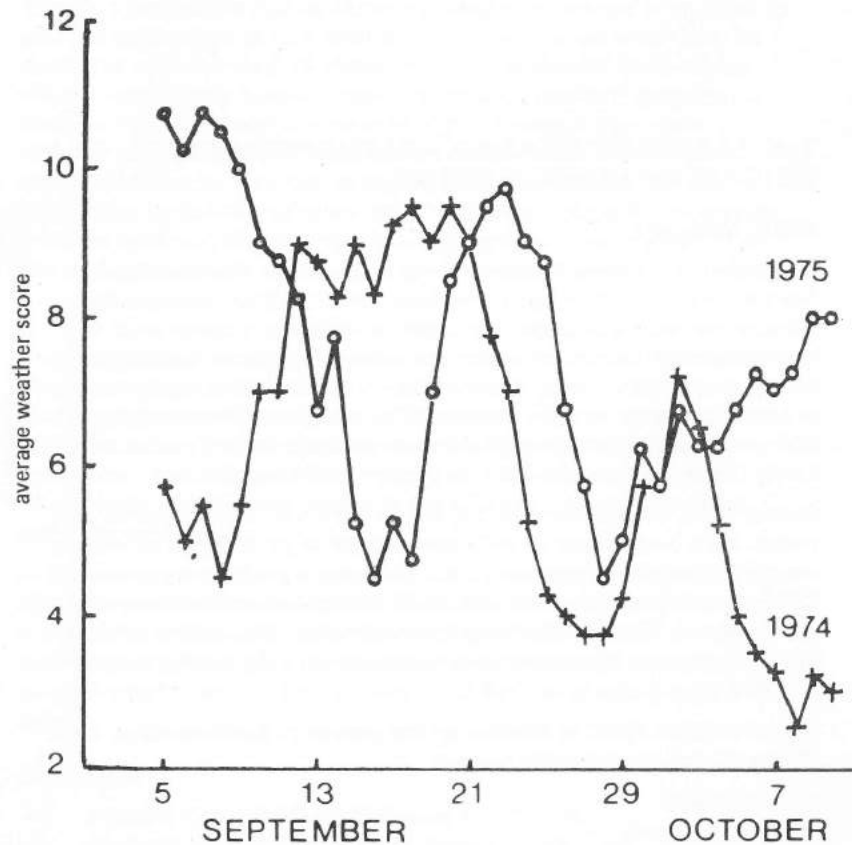
During 1974, 45 birds were ringed and in 1975 a further 113 birds were ringed. Nine birds ringed in 1974 were caught in 1975. When all retraps are considered for the two years 267 weights are available for analysis, 230 from birds caught at the nest about half an hour before dawn and the remaining 37 by flick netting later in the day. The weights of flick netted birds were adjusted to an estimated dawn weight using a factor of 0.078 g/h (2).

In studying the effect of weather on the growth of Swift nestlings, Lack (1) considered four weather factors;

- a) sunshine
- b) temperature
- c) rain
- d) wind

and found that these all affected nestling growth, presumably by affecting the availability of the birds' food, small flying insects. Increases in sunshine or temperature led to faster weight gains by the nestlings, and increases in rainfall or windspeed led to slower weight gains. The same four factors were used to assess the weather in this study. Each day in September and October up to the 9th of each year was given a weather score by allotting between 0 and 3 points for each of; a) hours of sunshine, b) maximum temperature, c) rainfall and d) windstrength from records provided by the Meteorological Office at R.A.F. Wyton, 30 km. north west of Lode. Thus a sunny, warm, dry, calm day would be scored as 12 and a dull, cool, wet, windy day as 0. Four day averages of the weather scores are shown in Figure 1.

