

Madingley Ringing Report, 2019

This document summarises the ringing activities in Madingley Wood between 30 December 2018 and 1 December 2019, inclusive. (One 2018 session reported here took place after last year's report; there may be 1 or 2 more sessions later in December 2019 after this report has been compiled.) 27 mist-netting sessions were completed and all the pulli in the Wood's nest boxes were ringed and tagged. This year Liisa Hämäläinen completed her PhD studies on social learning and Gabrielle Davidson began a project on the Great Tit microbiome and its association with bird behaviour. Many thanks to our regular helpers Chris Thorne, Liisa Hämäläinen, Carole Davis and Diana Sobota and all the others listed below who have helped with the ringing effort (I do hope I've not left anyone out), without whom these studies could not be conducted.

Jo Beaver	Michael Holdsworth
Anne-Sophie Bonnet-Lebrun	Neil Lerner
Gabrielle Davidson	Chris Quy
Carole Davis	Diana Sobota
Alice Edney	Alex Starace
Elias Garcia	Chris Thorne
Kiyoko Gotanda	Sergio Tomey
Alison Greggor	Alizee Vernouillet
Liisa Hämäläinen	Hannah Ward
Josh Harris	

We have now been successfully using real-time computer entry of ringing and tagging data for over a year now. This autumn the system was improved by the introduction of a PIT reader (constructed by Mike Francis) that allows electronic capture of PIT data. We also now have a dedicated Windows PC on which the data are entered. Improvements made to the software this year include macros to deal with nest-box data and a system to flag up checks or other actions required for specific bird when they are caught. The IB Tech tags have proved enormously more reliable than the old-style tag and spacer; a very small percentage do occasionally fail to trigger the reader but even this has been much reduced by running the reader off the mains (via a transformer) rather than 12V battery. All in all, the system is now running very smoothly.

	captures	individuals	ringed
BT	868	409	246
GT	530	226	116
CHAFF	51	50	47
LOTTI	51	41	37
GRSWO	42	21	10
COATI	61	19	11
GOLDC	18	18	16
TREEC	21	16	12
NUTHA	30	13	6
REDWING	9	9	9
ROBIN	14	9	5
BLABI	9	8	7
WREN	4	4	4
MARTI	3	2	1
BLACA	1	1	1
DUNNO	1	1	1
JAY	1	1	1
total	1714	848	530

The dynamics of the tit population in the Wood this autumn has proved quite different from the last couple of years. Where previously we have struggled to keep the percentage of untagged bird below 20%, this year we had achieved that by mid-November and untagged percentage has remained well below this for both species ever since. The obvious explanation is that the population is more stable this year. Gabrielle would like to run a social network study in the New Year; let's hope the population remains stable and the continuous influx of outside birds of previous years does not resume.

Very few of the birds raised in the Wood are subsequently caught in the following autumn/winter (just 24 individuals, 15 BTs and 9 GTs, caught in 2019 were born in our boxes, i.e. <4% of all individuals caught). The origin of the incomers has been a bit of a mystery. Recently we have received data on 9 controls caught in the Wood over the years. All but two were ringed at sites around the periphery of Cambridge (Hardwick Wood, Oakington, Impington, Cantaloupe Farm, Botanic Gardens, Milton CP, even Madingley Wood itself before our time); the exceptions came from further east in East Anglia (The Nunnery, Thetford and Thorndon, Suffolk). We've received little information about where birds ringed in Madingley go (I heard on the grape-vine that one was caught by Michael in Barton a few years back).

Ringing/observation at nest			
	Pulli ringed in 2019	Pullus-ringed birds netted this year*	Adults observed at nest**
BT	203	15	40
GT	174	9	51
total	377	24	91

* most, but not all, were ringed in 2019.

** PIT numbers detected by face-plate aerals on the nest box. Over the course of the year all of these GTs were also caught in mist nets but 7 of these BTs were not otherwise encountered.

While birds raised in our boxes make up a vanishingly small percentage of the birds in the Wood in the autumn and winter, those that came to breed in the boxes this year were almost all already ringed and tagged: 101/114 parents in the 57 occupied boxes were identified by a tag they already wore. Furthermore, all but one of these had been caught during the winter so we are not dealing with separate winter and breeding populations of Tits. 11 of them were born in the boxes themselves: not a high percentage of parents but much greater than their percentage of autumn/winter caught birds. So those rare Madingley-born birds that stay/visit during the winter have a comparatively high chance of breeding in the boxes themselves.

Faecal sampling: Gabrielle Davidson has started a project looking at the microbiomes of Great Tits. For this she has taken 46 samples from pulli, 25 from adults at the nest and, so far, 35 from birds caught in the mist-nets. For the mist-netted birds she successfully introduced a new, clean method for sample collection developed by Kiyoko Gotanda for Galapagos finches.

Other than the BTs and GTs the following were of note. Coal Tits and Nuthatches, two species that use the feeders, were frequently retrapped. Great Spotted Woodpeckers were also often retrapped, probably because they also use the feeders. The total of 21 individuals in a wood of this size seems extraordinary. Chaffinches probably use the feeders too, or at least feed on seed spilt from them, yet of 50 individuals caught only 1 was ever retrapped. Does that indicate that this species is highly itinerant never spending long in the Wood, or are they very net-savvy, at least after their first capture? It's a similar story for Goldcrests: none of the individuals caught this year were caught more than once (although 2 were ringed in previous years). I would guess that this species is just moving through. Only 2 individual Marsh Tits were caught all year. Their numbers do seem to be declining and it is quite possible that they will disappear from the wood in the next year or two. (Curiously, there are still GTs giving Marsh

Tit calls, often when released after ringing.) Surprisingly few Dunnocks and Wrens were ringed; both are species that are readily caught if present but it is not clear why the Wood might be unsuitable for them. We actually caught 19 Redwings but 10 had to be released unringed as we did not initially have "CC" rings for them. (Note, to my knowledge, we've never caught a Song Thrush, another CC-ring bird, in the Wood.)

Over the year 7 GTs, 1 COATI and 1 BT were noted to have lesions resembling avian pox. The BT's "pox" was first noted on 30th Dec 2018 and the bird was apparently free of the virus when caught recently. The other 8 individuals were only diagnosed since Oct 2019 and none yet seen to be free of their lesions. A second condition has been cropping up that I call "Grey Belly Disease". It involves the degradation of feathers on the belly and sometimes also flight and crown feathers: the tips of the feathers are broken often leaving just the central shaft. It affects Great, Blue and Coal Tits. I've sent photographs of affected birds to Garden Wildlife Health and the BTO but neither can say for certain what the cause is. One suggestion, that mites or moth larvae living in the nest boxes chew the feathers while the birds are roosting, seems plausible. However, the boxes were cleared of their contents in the summer and Coal Tits don't breed in the boxes, so perhaps there are parasites living in other roosting holes. Other suggestions, included dietary deficiencies and bacterial growth on the feathers, seem less plausible. We have flagged these birds and will keep an eye on them; Garden Wildlife Health have asked us to send samples – we might ask the BTO for permission to take a few affected feathers for analysis.

Tony Fulford (13 Dec 2019)