

A CHESHIRE CENTENARY OF WILLOW AND MARSH TITS

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Summary

The first Willow Tit was identified in the field in Cheshire in 1912, fifteen years after the species was recognised as a British bird, separate from Marsh Tit. We should not let the centenary of this occasion go unremarked, and this article summarises the changing fortunes in Cheshire and Wirral of the two species, covering their identification, history, changing status over the years in local population and distribution, habitat and conservation.

Introduction

With hindsight, it seems amazing that most 19th century ornithologists had not realised that Marsh Tit and Willow Tit, quite common and resident birds, were actually two species. Well over one hundred years earlier, Gilbert White had separated Chiffchaff, Willow Warbler and Wood Warbler (White 1789): he had no optics and eschewed collecting specimens, but distinguished them by their differing calls, song and breeding behaviour; just the characteristics that easily separate Willow Tit and Marsh Tit. If one browsed *The Smaller British Birds* (Adams 1874), a lavish volume with exquisite painted plates, only Marsh Tit is elaborately described, but the features and song are a mixture of what we know today of both species, and the beautiful plate clearly shows a *parus* species with the facial pattern of a Marsh Tit, but the pale wing panel of a Willow Tit. It was not until 1897 that Willow Tit was first distinguished from a specimen collected at Coalfall Wood near Finchley, Middlesex as described by Hellmayr in 1900, and some descriptive detail published in the first volume of the then-new journal *British Birds* in 1907 by Lord Rothschild.

This discovery clearly clouded the knowledge of the status and range of Marsh Tit, and subsequently it took more than a few decades to work out the relative distribution of the two species, but in reality, it was *The Atlas of Breeding Birds in Britain and Ireland* (1968-72) that fully defined their national distribution (Sharrock 1976). Progress was similarly slow in Cheshire, despite the county's being blessed with two of Britain's best ornithologists (Coward and Boyd), and this paper is intended to mark the centenary of the Willow Tit's first identification in Cheshire with a summary of their history and present status. The first-named author of this article has undertaken a thorough study of all the 20th century literature for Cheshire and Wirral. The account in the 2012 County *Bird Report* contains a précis: a complete version follows below.

This article was prompted by the recognition, more than a century ago, that Marsh Tit and Willow Tit were two separate species. Taxonomists have not been idle since then, and indeed the advent of DNA profiling has encouraged more separation of species, resulting, in 2005, in a major revision of all the *Parus* family, and splitting these two from the other tits, with the new scientific names *Poecile montana* (originally *montanus*) (Willow Tit) and *Poecile palustris* (Marsh Tit).

Identification

Separation of these two species in the field is best achieved by seeing and hearing a combination of features to confirm an identification (Broughton 2009). Key is call, and this is often what alerts you to a bird's presence in the first place. Like all tits, both have a variety of calls, but the most frequently given are the most diagnostic. Marsh Tits are routinely very vocal, and have a distinctive high pitched, almost sneezing sounding call, pitchou, which may be extended to a pitchou chu-chu-chu series of notes. Willow Tits are generally more silent, and call less, but when heard, it's an equally loud, but lower pitched and buzzing call, tsit, tsit or si-zur-zur-zur, or a combination of these. Both will give nasal dzee or tchay single calls in alarm, although these calls

are more a feature of Willow Tit, which seems to mix these specific call notes with its others, but never has the explosive pitchou call given by Marsh Tit. Their songs are also different with Marsh Tit giving a rapid, repeated swee, swee, swee, swee series of notes, very tit-like in fact, and quite unlike the tsui, tsui, tsui series of the slow low piping notes of Willow Tit, almost reminiscent of Wood Warbler. Willow Tits also can give a series of thin high-pitched phrases, si si soo soo, descending at the end. Young Willow Tits also have a three or four note begging call, jzee, jzee, jzee, not given by young Marsh Tits.

From a structural and plumage perspective, both are medium sized tits, with stocky bills, dark caps, and dullish brown upperparts, white cheek patches, off-white underparts with variable amounts of buff or brown on the flanks. In adult plumage, Marsh Tit's facial pattern of a slightly glossy black cap and white cheeks, which become buff behind the ear coverts, differs from adult Willow Tit's dull black crown, which sweeps back onto the mantle framing completely white cheeks. Willow Tit thus appears large headed, with a thick-necked appearance. Both have small black bibs running down from the base of the lower mandible, but this is narrow and small in Marsh Tit which, if seen well, also shows a white margin to the lower cutting edge of the bill not present in Willow Tit. The remaining upper parts on Marsh Tit are uniform buff or dusky brown, with uniform tertials, giving a plain look, whilst Willow Tit shows pale fringes to the secondaries and the longest tertial, which form, in fresh plumage, a distinctive pale wing panel, and contrast with the slightly darker centres to most of the flight feathers. Fresh-plumaged Marsh Tits may show a very slight pale wing panel but never as obvious as Willow Tit. Conversely, in mid-summer, after a year's abrasion and before it moults to new feathers, the wing panel in Willow Tit may be absent. Willow Tit tends to have a richer buff to the flanks than Marsh Tit's more uniform look and appears to have a more rounded tail, with more noticeable white on the outer tail feather, whilst Marsh Tit has a square shaped tail. All of the descriptive detail above is for adult birds. In juvenile plumage, prior to their partial post-juvenile moult in August, birds of the two species look like dull versions of the adults and some cannot be reliably distinguished on plumage features alone, only on call.

Prior to 2009, records of these two species have been accepted from observers for the Cheshire and Wirral database without requiring validation or further descriptive details to confirm a correct identification. Following the 2004-07 fieldwork for the county atlas, *Birds in Cheshire and Wirral: a breeding and wintering atlas* (Norman 2008), it became clear that in the breeding season at least, these two species were not to be found at the same site, or even in the same tetrad; but in winter there were occasional records of either species in the other's typical strongholds. No descriptions were required for records submitted during the atlas project, and no record was rejected or returned to the observer. But this situation has now evolved where such occasional sight records of either species appear as obvious outliers and suggest that there is a potential for misidentification to be occurring. So given the continued decline in the range and regular sites for both Marsh and Willow Tit, from 2009 the County Records subcommittee requested that records of either species, away from known breeding areas, be supported with an adequate description for review by the County's rarities team to confirm that a correct identification had been made. The identification features outlined above, based on Broughton (2009), probably represent the current state-of-the-art. Observers should be aware that, as Broughton states, "some current texts continue to place emphasis on discredited criteria for field identification".

Habitat and habits

At least now that the county populations of both species are at a low ebb, they have largely retreated to their preferred habitats. Their common names are potentially confusing as Willow Tits mostly frequent damp (carr) woodland while Marsh Tit is the species of mature broadleaved

woods, with considerable understorey. Willow Tits excavate their own nest-holes, in rotting stumps or branches of willow, alder or birch, but Marsh Tits use natural holes, normally choosing small holes in mature trees, close to the ground, that are probably unattractive to other species as they are the lowest in pecking order when competing for nest-holes.

Both species hold large territories. In a major study of Marsh Tits in eastern England, territory sizes ranged from 1.45 to 14.12 ha, with a mean of 5.55 ha (Broughton *et al* 2012b), and they are seldom found in woods smaller than 1 ha (Hinsley *et al* 1995). Adults of both species are among the most sedentary of all birds, and probably defend their territories all year round, but some first-year birds may wander and their distributions spread out somewhat in winter.

Records in Cheshire and Wirral

In the introduction to *The Birds of Cheshire* (Coward & Oldham 1900) the authors wrote "Unfortunately there is no record at all of the birds found in Cheshire more than sixty years ago...". *The Birds of Cheshire* summarised the existing knowledge of the bird life of Cheshire. At that time, the 1897 discovery of Willow Tit skins from Hampstead among Marsh Tit skins in the British Museum was not widely known (Rothschild 1907). Willow Tit was not included in *The Birds of Cheshire* and Coward & Oldham summarised the Cheshire status of Marsh Tit: "as a general rule, the Marsh Titmouse, although a resident, is less plentiful in Cheshire than the Coal Titmouse. Like that species it is met with most frequently during the winter months. Flocks consisting solely of Marsh Tits are often seen; and although the bird does associate with other species, it is on the whole less sociable than its congeners". When *The Fauna of Cheshire* (Coward 1910) was published there was still no record of Willow Tit in the county and Coward could only add of the Marsh Tit "although it occurs in all parts of Cheshire, (it) is not, except perhaps in the neighbourhood of Chester, so abundant as the Coal Titmouse".

