

CES News



This is the twenty-second edition of the CES News, the newsletter for the British Trust for Ornithology's Constant Effort Sites Scheme. If you require further copies, then please contact Mark Grantham at The Nunnery.

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After the terrible weather that both birds and ringers had to put up with during the 2007 season, surely the summer of 2008 would bring some relief? Sadly not, but it did demonstrate the value of the CES Scheme for monitoring fluctuations in both abundance and productivity.

Over the course of the 2008 season, we received data from 117 sites, exactly the same number as in 2007 (Table 1). Whilst it's encouraging to see the number of English sites increasing again, we will be looking to recruit more in other countries. We had to say goodbye to a number of sites at the end

of last year, though with several new ones established in 2009, we are confident of increasing this number over the next couple of years.

Adult numbers down

The numbers of adult Blackcap, Willow Warbler, Blue Tit and Bullfinch caught in 2008 were all significantly lower than in 2007 (Table 2), and adult abundance was the lowest recorded in CES history for five species – Sedge Warbler, Whitethroat, Willow Warbler, Bullfinch and Reed Bunting – and the second lowest for a further two – Reed Warbler and Linnet. Poor overall reproductive performance in 2007, with 11 of 25 core species displaying significant declines in productivity relative to the long-term average, may well have been a contributing factor.



Table 1. Number of CE Sites by country over the last five years

	England	Scotland	Wales	Ireland	Total
2008	90	15	7	5	117
2007	87	15	8	7	117
2006	85	15	6	6	112
2005	91	16	6	5	118
2004	93	18	6	5	122

Table 2. Changes in captures on CE Sites between 2007 and 2008

		Adult	numbers	Productivity				
		2005000 15	tong-term	2005 00 15	1005 0025 0025	tong-term		
Wren	Troglodytes troglodytes	- 5	t	+ 4	- 1	↔		
Dunnock	Prunella modularis	- 4	↔	- 8	-19 *	Ļ		
Robin	Erithacus rubecula	- 3	t	-15 *	-21 *	Ļ		
Blackbird	Turdus merula	+ 6	Ļ	-40 *	-31 *	\leftrightarrow		
Song Thrush	Turdus philomelos	- 5	↓↑	-33 *	-31 *	\leftrightarrow		
Cetti's Warbler	Cettia cetti	+ 13	t	+ 4	+10	\leftrightarrow		
Sedge Warbler	Acrocephalus schoenobaenus	- 4	Ļ	-12	-18 *	Ļ		
Reed Warbler	Acrocephalus scirpaceus	- 5	Ļ	+29 *	+ 4	\leftrightarrow		
Lesser Whitethroat	Sylvia curruca	+ 24	Ļ	-22	-15	\leftrightarrow		
Whitethroat	Sylvia communis	- 10	Ļ	- 3	-21 *	Ļ		
Garden Warbler	Sylvia borin	- 4	Ļ	-25 *	-38 *	Ļ		
Blackcap	Sylvia atricapilla	-13*	Ť	0	-23 *	\leftrightarrow		
Chiffchaff	Phylloscopus collybita	+ 23 *	Ť	+18 *	- 2	\leftrightarrow		
Willow Warbler	Phylloscopus trochilus	-19*	Ļ	+20 *	+ 2	Ļ		
Long-tailed Tit	Aegithalos caudatus	+14*	Ť	-24 *	- 6	\leftrightarrow		
Willow Tit	Poecile montanus	+ 3	Ļ	+ 51	-29	Ļ		
Blue Tit	Cyanistes caeruleus	- 20 *	t	+19 *	-27 *	Ļ		
Great Tit	Parus major	- 8	Ť	- 7	-33 *	Ļ		
Treecreeper	Certhia familiaris	- 16	Ť	+58 *	+ 8	\leftrightarrow		
Chaffinch	Fringilla montifringilla	0	t	-26 *	-22 *	↓↑		
Greenfinch	Carduelis chloris	- 3	†	+ 7	+24	↓↔		
Goldfinch	Carduelis carduelis	+ 13	↔	- 9	+13	\leftrightarrow		
Linnet	Carduelis cannabina	+ 20	Ļ	-29	+17	Ļ		
Bullfinch	Pyrrhula pyrrhula	-14*	Ļ	- 6	+ 1	\leftrightarrow		
Reed Bunting	Emberiza schoeniclus	- 2	Ļ	+16	+ 3	Ļ		

The % changes shown are between the 2007 season and the 2008 season. For productivity, the % change is also shown compared to when the scheme began in 1983.

