



*This is the fourth edition of the RAS Newsletter, the newsletter for the British Trust for Ornithology's Retrapping Adults for Survival (RAS) Project. If you require further copies, then please contact Dawn Balmer at The Nunnery.*

Number 4

May 2002

## First results from RAS



*BTO Collection*

The first analysis using information submitted to the RAS Project has been carried out this year. Pied Flycatcher was chosen as the flagship species because regional decreases in numbers had been reported by some observers. In addition, RAS data are available from sites well distributed throughout the range of the species, and many of these studies include historical data for the RAS study area. See page 6 for the results.

The RAS Project continues to be well supported. In 2001, 86 datasets covering 42 species were received. The overall total is slightly lower than in previous years due to the impact of Foot and Mouth Disease, which unfortunately prevented access to some study areas (see page 2).

# RAS Update

In 2001, a total of 86 studies were carried out covering 42 species. Of these, seven studies were on species on the *Birds of Conservation Concern* (BOCC) Red list (high conservation concern) and 24 were on the Amber list (medium conservation concern).

Inevitably, Foot and Mouth Disease did impact upon the level of fieldwork carried out for RAS in 2001. Pied Flycatcher and Sand Martin were the most affected species; 10 Pied Flycatcher studies were not carried out in 2001 due to the restrictions imposed by Foot & Mouth. However, it is encouraging that so many ringers were able to continue with their long-term studies. The statistical techniques now available allow us to account for changes in effort from one year to the next, so the reduced effort in 2001 at some sites will not prevent long-term changes in survival rates from being monitored.

The table below shows the species that have two or more current studies. In addition, there are 19 species for which there is only one study. Pied Flycatcher and Sand Martin are by far the most well represented species. Species in **bold** are currently on the BOCC Red list and species in *italics* are on the BOCC Amber list.

## Unwelcome visitors to a RAS site

Hugh Insley, who carries out a RAS study on Storm petrels on Eilan Hoan, writes “an eventful visit this year, which started with a face down with 3 Lynx helicopters that were trying to hide from radar in the middle of a seabird colony. Quite something facing down the lead pilot hovering 10 feet above my head armed with nothing more than determination, a fulmar hook and my mobile. Having asked and succeeded in getting them to depart I sealed the victory by phoning our liaison colonel at Army Scotland HQ who took great delight in telling the Royal Navy range control that the RSPB reserve had to be treated as out of bounds. We went from chaos to being a helicopter free zone in five minutes. The rest of the team were so gob smacked that no-one took a picture sadly.”

## Refunds

In order to receive your RAS refund, please make sure that your RAS data for 2002 are sent to BTO HQ by the end of February 2003. In addition to the data (electronic or paper form), a RAS Summary Sheet must be submitted. This contains vital information about your study, such as annual capture effort, habitat details, census information and details of to whom the refund cheque should be made payable!

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Species	No. studies	Species	No. studies
Pied Flycatcher	19	Common Sandpiper	2
<i>Sand Martin</i>	11	Dipper	2
<i>Swallow</i>	7	<i>Eider</i>	2
Whitethroat	7	<b>Linnnet</b>	2
House Martin	5	<i>Storm Petrel</i>	2
Reed Warbler	5	Swift	2
Chaffinch	3	<b>Tree Sparrow</b>	2
Sedge Warbler	3	Wheatear	2
<i>Barn Owl</i>	2	Whinchat	2
<i>Blackbird</i>	2		

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# Reed Warblers at Rostherne Mere, Cheshire: a review of 2001

## Access

Access was not possible until 7<sup>th</sup> May due to restrictions placed by Foot and Mouth Disease. Instances of the disease were found locally in late May and, as a result, after my first visit to the reserve on 25<sup>th</sup> May I was unable to return until 16<sup>th</sup> June.

## The study

The Reed Warblers at Rostherne Mere have been monitored since the early 1970s, and the site was registered as a RAS study in 1998. Where possible, the adults have been sexed on cloacal protuberance (males) and brood patch (females), although some birds defy being sexed in this way.

