TWITTER

Treswell Wood - Information To Tell Every Recorder

August 2018 Treswell Wood IPM Group

(Integrated Population Monitoring)

Project leaders:

2018/3

CBC

Pat Quinn-Catling Number

Nest Records Chris du Feu

Ringing John Clark 118

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Events in Nestboxes - Treswell Wood, 2018

Species	Nests		Eggs		Birds		% Succ	ess Rate
	Recorded	Successful	laid	Adults	Nestlings	Nestlings	Nests	Eggs
				caught	fledged	recaptured		
				on nests		(to Aug. 26 th)		
Tawny Owl	1	1	2		1	•	100	50
Stock Dove*	5	3+	6		5+	•		
Wren	2	1	12	•	6		50	50
Robin	1	1	4		4	•	100	100
Blackbird	3	1	12	•	4		33	33
Song Thrush	2	0	9		•	•	0	0
Coal Tit	1	0	12	1		•	0	0
Marsh Tit	2	1	19	2	6	1	50	32
Blue Tit	64	48	549	57	347	20	75	62
Great Tit	40	26	285	18	173	64	65	64
Totals	120	81	910	78	545	85	68	60
2017	105	75	747	38	416	45	71	56
2016	91	54	626	38	324	47	59	51
2015	102	59	633	41	283	33	58	45
2014	119	65	791	31	330	33	55	42
2013	80	51	484	26	314	76	64	65
2012	112	50	670	28	219	35	45	33
2011	111	62	796	32	310	29	56	39
2010	112	80	778	25	539	146	71	69
2009	118	54	648	26	300	38	46	46
2008	108	29	589	22	139	17	27	24
2007	129	64	922	52	313	35	50	34
2006	175	37	885	31	225	33	21	25
2005	153	49	852	47	245	22	32	29
2004	141	94	917	41	538	41	67	59

Notes: Nests of species in italics were open nests found incidentally during the nestbox rounds or by other workers in the wood. The numbers of nests recorded, for all species, exclude nests which were abandoned before any eggs were laid.

The third cycle of standard site visits gave us exactly the average number of captures since we began the system in 1978. However, it was the third highest total this century - all in spite of the wet winter and any damaging effects of the 'Beast from the East' sudden very cold spell. Bullfinches were very prominent - the third most commonly captured species. Spotted Flycatchers appeared again but sadly no Garden Warblers; Willow Warblers were heard singing fairly often but no adults caught in breeding condition. In contrast, Blackcap, also a summer migrant, was our most frequently caught species. Blackbirds were the second most frequently caught but, interestingly, their captures have been very variable from week to week. August brought two successive visits with very large catches many birds, including nestling ringed Blue and Great Tits, at the feeding station but also large numbers in other nets. On August 5th we made 103 captures and 131 the following week. This visit was the 7th highest total ever caught on one day. The higher visits included one in March 2015 (nets in much the same place as this day but

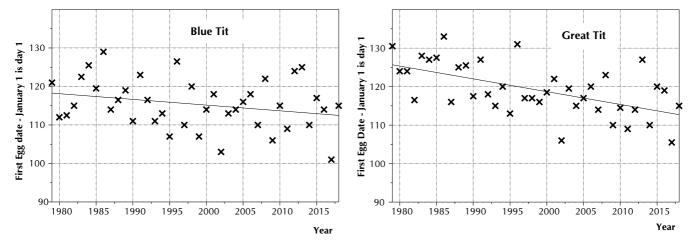
^{*} Some Stock Dove nests are still active.

catch augmented by spring influx rather than juveniles), three in 1976 near the pond where birds were coming to drink during the drought and two in late 1975 with birds attracted to a kale crop adjacent to the wood. These recent two large catches give more evidence for a good 2018 tit breeding season and high immediate post-fledging survival.