The long-term trends indicate if the general trend during the whole period of the CES Scheme shows an increase (\uparrow), a decrease (\downarrow) or stability (\leftarrow). Where trends have noticeably changed direction over the period, more than one symbol is used. For more details on these trends, see the Wider Countryside Report on the BTO website (www.bto.org/birdtrends).

Significant changes are indicated in bold with an asterisk.

It wasn't all doom and gloom in 2008, though. Numbers of adult Chiffchaff and Long-tailed Tit both showed a significant increase on the long-term average. In fact, adult Long-tailed Tits were caught in their highest ever numbers on CES, with numbers of Robin and Cetti's Warbler the second highest on record.

Poor breeding season for residents

As in 2007, breeding success in 2008 appeared to be relatively poor (Table 2). For the second year in a row, productivity of 11 of the 25 core species monitored by CES was significantly down on the long-term average. Whilst 2007 seemed to be a particularly poor season for migrants, it was the residents that appeared to suffer most in 2008.

The defining characteristic of both the 2007 and 2008 breeding seasons was unusually heavy rainfall. Total summer precipitation figures were similar (358 mm in 2007, 323 mm in 2008), as were the number of days on which rainfall exceeded 1 mm (42.8 in 2007 and 42.7 in 2008). There were some clear regional differences, however - in 2007, the south and

west experienced the heaviest precipitation, while the pattern in 2008 was for northern areas to see the wettest weather (Figure 1). The relative timing of rainfall events also differed, the heaviest summer precipitation occurring in May, June and July during 2007, but in July and August during 2008.

Young birds, whether in the nest or recently fledged, are particularly susceptible to chilling due to the relatively poor insulation provided by the growing body feathers. It may be that the first broods of migrants suffered increased mortality in 2007, whereas the second broods of resident species were generally more affected in 2008. Further analysis and comparison of CES and Nest Record Scheme data will help to determine whether this was the case and, if so, at what stage of their development peak mortality was occurring.

Climate models are predicting future rainfall to occur in fewer, more concentrated bursts, similar to those we've seen recently. Demographic data such as those collected by the CES will play an increasingly pivotal role in determining the consequences of changing weather patterns, both in the UK and beyond, for Britain's breeding birds.



Figure 1. Rainfall anomaly maps for Britain in 2007 and 2008.



Figure 2. Location of CE sites operated in 2008, with new sites shown in yellow. The background map shows the density of general ringing effort since 2000 (darker colours show greater ringing effort).

Estimating survival in adult Reed and Sedge Warblers

The BTO's national ring recovery database gathers information on changes in survival, but unfortunately for most small songbirds, especially long-distance migrants, recoveries are too few to provide precise estimates and an alternative source of data is required. This is where the CES Scheme is especially important, as it provides a valuable source of data on the survival of songbirds through the annual recaptures of ringed individuals.

As part of my post-graduate research, I have been developing a model to 'accurately estimate the annual probability of adult survival from CES data'. Modelling was complicated by several nuances in the CES data:

- i) Presence of transient birds. These are birds not normally resident at the CE Site during the breeding season, but rather captured "in transit" as they passed through the site en-route elsewhere.
- ii) Site infidelity. Although adults are typically site faithful, not all birds return to the same breeding site each year.

from CES data (bold, right) plotted alongside those derived from the very sparse ring recovery data for these two species (thin, left). The width of the error bars (95% symmetric credible intervals - the Bayesian analog to the Classical 95% confidence intervals) clearly demonstrates the advantage of using the CES data: this richer dataset enables considerably more precise estimation. It is thanks to CES volunteers that we can estimate the survival of adult songbirds with enough precision to enable it to be monitored reliably!

Figure 3 also shows that the annual trend in adult survival between these two species is quite dissimilar. For example, between 1987 and 1989, the survival of adult Sedge Warblers declined, whereas for Reed Warbler it was fairly stable. As Reed and Sedge Warblers occupy different ecological niches (with different feeding, breeding and migration strategies) this lack of association is not surprising. We would expect different environmental factors to have different impacts on the survival of these two species resulting in the dissimilar trends observed between them.

iii) Missed within-year visits. When there are fewer than 12 visits at a CE Site the probability of capturing an individual bird is reduced.