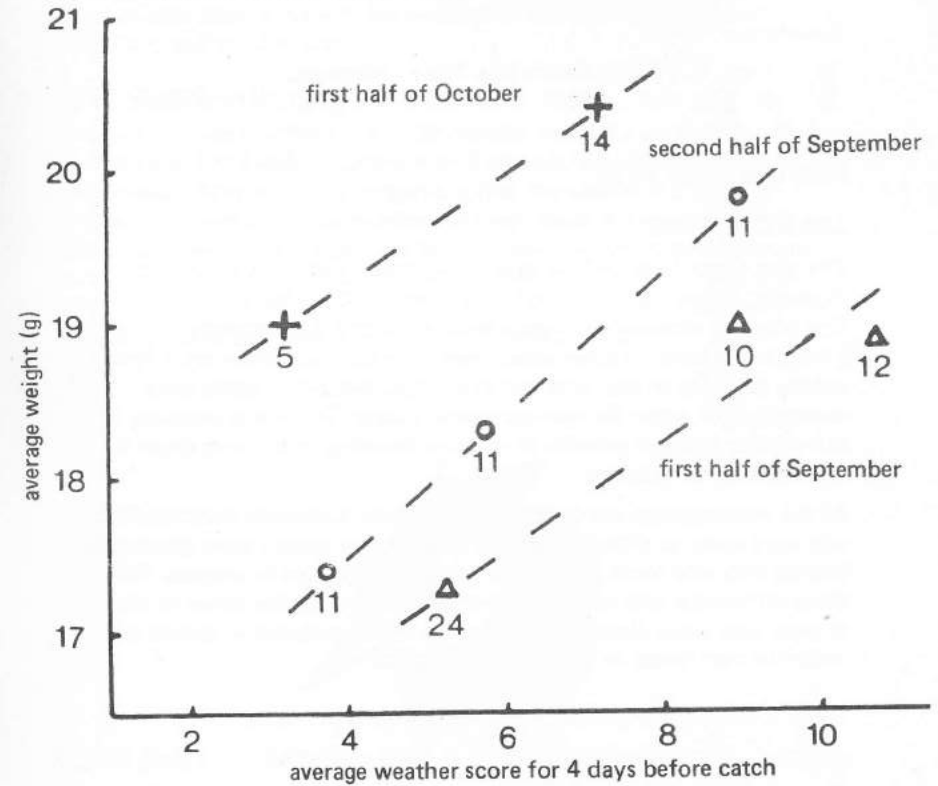
Figure 1. Autumn weather in 1974 - 1975



It can be seen from Figure 1. that the weather during late September and early October was substantially worse in 1974 than in 1975. The mean score for the whole period examined was 6.0 in 1974 and 7.8 in 1975.

During July and August regular catches of House Martins showed a fairly constant average weight of about 18 g. (range of means of five catches, 17.6 - 18.1). The average weight of all adults in each day's catch in September and October of each year were plotted, in turn, against the average weather scores for 1, 2, 4, 6, 8 and 10 days before capture. The best correlation was seen when the 4 day average weather scores were used (Figure 2). The samples were grouped by date in half month periods.

Figure 2. Relationship between weight and weather score.



Figures below symbols are the numbers of birds in each catch.

It appears that body weight is affected by weather conditions but that there is also a tendency for birds to become heavier later in the season. This may be due to the deposition of premigratory fat.

It is interesting to note that there was a marked decline in Lode's House Martin population from 1974 to 1975. The breeding colony contained 92 nests on 10 houses in 1974 and 40 nests on 6 houses in 1975. About 20 nests were lost in 1975 due to the actions of householders who prefer clean windows to House Martins, but there seems, nonetheless, to have been a real fall in numbers.

In view of the relationship between weight and weather it is tempting to suggest that poor weather conditions during departure in 1974 may have contributed to the population decline. It will be interesting to see whether the more favourable autumn conditions in 1975 precede a recovery in numbers in 1976.

Acknowledgements are due to the Meteorological Office at R.A.F. Wyton for extracting weather details from their records.