There has been a long-term upward trend in the nesting population of Reed Warblers at the reserve, with averages of 31 pairs in the period 1973–79, 42 pairs in 1980–89 and 57 pairs in 1990–99. In 1997, 62 pairs were recorded before increases to 80 pairs in 1998 and 85 pairs in 1999. A small reduction occurred in 2000, with 82 pairs nesting. Only 64 pairs appeared to have nested in 2001 but, from the high numbers of adults caught at the site (equivalent to 71 pairs), it would seem that some birds have failed to show any interest in nesting activity. Table 1 shows the number of Reed Warblers caught at Rostherne

Mere 1997–2001 and the numbers of retrap birds originally ringed as adults, juveniles and nestlings.

## Breeding success in 2001

Due to access restrictions, it was not possible to record first arrival date in 2001, although egg-laying in early May indicates that some birds arrived on the reserve by the end of April. Two early clutches were laid with first egg dates of 4<sup>th</sup> & 5<sup>th</sup> May; the nest of the latter was predated. The first pair hatched only one of four eggs on 18<sup>th</sup> May – the earliest chick to be ringed at Rostherne Mere (25<sup>th</sup> May). Productivity proved to be very low, representing a breeding season success worse than that of any previously recorded year on the reserve (1973–2000). The reasons for this are not obvious but may well be more related to food supply than to direct effects of the season's weather conditions.

Interestingly, the percentage of nests known to hold eggs in 2001 (50.5%) was low compared to 2000 (70.6%) and 1999 (85.4%). The number of nests that produced fledged young was correspondingly low in 2001 (range 18.9–24.2%) compared with 2000 (range 34.6–40.4%) and 1999 (range 45.7–47.9%). There is no evidence to suggest an unusually high level of inexperienced younger adults in the 2001 breeding population,

**Table 1. Captures of adult Reed Warblers at Rostherne Mere.**

Year	New birds		Retraps originally ringed as:			Total annual catch
	Newly ringed	Controlled	Ex-Ros Adult	Ex-Ros Juv Nestling	Ex-Ros	
2001	58	6	30	22	26	142
2000	57	2	33	19	46	157
1999	59	3	27	9	42	140
1998	36	2	15	7	21	81
1997	46	1	10	10	23	90

assuming that retraps are representative of the population as a whole.

Information from the proportion of nestlings ringed and later retrapped within the same season suggests that a high proportion of young birds may have perished soon after leaving the nest in 2001 (Table 2).

To investigate whether or not the adults in 2001 showed signs of experiencing food shortages, the average weights of adults were compared with birds in previous seasons. In 2001 adults did not show any differences in weight compared with 1999 and 2000.

The weather was not particularly wet or cold throughout the 2001 Reed Warbler breeding season but it is possible that the extremely wet autumn 2000 to spring 2001 period may have had an effect on the local insect supply. In the period September 2000 to April 2001 rainfall totalled 156% of the normal for the time of year (Manchester Airport data) and this produced a high mere level until early June.

The overall totals of adults caught (Table 3) suggest that adults returned in normal numbers in 2001, but the number that attempted to nest was lower than in previous seasons. It is possible



Graham Giddens

that the unusually high water levels made conditions unsuitable for Reed Warblers at Rostherne Mere. Those that did breed had poor breeding success.

Ed: Long-term studies like Malcolm's are extremely valuable, and in addition to ringing adults, Malcolm spends a lot of time locating nests, ringing pulli and completing nest record cards to complete the picture.

Malcolm Calvert

**Table 2. Nestlings ringed and retrapped within the same season.**

Year	No. ringed	No. retrapped	% retrapped
2001	50	1	2.00
2000	115	24	20.87
1999	213	43	20.19

