RAS *News*

This is the tenth edition of RAS News, the newsletter for the British Trust for Ornithology's Retrapping Adults for Survival (RAS) Scheme. If you require further copies, then please contact Mark Grantham at The Nunnery.

Number 10 June 2009

RAS turns demographic

It occurred to me recently, as I've been putting together *RAS News*, *CES News* and *Ringers' Bulletin*, that every publication that comes out of the BTO of late has news of big changes, whether of staff, offices, names or titles. As might be expected, RAS is no different!

I've only recently taken over the RAS reins and now have a few different hats to wear, but thankfully I can wear most of them at the same time and just think about DEMOGRAPHY. The most recent strategy changes at the BTO (more of that in the upcoming *Ringers' Bulletin*) have meant that the Ringing Scheme and the Nest Record Scheme are now sitting together (literally, in the office as well!), under the umbrella of the new Demography Team. Within this team, we've brought together the three main Demographic Monitoring Projects: RAS, CES and the Nest Record Scheme, which will enable us to develop a much more integrated approach to our monitoring. So, over the next six months we'll be thinking of ways to increase the number of RAS projects and also how we might be able to achieve more integration between the three 'DMP's to produce a much clearer picture of what is happening to populations on these sites. We hope this will be an inclusive task, so please let us know your thoughts. More of this in the next *RAS News*...

The new RAS Team

Following this change, we thought we'd better introduce ourselves as the new RAS Team...

Heading up all of the Demographic Monitoring Projects (RAS, CES and Nest Records) is Dr Dave Leech, who many of you will know from his involvement with the Nest Record Scheme. Dave has been ringing for over 10 years and currently runs a Blackbird colour-ringing project, recently registered as a RAS study, in North Norfolk.

The day-to-day organisation of RAS is now my responsibility. I'm a migrant ringer at heart, having trained at Gibraltar Point Bird Obs, but am now involved in CES and nest recording at The Nunnery and at the University of East Anglia.

Mark Grantham

Summary of current RAS projects

Species	Number	Location
Eider	1	Strathclyde
Manx Shearwater	1	Highland
Storm Petrel	2	Highland (2)
Shag	1	Strathclyde
Little Ringed Plover	1	North Yorkshire
Common Sandpiper	2	Borders, Derbyshire
Kittiwake	1	Anglesey
Puffin	1	Western Isles
Barn Owl	1	Dumfries
Swift	1	Oxfordshire
Sand Martin	13	(see map)
Swallow	4	Co. Offaly, Cumbria, Herefordshire, North Yorkshire, Oxfordshire
House Martin	2	Dorset, North Yorkshire
Dipper	2	Borders, Manchester
Dunnock	1	Lincolnshire
Stonechat	1	Shropshire
Wheatear	1	Shropshire
Blackbird	1	Norfolk
Sedge Warbler	3	Shropshire, Suffolk (2)
Reed Warbler	5	Cheshire, Lancashire, Shropshire, Suffolk (2)
Whitethroat	2	Kent, Lincolnshire
Wood Warbler	1	Somerset
Willow Warbler	1	Fife
Firecrest	1	Hampshire
Pied Flycatcher	18	(see map)
Blue Tit	1	Co. Londonderry
Great Tit	3	Cleveland, Co. Londonderry, Cumbria
Marsh Tit	1	Cumbria
Starling	1	Essex
House Sparrow	8	Glamorgan (2), Hampshire, Kent, Norfolk, Northumberland, North Yorkshire, Somerset
Tree Sparrow	1	Durham
Chaffinch	3	Borders, Fife, Norfolk
Siskin	5	Borders, Clwyd, Norfolk, Somerset, Suffolk
Yellowhammer	1	Northumberland

2008 RAS season

As the results table (left) shows, 2008 saw 92 RAS projects submitting data, once again for a wide variety of species. Of the 34 species we received data for, six are Red-listed (species of high conservation concern), with another 18 being Amber-listed. The kind of information that we collate through RAS for these declining species is incredibly valuable, and is a testament to the targeted nature of the Scheme.

Whilst the 2008 total is still below the peak in 2004, many of the projects continue to provide very long runs of data, making them more valuable every year. Of the current projects, 43 have submitted data covering more than 10 years, and the 'top five' longest-running active projects are shown in Table 1.