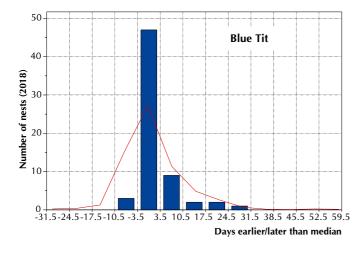
For some reason we normally catch relatively few nestling-ringed Blue Tits compared to Great Tits during July and August. This year we felt that we were catching more Blue Tits than normal. But looking at the data shows the picture is, in fact, much the same as usual with only 6% of the nestling-ringed Blue Tits appearing so far compared to 37% of the Great Tits. The apparently high number of Blue Tits is just a result of the high total number ringed with the proportion remaining typically low.

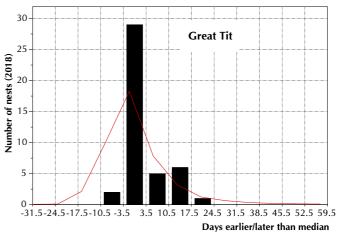
The 2018 nesting season

After recording events in nestboxes for three or four years, I thought I understood what was going on and that events were very predictable. After another 35 years I am now sure of only one thing - events are unpredictable. With the late start to the tit breeding season, following a wet spring, combined with the 'Beast from the East' we might expect small numbers of nests, small clutches and, possibly low nesting success resulting from birds in poor condition after the winter. In fact, it has not been like this at all. Nests were later in starting than in some recent years but, nevertheless, completely in line with the long term trend and still some days earlier than nests in the 1980s. The two graphs below show the egg laying times since we installed nestboxes in 1979. Numbers of nests of both Blue and Great Tits were high (but not highest ever) whereas the smaller box-nesting tits were few in number and suffered low success. Perhaps these smaller tits, included Long-tailed Tits, suffered more in the winter and, perhaps, more competition from the more abundant, larger species.



Because of the late start we could expect nests to be started rapidly, making a very short laying season. This did happen with Blue Tits having the shortest equal laying season ever (inter-quartile range of only 3 days) and the Great Tit laying period was also well below average. The charts of first egg dates show the sudden burst of egg laying followed by rapidly decreasing numbers of birds starting to lay. Great Tits have a rather greater spread with an apparent second small peak. This is a result of Great Tits suffering a higher early failure rate (they are noisier than Blue Tits and tend to nest in boxes with slightly larger holes making them easier to find and access by predators). The second peak results from replacement clutches - either by birds which have failed at an early stage or by birds which have taken advantage of a vacant territory after the territory holders have been taken by

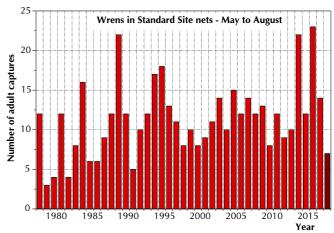




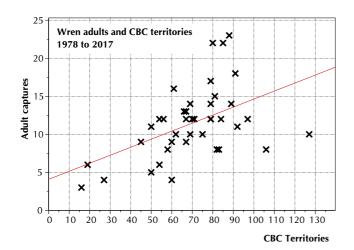
predators. On these two graphs are overlaid in red the expected spread of laying dates around the median value for all nests recorded from 1979 to 2017 inclusive. They show very clearly the very sudden burst of activity with much steeper decline after the burst than typical.

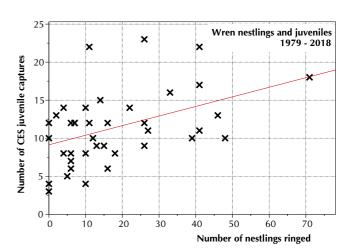
A short season might be expected to be one with fewer nests and fewer birds fledged. Not so this year. With 545 birds fledged it is our second highest total ever - a long way behind the exceptional year of 1995 with its 750 fledged birds but just ahead of the next highest three years with around 540 birds fledged in each. Curiously, the other two very short seasons (inter-quartile range of 3 days for Blue Tits) of 1986 and 1993 were quite different. Neither were particularly early. Both had relatively few nests, 1993 had only 21 Blue Tit nests (the second lowest number recorded in any year), 1986 has 29 which is at lower quartile. The compactness of the 2018 season, together with the large number of nests, gave us a very short window for ringing a large number of nestlings. On the peak day, 27^{th} May, we ringed a total of 300 nestlings - over half the year's total. Even in the exceptional year of 1995, because it had a much longer spread of nesting times, our maximum daily total was a niggardly 189 nestlings ringed.