Having accounted for these data 'features', the resulting model has been successfully applied to Reed and Sedge Warbler data. Figure 3 shows the annual adult survival estimates produced



Figure 3. Annual survival rates of Reed and Sedge Warbler on CE Sites

You may be interested to know that the model predicts that 40% of adult Reed Warblers caught for the first time in a mist net are transients. In other words, over a third of the adult Reed Warblers you ring during a CES visit will not remain at your site to breed, but will move to another breeding site. This movement may simply be to another area in the same wetland habitat, for example, that is not covered by your mist nets, or to an entirely separate location. A slightly lower percentage (37%) of adult Sedge Warblers are predicted to be transients.

The model also enables us to assess the degree of site fidelity of adult birds: the probability that a surviving adult will return to the same CE Site it occupied the previous year. For Reed Warbler the model predicts a very high

level of site faithfulness, with 85% returning to the same site. For Sedge Warblers, 76% of adults are predicted to return. Note, though, that the uncertainty about these estimates are large (95% symmetric credible intervals extend from 79% to 92% for Reed Warbler, and 64% to 91% for Sedge Warbler).

The CES Scheme provides a wonderfully rich source of information on the abundance, productivity and survival of common songbirds. Much of my post-graduate research has focused on developing models for CES data, and I would like to thank all the volunteers and the BTO for providing me with such a fantastic resource. Thanks!

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Not another CES or the perils of 'having a look'

I am, I suppose, something of a compulsive ringer and I'm convinced of the scientific value of ringing; not surprisingly, I've been involved in CES from my first ringing sessions a quarter of a century ago. Having ringed at many different sites over the years I now help run a group CES and operate an "independent" one. In many ways they are similar; a mix of reed swamp and wet scrub, so when my local Wildlife Trust approached me about starting another, I was rather

equivocal. The description of a willow-scrub fringed reservoir was okay, yet not that dissimilar to my current sites and in any case how on earth could I find the time? Rather reluctantly I agreed to have a look. In mid-autumn most of the birds had gone but it did look different from my other sites: high altitude (water level at 225 m) willow-scrub with a mosaic of sheep pasture and mixed woodland abutting. I said I'd think about it and a few exploratory sessions later I agreed to try it in

the mode of a CE Site the next breeding season because, I thought, it might perhaps provide a little variety.

Early May arrived and session one provided high water levels and few birds. The total of 17 captures was rather thin but then the main sites were faring badly as well and there were some unusual birds amongst the warblers, tits and finches. A Mistle Thrush was good but both Lapwing and Common Sandpiper... Visit two: if one Mistle Thrush





is good, two is better and the same applied with the sandpiper. Throw in a Redstart and my 'C' Permit holders and Trainees were now very keen to come along (not that they'd been that reluctant before). Visit three, and Mistle Thrush and Common Sandpipers were now almost a little passé but two Cuckoo in quick succession and things were looking up, again! Numbers were always low but the nadir was just seven birds on visit six and even two Redstart would have been no real recompense for the (long) trek round the nine nets but (there was always a but here) 'another Mistle Thrush' said I to a trainee, became 'Bloody Hell, a Fieldfare!'.

Needless to say Derwent Reservoir became CES site 802 with all visits completed

(as well as to my other sites). Yes, numbers were low: 326 captures of 287 individuals but the species list of 36 included, apart from the above, Dipper, Siskin, Grey and Pied Wagtail, Woodpigeon, Magpie and Curlew. Willow Warbler was the commonest bird by far, followed by Long-tailed Tit, Chaffinch and Blue Tit so, more than just catching the unusual, it's helping the scientific monitoring of bird populations. Am I looking forward to more seasons of running three CE Sites? Of course, and particularly here, for how many other sites are there where more Mistle Thrushes are caught than Blackbirds, more Redstart than either Chiffchaff or Blackcap and more Common Sandpiper than Dunnock? So, given the chance and the time, try taking on another site; you just never know what you may catch. Martin Hughes