We are always keen to receive historical datasets when they complement new, or existing, projects, so if you have any data gathering dust in old notebooks or paper schedules then why not consider getting them input and submitted?

Distribution of RAS projects in 2008 on Sand Martin (red) and Pied Flycatcher (blue).

Table 1. Longest-running RAS projects active in 2008.

Start year	Species	County	Ringer
1968	Pied Flycatcher	Herefordshire	Dave Boddington
1972	Pied Flycatcher	Herefordshire	Dave Boddington
1977	Common Sandpiper	Derbyshire	Phil Holland
1979	Pied Flycatcher	Cumbria	Alan Old
1980	Pied Flycatcher	Northumberland	Northumbria RG

RAS analysis

Rob Robinson, here at The Nunnery, has just finished an analysis of 10 years of Blackbird data collected by Jeff and Allison Kew in their Norfolk garden. Using their 13,156 resightings of colour-ringed adults(!), we were able to look at seasonal changes in survival, which really is ground-breaking work. The full analysis will appear in the *Journal of Avian Biology* (with a summary in RAS News); a real boost to the RAS Scheme..

RAS studies in County Offaly

I started ringing hirundines in 2001, having got my 'C' Permit in December 2000. Having been brought up on a farm, I was always fascinated by the Swallows nesting in the sheds and how they always came back each year. Even as a child I always wondered – were they the same ones coming back each year? My father would tell me "yes", and I was amazed that they found the same farmyard having come all the way back from Africa.

A RAS study seemed to be the obvious choice for me and gave me a chance to prove or disprove some of my childhood theories. Happily I was able to prove my father and I were neither right nor wrong as several of the same birds came back to the farmyard along with new partners. I have just got word that a female Swallow ringed in 2005 in my uncle's farmyard was controlled in April 2007 in Malaga, southern Spain. This bird was back in my uncle's shed in May 2007 and again in 2008. This proves that she has nested in this farmyard for four years at least; hopefully, I will catch her again this year.

The Sand Martin project was a logical progression. I am fortunate to live in an area of glacial eskers, from many of which sand and gravel is being extracted. These sandpits are ideal breeding areas for Sand Martins and the owners are happy to let me ring there. I usually go in the evenings or weekends when it is quiet: the quietness is for me as the Sand Martins are used to the noise and activity. In fact, they need the sandpit to be worked in order to have fresh banks to nest in. Sandpits not in use tend to get overgrown and less attractive to Sand Martins.

I find with the Sand Martins that it is possible to ring a lot of birds as they are in a colony, whereas with Swallows each farmyard has to be visited individually to ring eight to ten birds. One advantage of the RAS study is that you can usefully catch birds at any time of the day, not just early morning. Most of the Sand Martins I ring are caught in the evening. If I finish work early I can go to a colony at six and be out by eight, having caught between 50 and 100 birds. I have tried going to colonies at dawn and setting up nets in the dark but I didn't necessarily catch any more birds.

It is also possible to catch Swallows in farmyards at any time of the day, especially when they are feeding young. It is always important to remember that they are breeding birds and not to spend too long in the one place as they may have small chicks or eggs. In a Sand Martin colony it is important not to leave nets up too long in front of the burrows – less than an hour is okay. I find if I leave the top strings of nets about 30 cm below the top burrows the birds can get back in – and as they drop when they fly out they still get caught.

At the moment I think I am the only ringer doing a RAS study in the Republic of Ireland (*you are Declan - Ed*). There are great opportunities to do studies here in Ireland! Swallows are breeding all over the country

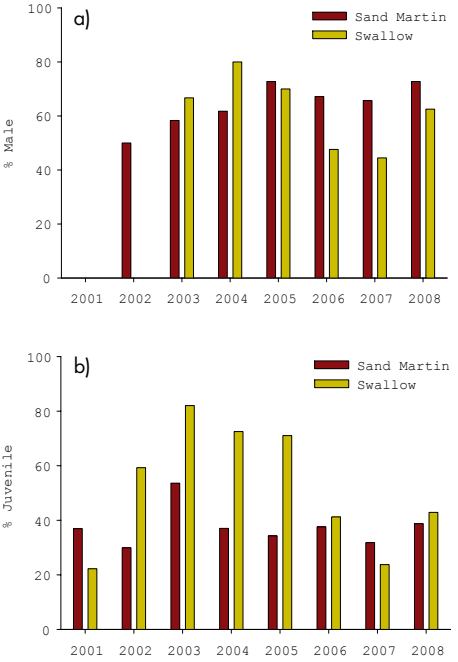

Figure 1. a) The sex ratio of the two species (from adult retraps) can be quite variable, consistently biased towards males in Sand Martins, though more variable in Swallow, with over 80% males in 2004, but closer to 40% in 2006 and 2007. b) The percentage of juveniles in the catch is also rather variable, more so in Swallows than Sand Martins.