Apparently, Coward then became aware that Willow Tit should be looked for locally as, according to several sources, he examined every Marsh Tit he saw as carefully as possible and also looked at the few specimens in museums and local collections (Coward 1914a). In 1911 he found two Willow Tits in Warrington Museum and his opinion regarding their identity was confirmed by Mr H. F. Witherby, a national authority (Coward 1911). One of these birds had been obtained at Padgate, near Warrington, in 1890 but the identity of the locality of the other had been lost. At the time of its discovery the Padgate bird was the first Lancashire record. However, subsequent to boundary changes in 1974 it became the earliest Cheshire record. Of his Padgate find, Coward wrote "I have not, up to the present, identified the Willow-Tit in Cheshire; black-capped Tits which I have examined in other museums, and those which I have been able to watch closely in the field, have all been Marsh-Tits" (Coward 1911). *Under these circumstances, it is advisable to treat all pre-1911 references to Marsh Tits in Cheshire with caution.*

The discovery of the first live Willow Tit in Cheshire followed on 17th April 1912 when Coward positively identified one of two black-capped tits he had under observation as a Willow Tit (Coward 1911). This was followed in April 1913 by the first known Cheshire breeding pair which Coward and other observers, including A W Boyd, watched at a nest, with details of the discoveries published in both national (Coward 1913) and local (Coward 1914a) journals. Differing locations were given including woods 'at Rostherne', 'near Rostherne' and 'not far from Bowdon'. From a comparison of several sources it becomes apparent that these sightings were made in one wood which is part of the present Rostherne Mere NNR. The *Faunal Survey of Rostherne Mere*, apparently referring only to its Rostherne status, states "the Willow Titmouse is a much rarer bird than the others (tits)" (Coward 1914b).

Of his 1912 discovery Coward wrote in *British Birds* "A pair of Marsh-Tits are nesting in the same wood, and I have for some time been carefully observing every Marsh-Tit in this wood and in the neighbourhood, in the hope of identifying a Willow-Tit. I feel confident in asserting that the Marsh-Tit is by far the commoner bird of the two in Cheshire" (Coward 1912). This is the first comparative statement regarding the status of the two black-capped tits in the county. The modern day reader might feel that it was made rather quickly and that there are remarkably few published Cheshire records of either species to support it.

When Coward updated the *Fauna of Cheshire* he added Willow Tit to the Cheshire list as "an overlooked resident" and stated: "...probably many of the birds identified in the past as Marsh Tits were referable to this species. It certainly is less numerous than the Marsh Tit, and the remarks about this species on p. 155 of the "Vertebrate Fauna" are correct." He also reported further Willow Tit sightings at Rostherne in 1914 and 1915 while sightings he made at "Marbury, near Northwich" in 1915 extended for the first time the known range of the species within the modern day Cheshire boundaries (Coward 1916). In 1916 Coward was assured by the observer, a Mr L Greening, that he recognised a bird visiting the food tray in his Grappenhall garden in spring and in November as a Willow Tit (Coward 1918). In the *Lancashire and Cheshire Fauna Committee (L&CFC) Report* for 1917 Coward noted "Marsh Tits were fairly plentiful all summer, and in winter I found them frequently consorting with Greats and Blues, and in December detected the Willow Tit in at least three nomadic parties at Rostherne. On one occasion both Willow and Marsh were together...". There is no further mention of either species in *L&CFC Reports* until 1921 when it appears Coward was publishing, in parts, a further update of *The Fauna of Cheshire* (Coward 1921). He re-stated that he "carefully examined every tit of this group which came within range of my glasses, with the result that I find, in Cheshire at any rate, the Marsh tit the commoner bird". Sites within modern day Cheshire where he reported meeting with it frequently are the Rostherne and Ashley districts, Chester and Woodchurch in Wirral. He had nothing further to add on Willow Tit. Thus in 1921 Coward's view of the status of Marsh Tit appears to be unchanged from *The Birds of Cheshire* (1900) while the status of Willow Tit, based on the apparently small amount of information available, would appear to be that of a species of very limited distribution, less numerous than Marsh Tit.

There are *L&CFC Reports* covering the 1920s but they are meagre affairs and the only mention of black-capped tits is of a pair of Willow Tits breeding in Marbury Park, Northwich in 1927. However, two other local sources have references to the black-capped tits in this period. *The Birds of Alderley Edge & District* (Hendy 1924), is a full systematic list of the birds noted by Hendy and a number of other birdwatchers active in the area between 1910-1924. Marsh Tit is described therein as "A common resident, and in my experience as common as the Coal Titmouse in this district. Breeds". Willow Tit on the other hand was placed in square brackets with the comment "I have never identified this species in this district, though for some years I have carefully scrutinised any Marsh Tits I have seen. Neither Mr Abbott, nor Mr Garnett, has ever seen the bird here". The notebooks of 'Mr Abbott' were made available to CAWOS during preparation of *The Breeding Bird Atlas of Cheshire and Wirral* (Guest *et al* 1992). Abbott's notebooks cover the period 1913-1930. They reveal him to have been a birdwatcher very active in the eastern halves of SJ77 and 78 and western halves of SJ87 and 88, an area covering up to perhaps 40 tetrads, including much of the Alderley Edge district, between 1914 and 1928. He noted Marsh Tit in 13 tetrads within this area of which four held birds during the breeding season. He also saw Marsh Tits south of Hatchmere village in November 1920 and at Marbury Hall in April in 1915 and 1919. In all his years birding this area Abbott's notebooks only mention Willow Tit once and that he considered only a 'possible'. Abbott appears to have been a careful observer yet it is of interest that his Marsh Tit records include birds at sites/areas such as Soss Moss; Radnor Mere Mill Pond; Redesmere; Carr Wood,

Wilmslow; Lindow Moss etc where, given the habitat, Willow Tits might have been expected to be present. Also, in his *British Birds* note, *Distribution of Marsh-Tits in Flintshire* (Freme 1928) the writer mentions that he has examined black-headed Titmice from a small shoot in Tarvin and found them to be Marsh Tits.

By 1929 Willow Tit records can be traced from just four sites within the modern Cheshire boundaries. It is noteworthy that almost all the published sightings were due to one or both of Coward and Boyd. On the other hand Marsh Tit, mainly due to Abbott's efforts, are known of from c25 sites between 1912-1929. At that time the most recent Cheshire status statement we have for Marsh Tit is the one made in *The Fauna of Cheshire* (Coward 1910) which Coward re-affirmed in 1916 (Coward 1916) with his addition in 1921 that the Marsh Tit is the commoner bird (than Willow Tit) (Coward 1921). *L&CFC Reports* for the first half of the 1930s do not mention either Marsh or Willow Tit.

The issue of *British Birds* for May 1937 includes a paper by two distinguished authors *On the Distribution and Status of the British Willow-Tit* (Witherby and Nicholson 1937a). This showed that there was much to be learned about its distribution and status in the country as a whole. For Cheshire it was stated "there are breeding records from the north-east (Altrincham district - *which would include Rostherne*) and Wirral, but there is reason to believe that the species is very sparingly distributed.". No references are quoted in support of this statement. The September 1937 issue of *British Birds* followed up with *Supplementary Notes on the Distribution and Status of the British Willow-Tit* which added: "Mr. A. W. Boyd notifies three cases of breeding in the Northwich area, and a map and notes sent in by Mr. R. B. Sibson show that the Willow-Tit is also widely distributed and by no means rare in the southerly part of the *Cheshire* plain and adjoining areas of *Staffordshire*, where it is believed to outnumber the Marsh-Tit." (Witherby and Nicholson 1937b).

It seems likely that the data in Sibson's map and notes referred to in *British Birds* formed part of his *Notes on Birds of Sandbach, S.E. Cheshire* (Sibson 1945 & 1946). Sibson's fieldwork was done during the period September 1935 to July 1939. The area he appears to have covered for Marsh and Willow Tit is roughly the equivalent of a 10 km square centred on Sandbach Heath (SJ76K). Within this area he found Willow Tits in 13 tetrads of which six held birds in the breeding season and nine held birds at other times of the year. Of the status of the two species, Sibson wrote of Willow Tit: "The dominant black-capped tit of the district. Well distributed along the streams, never far from water or swamp, and especially fond of mosses where birch and alder thrive... (and) In winter they are thinly distributed along the streams, and there is hardly a half-mile between Elton (Hall) and Rode Pool along the River Wheelock where I have not found them". Sibson found the Marsh Tit "Common at Crewe Hall, where I could find them at all seasons, but otherwise a rare bird in this district". Away from Crewe Hall he quoted just two Marsh Tit records, a single at Elton (Hall) in October 1938 and a family party by Saltersford School (Saltersford Hall) in July 1939. Outside his study area he had a pair at Moreton Hall in February 1938 and a pair at Redesmere in May 1939.