Wren nests in boxes were very few - only two. This compares with an average of five and a maximum ever of 17 in one year. In only six years have we found fewer Wren nests than this. Perhaps Wrens, and apparently the smaller tits, suffered particularly badly with 'Beast from the East'. The graph shows that Wrens this year have, indeed, been less abundant than in recent years. It is interesting to look at previous low years and compare them with winter weather. The 1978/79 winter was particularly hard with massive Wren mortality and this was followed three years later by another hard winter before the local Wren population had fully recovered. This year's captures have not reached those historic low points but are certainly much lower than in most years.



Extracting the Wren data from previous years has given the opportunity to look at other features of Wren demographics. The aim of constant effort mist netting is to give insight into bird populations, the number of captures hopefully reflecting abundance without interference from variation in catch effort. It is very pleasing to note that both adult and juvenile captures in the constant effort nets are significantly correlated with two independent measures of their abundance. The first graph compares adult captures with the CBC territories determined. The next graph relates the numbers of juveniles captured to the number of nestlings ringed (mostly in nests in boxes). Again there is a significant relationship even though the number of nestlings ringed can only be a small proportion of the total fledging from natural nests in the wood. These two results are very pleasing. In 1991 we published a paper with Will Peach, 'Does Constant Effort Netting Measure Juvenile Abundance?' in which we were able to demonstrate the same relationship for Great Tits, Blue Tits and Blackbirds. At that stage we had too few data to examine other species - clearly we now have very long time series so possibilities are greater.





Constant effort programmes attempt to determine breeding success. This is measured by productivity - the number of juveniles raised per breeding pair. This measure is impossible to determine exactly so a proxy measurement is the number of juvenile captures per adult capture. That is easy to calculate and the productivity measure can then be related to various other factors such as weather. Wren populations are very volatile because of the species susceptibility to hard winters. However, in the 1991 paper we were able to control for weather and detect a small

density dependent winter survival effect. This was the first time density-dependent survival had been demonstrated for this small species. What we did not look for was any density-dependent effect on productivity. All other things being equal we should expect that productivity would be reduced when populations are high. Any offers for a serious analysis of this?

Frass

We have, again, collected frass during the nestling season. The brevity of the season made for fewer 5-day samples to collect. It will be interesting to see how the frass timing compared to the tit nesting timing in this very short season. In addition to the normal frass collection we have placed an additional collecting tray under an ash tree well away from any oak. The aim is to see if ash is as poor for caterpillars as we suspect it is. Our feeling is that a good deal of the frass found under ash in the long-established collecting trays has drifted in the wind from nearby oaks. Ken Smith now has the frass samples and will let us know in due course when he has removed the dross and weighed what remains. Many thanks to him for his work for us.

Projects and Publications

We have received information about three studies in which Treswell Wood data have been used.

First is a poster from Lynne Barnett of Northampton University who carried out a multi-site, long-term study of effects of climate on the breeding success of Blue Tits. Data came from 27 sites across England and Wales. The key findings were that egg hatching success is positively correlated with spring temperature. This is not in the least surprising but excellent to have it well documented. Nestling success, however, is negatively correlated with temperature. This 'climatic mismatch', in Lynne's words, requires further analysis. We agree. Lynne hopes to pursue her studies with these data (and now an additional year's data too). We wish her well and look forward to eventual publication.