so you will never be too far from buildings or farmyards with Swallows. There are quite a lot of sandpits in the country also and these would have Sand Martins breeding in them. With the small number of ringers in Ireland there is great potential for RAS studies on a wide variety of species. I find that when I approach farmers and sandpit owners to explain what I plan to do they are very interested and fascinated by the whole idea of ringing and tracking the birds' movements. When I get an unusual recovery or control, I always let them know and they are amazed that a tiny Swallow ringed in their shed is back again in Edenderry after travelling all the way to South Africa.

I find the RAS study easy to do and very enjoyable and I look forward to the return of the Swallows and Sand Martins every year. If anyone in Ireland or indeed the UK is interested in doing a similar RAS study to mine, please do not hesitate to contact me.

Declan Manley runs a tree nursery and landscape business in Co. Offaly - an ideal ringing site! He got his 'C' Permit 2000, and his 'A' Permit in 2003 and has run a RAS on Swallows and Sand Martins since 2001. His son, Patrick (18), is now a 'C' Permit holder and his daughter, Katie (14), a Trainee.

Email: declan@manleysnurseries.com

Solving a problem – RAS for Storm Petrels

Many ringing projects start with ringers finding an opportunity to catch lots of birds and then trying to work out what they can do with the data collected. This project started with a conservation management problem, which we have tried to address by working out how catching and marking the birds might produce the answers needed.

Two of the RSPB's reserves in the northwest Highlands, Priest Island and Eilean Hoan, hold Storm Petrel colonies that we are helping to monitor using RAS methodology, and this article describes some of the issues arising at Priest. Priest Island, 121 ha, is estimated to hold the third biggest Storm Petrel breeding colony in Britain. The birds' wholly nocturnal comings and goings, and their hidden nests, make managing a reserve for Storm Petrels extremely difficult.

The only accepted method for assessing Storm Petrel breeding numbers is tape response. For Priest Island this is so onerous that a quinquennial census has been adopted, recently with annual sampling in a few fixed plots. At about the time that the first full tape response survey was made on Priest Island in 1999, we started to explore whether mark–recapture could be used as an alternative method.

Our starting point was to read everything written on Storm Petrels and relevant to a mark–recapture programme. Adults return to breeding colonies in May and June, eggs are laid in June or early July and the young fledge from August through to October. All available information suggests that both adults and young migrate south to winter off Namibia and South Africa. Some young can return to breeding colonies in their first year, but most do not start to breed until their third or fourth years.

Until then, the young birds wander all over the North Atlantic visiting other breeding colonies; it is thought to be these juveniles that respond to ringers' tape lures. Because of this, up to 10% of the Storm Petrels in some colonies carry rings acquired from all around the coasts of Britain, Ireland, Norway and especially Portugal, where A Rocha catch many on passage. Once they settle to breed, it seems they no longer respond to tape lures and become extremely site faithful. This change in behaviour is well illustrated by our ringing returns at Priest Island, where 90% of our recoveries are controls of birds ringed elsewhere during their wandering phase, while only 10% are recoveries elsewhere of birds we have ringed.

Because the juvenile wanderers return north some weeks after the adults, we deliberately make our RAS visits in early June and avoid the use of tape lures to maximise the proportion of adults caught. Judging by the recovery pattern, this is successful.

Simultaneous catches all over the island in 2001 and 2002 suggested that the interchange between sites on the island was less than 1–2%. Clearly we could not continue with such a massive effort and anyway a total population estimate was not necessary as a reserve

management tool. What was needed was an indicator of population change, so for the last ten years we have focused our efforts in the core site. Because the adults change over at around four days, we limit our catching effort to three consecutive nights. This seems to work and we seldom catch the same individual on more than one night during our visits. The results have been dramatic and statistically very sound with tight standard errors (Table 1). Interestingly the estimate of the population being sampled (not the whole island population) has been remarkably close to that found by the quinquennial tape response surveys, which do aim to census the whole island. More importantly the Jolly (1965) and MARK methods have given us very robust annual survival figures.