Willow Tit is included in the *L&CFC Reports* for 1936 and 1937 mainly on the strength of Sibson's records but there is also a record from Boyd of nest-making at Whitley Reed in 1937. The 1938 *Report*, the last annual *L&CFC Bird Report* for many years, included Marsh Tit for the first time since 1921, repeating Sibson's records above. The number of Willow Tit records published in the 1938 *Report* increased - perhaps inspired by the recent papers in *British Birds*. Later *L&CFC Reports* covered the periods 1939-42 and 1943-49, the latter being the last 'joint' Bird Report with Lancashire. In the period 1939-1949 Willow Tits were reported from a total of 14 widespread sites apart from those in the Sandbach district mentioned above. These included breeding season

records from Marbury Park and Rostherne where birds had been recorded previously. 'New' sites included Caldy and Thurstaston Common in 1942. In fact according to two articles both entitled *The Willow Tit in Wirral* by (Ellison 1942a and Ellison 1942b) these were the first Wirral records of the species. In the *Proceedings...* (Ellison 1942b) he explains that enquiries had been made to trace the source of the May 1937 statement in *British Birds* that there were Willow Tit breeding records from Wirral. It became known that the breeding record was attributed to C.H. Gowland. Gowland was contacted but replied that he had not found the Willow Tit in Wirral. Under these circumstances H.F. Witherby, co-author of the *British Birds* paper, wrote that "it would be safer to wash out (the information) as a mistake". Breeding was confirmed at Thurstaston Common in 1942 and Caldy was added as a breeding site in 1949. Other 'new' Willow Tit sites were Norton Priory in May 1941, (a brood was reported from 'Norton' in 1946 or 1947) and Frandley where nest holes were excavated in 1938; Lymm Dam and at Nantwich where birds were present at a garden bird table in both winter and spring; Crewe in summer; Burwardsley and Peckforton Woods in autumn; Combermere and Redesmere in winter and Mollington where recorded "regularly".

In 1941 Eric Hardy's *The Birds of the Liverpool Area* was published (Hardy 1941). The book covers historical records and the 'Liverpool Area' extends beyond Liverpool including sites well into Cheshire, Lancashire and North Wales. The extent of the area covered needs to be borne in mind when considering the status statements. Hardy found Marsh Tit "widely distributed, but not abundant". Norton Priory, Leasowe, Dibbinsdale, Burton and Stanney Woods are listed among its nesting sites while birds were also seen at Thornton Manor in July and Meols appears among wintering sites. Willow Tit is stated to be "probably widely distributed but scarce". Several Cheshire records are quoted mostly duplicating those referred to above but there is also one from Delamere Woods in November 1940. The reference from Coward of birds at Chester and Woodchurch quoted by Hardy in his book actually refers to Marsh not Willow Tit as incorrectly stated by Hardy.

In the 1939-42 *L&CFC Report* Boyd gave Cheshire status statements for both species. For Marsh Tit: "Widely distributed but in places outnumbered by the still little-known Willow Tit: e.g. Sandbach district (R.B.S.); near Northwich (A.W.B.)". For Willow Tit: "Proves to be more widespread than was previously recognised". Under Willow Tit the 1943-49 *Report* says "More widespread than is generally known. Although in some Cheshire districts such as Antrobus (including Frandley) and Sandbach commoner than the Marsh Tit it has not often been identified with certainty". Otherwise the Marsh Tit was not mentioned in the 1943-49 *Report*.

Boyd's classic *New Naturalist* book *A Country Parish: Great Budworth in the county of Chester* was published in 1951 (Boyd 1951). He had been watching the birds of the district for some forty years so his notes on the black-capped tits are of considerable interest. Boyd wrote "The Marsh-Tit is the least common of the Titmice. The first seen in my own fields was killed by a robin in a trap into which both had gone. One or two may occasionally be seen at Marbury, Arley and Tabley, and I have heard the song on 31 December as well as in April." Its status is given as "Uncommon generally". Also "The Willow-Tit on the other hand, is not uncommon, although not plentiful. It nests at Marbury, Cobbler's Gorse in Antrobus, Frandley and Whitley Reed and doubtless elsewhere...The willow-tit is evidently resident and may be seen in the coverts and hedgerows at any time." Boyd gives the status as "Thinly distributed resident."

In 1955 Boyd completed *A revised account of the Birds* as part of a *Faunal Survey of Rostherne Mere* (Boyd 1954-55). He noted "the Marsh Tit nests in the mere covert" but didn't mention a note by J. Southern (Southern 1946) referring to Marsh Tits observed carrying small black slugs at

the edge of a wood at Rostherne from October to December 1944. Of the Willow Tit Boyd wrote "Probably nests annually".

Notes on the Birds of the Urban District of Wilmslow, Cheshire (Bell *et al* 1955) was published in *The North Western Naturalist* in 1955. Records cover the period from 1929 to 1954 and "continuous notes" of the birds of the area were taken from 1941. The paper includes a full systematic list in which Marsh Tit is said to be "Resident. Widespread but usually recorded in damp woodlands" while Willow Tit is "Resident. Probably often overlooked but two definite records in the Bollin Valley on the eastern boundary; and two records at Styal."

There is no *Cheshire Bird Report (CBR)* for the period 1950-56 but *CBRs* began to get back on track with a *Report* covering 1957-60. Willow Tits were noted as breeding in Birkenhead in 1957 while Macclesfield, Prestbury and Wilmslow were added to previously published localities for the species. The 1961-62 *Report* has two pairs of Willow Tits breeding at Alderley Edge and probable breeding at Poynton in 1962. Marsh Tit was among a list of species 'also recorded' in the period 1957-62.

Manchester Bird Reports (MBR) for 1959-75 covered an area within a 15 mile radius of Manchester Town Hall thus including a small area of Cheshire. Records for the period to 1961 include Marsh Tits at Adlington, Bollin Valley, Lymm, Tabley and Tatton Park while Willow Tits were noted at Mottram St Andrew, Prestbury, Saltersley Moss and at Styal which was noted 'a regular haunt'. The Merseyside Naturalists' Association *Bird Report* for 1959-60 adds a record of Willow Tits nesting in a stump at 'Sandymoor heronry wood'.

Bell's *Birds of Cheshire* was published in 1962 (Bell 1962). The Marsh Tit account summarises Coward (1910) and Boyd (1951) and adds a comment based on Sibson (1945 & 46). In addition, Bell wrote "it is resident in the Styal woods, at Rostherne, and in the Adlington woods". Bell appears to have had access to almost all the sources reviewed above so he will have been aware that from 1935 Marsh Tit had been reported from c16 quite widespread Cheshire sites while Hardy (1941) had added six sites on Wirral although these are undated. Bell sums up the species status "Such records as there are indicate that it is widely but thinly distributed throughout the county". For Willow Tit Bell mentions the discovery of the first live Cheshire birds in 1912 and 1913 then says "since then it has been identified throughout the county..." Sources probably available to Bell would have shown that from 1935 Willow Tit had been reported from around 25 widespread Cheshire sites not including the Sandbach area (see above) and three on Wirral. Bell adds "Nowhere, however, is it common, although it is widely distributed".

In the period 1962-1966 relevant Marsh and Willow Tit records appeared in both *Cheshire* and *Manchester Bird Reports*. Two pairs of Willow Tits bred at Alderley Edge in 1962. In 1963 Willow Tits were reported from nine sites four of which were 'new': Bidston Hill, Dibbinsdale, Macclesfield Forest and Morley. In 1966 Willow Tit was reported from 11 sites of which five were 'new': Cuddington, Frodsham, Petty Pool, Plumley and Toft; it is described as "uncommon in south-west Cheshire". The 1963 *CBR* says that Marsh Tit was recorded from six sites of which Withington (presumably Lower Withington) was 'new' - it was noted that it was not recorded at Nantwich and Prestbury. The 1964 *CBR* (published by L&CFC as part of its own Report and, for the first time, separately as a stand-alone Cheshire Bird Report) recorded the first ever apparent passage movements of Marsh Tit at Red Rocks and Hilbre with singles on, respectively, October 2nd and 11th and two with a tit flock at Red Rocks on Nov 2nd. In 1966 Marsh Tit was recorded only at Langley and not at all in mid-Cheshire - the species was though noted as "common in south-west Cheshire, especially in the Eaton Park area".