One of Charles Deeming's students at Lincoln University, Eloise Campion, has been looking at Great Tit arrivals in the wood. We have, in the past, done some superficial analyses of the arrivals in the 'Spring influx'. Eloise is looking at first appearances of individuals throughout the year. There are obvious biases in the data collection - so her first results are just for individuals captured in constant effort nets. There is an influx of new birds in the spring (not surprising) but no difference in the timing of the two sexes (unexpected). In spring the proportion of new to recaptured birds is higher for females than for males. This is interesting to have it documented - it may result from females having higher mortality than males or females dispersing more widely than males. Plenty of opportunity here for further investigation. Finally, something we have never considered before - the autumn departure. Females tend to move away from the wood earlier than males. We look forward to a full account of these studies from Eloise. Many thanks for work so far.

Finally, Russell Barnett from Exeter University used our Great Tit nest record data for his undergraduate project. It was so promising that he and Thomas Bodey, his supervisor, have worked the project into a paper which is now ready for submission to the ornithological press. The paper looks at our nest records - laying dates, clutch size, hatching and fledging success in relation to nestbox availability, various climatic factors and population density. Findings are very interesting but their promulgation will have to wait until the paper is (hopefully) published.

Ash Dieback

Michael Gilman from Lincoln University has completed the third annual survey of vegetation in the assart. This year's data have enabled him to do a preliminary analysis of ash dieback amongst the saplings and seedlings in the assart. The results are not in the least surprising but it is excellent to have them documented. Ash dieback is most prevalent in patches where ash seedlings are densest and in taller (and therefore generally older) saplings. There is now enough data to produce a short note for publication - maybe a full paper in a couple more years.

To complement the ash dieback observations in the assart, a Lincoln student, Abbie Edwards, is studying ash dieback in the rest of the wood. Again, from the first observations, it seems likely there will be sufficient material for at least a short note but, more importantly, it will give us a better idea of how the disease is affecting ash trees in various conditions of coppicing and age.

Five go to Wytham Wood

After a number of false starts, five of us went to Wytham Wood at the beginning of June to see PIT tagging work first hand, and to understand the practicalities. We were looked after by Keith McMahon, one of the project team, and had the chance to have a look at the equipment, ring and tag three broods of Great Tits. As with many things, the tags themselves were simple and easy to fit, but the administration needs rather more care. It was useful to see how Keith managed it. A look at one of the nestbox readers and a feeder with a reader attached completed the visit. The Data Controller was also able to confirm his worst fears about the amount of data that can be generated, but pleased that his ideas of managing it were practical. Our thanks to Keith for a really useful hands-on morning. By chance, a week or so later, Springwatch featured a look at pit tagging with some interesting developments in

reducing the cost of readers. We are pursuing this with the hope of starting a suitable project next year when the plans for economy readers are available.

Goodbye to Max

Max Collins has been with us during his student time at Brackenhurst. We are very grateful to him for being such a reliable and helpful member of the team and doing a great deal to strengthen links with NTU at Brackenhurst. We are also delighted we have been able to supply suitable material for his third-year dissertation (see Twitter 117). He has secured work in Reading in an environmental consultancy. Sadly he will be too far away to visit us each week, but we hope and expect to see him again from time to time.

Parasites

Over the years we have gathered data on various parasites - notably feather mites, bird fleas and harvest mites. We were reminded of the wealth of data when sorting through some heaps of old paperwork. Some of the data have been investigated in various ways - particularly the feather mite data. What has not been looked at in any way, though, is anything to do with coppice age, population density or area of the wood. There is plenty of scope here for original studies to be done with the long-term, computerised data set.

Noteworthy Encounters

Species	Age/sex	Ring	Date	Grid
Sparrowhawk	6F	EL01989	24/6/2018	N-1

This is the fourth Sparrowhawk we have captured this year - not yet a record year but there are still over four months to go. Male Sparrowhawks are captured more often than females - probably the females, being much larger, find it easier to escape from the net. About 30% of the males we catch are retrapped in the wood. However a retrap of a female is a rarity - this is only the second out of a total of 20 females ever captured.

Great Spotted Woodpecker 4F CT95960 20/5/2018 Q03

An old friend, now 8 years since being ringed and our third longest capture history. She still has four more years to go to equal the record set by CT84206 in 2017.