Because of our birds' secretive and nocturnal habits, it has been extremely difficult to tell whether they have shared in the near-total collapse in breeding success that has affected larger seabirds in the region (Mavor *et al.* 2008). The population estimates from mark–recapture and tape response are remarkably consistent, giving confidence that the combined use of the two techniques is proving reliable, but for both there is a worrying suggestion of a decline since 2003.

The survival rates calculated from the RAS work are also fairly consistent, with what must be normal variations year to year, but no real trend. The overall average of 0.83 is marginally less than the national average (0.858) estimated from dead birds (Dagys 2001). Survival estimates calculated from mark–recapture studies are usually lower than those from ring-recovery analyses because they are an estimate of 'survival' within the population, not survival from death *per se*, and so include an element of emigration from the population. The difference between our mark–recapture estimate and the national one being so small could be interpreted to mean that few of our breeding birds emigrate to different colonies, *i.e.* once a bird has bred on Priest, it usually breeds there for the rest of its life. That we can make this statement is another benefit of us catching the birds early in the season and without tape lures – thus excluding most wanderers and exploring young birds.

The ingress (recruitment) estimates show a rise over the first four periods then a subsequent small fall. Using the overall figures of a population of 7,438 and a survival rate of 0.83 we can see that 6,191 birds will survive after one year (7,438 x 0.83) and that if there are 841 recruits then the new population will be 7,032 (6,191+841). If these average figures continue, the population will decline by about 406 (7,438–7,032) birds per year. Put another way, the breeders need to produce 1,247 recruits per year but they are producing only 841, or the breeders will have to improve their survival rate from 0.83 to 0.89 ([7438–841]/7438) if the population level is to be maintained.

Table 1. Storm Petrel monitoring on the Priest Island RAS (note there were no captures in 2000).

Year	Captures	Prop. retrap	Pop	SE	(Since previous year...)			
					Surv	SE (surv)	Ingress	SE (ing)
1999	885	0.017						
2001	559	0.061	8,336	1,460				
2002	1,015	0.124	8,137	809	0.9724	0.0696	31	1,436
2003	1,064	0.214	8,279	707	0.9339	0.0679	680	777
2004	760	0.263	7,082	654	0.7152	0.0607	1,162	540
2005	1,033	0.277	7,656	719	0.8742	0.0857	1,464	530
2006	348	0.322	6,576	983	0.7413	0.1054	901	587
2007	744	0.311	5,999	840	0.7899	0.1376	805	515
2008	556	0.349						

Summary: overall survival rate 0.83; further life expectancy 5.45 years; average population size 7,438; average ingress (recruitment) 841.

Working with Storm Petrels is challenging in terms of both location and timing but it is extremely enjoyable and exciting. We are limited by the licence for the boat in the number of people who can go to the island but we try to include someone new each year to spread the experience. There is a waiting list, but especially if you are young and fit (we want to encourage young ringers), email us and we'll do our best to include you in a future year.

Acknowledgements

This work has been carried out as part of the RSPB's volunteering programme. Scottish Natural Heritage provides financial support, as does the RSPB's reserve budget for Priest Island. We have been fully supported throughout by the reserve site managers, initially Kenna Chisholm and more recently Steph Elliott, who have also both taken an essential and active part in the fieldwork. We are also very grateful to Hamish Sinclair of Achiltibuie, who adds colour to our experience during our safe transport to and from the island. Thanks also to my co-author, Mike Hounsome.

References

Dagys, M. (2001) PhD thesis, University of Manchester.

Jolly, G.M. (1965) *Biometrika* 52, 225–247.

Mavor, R.A., Heubeck M., Schmitt S. & Parsons M. (2008) *UK Nature Conservation* No 31. JNCC.

Hugh Insley has been a lifelong member of the BTO and has served on RNC and Council. He has been the Regional Rep for Inverness-shire for longer than he can remember (more than 10 years anyway), is the Atlas Organiser for Inverness-shire and has three long-running RAS projects: Storm Petrels on Priest and Hoan and Sand Martins around Inverness.