Bell's (1967) *Supplement to the Birds of Cheshire* updates some of the species accounts. For Marsh Tit he wrote "continues to be very local, and is far less widely distributed than the Willow Tit, although it is reported as common in south west Cheshire". Of Willow Tit Bell states "records of recent years confirm that the species is widely distributed throughout the county and is much less local than the Marsh Tit". Otherwise some of the information from the 1962-1966 *Reports* noted above is repeated by Bell. Sources available to Bell for the period 1962-1966 at the time he prepared his *Supplement* show Marsh Tit records from nine sites and Willow Tit records from 20 sites. *Bird Reports* and other sources from the mid 1930s generally show a preponderance of Willow Tit records. It is interesting to speculate whether this reflects the real status of the species or whether there was a concentration on reporting and publishing records of what was then believed to be the scarcer of the two species.

Unfortunately coverage of Willow Tit in most *CBRs* from 1967 to 1978 is limited to inclusion in lists of species also recorded, the comment 'no change of status is apparent' or, in one year, not mentioned at all. However the 1967 *CBR* includes a map of the distribution in Cheshire (including Wirral) of Marsh, Willow and unidentified black-capped Tits. This shows both species to be widely but thinly spread throughout most of the county but with an apparent lack of information from south Cheshire. Unfortunately there is no written account to support the map and it is not clear whether it illustrates 1967 sightings only or covers a period of years. There is a comment in the 1968 *CBR* to the effect that more information has been received and it was hoped that a full picture of distribution would follow in the 1969 *CBR*, but unfortunately this didn't appear. The *MBR* for 1969 says that Willow Tits were "regularly seen" at Rostherne. *Notes on the Bird Life of Chester* (Williams 1971) provides local status statements for both species. Marsh Tit is said to be "A common resident in Eaton Park woods. More thinly distributed over the rest of the district. Occasional visitor to City gardens in winter." While for the Willow Tit "at the present day it appears to be more numerous than the Marsh Tit to the south of the City. J.M.B. King found it in every wood in an area between Shotwick Lodge Farm, Stanney Wood and south to Collinge Farm and Crabwell Hall. Although the Willow Tit was quite common he had some difficulty in identifying a single Marsh Tit in this extensive area north of the City. It would appear that the Willow Tit is much the commoner bird northwards from Mollington, throughout the whole of Wirral whilst the Marsh Tit is the commoner south of Chester." There appears to be some contradiction here given that Willow Tit is said to be "more numerous than the Marsh Tit south of the City" yet it is also stated that "Marsh Tit is the commoner south of Chester"!

At the time that many common birds were being ignored by the editors of *CBRs*, thankfully some of the county's volunteer fieldworkers were contributing to the first national Breeding Atlas (1968-72) (Sharrock 1976). Recording was on the fairly coarse hectad basis (10x10km squares) and, of the 26 hectads that are mostly in Cheshire and Wirral, Willow Tit was confirmed to breed in 18, probably breeding in 4, possibly breeding in 3 and not recorded in 1. Marsh Tit was confirmed to breed in 10, probably breeding in 4, possibly breeding in 5 and not recorded in 7. The benefit of atlas projects is that all areas are covered, not just those where birdwatchers are used to spending their time. Thus, these results were the first definitive recording of the status of the two species across the county, and supported the view that Willow Tit was the more widely distributed in Cheshire and Wirral.

In 1974 the *CBR* reports that a Willow Tit was trapped at Red Rocks during morning passage on October 12th and in 1975 singles were reported from there on August 10th and 18th. The Willow Tit was described as somewhat commoner than the Marsh and more widespread in 1975 and 1976 and one observer reported a definite increase of Willow Tits at Heswall in 1976. The comment for Willow Tit in 1977 was "generally appears much more common than previous years".

Marsh Tit is treated somewhat more generously in CBRs of the period 1964-1978 being relegated to the 'also recorded' lists in only two years. However information away from Wirral is almost non-existent. In 1970 and 1971 CBRs Marsh Tit is described as, respectively, "decidedly rare" and "rare" while in 1972 it is stated "Other than on Wirral the species is widely but thinly distributed". Records quoted in 1970 are two at Thornton-le-Moors on March 1st and one near Capenhurst on March 8th. In 1971 two at Capenhurst and a pair at Landican were undated and one was at Red Rocks on October 23rd. 1972 records came from the Landican area, along the Wirral Way and Grange Hill, West Kirby. In 1973 "rather more than usual records came from Wirral" but none were quoted. One was at Red Rocks on September 6th 1975. The following comment under Marsh Tit in the 1978 CBR sounds heartfelt and the second part could apply equally to Willow Tit: "No records from Wirral. Records from other areas are at present insufficient to shed light on the species' distribution. Tetrad results are eagerly awaited". The only Marsh Tit information for this period in the MBR is from Rostherne where it was regularly seen in 1968 and 1969 and probably nested in 1970. The only CBR Marsh Tit record away from Wirral was from Rostherne where a family party was noted in June 1974. According to the Report the species "is regarded as rare on the Reserve and breeding status doubtful". *The Birds of Rostherne Mere* (Harrison & Rogers 1978) found that 'nowadays' one or two Marsh Tits were noted occasionally in the winter tit flocks and that there were very few breeding season records but it was thought nesting occurred occasionally if not every year. The Common Bird Census (CBC)-style survey on the Reserve found birds present each year from 1976 to 1982 with one or two territories held in four of those years.

1979 saw a change of policy in bird recording and reporting in Cheshire. The county was split into new recording areas, each area had a 'recorder' and it was hoped that the species accounts in the annual Report would include at least a remark about each area. These changes coincided with the first tetrad atlas survey of breeding birds undertaken in the county, the *1978-84 Breeding Atlas*. This atlas revolutionised knowledge of the distribution of all breeding birds in the county and the tetrad (2x2km square) mapping was a sufficiently fine resolution to provide useful detail (Guest *et al* 1992). Of the 670 tetrads comprising Cheshire and Wirral, Willow Tit was proven to breed in 109, probably breeding in 71, possibly breeding in 90 and not recorded in 400. Marsh Tit was proven to breed in 45 tetrads, probably breeding in 46, possibly breeding in 69 and not recorded in 510. These results confirmed the more restricted distribution of the Marsh Tit. Although this atlas did not measure densities, the authors estimated the county breeding population of the Marsh Tit to lie somewhere between 150 and 200 pairs, and, for the Willow Tit, probably some 350-400 pairs (Guest *et al* 1992). Thus, some 70 years after its first recognition in Cheshire, there were probably twice as many Willow as Marsh Tits in the county.