Great Spotted Woodpecker 3 LE35457 24/6/2018 Q03

This is the first and only juvenile woodpecker we have caught so far this year at a time of year when juveniles are normally frequent users of peanuts at the feeding station. Whereas we do find this species interesting - particularly in regard to sexing them before post-juvenile moult and ageing them afterwards - there is no doubt they can have serious affects on nesting tits. The apparent lack of juveniles of this species, coupled with corresponding relative lack of woodpecker attacks on nestboxes, suggests that they have not enjoyed a good breeding season. It is also possible that there has been some phenological mismatch between the tits and woodpeckers. With the very compact tit season, peak demand by woodpeckers may not have coincided with great availability of tit nestlings. It will be interesting to see whether the CBC survey shows a poor year for the species.

Stock Dove 4 EY42328 22/7/2018 D03 on nest

We had always regarded sitting adult Stock Doves as not safe to handle on the nest for fear of desertion. However, at a meeting of nest recorders and ringers at a recent BTO conference we were told this they were safe to handle and also (very helpfully) that nestboxes need not be placed as high as we had previously done. We have made efforts to catch them on the nest. Some individuals, though, are very wary and leave the nest well before the recorder approaches. We think it would be dangerous to try and trap such flighty individuals. However, some remain sitting almost as tightly as do Blue Tits - and these we have captured without any desertions. This bird is particularly pleasing as we ringed it as a nesting adult in June when we also ringed her two young. This capture is of her again in the same box, brooding a third brood of chicks in that box for the year. We suspect it is her own third brood but, as we did not catch her on the first nest in the box, cannot be sure.

Spotted Flycatcher 4 **ANA7267** 17/6/2018 **M07**

We have now caught three Spotted Flycatchers so far this year, well above average for the last 10 years. We have not recorded any in nestboxes for many years because, in the last years before they declined sharply, almost all nests in their special open boxes were targeted by predators. Nestboxes for the species were counter-productive and all removed. Perhaps it may be worth trying boxes for them again in the hope that patterns of predation have changed since the 1980s.

Willow Warbler 3J JTE172 12/8/2018 R-1

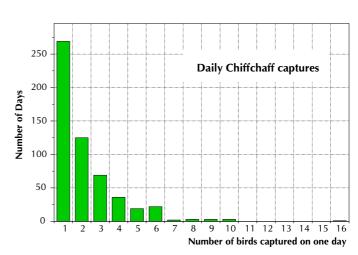
Only the second Willow Warbler to be caught this year in the wood - a far cry from the abundance in the late 1970s and early 1980s when the typical annual catch was around 35 birds. We do not know if they have bred in the wood this year - we wait to see what the CBC reveals - this bird was a juvenile but clearly not one which had just fledged. It could well have been reared far away from the wood.

Blackcap 3J M ANA7310 24/6/2018 N01

In recent years we have noted some Blackcap juveniles with very dark caps which seem certain to be males. This one had an even darker cap - as dark as some males we would age as 5 and certainly far, far darker than any adult female. Is this darkness of cap increasing? Is it genetic or environmental and has it anything to do with the increasing numbers of birds seen here in winter?

Chiffchaff 4F JTE136 24/6/2018 N01

It was a very good day for Chiffchaffs - eight individuals. We could not remember ever having caught so many on one day before. A subsequent look at the data, though, showed that memory in this case was not as reliable as a computerised data set. It certainly was a good day but we had enjoyed seven days with even more. The highest total was in July 1988 with 16 individuals. Next were three days with 10 and three more with 9 individuals together with another two with eight. It might be expected that these peak days occurred at the same time of year, perhaps when juveniles were abundant, or perhaps when many birds were coming to drink at a pond in very dry weather. Not so: the peak days are spread fairly evenly from March through to September. One was in 1976, then a scattering of them from 1993



onwards. We have caught at least one Chiffchaff on 552 ringing visits - the chart shows the distribution of numbers caught on these days. From the chart it can be seen that 8 in a day was, indeed, a rare event but not, as memory initially suggested, a record.