Email: hugh.insley@btinternet.com

Opportunistic, high rise RAS

My House Martin RAS study area is, conveniently, the school where I have been working for nearly 30 years. Most of the nests are on the sides of one long single storey building, the Assembly Hall, which has eaves just under 18 feet high that I can reach fairly easily with either a mist net on 18 ft poles or a 'butterfly' net on a long pole for individual captures. Other nests are scattered on various other buildings at more accessible heights. A few years ago, nests started being built under arched

stonework over a wide window on the main building which is in excess of 25 feet high (right). Currently there are nine nests closely spaced, all of which seem to be occupied every year and they have mostly defeated my various attempts to get at them. I have tried a very long pole from ground level, or climbing a single ladder as high as I dare and reaching with a shorter pole, but I have rarely caught more than one or two birds at a time. The main problem, apart from the height, is that the proximity of the nests to each other means that, when trying catch at any single nest, most other birds are flushed at the same time and one misses the majority. Very frustrating.

However, during the 2008 summer holidays, it was deemed necessary to undertake wholesale repainting of the window frames on this side of the building. This entailed erecting scaffolding over two long lengths, including the section where this archway is (left). Seizing my opportunity, I set out on two early mornings (long before the painters appeared) to climb the scaffolding and erect a short mist net across the archway. I actually set it up furled the evening before so that in the morning all I had to do was to unfurl it as quietly as possible and wait for the adults to emerge. The picture below shows some of the nests under the arch with the net in front (well, no, you can't really see the net can you – which is the whole point!).

From these two visits, I managed to catch seven birds the first time (five new and two retraps) and 20 the second (nine new and 11 retraps) which was very encouraging. Six of the new birds were juveniles, and three of the retraps on the second catch were new birds from first attempt. However, two retraps were from two years before, which made things worthwhile.

This is clearly a one-off situation as I can't expect the school to put up scaffolding every year just for me to get at the birds, so from here on it will be back to the hit and miss methods!

Roger Peart has been ringing for over 40 years, mostly local passerines in Devon and Dorset. Pulli, generally from nestboxes, make up a good proportion of his annual totals, though Spotted Flycatchers also featured until they disappeared from the area a couple of years ago.

Blacksmith Sparrows

In March 2006, a chance conversation about ringing and the dearth of House Sparrows on my home patch led to me being invited to ring at the home and plant nursery of Ben Potterton, at Blacksmith's Cottage, near Diss in south Norfolk.

House Sparrow is proving to be a popular and successful species for RAS projects, and more projects like David's would be most welcome. The results will aid the conservation of this red-listed bird.

The cottage and neighbouring properties themselves provide plenty of suitable nest sites for House Sparrows, and some nest box terraces had also been installed. Seed feeders have been put out, and adjacent to the nursery is an area holding a collection of rare poultry, wildfowl, cranes, storks and alpacas, which all add to the feeding opportunities available to wild birds. I was originally told there was a healthy colony of House Sparrows present and Ben was particularly interested in the dynamics of this population.

Ringing started at the end of March 2006 with, at that stage, no thought of a RAS project. However, by the beginning of that July, 68 House Sparrows had been ringed and 11 of them retrapped. At that time the BTO was looking for more people to take on RAS projects for House Sparrows, so it seemed a natural next step to register. Given that the owners were keen to know more about "their" sparrow population, lived and worked on site and would be frequent observers, it also seemed sensible to introduce individual colour-ringing of birds at the same time.

Ringing has taken place on an almost weekly basis since then, predominantly using mist nets, but the nest box pulli are also ringed when the terraces have been occupied. With so many pantiled buildings nearby, however, the uptake of the terrace nest boxes has been rather disappointing. Also, the timing of pullus ringing is crucial – too soon and it is not possible to fit a BTO ring and a colour ring on the same leg, yet too late and they are gone, or there is a risk of an 'explosion' on opening the lid.

The total number of birds ringed has been far from disappointing, however, with 341 up to the end of 2008. Of these, some 98 have not been retrapped or observed since ringing. This figure includes recently ringed birds yet to be seen or recaptured, and there are still some sightings of birds with just a BTO ring that cannot be identified individually. Combinations of up to three colour rings have only been added to new birds and retraps since registering the RAS project.

Three years into the project now, things are beginning to settle down in terms of numbers and we are starting to see some patterns emerging.