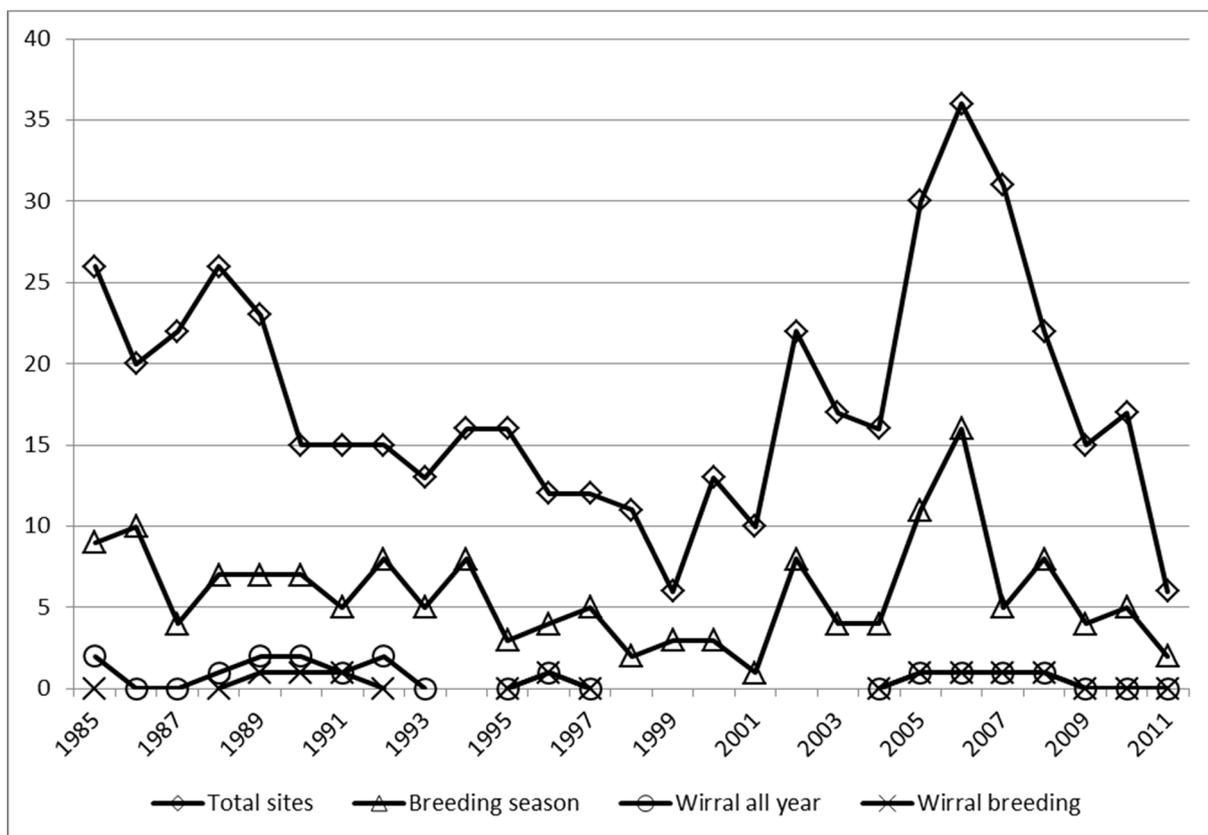
Items cherry-picked from the Willow Tit accounts in the CBR systematic list for the period of atlas survey work are the first record for Hilbre on 4th July 1979; "commoner than Marsh Tit" in south-east Cheshire in 1979 and in east Cheshire in 1980, five territories located in 25 hectares of woodland, described as "classical habitat", at Risley Moss in 1981 and eight pairs breeding there in 1983. For Marsh Tit during the atlas period the only Wirral record given is one at Red Rocks on 13th August 1980; "perhaps commoner in mature deciduous woodland in the Weaver valley than anywhere else in the county" on the strength of four pairs with young between Dutton and Kingsley in 1981.

Overlapping with the county's first breeding bird atlas was the first *Atlas of Wintering Birds in Britain and Ireland*, recording in hectads (10x10km squares) with fieldwork in three winters (1981/82 to 1983/84) (Lack 1986). Of the 26 hectads of which more than half lies in Cheshire and Wirral, Willow Tit was found in winter in 24, and Marsh Tit in 21, similar to the 25 and 19 respectively in the national *Breeding Atlas* 1968-72. The 1981-84 *Winter Atlas* recording was semi-

quantitative, with density split into three bands according to the number of birds recorded in a day, determined so that 20% of the national records were in the top band, 30% in the middle category and 50% of records in the lowest abundance band. In Cheshire and Wirral, Willow Tit was found in 6 hectads in the highest abundance level, 12 in the middle and 6 in the lowest, while Marsh Tit had none with the highest abundance, 7 in the middle band and 14 in the lowest. These figures again show that, from a national perspective, the county is more important for Willow than Marsh Tit, and for such relatively sedentary species these relative densities probably correspond to a measure of their breeding abundance as well.

Marsh Tit 1985-2011

1985 saw a reversion in *Cheshire Bird Report* policy back to species accounts written on a county-wide rather than an area basis and this has continued to date. As became common in following years the 1985 Marsh Tit systematic list account included all the records submitted with the following expression of concern, to be repeated in one guise or another in the years to come: "Always uncommon, this year it has been noted by many observers to be scarcer than ever, with the exception of Overleigh Drive, Chester and the Eaton Estate." Other than singles at Burton on January 9th and at Hilbre on October 13th there were no records from Wirral, otherwise birds were reported from some 24 quite widespread sites.



Marsh Tit sites occupied

The Marsh Tit graph is based on information in annual *Cheshire (and Wirral) Bird Reports* 1985-2011. The four lines show, from top to bottom, the approximate number of sites from which birds were reported in the county; the number of sites with 'breeding season' presence; the number of Wirral sites with records; and the number of Wirral sites with breeding presence. These figures should be treated with especial caution as the criteria for listing such sites is not always clear from the individual *Reports*. It should be noted that totals for the period 2004-2007 are inflated by records collected for the second *Cheshire and Wirral Atlas*.

The story told by the *Bird Reports* in the years after 1984 is of a species virtually absent from Wirral and gradually becoming increasingly thinly spread in declining numbers in Cheshire. Perhaps surprisingly the Reports contain records from as many as 113 different named sites or areas including ten in Wirral. However, at 60 of the 103 Cheshire sites birds were recorded in only one or two years while in Wirral birds appeared at nine of the sites in one year only. As well as being very scarce in Wirral there were few records from the very east of Cheshire with records from Bosley, Lyme Park and Macclesfield Forest in just four years.

By the time of the second national atlas *The New Atlas of Breeding Birds in Britain and Ireland: 1988-91* (Gibbons *et al* 1993) the decline of Marsh Tit in the county was obvious. Of the 26 hectads (10x10km squares) that are mostly in Cheshire and Wirral, Marsh Tit was confirmed or probably breeding in 5, seen in the breeding season in 8 and not recorded in 13; down from 14, 5 and 7 respectively in the first national *1968-72 Breeding Atlas* twenty years before. The relative difficulty in finding evidence of breeding is another indication of the species' scarcity.

For much of this period, based on records submitted for the county *Bird Reports*, Marsh Tit appears to have been most numerous in the south-west of Cheshire. Certainly Aldford, Beeston, Bickerton, Brown Knowl, Burwardsley, Cholmondeley, Combermere, Eaton Estate, Eccleston, Farndon, Overleigh Drive, Peckforton, Lower Wych Valley feature strongly in the Reports. Six birds were counted at Burwardsley in April 1986, ten at Combermere in November and eight at Brown Knowl in December of 1988, in 1990 "a few pairs" were confirmed breeding at Eccleston and two pairs at Peckforton while in late 1991 c20 were in a tit flock at Eccleston. However despite being described in 1995 as "quite common locally" on the Eaton Estate there were indications during the 1990s that numbers in some parts of the south-west were decreasing. Later maximum counts were five at Eccleston in March 1993; Overleigh Drive had three pairs in 1994, up to seven birds in January and February 1995, four pairs in 1996, four birds in January 1997 and three pairs in November 1998. By 1999 just two birds were reported from Overleigh Drive and it was described as "very uncommon here" at Aldford. Marsh Tits remained resident in the area in the first decade of the new century but the largest numbers were reported from Combermere where there were seven in February 2003, six in 2006 and four in winter 2009. In 2011 it was reported that for the first time in 30 years there were no records in the Tattenhall to Aldford area but birds were still present in the Cholmondeley and Peckforton areas.

Elsewhere it would appear from the *Bird Reports* that only in the Aston/ Hatton's Hey area of the lower Weaver Valley were Marsh Tits present throughout the 1985-2011 period. Sites such as Bollin Valley, Church Minshull, and Tatton Park appear to have been all-but deserted by the mid-1990s. The declining status at Rostherne Mere NNR is clear from the annual *Reserve Reports*. Birds were recorded there during the CBC-style survey in 1987, in 1989 when a territory was held and 1991. There were one or two records in each year to 1994 but subsequently single birds have appeared on single dates in just four years - three times in autumn.

There has not been a *Bird Report* record from the Marbury Country Park area since 2003. One or two Marsh Tits appeared irregularly at Moore in the late 1990s and early 2000s and at Risley Moss for several years in the 2000s. Following an isolated record in July 1996 birds were recorded in Stanney Woods, Ellesmere Port, a site mentioned by Hardy (1941), from 2005-2008 and, according to the *Bird Report*, bred there in 2006. Other Wirral records of note include birds at Hilbre in October 1985, Red Rocks in March 1990 and Stapledon Wood where one sang on 5th May 1990. Back in Cheshire, a lone bird appeared at feeders at Rode Pool on 17th September 2002 and was seen there to 22nd May 2012. According to BTO 'Birdfacts' the longevity record for a British ringed bird, defined from date of ringing to last report, is 10 years, 1 month, 26 days and typical lifespan 2 years while a Swedish Marsh Tit was reported at an age from hatching of at least 11 years 11

months. Ringing studies in part of the Aston estate in the lower Weaver valley, every February and March from 1981 to date, have found Marsh Tits present throughout, with several individuals being caught for three or four years in succession. There were, however, long periods (1994–2000 and 2005–09) with none being caught before resurgence for a few years, which would be consistent with a species holding large territories (much larger than the study area) and roaming around them during winter.