CES birthdays

- 20 years Chew Valley Ringing Station, Avon (Alan Ashman, Chew Valley Ringing Station).
- 15 years Castlemorton Common, Herefordshire (Peter Holmes); Loch Eye, Highland (Bob Swann, Highland RG); St Abbs NNR, Borders (Alan Kerr, Borders RG).
- 10 years Brock's Wood, Sussex (Reg Lanaway); Arklow Ponds, Wicklow (Michael O'Donnell); Alton Water, Suffolk (John Glazebrook); Queen Mary Reservoir II, Surrey (Tony Beasley, Hersham RG); Gibraltar Point, Lincs (Mick Briggs, Gibraltar Point Bird Observatory).
- 5 years Steart, Somerset (Doug Miller); Hempsted, Gloucs (Robin Husbands); Barry Links, Tay (Peter Ellis, Tay RG); Blackgrange, Central (John Calladine).
- And welcome to new sites for 2008 Birtley STW, Tyne & Wear (Richard Barnes); Brentingby, Leics (Chris Hughes); Garbh Chnoc, Highland (Donald Omand); World's End, Bucks (Pete Weisner); Stanwick Lakes, Northants (Ian Wrisdale, Northants RG); West Everleigh Down, Wilts (Simon Lane, Stour RG); Rutland Water, Rutland (Martin Kerman, Rutland Water RG); Derwent Reservoir, Northumberland (Martin Hughes, Nat. Hist. Soc. Northumbria); Brandon, Norfolk (Graham Austin, Nunnery RG).

Site round up

Paxton Pits LNR, Cambridgeshire (2007) – Ian Dillon

We completed the sixth visit this morning (24 June) and we're much happier bunnies at this stage than last year. No doubt having learnt from last year and reconfigured our nets has helped, but in general we have had much better catches than last year with two 70+ catches, the stuff of dreams last year. We had 70 birds this morning with quite a number of juveniles on the go for the first time. Interestingly though these were mainly juveniles of obligate migrants - Willow Warblers, Chiffchaffs and Sylvia warblers - with many fewer juveniles from sedentary species. Quite a few moulting adult Willow Warblers now as well. One species that has changed a lot from last year is Long-tailed Tit. That species kept our day totals semi-respectable last year but they are almost totally absent this year. Boom and bust scenario or are they more mobile than we think and have moved off elsewhere?

After this morning our feeling is that it's been a better breeding season for migrants this year than last, probably due to much better - drier and warmer - conditions than last year with no persistent monsoon periods so far. Lets hope it keeps going like this and it wasn't just a blip.

Abbotsbury Swannery, Dorset (1995) – Steve Hales

Just a few lines to say that like last year I am finding it very hard to get the CES done. Due to wind and/or rain on the south coast I have not been able to set a net since 14 June - and not for the lack of trying! The previous two CES sessions started OK but after a couple of hours somebody up there spotted me and up sprang the wind and we had to pack up. This meant a much reduced catch. The weather pattern has clearly changed down here over the past five or six years. We don't get the prolonged high pressure and the calm weather which goes with it. I am not sure how many CES visits I can afford to miss but again this week looks hopeless. The site is right on the coast just yards from Lyme Bay and although I can get away with northerly winds I cannot function in southwesterlies or southeasterlies which seem to dominate. It is all very frustrating. Am I alone this year having weather problems?

Thankfully though, things did pick up...

Just a line to say that I am just managing to keep the CES going down here despite the weather. I had feared the worst earlier in the year but things have swung round a little in my favour and although it won't be a complete dataset it is looking much better, although birds are few and far between - especially Blackcaps.

Foxglove Covert, North Yorkshire (1993) – Tony Crease

Last year we did 1,893 new birds by now, this year to date the totals are 895. On CES alone we had done 800 new birds, this year the total so far is 536.

In July last year on CES we did 69 new Willow Warbler, 27 Blackcap and 18 Garden Warbler. This year it reads 18: 2: 6 respectively. Last year by now we had ringed 160 new Willow Warblers, this year the number is 60! Garden Warbler 45 – 15, Blackcap 71 – 20.

You can probably see from this that it is our poorest CES season by far since we started in 1993. I would have liked to finish on a couple of pluses but there are none! A sad state of affairs without a doubt!

North Haugh, Strathclyde (1995) – Iain Livingstone

CES visit Sunday 27 July turned out rather well. No Cuckoo this time but lots of birds. With three caught by the time I opened the first net things looked promising, 20+ in the first net round with all eight nets up in ideal weather conditions. Then just as Paul arrived it went mental. I thought taking 41 'burd' bags was overkill - nowhere near it, second net round produced over 60 birds. A major ringing and flinging session followed for an hour. I had expected it to calm down but the remains of the large flock trailed off east and we continued to catch right up to 1pm when we were leaving.