Table 1 highlights the ringing effort over the last three years, within and outside the RAS period. It is still early days but if the emerging pattern continues some useful data will be obtained and questions answered, but it will inevitably start to pose more questions – which can only be good in the long term. Table 2 gives an indication of the numbers of adult retraps we are recording, though the proportion returning year on year seems low.

Table 1. House Sparrow ringing totals by calendar year, with those in the main RAS period (1 April to 31 August) in brackets – all ages included.

Year	New	Retrap	Observations
2006	155 (97)	61 (14)	35 (0)
2007	96 (67)	55 (27)	208 (25)
2008	90 (64)	41 (21)	432 (63)

Table 2. Number of adult House Sparrows recorded in each RAS season and number that were also recorded in the previous season.

RAS season	06	07	08
No. adults recorded	44	33	31
No. of adults also recorded in the previous RAS season	0	8	6

Ringing and colour-ring observations extend throughout the year. Roughly two-thirds of birds are being ringed in the RAS period and, 2006 excepted, roughly half of the retraps are in the RAS period; sightings, though, are heavily weighted toward the rest of the year.

The colour-ringing and observation of combinations in the field has provided a very significant contribution to the project, accounting for many more records than the retrapping alone, both within and outside the RAS period. It is also this aspect that has added even more interest and involvement from Ben and his family. They are now very well practised at recording colour ring combinations correctly and have been given colour charts to ensure the correct colours are described. On each visit I am proudly presented with long lists of new sightings and enquiries about those birds' histories. I hope to extend this interest and enthusiasm throughout the village, as some other residents have already started to notice colour-ringed birds, but as yet have been unable to be specific about colours – another training need identified and more work to do!

While this is essentially a ringing project, the enthusiastic involvement of non-ringers has contributed greatly. My thanks in particular go to Ben and his fiancée, Sarah Marshall, for allowing access to the site and for their tireless work in collecting their observations. Thanks also go to Helen Bristol who has been significantly involved in the ringing.

David Fuller is an 'A' Permit holder and trainer. In addition to this RAS project, David has a Great Spotted Woodpecker colour-ringing project on a Norfolk farm where he also has 100 nest boxes. He is also a Schedule 1 licence holder for Stone Curlew on a Suffolk Estate, ringing chicks of about 10 pairs each year.

Dutch RAS

RAS ringers might be interested in some of the work being done in The Netherlands by Frank Majoor. Frank is the Dutch equivalent of much of the BTO's Demography Team in one man, working on the Dutch RAS, CES and nest recording schemes.

Frank currently runs seven RAS projects, four of which use colour ringing to generate resightings (Egyptian Goose, Little Ringed Plover, Black-headed Gull and House Sparrow). His metal-ringing RAS studies focus on Swallow, Mandarin and Coot.

With a great deal of effort put in by Frank, and others, in resighting their own birds, the total of returning adults is really impressive, including 45 Egyptian Goose and 30 Little Ringed Plover in 2008. Even more impressive are their totals for Black-headed Gull, where in 2008 a special ring-reading site near the colony yielded 3,000 resightings of 725 individuals!

More details on the work done in the Gelderse Poort region of The Netherlands can be found on Frank's website at www.frankmajoor.nl

RAS News
Number 10, June 2009

For further copies, contact:
Mark Grantham
Demography Team
BTO, The Nunnery, Thetford, Norfolk
IP24 2PU
Tel: 01842 750050
Direct: 01842 768208
Email: ras@bto.org

Editors: Mark Grantham and Dave Leech

DTP: Jane Waters

Thanks to the proof readers for all their efforts: Jacquie Clark and Rob Robinson

Photos
'Homer' the Blackbird by Jeff Kew. Hirundine netting by Patrick Manley. Storm Petrel ringers by Hugh Insley. House Martin nests by Roger Peart. House Sparrows by Dave Fuller. Egyptian Goose and Little Ringed Plover by Harvey van Diek.

The Retrapping Adults for Survival Scheme is supported by the BTO and the JNCC Partnership and is also part of the BTO Ringing Scheme which is funded by a partnership of the British Trust for Ornithology, the Joint Nature Conservation Committee (on behalf of Natural England, Scottish Natural Heritage and the Countryside Council for Wales, and also on behalf of the Environment and Heritage Service in Northern Ireland), The National Parks and Wildlife Service (Ireland) and the ringers themselves.