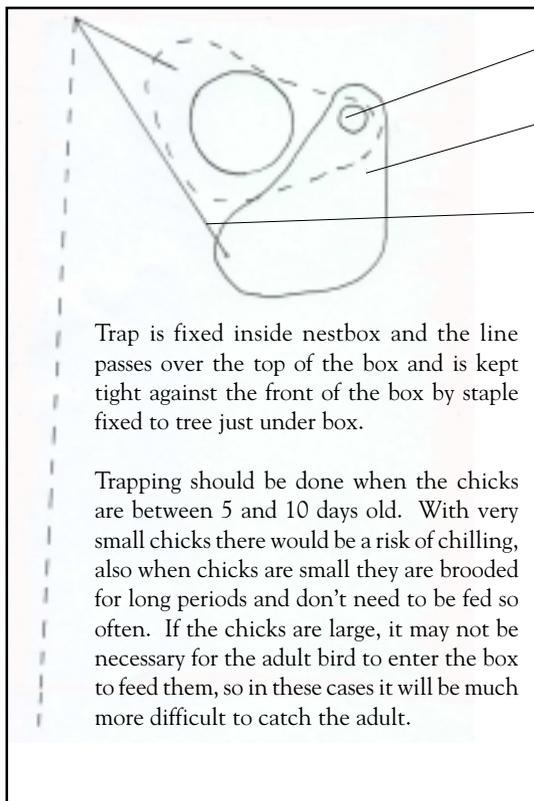
**Table 3. Overall totals of known birds within the breeding season 1999-2001.**

Year	Adults	Juveniles	Pullus	Total
2001	142	21	50	213
2000	157	93	115	365
1999	140	68	213	421

# Alternative Pied Flycatcher trap

After reading the article on Pied Flycatcher catching techniques in *RAS Newsletter* No. 3, Alan Old, a RAS Pied Flycatcher ringer from Cumbria, sent his design for a selective nest box trap for catching feeding adults.

This method of trapping is good for catching male Pied Flycatchers as it allows the female to go in and out of the box unhindered. When catching it is essential to wait until the bird's tail disappears into the box before pulling the line (so that it cannot jump back out as the trap closes). Using flexible plastic ensures that the bird will not be injured should it get caught. 100s of birds have been trapped using this method without mishap. Providing that the male is not polygynous it is usually very quick. Try to set the trap quickly so as not to make the bird suspicious. The bird may look into the box a few times before entering but is quickly reassured by the young calling, or the female entering the box. Polygynous males may take several visits – or never be seen at all.



Drawing Pin Hinge

'Flexible' plastic trap

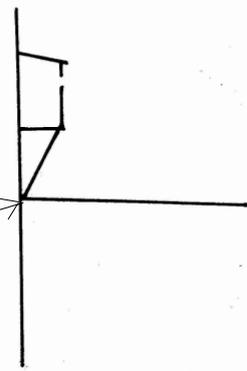
Fishing line

Trap is fixed inside nestbox and the line passes over the top of the box and is kept tight against the front of the box by staple fixed to tree just under box.

Trapping should be done when the chicks are between 5 and 10 days old. With very small chicks there would be a risk of chilling, also when chicks are small they are brooded for long periods and don't need to be fed so often. If the chicks are large, it may not be necessary for the adult bird to enter the box to feed them, so in these cases it will be much more difficult to catch the adult.

Fishing line is kept taut when waiting for bird. A slight tug is all that is necessary to close trap. Try to sit partly hidden behind a tree about 30 yards from box, but providing you can see the entrance hole clearly you can be as far away as you like as the trap pulls easily. It is essential to use a fishing spool, otherwise the line would tangle easily when being 'reeled' in.

Fishing line fed through staple tapped lightly into tree to keep line taut.



# Pied Flycatcher RAS Analysis

The first analysis using information submitted to the RAS Project has been carried out this year. We chose Pied Flycatcher because this species is well represented within the RAS Project, with sites distributed throughout the species range, and many of these studies include historical data for the RAS study area. Over the last few years, some ringers working on Pied Flycatcher RAS studies have described a decline in the number of pairs at their study sites, and also poor breeding success at some sites (see *RAS Newsletter* Number 3.). This apparent decline is worrying and making an investigation to see if survival rates have changed over time of immediate value.

For species like the Pied Flycatcher, the recovery rates of dead ringed birds are generally low, and a RAS-type programme is highly suitable for generating more records and therefore potentially monitoring changes in survival rates with greater precision. The data for Pied Flycatchers are really good because the adult birds can be caught quite easily using a variety of

methods (see *RAS Newsletter* Number 3). This means that, each year, ringers are able to catch a high proportion of the adult birds that are in their study area. The ability to catch a high proportion of the birds each year (recapture probability) means that the estimated survival rates should be more precise. The level of recapture probability may depend of the trapping methods used, the size of the study area and the amount of time a ringer has available to catch birds!