131 birds ringed and 20 retraps gives us the best visit in eight years. Surprisingly Willow Warbler was top of the pile with 27, Chaffinch 20, 11 Blackcaps and the usual others. Tits were in short supply with only 11 Blue Tit and three Great Tit, single Goldcrest and two Treecreepers. Not quite Mark's Nightjar, Crossbill, Kingfisher etc (that Lee has a few ringing ticks this year now eh?) but a good visit.

Waterhay, Wiltshire (2006) – John Wells

Like most sites I suspect our young bird numbers were down this year. The reed bed inundated with flood water for a week in the middle of the breeding season and as a result I think species like Reed Bunting suffered from nest failure. Nevertheless we managed to get all of our visits completed.

Whilst nothing wildly exciting on CES visits I did catch a Penduline Tit in a CES net site in March - a 3F with a limited mask and moult limit in GCs, and a first for Wiltshire!



Big Waters NR, Tyne & Wear (1986) – Alan Johnston

The CES this year at BW was heading for a record year up to visit eight when it all went downhill. You got the feeling that all the juvs had gone early or it was a poor breeding season. We seem to be catching juvs earlier and earlier each year, if this goes on it might be worth revamping the start and end dates for the CES in future! Anyway roll on next year. Again myself and John Day operated the site; it seems forever since we began in 1986.



Steart, Somerset (2004) – Doug Miller

Though not entirely a CES bird, this late Aquatic Warbler (above) was caught on the CE Site on 19 September. Interestingly this isn't the first to turn up there, as one was also caught on 25 August 2006 (below).



Loch Eye, Highland (1994) – Bob Swann

Loch Eye CES Willow Warbler data below 1994–08. Looks as though we catch fewer adults nowadays. First year numbers are a bit more variable.

	95	96	97	98	99	00	01	02	03	04	05	06	06	07	08
Ad	90	101	157	113	127	96	86	90	72	70	79	49	77	82	70
1Y	194	199	133	236	116	134	116	217	245	228	233	99	133	147	183

The recovery of Ashleworth Ham

In the last *CES News*, we reported on the devastating flooding of Mervyn Greening's site at Ashleworth Ham. One year on, Mervyn gives us an update on how the site is doing now.

Following the disastrous 2007 season at Ashleworth Ham, there was much speculation concerning the long term effects of the summer flood and how it would impact bird numbers. A 'back of envelope' analysis of numbers of birds caught on May visits seemed to show that these fears were well-founded and numbers were down on previous years. However, a more detailed look at the figures revealed that for most species, the number of adults caught in May was higher than in previous years, and the general drop was due to a very low catch of Sedge Warblers. My first thoughts were to blame the flood, but closer analysis showed that the numbers of breeding Sedge Warblers fits a worrying pattern of year on year decline in adult numbers since 2004.

The final figures showed that 2008 in fact saw the third highest catch, with the average catch per visit on par with the previous 10 years. The good weather during the main nesting season allowed most species to rear good numbers of young, with Reed Buntings doing exceptionally well.

The long term impact on the habitat remains to be seen, as much of the cover is now dead Blackthorn, with little evidence of regeneration, though Hawthorn and Willow have maintained their cover. The ground vegetation has almost recovered, but the open areas are showing more bare patches, with areas of Greater Burnet and Rush now appearing.

Most of the common species on the site feed their young on small insects and other arthropods and invertebrates. It was obvious following the summer floods of 2007 and 2008 that airborne organisms re-colonised the site quickly, with cobwebs draping the dead docks by October 2008 and the successful season in 2008 shows how quickly an area can recover from flooding.

Sedge Warbler

Previously the most numerous breeding species at the site, numbers have crashed since the peak in 2004. New adults were well down on the 10 year mean (14 compared to 29), though adult recaptures don't show such a large decline (eight returning compared to the mean of 10). For the fourth year in succession juvenile numbers were below adult numbers, so the population is suffering both low adult survival/return and poor productivity. If the trend continues we could lose Sedge Warbler as a breeding bird by 2011.