The most definitive detailed statement of the species' status across the whole of Cheshire and Wirral came from fieldwork for our *2004-07 Breeding and Wintering Atlas* (Norman 2008). The species had been found in 160 tetrads in the first county *1978-84 Breeding Atlas* only twenty years before (Guest *et al* 1992), but in just 30 tetrads in the second survey, only four of them with proven breeding. Locations that were occupied in both atlas projects included much of the county's scarce mature woodland: the lower Weaver valley around Aston, the Wych valley, the Eaton estate and the Peckforton area. The habitat recording by atlas surveyors was revealing: nearly three-quarters of the records (22 out of 30) were in broadleaved woodland.

In the winter part of our *2004-07 Breeding and Wintering Atlas* (Norman 2008), Marsh Tits were found in 50 tetrads, twenty more than in the breeding season. Many of the extra tetrads with winter records were within one or two tetrads of the core breeding sites, and could be interpreted as dispersal of first-year birds, but up to ten of the records were from isolated tetrads, at least 5 km distant from the nearest known breeding site. Conversely, four tetrads in the east of the county furnished records of single birds in the breeding season, but none was found within those 10-km squares in winter. As stated earlier, no descriptions were required for records submitted during the atlas project, and perhaps some might not withstand the now-required scrutiny by the county Records Team.

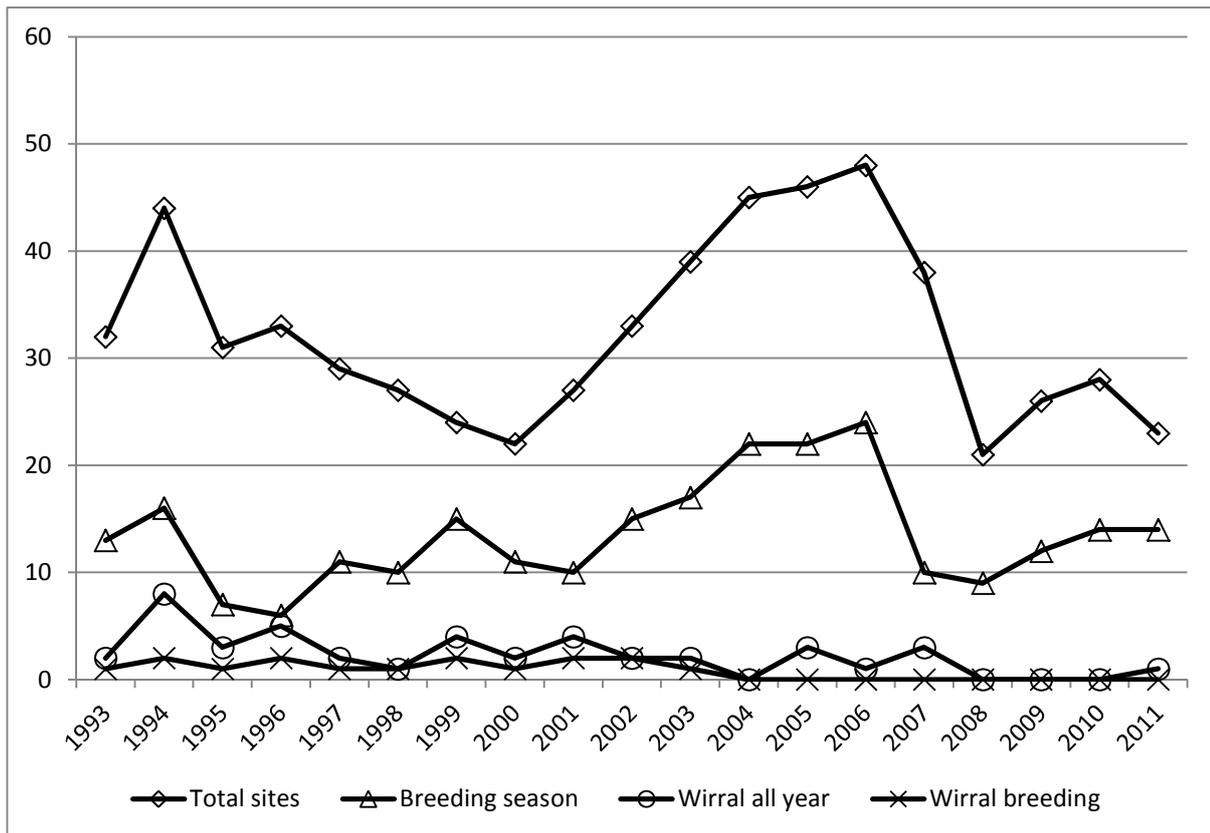
In the most recent national *Bird Atlas 2007-11 The breeding and wintering birds of Britain and Ireland* (Balmer *et al* 2013) the Marsh Tit was confirmed breeding during 2008-11 in just three of the 26 hectads (10x10km squares) in Cheshire and Wirral, probably breeding in a further three and possibly breeding in three more, with non-breeding presence recorded in another three, and the species was not found in 14 hectads. Similarly in the winter surveys (2007/08 to 2010/11), Marsh Tits were recorded in 12 hectads and not found in 14, although three of those 12 had not had birds present in the breeding seasons. These figures show a similar breeding range to the national *1988-91 Breeding Atlas* and a loss of 9 hectads compared to the national *1981-84 Winter Atlas*, confirming the shrinking distribution noted above. These data appear to show a further drop from the county *2004-07 Breeding and Wintering Atlas* but the national atlas used a sample of tetrads, rather than all squares, so the difference may well be attributable to the variation in methodology.

Willow Tit 1985-2011

We have seen that records of Marsh Tit submitted for the annual *Bird Reports* were, by 1985, so few that they were mentioned almost individually. Willow Tit records however have remained numerous enough to be summarised in the *Bird Reports*, although from 1993 it is possible to illustrate by a graph the number of sites from which birds were reported. The following records or comments are cherry-picked from *Bird Reports* during the period 1985 to 1992: in 1985 a tetrad survey in the Chester area indicated Willow Tit to be more common north of the city while Marsh Tit was more likely to be encountered in the south Chester area. In 1986 "few reported from the north-east and none from the eastern hills - the species has been in decline here throughout this decade". Summarised in 1987 by "although seen more often than Marsh Tit, it is still scarce in a lot of places even where suitable habitat exists". Described as only locally common in 1988 with records of about 90 individuals from 44 sites. In 1989 "more were reported from Wirral" than Marsh Tit and "ones and twos were generally quite widespread outside the breeding season". In

1990 “reported as ‘resident’ or present in the breeding season at sites throughout Cheshire and Wirral”. Reported from only three Wirral sites in 1991 while in 1992 Willow Tit was stated by one observer to be “much rarer in the west of the county” than Marsh Tit.

The second national 1988-91 Breeding Atlas (Gibbons et al 1993) showed a decline of Willow Tits in the county, although not as severe as for Marsh Tit. No breeding season presence was recorded in Wirral and in total, of the 26 hectads (10x10km squares) of which more than half is in the county, Willow Tit was confirmed or probably breeding in 17, seen in the breeding season in 4 and not recorded in 5; down from 22, 3 and 1 respectively in the first national 1968-72 Breeding Atlas twenty years before.



Willow Tit sites occupied

The Willow Tit graph is based on information in annual *Cheshire and Wirral Bird Reports (CWBR)* 1993-2011. The four lines show, from top to bottom, the approximate number of sites from which birds were reported in the county; the number of sites with ‘breeding season’ presence; the number of Wirral sites with records; and the number of Wirral sites with breeding presence. These figures should be treated with especial caution as the criteria for listing such sites is not always clear from the individual *Reports*. It is clear that totals for the period 2004-2007 are inflated by records collected for the second *Cheshire and Wirral Atlas*.