In this piece of work, undertaken by Dr Steve Freeman, data from sixteen long-established sites have been analysed. Thank you to everyone who sent in historical data for this study, especially those who were able to computerise their records. At some of these sites, more than a hundred birds are caught regularly in a year!

The table below shows some of the preliminary results. For each site, the average survival rate, together with the average recapture probability, is shown.

Ringer	County	Region for analysis	Average survival (%)	Average recapture probability (%)
Durham RG (John Wood)	Durham	Durham/N'land	35	72
Northumbria RG (Jane Lindsay)	Northumberland	Durham/N'land	43	60
Northumbria RG (Michael Holmes)	Northumberland	Durham/N'land	40	73
Terry Robinson	Cumbria	Cumbria	38	45
Alan Old	Cumbria	Cumbria	41	81
Edwin Samuels & Merseyside RG	Clywd	Wales & Mids. (N)	39	62
Graham Austin	Shropshire/Powys	Wales & Mids. (N)	39	37
Chris Whittles	Shropshire	Wales & Mids. (N)	31	40
Dorian Moss	Gwynedd	Wales & Mids. (N)	44	86
Dave Coker	Herefordshire	Wales & Mids. (S)	36	57
Dave Hanford & Bob Rigdon	Glamorgan	Wales & Mids. (S)	41	72
Jerry Lewis	Dyfed	Wales & Mids. (S)	44	66
Frank Lander	Gloucestershire	Wales & Mids. (S)	46	89
John High	Devon	Wales & Mids. (S)	42	84
Harvey Kendall	Devon	Wales & Mids. (S)	33	48
Peter Gardner	Herefordshire	Wales & Mids. (S)	44	75

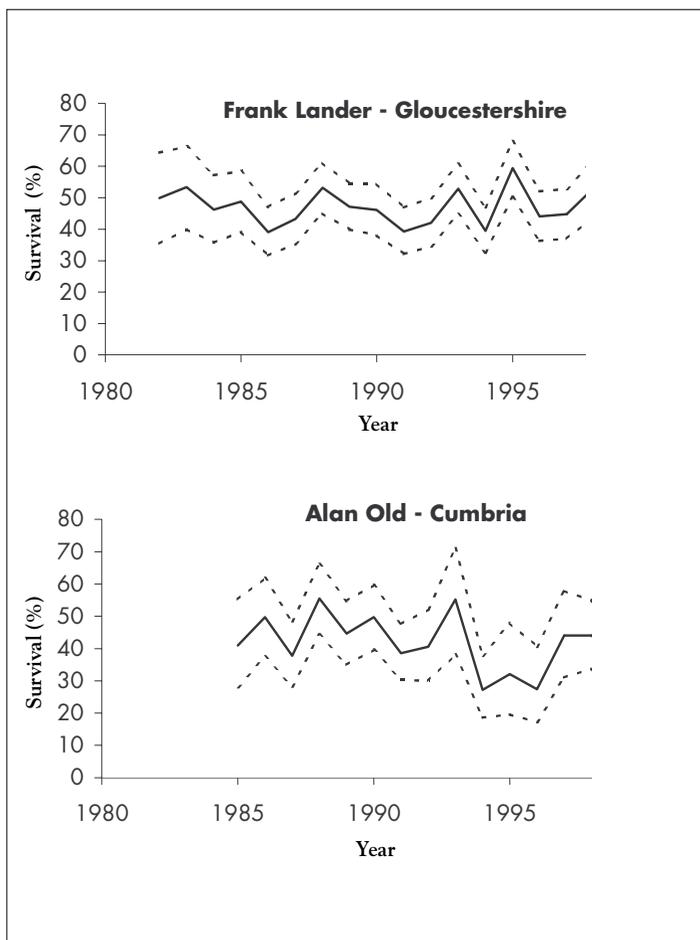
Many ringers were able to recapture well over 50% of the ringed Pied Flycatchers returning to their sites (range 37–89%), often in specially situated nest-boxes, to produce a unique data resource for this species of very localised distribution. Average survival rates of adult birds varied from 31–46% per year between the different sites. There are no reliable estimates for British Pied Flycatchers with which to compare these figures, but they are very similar to previously published estimates from Scandinavia, where the species is common.