Reed Bunting

After Sedge Warbler (now only just), the most numerous breeding bird on the site. Adult numbers vary little from year to year, and the breeding density appears to be high in what is clearly optimum breeding habitat (the combination of song perches and dense ground cover are ideal). Any standing water during the breeding season has an effect on productivity, so virtually all nests failed in 2007 because of the timing of the floods. Interestingly, the opposite happened in 2008, with both periods of breeding enjoying reasonable weather with no standing water, hence the record number of young. This was obviously the case elsewhere further up the Severn, as autumn passage was also very good this year.

Willow Warbler

A species bucking the national trend, despite the habitat not being ideal. Interestingly, despite being ground nesters, they were not affected by the floods as much as Reed Buntings. Birds utilise banks for nesting rather than the flat open fields, and the number of young in 2007 indicates that some of our birds are using the bank above the flood line.

MAPS milestone reached

The North American Monitoring Avian Productivity and Survivorship (MAPS, the North American equivalent of CES) Program hit a major milestone in 2008, as detailed in the March 2009 edition of MAPS *Chat*, (the program's equivalent of *CES News*) which can be found in full on the IBP (Institute of Bird Populations) website at www.ibp.org

'In November 2008, IBP biologists reached a long-awaited milestone and completed vetting of all 1989–2006 MAPS data, a total of 1.5 million banding and recapture records. From these, we extracted about 1.2 million records of aged birds captured during the 10 periods of the standardized MAPS program at the 975 stations across United States and Canada that were operated at least one year between 1992 and 2006. These records, along with effort and breeding status data, comprise the 15-year database that we are now analyzing to assess demographic responses of North American landbirds to climate change.

MAPS, to which so many operators across North America have contributed, provides the largest and most meticulously vetted standardized capture-mark-recapture (CMR) database on birds in existence on the planet. People sometimes ask why we go to such lengths to verify every record so thoroughly.

The answer is that we are providing a unique database documenting the demographics of North American landbirds at the turn of the 21st century, and from this database we (and future researchers) will be able to answer questions regarding the dynamics of landbird populations, their vital rates, and their responses to environmental changes that we do not yet even know how to ask. As evidence for this, recall that when MAPS was created in 1989, reverse symmetry CMR models from which we now routinely estimate both recruitment and lambda (the rate of population change) had not yet been developed.



MAPS Chat An occasional newsletter of the Monitoring Avian Productivity and Survivorship (MAPS) Program



Clearly, this database must be as accurate as possible. The next major thrust of IBP's data analyses will be to use the 15-year dataset to model responses of vital rates to weather, so that we can predict consequences of climate change on bird populations, identify species that will be particularly sensitive to climate change, and help develop land management strategies to reduce the impacts of climate change on bird populations.'



Other articles in this recent MAPS Chat include:

- Low first-year survival driving population declines in at least 16 MAPS species.
- the establishment of TMAPS, taking the MAPS concept into Latin America.
- Investigating the moult migration of buntings to Mexico.

Thanks to Danielle Kaschube, the MAPS coordinator, for letting us use this summary.

Do you catch good numbers of Chiffchaff?

I'm looking for a few ringers who would be willing to help me with a study of Chiffchaffs by collecting feather samples for stable isotope analyses. I'm after ringers from different parts of Britain (southwest England, southeast England, and northern England/southern Scotland) who regularly catch Chiffchaffs on their breeding territories.

If you think that you may be able to help then please email me for more information, and so that I can arrange licences.

Karl Evans

Email: karl.evans@sheffield.ac.uk Web: http://tinyurl.com/karl-evans

Lesser Whitethroat and Nightingale biometrics

Is anyone able to collect a good set of measurements of Lesser Whitethroats and Nightingales this summer? I am currently researching 'eastern' Lesser Whitethroats to publish a detailed paper on the ID of the complex. As I am less familiar with 'western' birds, I'm keen to collect more data, including photos of birds in the hand.

What I really need are birds that can safely be said to be nominate *curruca*, and would like a measurement of both wing and tail on these birds. For consistency, the measurements should be collected or checked by an 'A' Permit holder, and one or two sites catching a good number of birds would be better than having the measurements collected by a large number of ringers.

I am also interested in the same measurements for Nightingale, so if you are likely to catch good numbers of either then please drop me an email.

Paul Leader

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Bullfinch by Chris Bradley. Common Sandpiper, Redstart and Fieldfare by Martin Hughes. Penduline Tit by John Wells. Aquatic Warblers by Denise Wawman (2008) and Doug Miller (2006). Indigo Bunting by MAPS

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