Robin 3J ANA7244 20/5/2018 Q03

This was our first juvenile of any species to be captured this year. It is far from an early juvenile record - a month later than the earliest ever (a Blackbird in 2017). Only in 8 previous years have have first juvenile captures been later than this date. With advancing laying dates we would expect that the first juvenile dates to be earlier year by year. Not so - the years later than this are fairly evenly spaced with about two in each decade.

Coal Tit 3J ANA7409 12/8/2018 Q03

The only nest in a box failed this year but it seems that some juveniles were reared in natural nests in or near the wood. This is the third juvenile to be caught in the wood this year - the two earlier birds were still in full juvenile plumage and unlikely to have travelled any great distance from their natal site.

Blue Tit 5F ANA7067 17/5/2018 K02 On nest

The tits we find on nests are often of particular interest - some having nesting histories, often in the same box, over two or more years. This bird is interesting for a different reason. It was ringed as a juvenile in November 2017 and captured two weeks later by Peter Cobb in Darlton, some 7km southwards. He last retrapped it in Darlton on January 12th 2018. It was back in the wood again in March and in May found nesting in one of our boxes. It could be that its autumn captures were part of its post-juvenile wanderings, assessing possible future breeding sites, or else it could be it is a 'migrant' moving south a few kilometres for the early winter.

Great Tit 3J S163814 19/8/2018 J03

This is one of several juveniles showing fairly rapid local dispersal movements. It was ringed at Hillcrest Farm in the village a month prior to this capture. In addition there has been one more juvenile Great Tit moving in the same direction, to be replaced by a nestling-ringed Great Tit and nestling-ringed Blue Tit which have moved from the wood to the farm.

Blue Tit 4 L803145 12/8/2018 O03

At 6y 17d since being ringed this is only our 13th longest Blue Tit encounter history. Of course 13th out of 11,592 birds is not a position to be sneezed at. This bird is also our oldest documented immigrant Blue Tit, having been ringed as a juvenile by John Clark at Hillcrest Farm in the village nearby. It has been seen in the wood in most years since being ringed in the summer of 2012.

Great Tit 6F D309148 24/5/2018 P-2 On nest

Another of the birds found on the nest, this one with a Treswell Wood only encounter history. It was ringed as a juvenile in 2013 and has been re-encountered 11 times since then. It was found roosting in the 2014/15 winter in the same nestbox as it used for nesting this year. In 2015 it nested in another box about 100 metres south of this year's site. All of its captures including in mist nets or boxes but excluding a few captures at the feeder in the north of the wood have been in, or on the edge of, compartment A. Like so many birds it is exhibiting fairly sedentary behaviour.

Great Tit 4M TJ49521 12/8/2018 Q03

At 9y 86d since being ringed as a nestling, this is our oldest recorded Great Tit, beating the previous record set in 1992 (also by a nestling-ringed bird) by one year and three months. Male Great Tits tend to disperse less than do females. This male was ringed as a nestling in the centre of the wood. By the time of its first capture after fledging it had moved all of 100 metres northwards. Since then it has only been caught in the northern third of the wood.

Great Tit 3J NZ53107 17/6/2018 Q03

The first of this year's nestling-ringed Great Tits to be recaptured. It was in a small party of siblings captured at the feeder in the north of the wood. Very oddly, this brood was ringed in the south of the wood and these siblings were caught, still together, before any of the northern-ringed tits were caught there.

Nuthatch 4M TV35679 17/6/2018 Q03

This is one of the 2017 brood of Nuthatches reared in one of our nestboxes - only the second brood ever. Nuthatches are highly sedentary so it is not surprising its natal dispersal is limited to the wood. It is good to know that at least one of the brood has managed to survive well into its first breeding season.

House Sparrow 4F TT49351 20/5/2018 Q04

After a single House Sparrow was caught in April, this one followed a month later. In turn it was followed by another five birds during May and June making a total of four adults and three juveniles for the year so far.