The graphs show the long-term pattern of adult Pied Flycatcher in survival at two RAS study sites: Frank Lander's site in Gloucestershire and Alan Old's site in Cumbria. Survival has been

fairly stable at Frank's site, whereas there was a notable fall between 1983–84 at Alan's site.

Steve divided the sites into four regions, representing the species' British strongholds. Since 1981, Pied Flycatcher populations in different parts of the country have experienced different fortunes in terms of annual survival. Those in south Wales and the English Midlands have had remarkably stable survival whilst birds in Cumbria have seen a steady increase in mortality rates over the same period. In the northern part of Wales and the Midlands, survival appears to have been particularly low in the early 1990s but has since recovered. There is no evidence of decreasing survival at any of the sites in Durham/Northumberland.

This study has given us a first opportunity to explore and develop methods for analysing RAS-type mark-recapture data that can subsequently be applied to other species. The ability to combine data from several sites is a powerful tool and might enable us to provide more precise information than would be available from the analysis of single sites in isolation. This exploratory analysis shows that RAS studies, in which relatively modest numbers of birds are caught, if carried out consistently over time, can make an important contribution to our knowledge of the demography of many species when combined among a number of such sites. We will be writing up the results for publication as soon as possible.



# Ringling recoveries at Sparrowhawk sites: the impact on Whinchats

We are both interested in Whinchats and have been carrying out RAS studies for several years. One study was started in 1998 by Steve Smith (SS) and covers the Blorenge–Garn–Clochdy ridge in Gwent, and the other started in 1999 by Mark Lawrence (ML) and is centred on Blaen Onnau near Crickhowell in Powys.

The Gwent study area is primarily moorland habitat and each year around 300 Whinchats (adults and pulli) are ringed. Adjacent to the moorland is a forestry plantation, which holds breeding Sparrowhawks. We were keen to search for some of our “lost birds” from the RAS studies, so we set out to find the nests of the local Sparrowhawks. We were able to find several nests, and using a metal detector could find metal rings on the floor, either lying on the ground or slightly buried. In recently occupied Sparrowhawk nests, the rings were still in the nest. In total, rings

from 11 Whinchats, one Meadow Pipit, one Pied Flycatcher, one Greenfinch and one Wheatear were found. Whinchat is the most ringed species in the area so the proportion of Whinchat rings discovered is not too surprising.

In addition, prey items were found including the following species: Cuckoo, Green Woodpecker, Wren, Robin, Whinchat, Blackbird, Song Thrush, Willow Warbler/Chiffchaff, Blue Tit, Great Tit, Starling, Chaffinch, Greenfinch and Siskin.

## Some facts

Whinchat<sup>1</sup> was first ringed as a pullus in June 1998 and the following year nested less than 1 km from the natal site (it was a



Rob Hume

## Table of ringling and finding information for rings found.

Species	Ringling Date	Ringling Location	Finding Date	Finding * Location	Other info
Whinchat	17.06.00	Garn-Fawr, Gwent	31.07.01	1	RAS pullus
Whinchat	07.06.00	Blorenge, Gwent	31.07.01	1	RAS pullus
Whinchat <sup>1</sup>	10.06.98	Garn-clochdy, Gwent	04.08.01	1	RAS male
Whinchat	22.06.00	Blorenge, Gwent	06.08.01	1	RAS female
Whinchat	20.06.01	Garn-clochdy, Gwent	10.08.01	2	RAS pullus
Whinchat	21.06.95	Garn-clochdy, Gwent	19.08.01	2	Pre-RAS
Whinchat	23.06.96	Garn-clochdy, Gwent	19.08.01	2	Pre-RAS
Whinchat <sup>2</sup>	03.06.00	Blaen-Onnau, Powys	21.08.01	2	RAS female
Whinchat	02.07.01	Garn-clochdy, Gwent	27.08.01	2	RAS male
Pied Flycatcher <sup>3</sup>	09.05.00	Nr Rifton, Devon	21.08.01	2	RAS female!
Whinchat	14.06.99	Garn-clochdy, Gwent	08.09.01	2	RAS pullus
Greenfinch	27.04.99	Lasgarn Wood, Gwent	08.09.01	2	Garden pullus
Meadow Pipit <sup>4</sup>	15.07.90	Garn-clochdy, Gwent	11.11.01	2	RAS area
Whinchat	13.06.95	Garn-clochdy, Gwent	18.11.01	2	Pre-RAS
Wheatear	04.06.93	Varteg, Gwent	-.12.01	3	Nest box pullus