#### References

- 1) Lack, D. (1956), Swifts in a Tower, Methuen.
- 2) Baggott, G.K., (1967), Chew Valley Ringing Station Report, 3 : 25

## NEST BOXES 1975

J.M. & C.M. Smith

The year started well with a large proportion of the boxes occupied. However, following initial egg laying, predation started to take place. One box was attacked by a woodpecker and the eggs extracted through a hole in the base. In other cases, bees (*Bombus lapidarius*) were found among the moss in the nests and in all these cases the parent birds deserted, even when the nest contained young. This bee is normally a soil dweller and it is possible that severe flooding of the area drove it from its normal nest site.

At the nestling stage the birds fared no better. Complete clutches died and were eaten to differing degrees and in other cases young disappeared leaving only odd birds. This predation was attributed to weasels. All these difficulties and problems involved in checking the boxes in their present sites when flooding occurs as in 1975 have led us to decide to resite the nest boxes in the 1975 - 76 winter.

Table 1. Nesting performance in Wicken Fen nest boxes, 1975.

species	nests occupied	nests successful	young fledged
Great tit	4	1	5
Blue tit	18	6	35
Tree Sparrow	11	3	7

## WATERBIRDS AT WICKEN FEN 1969 - 1975

H.J. Harvey

Waterbirds, defined here as grebes, ducks, geese and swans, are considerably underrecorded by the Group. As an indication of this it may be noted that, despite the writer's conviction that a minimum of three species are always present at the Fen, waterbird observations are available for only 40% of the days for which observations exist. A further indication is given by records of the Mallard, which breeds, moults and winters in large numbers, for which there are only eight observations available in 1974. Records are particularly few for the period May - September, the interval between the obvious activity of breeding birds and the build up of winter flocks. Records are also infrequent during the winter period when duck numbers are greatest, a consequence of the few visits made during this season. With these deficiencies it is difficult to provide a picture of the occurrence of these species at Wicken solely from Group records. This paper therefore attempts to interpret the available observations in the context of the records of the Cambridge Bird Club and the Fen staff.

### Great Crested Grebe

Noted in all years with a total of 30 records, but only single observations in 1970 and 1972 and a maximum of 9 records in 1975. Most records are between April and July, suggesting that the species is a summer visitor, but there are 5 observations of single birds in October and November and two records from late March. Breeding was probably attempted on the Mere in every year but young were only seen in 1969 and 1975 and probably did not survive in the latter year. Generally only one pair were noted but two pairs recorded in April 1973.



### **Little Grebe**

This species has been suggested to be resident in small numbers (1) but Group observations suggest that it is an unusual visitor with only four records, one from August 1971 and three, all of two birds, from mid-July 1974.

### **Mallard**

The commonest duck species at most times of the year. Probably 20 – 30 pairs breed and young are frequently recorded; large numbers, possibly up to 100, moult on the reserve. The population increases markedly during August and September with frequent counts of 250 or more in September and October and occasional autumn records of up to 500. Numbers in the winter commonly rise to about 500 with occasional counts of around 1000. During the winter most birds probably use the area as a roost, flying out to feed, sometimes on neighbouring agricultural land but frequently in a North or North westerly direction which could take them to the Cam Washes, Ely Beet Factory or even to the Ouse Washes.

Five birds have been ringed of which one has been found dead at the Fen and two others, both summer ringed, recovered shot in the autumn within 30 km.

### **Teal**

Chiefly a winter visitor with occasional counts in excess of 500. Group counts for November – January are generally of less than 50 birds with a maximum of about 100 in December 1974. Large numbers are noted in the autumn of some years with counts of about 100 in August 1969 and 1971. Small numbers occur during the summer with single pairs being noted in all years save 1974 and possibly several pairs breed. However there is only one record for June with six in both May and July.

### **Garganey**

A summer visitor with only 11 records, one in late March, three in April, five in May, one in July and one in August. Single pairs were noted in 1969 and 1971 and two pairs in 1970 but breeding has not been proved. The only record since 1971 is of a single male in March 1974.