Information published in the county *Bird Reports* for the period 1993 to the end of the century shows an overall decline in the number of Cheshire and Wirral sites from which Willow Tits were reported. This was followed by an increase from 2001 which continued during almost all of the period of survey work for our *2004-07 Breeding and Wintering Atlas*. Once survey work was concluded the number of sites reported declined until by 2011 it was at almost its lowest in the period 1993-2011. Comments in *Bird Reports* included "seen much less frequently than they used to be" at Danes Moss and "scarce" at Plumley CWT in 1998; "lost again as a breeding species" at Arclid SQ, and "gone" at both Rostherne and Wilmslow in 2000; “becoming increasingly scarce at Bosley Reservoir“ in 2001. To a large extent the number of sites from which birds were reported in

Cheshire and Wirral in the breeding season matched the ups and downs in the total number of sites from which birds were reported annually. However, after reaching a post-*Atlas* survey work low in 2008 there has been a small but welcome increase subsequently in the number of 'breeding season' sites. Looking at the position for Cheshire and Wirral as a whole disguises the situation in Wirral over the same period. From a peak in 1994, when birds were reported from eight Wirral sites, this deteriorated to the point where there were no Wirral reports from 2008-2010 and just one in 2011. For the period 1993-2003 *Bird Reports* show that one or two Wirral sites held birds in the breeding season in each year. Since then no breeding season records from Wirral have appeared in the *Bird Reports*.

During the period 1993-2011 the annual *Bird Reports* name some 65 sites with 'breeding season' records. Although 'breeding season' sites are mostly listed by name in the annual *Reports*, sites holding birds at other times are often not named. It is possible to identify 17 named sites where birds were reported only outside of the breeding season but a look at the Willow Tit graph shows a sizeable disparity between 'total' and 'breeding season' sites each year. This indicates that outside the breeding season birds were reported from more than just the 17 known named non-breeding season sites. It is worth noting that around 40 of the 'breeding season' sites were reported in just one year while seven other sites were reported in only two years. Records were received from the 17 non-breeding sites in up to four years, but 11 of these sites only had records in one year.

The largest number of named sites, 20, are in the north of Cheshire. Here sites/areas such as Moore NR, Risley Moss and Woolston have held birds throughout the period while further along the Mersey Valley birds have been reported from Oxmoor in most years since 2001. The centre of the population in the north, and Cheshire as a whole, is undoubtedly Woolston. *Reports* in the mid-1980s referred to two territories, while four pairs were located there in 1990. Ringing totals increased during the 1993-2011 period and by 2011 the Woolston Reserve population was estimated at 14-18 pairs. The Risley Moss area, which had a sizeable population in the late 1970s and 1980s, continues to hold birds, although apparently in reduced numbers. Willow Tit sites stretch along the Mersey Valley with several pairs in the area around Moore NR and pairs breeding almost to the outskirts of Runcorn. It is heartening that in recent years the number of sites in the north of Cheshire reported holding birds appears to have increased. Since 2008 Willow Tit reports have been received from around seven 'new' sites compared to the period 1993-2007.

Elsewhere, away from Wirral and the Chester area, sites from which Willow Tits were reported from 1993-2011 are widely but generally extremely thinly spread. In the well-watched Marbury CP/Neumanns Flash area a pair or even two were reported in most years compared with an estimated four pairs in the area in the late 1980s and early 1990s (Walters 1993). At Arclid SQ/Taxmere a pair or two were reported in most years but after 2004 *Bird Report* appearances became infrequent. Birds were present at Bath Vale in most years from the late 1990s. At Bosley Willow Tits were once resident but there have been no records from there since 2003. In 1977 five territories were plotted at Rostherne Mere NNR following a CBC-style survey and as late as 1993 there were still three territories. However a decline then set in and annual breeding season presence on the survey ceased after 1999. According to *Rostherne Mere NNR Reports*, although appearances on the Reserve this century have been almost annual they have, generally, been irregular although breeding was successful here or very nearby in 2006. One juvenile was ringed on the Reserve on 4th July 2009, not three juveniles as noted in the 2009 CBR, and a female with a brood patch was caught in May 2012 (M Calvert pers com).

By the early years of the present century birds appear to have gone from, or be on the point of disappearing from, other once 'traditional' sites such as Danes Moss, the Lindow area and Mosses

Wood at Lower Withington. It will be recalled that in the second half of the 1930s Sibson found birds well distributed along the streams and in the mosses of the Sandbach area (Sibson 1945 & 1946). *SECOS Reports* of the 1990s and 2000s give some indications that birds are still occasionally to be found where Sibson watched them around 60 years ago. The 1997 *CWBR* notes birds were present in two stream valleys around Sandbach in late spring. Willow Tit was described as a “fairly common resident” at Sandbach Flashes in 1985 (Goodwin & Talbot 1985) with up to three pairs annually. By the end of the century a decline was suggested with at most two pairs present in the 1990s (Goodwin & Lythgoe 2000). By 2009 the decline was obvious, as the only records noted were from Foden’s Flash where birds were present each year from 2006 to early 2009, with breeding confirmed in 2007 (Lythgoe 2010). In the same general area birds have been found at Bagmere, Bridgemere and Brookhouse Swamp in several years of the present century. Otherwise the story told by the county *Bird Reports* is of birds being present at sites for just one or two years in the period 1993-2011. In the very east of Cheshire *A Natural History of Disley and Lyme Park* (Guest 1987) states that a few pairs of Willow Tits bred along the valleys but that more recently they had disappeared from much of eastern Cheshire. Records these days from the very east of Cheshire are few. The most recent are breeding season reports from Macclesfield Forest (2001), Middlewood Way (2006) and Pott Shrigley (2009). In the Chester area the most recent *Bird Report* mention is from Waverton where birds bred in 1999 - a marked change in its status since 1971 as mentioned above (Williams 1971). In Wirral there are records from around 14 sites/areas in the period 1993-2011. However 12 of these held birds to 1999, reducing to five from 2000-2007 and one in 2011. Three family parties were reported from Thurstaston in 1995 and up to four pairs were in the Heswall/Thurstaston area almost annually to 2003, when a bird seen entering a nest hole at Heswall Dales appears to be the last confirmed breeding record from Wirral. Birds were in the area of Inner Marsh Farm to 1997 and at Parkgate from 1994-1996. Despite being a sedentary species, reports of singles at Hilbre in April 1999 and Red Rocks in September 1994 and 1999 and July 2001 presumably refer to passage birds. Elsewhere on Wirral birds were reported in just one or two years.