\* Finding Location – Site 1: Blaenafon, Site 2: Cwm Lasgarn, Site 3: Cwmafon.

male). In 2000, it returned to breed very close to its successful 1999 site. The ring was found on 4 August 2001 in a Sparrowhawk nest that was thought to be a 2000 nest; therefore it is likely this bird was taken in the summer of 2000.

Whinchat<sup>2</sup> was controlled by SS in the Gwent study area as a female in 2001. ML had ringed it originally in June 2000 as a pullus in his RAS study area in Powys, c 16 km away. In June 2001 this female deserted her clutch of six eggs and then went on to raise a brood to fledging stage in July. Her

mate, a “new” male, had already been ringed and had disappeared. On 21 August 2001

the ring of this female was found in a Sparrowhawk



nest in a nearby Larch plantation, and a week later the ring of her mate was found in the nest; it was probably overlooked initially.

The ring of Pied Flycatcher<sup>3</sup> was found in a successful 2001 Sparrowhawk nest, along with two Whinchat rings. The Pied Flycatcher was ringed in May 2000 and was part of a RAS study in Devon! Meadow Pipit<sup>4</sup> was originally ringed as a pullus in 1990 and the ring was found well hidden amongst the leaf litter; the condition of the ring suggested it had been there for some time.

We found that it was not just inexperienced Whinchats that were predated, but experienced adults were just as vulnerable and we suspect that the Sparrowhawks are bringing in prey items from several kilometres away.

We encourage other RAS ringers to try and locate Sparrowhawk nests in the vicinity of your RAS project – you might just discover some of your “lost birds”!

**Steve Smith and Mark Lawrence**

## Coincidences

When I was a trainee with Barrie Watson, many years ago, he took me to ring winter birds in the village of Storrington, Sussex, at the house of one John McKelvie, ex India Diplomatic Service. On the way he said “*You* worked in India; did you know him?” This was rather like asking if I had come across John Doe when I was in America, or if I had met “Smudger” Smith when I was in the army. But, oddly enough, I *had* met the McKelvies, in Calcutta. I remembered admiring the nest of a Tailor (“Dersi”) Bird in their garden out there. Well, that’s what I call a coincidence.

And now another. In my RAS project on House Martins, I caught a matrimonial pair last year in the spread-eagled and scattered village of Westwick in North Norfolk. It was at Laundry Cottage, on 2 July 2000. The male got ring P220600 and the female, P510906. This year, 2001, I retrapped the same pair at Duff Cottage, 1 km away across the fields.

What really makes this an extraordinary epic and copper-bottomed coincidence is that, unlike

swans and geese and even Common Whitethroats, male and female House Martins have probably “never” been known to pair up again in consecutive years, even though both have survived the c.4000 mile each way, trans-Saharan migratory journey to and from Nigeria or the Congo, or wherever! Oh, and while we are rabbiting on about coincidences, the day they were retrapped was also 2 July.

**Sandy Hill**



# Focus On Willow Warbler

I started Kippo CES (Fife) in 1987, mainly to be politically correct, though I had run a similar standardised ringing project on a winter roost for twenty years. I rapidly found it quite fascinating. Kippo is an island of wood and moorland in an arable desert. My early thoughts were about how effective CES was and I decided to monitor the whole site (CES occupies less than 1/5) in an integrated way starting with Willow Warbler as the dominant summer visitor and Chaffinch as the dominant resident. It took twelve years to completely understand Willow Warblers and I have only just started on the Chaffinches! Briefly CES works very well for Willow Warblers and maybe one day my will get published.