Chaffinch 6M X649453 5/8/2018 Q03

Another golden oldie, ringed 8y 136d previously in 2010. We did not see it between 2010 and 2015 but have seen it each year since then, always in, or soon after, the breeding season. We have not seen it at all in any winter and all its capture locations have been in the northern parts of compartments B&C.

Goldfinch 5F ATC4518 20/5/2018 Q04

This is one of a total of eight Goldfinches caught so far this year and the only one with a known history. It was ringed in Deangarden Wood, near High Wycombe in March 2018. This is the tenth Goldfinch we have ever recorded moving to or from the wood. We have only recorded encounters with 157 individuals so 10 movements (albeit mostly local) is a very high 'reporting rate'. Goldfinches may move southwards, often crossing the Channel in winter, females moving further and more readily than males. It is posssible this bird was ringed on its northern return journey prior to the breeding season.

Bullfinch 5M Z782795 17/6/2018 M07

We have continued to catch more Bullfinches than in recent years. As noted in the previous issue of Twitter, we have been looking very much more closely at their carpal coverts. This bird caused confusion. We noted its ashgrey tipped carpal covert which would indicate an adult. However, we also saw it had retained its outer greater covert. Now we were aware of the possibility of juveniles moulting the carpal covert we used the old greater covert as a clear indication of juvenile plumage and aged it as a first year bird. (It does seem odd that a bird might moult a carpal covert before all greater coverts have been replaced but I have seen it fairly often on Blackbirds.) We were wrong - the bird had been ringed aged as a 5 in June 2017. Thank-you Z782795 for adding yet another layer of uncertainty to the ageing process.

10-Week Summary: 2018 Interval 3, Captures in Standard Sites

	New Birds			Recaptures			Total
	Adult	5	3	Adult	5	3	
Sparrowhawk	•	•		1	•		1
Wren	2	2	10	3	1	1	19
Dunnock	1	•	3	2	•	1	7
Robin		•	12	3	5		20
Blackbird	5	6	2	10	3		26
Song Thrush	•	1	4	•	•		5
Blackcap	11	1	11	4	1		28
Chiffchaff	3	•	8	1	•		12
Spotted Flycatcher	3	•		•	•		3
Marsh Tit		•	4		•	•	4
Coal Tit		•	1		1		2
Blue Tit		•	3	3	4	3	13
Great Tit		•		3	2	4	9
Nuthatch		•	3		•	•	3
Treecreeper		1		3	•	•	4
Chaffinch		1		1	•		2
Bullfinch	5	3	4	10	1	1	24
Totals	30	15	65	44	18	10	182

Treswell Wood Standard Site Totals in 10-week periods - Summary table

Summary Data since standard site netting began in 1978:

Interval	1	2	3	4	5	Total		
Maximu	ı m 128	198	288	253	177	864		
Minimu	m 57	33	89	66	59	364		
Mean	91	113	160	130	124	615		
10-year Avera	ages since standa	rd site netting began	in 1978:					
1978 - 1	1987 90	113	182	140	130	655		
1988 - 1	1997 86	107	170	149	127	637		
1998 - 2	2007 95	100	134	120	125	574		
2008 - 2	2017 93	133	150	109	120	605		
Totals from 2000 onwards								
Year	1	2	3	4	5	Total		
2000	<i>7</i> 5	106	106	159	170	616		
2001	57	33	94	121	59	364		
2002	85	89	141	176	11 <i>7</i>	608		
2003	117	116	146	104	114	597		
2004	103	128	126	165	132	654		
2005	107	140	150	88	133	618		
2006	128	98	185	125	166	702		
2007	107	110	138	73	92	520		
2008	125	130	151	86	100	592		
2009	57	130	156	85	80	508		
2010	94	100	144	119	143	600		
2011	96	112	120	105	101	534		
2012	69	125	132	66	72	464		
2013	76	90	89	100	15 <i>7</i>	512		
2014	83	132	181	123	120	639		
2015	105	123	136	137	158	659		
2016	102	185	193	109	109	698		
2017	106	198	163	149	163	779		
2018	95	108	182					