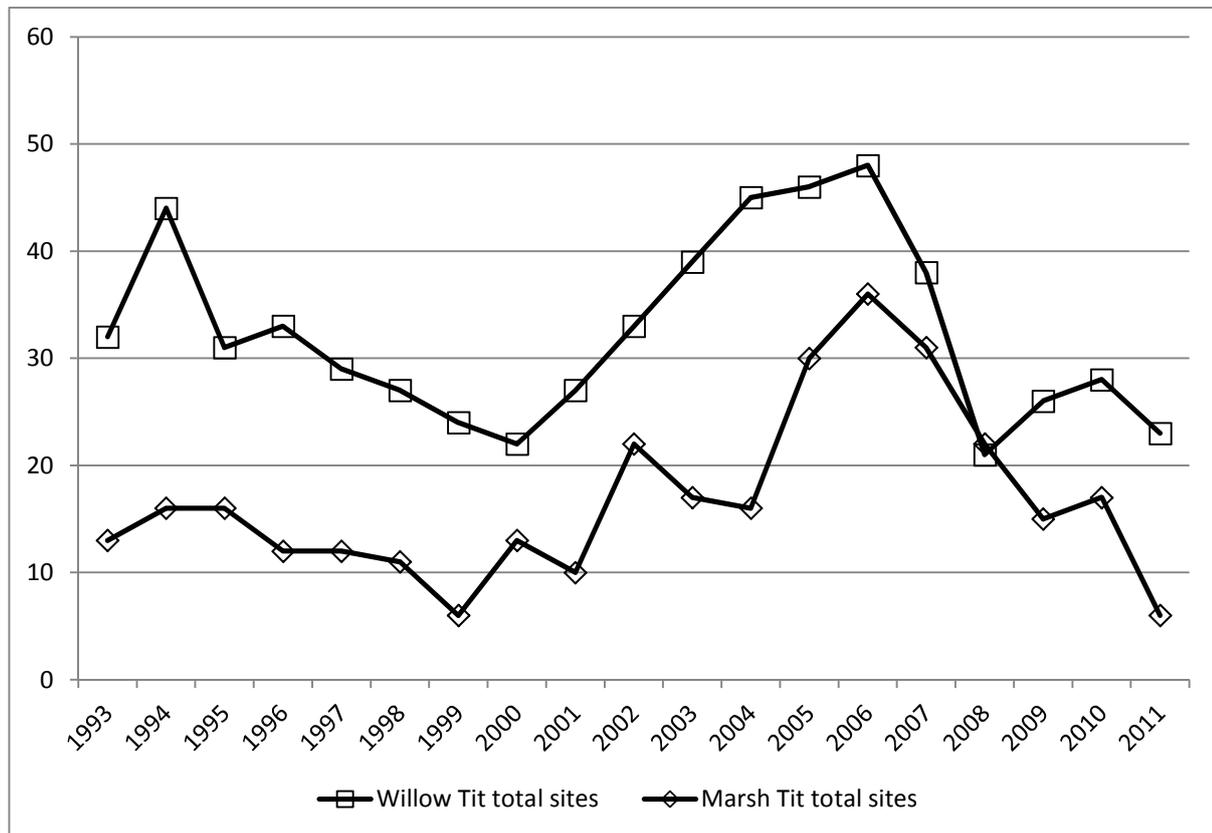
Fieldwork for our *2004-07 Breeding and Wintering Atlas* quantified the extent of the decline across the county (Norman 2008). Willow Tits had been recorded in the breeding season in 40% of Cheshire and Wirral tetrads in the first *1978-84 Breeding Atlas* only twenty years before (Guest *et al* 1992), but this dropped to 7% in the second survey, a drop from 270 tetrads to 49. The recorded habitat codes illustrated the species’ preference for waterlogged (carr) broadleaved woodland (10 tetrads) and scrub (14 tetrads), with 11 records from broadleaved woodland, five from mixed woodland and six others. Now that they are both scarce species in Cheshire, they have completely separated in their local distribution: during the second atlas survey there was no tetrad in which Marsh Tit and Willow Tit were both recorded in the breeding season.

Although the species is reported to be highly sedentary (Wernham *et al* 2002), and Willow Tits were found in winter in a similar number of tetrads (55) to the breeding season (49), the atlas survey showed that there were 24 tetrads in which they were found during the breeding season and not in winter and 30 vice versa. Most of the extra records in winter were within one or two tetrads of one occupied in the breeding season, and there were suggestions that birds had spread out from breeding sites into a wider range of habitats, with 7 records of birds in farmland hedgerows and 11 in human sites, several of them feeding stations. Another indication of their more widespread winter distribution was that there were eight tetrads in which Willow Tits and Marsh Tits were both found in the same winter.

In the most recent national *2007-11 Atlas* (Balmer *et al* 2013) the Willow Tit was confirmed breeding during 2008-11 in five of the 26 hectads (10x10km squares) in Cheshire and Wirral,

probably breeding in four and possibly breeding in three more, with non-breeding presence recorded in another four, and the species was not found in 10 hectads. In the winter surveys (2007/08 to 2010/11), Willow Tits were recorded in 17 hectads and not found in 9. In both seasons these are sharp declines from the previous national surveys in 1988-91 (breeding) and 1981-84 (winter), although they again confirm that Willow Tits are more widespread than Marsh Tits in the county.

Willow Tit and Marsh Tit sites 1993-2011



As shown in the graph above taking records from the annual *CWBR*, Willow Tit is consistently reported from more sites in Cheshire and Wirral than Marsh Tit. There are probably few counties in which Willow Tit is more numerous than Marsh Tit. In view of this, continued monitoring in Cheshire is warranted, and detailed study would be welcome.

Their national status, reasons for declines, and conservation

Both species have declined nationally, as shown by the recently-published *2007-11 Atlas* (Balmer *et al* 2013) which helps to place the Cheshire and Wirral status in the wider context. Nationally, Willow Tit has been lost from 55% of its breeding hectads (10x10km squares) since 1968-72, with a rapid decline in population shown by an 82% drop in numbers recorded by the BTO's Breeding Bird Survey (BBS) in just 16 years (1995-2011). The national atlas, even at the relatively coarse 10x10km square resolution, shows the fragmented distribution in Cheshire and Wirral, with none in Wirral, western or northeast Cheshire, but the mapping of relative abundance confirms that the density of Willow Tits in the Mersey valley is among the highest in the UK.

The Willow Tit has been Red-listed on the Species of Conservation Concern since 2002 (Eaton *et al* (2009)), owing to the long-term drop in its breeding population, with the BBS trend showing one of the largest declines by any species. Because of this precipitous decline, in 2010 the species was added to those whose records are collated by the Rare Breeding Birds Panel (RBBP). In 2010 and 2011 there were only around 650 pairs reported nationally, including 26-31 pairs from Cheshire

and Wirral; the county population had been estimated at 350-400 pairs during our 1978-84 atlas project (Guest *et al* 1992). Nationally, there is undoubtedly under-reporting from some places and county estimates suggest a UK population of around 1,500 pairs, concentrated in parts of northern and central England, and southwest Scotland, with the largest populations apparently in Dumfries & Galloway, Co. Durham, Yorkshire, Lancashire & N Merseyside, Greater Manchester, Cheshire & Wirral, Staffordshire, Derbyshire, Nottinghamshire, Lincolnshire, Leicestershire & Rutland and Hampshire (Holling, and the Rare Breeding Birds Panel 2012, 2013). With most of the Cheshire and Wirral records in the Mersey valley, this area holds perhaps as much as 1-2% of the national Willow Tit population.

The national decline of the Marsh Tit has not been as extreme. It has been lost from 22% of its breeding hectads (10x10km squares) since 1968-72, with a 24% drop in numbers recorded by the BTO's Breeding Bird Survey (BBS) in 16 years (1995-2011). Its fragmented distribution in Cheshire is also obvious on the national maps, with none in Wirral or northeast Cheshire. The loss of Marsh Tits in Cheshire, shown by our two tetrad atlases, is much more than would have been expected from this drop in their national population, and this is probably a reflection of changes in abundance and distribution being more obvious at the edge of a species' range. The Cheshire and Wirral population given in our first *1978-84 Breeding Atlas* (Guest *et al* 1992) was 150-200 pairs, with hindsight thought probably to be an under-estimate; by 2004-07, the county population was felt to be unlikely to exceed 50 pairs (Norman 2008).

The rapid declines of both species have prompted a considerable amount of professional study, notably by the BTO, RSPB and CEH (Centre for Ecology and Hydrology), to try to find the reasons. It is impossible to improve on the summaries given in the latest BTO *2007-11 Atlas* (Balmer *et al* 2013), from which this is a direct quote for Willow Tit: *The suitability of some woods may have been reduced by deer browsing and shading, both leading to thinning of the low vegetation that birds depend on for feeding* (Lewis *et al* 2009b, Newson *et al* 2012). *Competition for nest-sites with more dominant tit species may drive local Willow Tit declines* (Maxwell 2002, 2003), *but this does not explain the large-scale population changes, and only weak evidence links declines with numbers of avian nest predators* (Siriwardena 2004, Lewis *et al* 2007). *Many mysteries remain about the causes of recent range contractions.*

For Marsh Tit, the national *2007-11 Atlas* (Balmer *et al* 2013) says: *The decline does not appear to be due to competition with Blue and Great Tits nor to increased avian nest predation, and woodland habitat degradation is a more likely explanation* (Siriwardena 2006, Broughton *et al* 2011). *Historically, woodland fragmentation has probably been important because Marsh Tits require moderately large patches in which to breed* (Hinsley *et al* 1995). *They also prefer a complex understorey below tall, closed tree canopies* (Broughton *et al* 2012a). *Declining active woodland management causing shading of the preferred shrub-layer structure is a possible mechanism for population decline and range contraction* (Carpenter *et al* 2010, Broughton *et al* 2012a).

The rise in deer populations is often postulated as a reason for changes in woodland structure, and subsequent losses of birds; but this cannot be the case in Cheshire, where deer are still relatively scarce (Cheshire Mammal Group 2008). This has never been a particularly well-wooded county (Norman 2013), probably accounting for the relative scarcity of Marsh Tit compared to its comparative abundance in some other English counties.

Both these species are now so scarce in Cheshire and Wirral that all breeding sites should be identified and, in our view, designated at least as Local Wildlife Sites with appropriate management to aid their conservation.

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