Part of the study has involved ringing and colour ringing just under 2000 Willow Warbler nestlings. These have yielded just two distant controls but over 800 have been retrapped including more than 150 different individuals caught in subsequent years. It took a year or two to learn how to find every Willow Warbler nest – including one 16 foot up a spruce tree! At peak there are more than 85 territories. Relatively few nests are found before hatching though for four years the CES site was more thoroughly studied and most nests were found during building; these broods were intensively recorded including DNA finger printing. Integrating nest finding into the CES study has become critical since it allows one to tell where juvenile mortality is taking place. Not every brood is found in the nest every year but with nearly all adults colour marked, one can almost invariably detect them once fledged. Most

Kippo-produced juveniles leave the wood by 21<sup>st</sup> July and, after that time, true migrants may appear.

The years 1994 to 1999 were very good for Willow Warblers with an increasing population and, given there were only just over 90 territories as a maximum, then there were surplus adults. In 1999, 77% of all juveniles caught had been ringed in the nest and probably reflects a still improving ability to find nests! In 2000, the females were back very late (and may well have been in trouble since the males arrived on time and in record numbers); only 34 nests were found, a poor total, which probably reflected the poor return of females. Once again, 78% of all juveniles caught had been ringed in the nest, giving confidence that most nests were found. Most broods fledged but the weather during the post-fledging period was cold and, clearly, there was a high mortality immediately post fledging with less than 1/3 the average figure caught.

2001 was an unmitigated disaster. The birds came back late in very reduced numbers. I really struggled to find nests and even began to lose confidence in my abilities. Unless females at least hatch a brood they are relatively unlikely to be caught or even seen which in a poor year depresses the total. However only 10 juveniles were caught in all and nine of these were ringed in the nest. So four problems faced the population in 2001; a poor breeding season in 2000, a late arrival in spring, few birds successfully nesting and a terrible post-fledging period. Interestingly there was a good passage of juveniles in mid August, which rates of movement charts (based on the national



ringing data) suggested are likely to have come from north of Inverness. Even more interesting is that, in 1987, about 10% of Kippo birds were of a 'yellow morph' but by the mid 1990's all were of the 'brown and white morph'. Nearly all the migrants in August were as yellow as canaries. Clearly Willow Warblers did better in the Highlands in 2001 (there is a little evidence for this from one CES site in that area) – maybe even in Scotland there are different populations of Willow Warblers and just possibly they winter in different areas and survive differentially. Just maybe too when Kippo has a big population, young birds potentially going farther north to breed for the first time, stand no chance of setting territories up on the way by, but perhaps when the population is in trouble – as now – birds from elsewhere can establish.

I guess the future will be fascinating. You can tell numbers of second broods by the timing of female moult. It is very rare this far north – only 3 in 14 years. Why do Willow Warblers need to leave at the end of July? I suspect British birds trickle south in very short stages during August but do not know why. When I first started there was a little evidence that either replacement second broods or third broods successfully fledged in early September and returned to breed. Examination of the national ringing data by me (unpublished) provides almost no evidence that juveniles or adults ever return to anywhere but close to the natal site. So how will this population recover given that even in the best years they seem to only just produce enough young to maintain the population?

Jim Cobb

## Numbers of Willow Warblers trapped at Kippo 1995-2001.

YEAR	No. Territories	No. Males	No. Females	No. Nests	No. Pulli	Pulli per brood	Fledged pulli trapped	% of all juvs. caught before 21/7
Average 1995-98	88	98	87	39	215	5.4	70	70
1999	87	141	102	50	261	5.2	79	77
2000	73	148	66	34	190	5.6	19	78
2001	67	75	25	21	116	5.5	9	90



Andy Wilson

Ed – Jim's study on Willow Warblers is a good example of a RAS-type approach to investigating key questions about the dynamics of his population in Kippo. In addition to ringing and retrapping adult birds, Jim has invested a huge amount of time in nest finding and ringing pulli, and in general mist-netting in late summer to pick up fledglings. Jim is also taking this approach to attempt to understand more about Chaffinches and Bullfinches in Kippo. We encourage all RAS ringers, where possible, to record the numbers of territories of their species in their study area each year and to complete nest record cards. This will add a great deal of value to any RAS study. To find out more about nest recording, please contact Andy Simpkins at The Nunnery (e-mail: [andy.simpkins@bto.org](mailto:andy.simpkins@bto.org)).

## **RAS Newsletter**

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