### **Gadwall**

Occasionally reported in winter by other observers but recorded by the Group only in summer and autumn with a total of six records, two in June, one in August two in September and one in October. Almost certainly underrecorded as one of the two records for 1974 was of a female with five young. A female with young was also reported to the Cambridge Bird Club in 1969. Other observations were in 1971 (one) and 1975 (three). The maximum number of birds seen is six on two occasions.

### **Wigeon**

A winter visitor with extreme dates of 6 September and 2 May. Although small numbers summer in East Anglia the record of seven on 9 June 1972 seems doubtful. Numbers on the Fen vary from year to year, presumably being influenced by factors such as European weather conditions, local flooding and food availability. In most years about 500 birds use the Mere as a roost, flying out to feed, but in some years numbers rarely exceed 200. In some winters up to 400 birds feed on the grassland areas within the reserve.

### **Pintail**

Mainly an infrequent winter visitor in small numbers and therefore not much recorded by the Group. The five observations are of single birds in June and September 1971 and February 1975 and of two birds in October 1971 and a pair on the Mere in May 1969.

### **Shoveler**

There are more records (112) than for any other duck but mostly from April and May when breeding birds are very obvious. Yearly observations range from seven in 1973 to 29 in 1975. It is the next most common breeding species after the Mallard with possibly 10 – 15 pairs scattered over the reserve but young have not been noted by the Group. Shovelers are present in small numbers in most winters with a marked peak, with up to 50 birds noted, in late winter-early spring. The maximum Group counts are 30 in February 1969 and February 1975, with the maximum numbers of four records for November – January being 10 in November 1974.

### **Tufted Duck**

Present throughout the year but generally in small numbers with only 11 of 77 records referring to more than five birds and only two records of more than 20 birds. Observations in May suggest that 5 – 10 pairs breed, but young are seen only infrequently. Numbers increase during most winters with between 20 and 50 birds feeding on the Mere. A flock of about 300 birds in January 1974 is very unusual.

### **Pochard**

Its occurrence is, in many respects, similar to that of the last species. However the number of records is smaller. Only 29 records are available, ranging from one in 1974 to a maximum of 12 in 1969. Single pairs or single birds, generally males, were recorded during the breeding season in 1969, 1970 and 1975 but breeding has not been proved. Winter numbers may rise to between 20 and 50 but only four records refer to more than 10 birds with a maximum count of about 30 in September 1971.



### Goldeneye

A most unusual winter visitor with a single record of two birds in April 1971.

### Shelduck

An unusual visitor with two birds in May 1971 and one in December 1972.

### Greylag Goose

One bird recorded in January 1972. A grey goose noted from August to November 1969 was thought to be of domestic origin.

### Pink footed Goose

One in December 1974 with Canada Geese.

### Canada Goose

61 records in all years. Records have increased from three in 1969 and 1970, all in April, to 14 in both 1974 and 1975. A pair has been noted on the Mere in all years and goslings were seen in 1972, 1974 and 1975 although the single young in the last year did not survive. In most years there have been no records before April or after July or August, but two birds were recorded regularly between October 1973 and February 1974, possibly suggesting a tendency for the species to become resiednt.

### Mute Swan

Despite there being only 29 records with a minimum of two in 1971 and a maximum of seven in 1972, this species must be classified as a resident or extremely frequent visitor. A pair has been noted in the breeding season in all years save 1974. Two pairs were recorded in 1972. The only certain records of young are for 1973 and 1975 but late summer and autumn records of more than two birds, with a maximum of six in September 1970, suggest that successful breeding also occurred in 1970 and 1972.

### Bewick's Swan

A most unusual visitor, records for which probably refer to birds in flight over the Fen or making brief visits from the Cam Washes at Upware. The only record for the period is of four in February 1972.

### Reference

- 1) Easy, G.M.S. & Kirtland, C.A.E. (1967). Birds of Wicken Fen.

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