

Willow Tit National Survey Methods 2020

Survey background

Our endemic race of Willow Tit is the second-fastest declining species in the UK, after Turtle Dove, and is Red-listed. This resident species, which is highly sedentary remaining in an area centred on the breeding territory throughout the year, has been lost from large areas of southern and eastern England in recent years. RSPB and others have conducted research into causes of decline and eliminated a number of potential causes which seem unlikely to be causing the large scale declines. One of the potential causes that need investigating further is whether deterioration in habitat quality is affecting this species. One of the main habitats that willow tits occupy in Britain is damp young woodland. This habitat is often short lived with sites frequently drying out and developing into mature woodland over 20-30 years. RSPB and other organisations, including Natural England, are currently trialling woodland management solutions for Willow Tit, and the species is part of the Back From the Brink HLF project (<https://naturebftb.co.uk/the-projects/willow-tit/>), involving detailed study of daily movements and habitat use as well as habitat management.

However, due to the declining numbers, monitoring the species is becoming increasingly difficult. Whilst the BTO/JNCC/RSPB UK Breeding Bird Survey is still able to produce an annual trend, the sample had fallen to just 28 squares by 2017. Although collation of records by the Rare Breeding Birds Panel is useful for the design of future surveys, it is currently insufficient to enable robust population estimates, measures of change or maps of current distribution to be produced: thus a national survey is needed if our conservation work is going to be properly underpinned by evidence.

Survey coverage

Across the range, survey tetrads (2x2km) have been selected for coverage, based on:

- 1) non-random, self-selected squares in core areas, mostly around existing monitoring/intervention efforts,
- 2) random sampling of occupied tetrads, from 2007-11 Atlas and later (high intensity),
- 3) random sampling of remaining tetrads in occupied 10km squares, from 2007-11 Atlas and later (medium intensity),
- 4) lower intensity sampling through the rest of the known range, from the 1988-91 Atlas,
- 5) in counties with few recent records, the aim is to cover known and recently occupied sites.

Data from the 1988-91 and 2007-11 bird atlases, recent county atlases and from the RBBP have been used to identify the tetrads to be included in the sample survey.

Field methods

A playback method will be used to survey Willow Tits during the pre-breeding season when the birds are territorial, covering all potentially suitable habitat in the survey tetrad. A summary of suitable Willow Tit breeding habitat is provided at the end of the survey instructions. The playback method, using a standard (2-minute) Willow Tit call and listening for a response, has been successfully developed by the RSPB Willow Tit research project. The recording used for the survey is a combination of willow tit alarm call and song. **The call volume should be checked before surveying: the call should be audible up to 100m away from playback.**

A separate tetrad map with accompanying form will be provided for each visit. The survey form should be used to record visit information, details of any Willow Tits encountered, and an overall survey summary.

Before surveying, it is best to:

- Identify areas of potential habitat using Google earth and OS maps and mark these up on survey sheets.
- Create a survey route and mark the map with survey points, approximately 200m apart so all areas of potentially suitable habitat are visited and no suitable habitat is more than 100m from a survey point.

One or more visits should be carried out in each survey tetrad between mid-February and mid-April - if you are only able to undertake one survey, we will be able to use the results. If no Willow Tits are found after two visits despite there being (potentially) suitable breeding habitat in the tetrads, please consider undertaking a third visit. Once the birds are serious about excavating and nesting, they become very quiet, from mid-April. Ideally, surveys should be undertaken on 'fine' days – if present, Willow Tits are much more likely to be detected on relatively warm days with no wind and rain. Willow Tits are more likely to respond to calls during the morning, and when not heavily overcast.

A pre-determined transect should be walked covering potentially suitable habitat in the survey tetrad and the route taken should be marked on the OS tetrad map on the accompanying survey form, if not marked beforehand. A stop should be made every 200 metres and noted on a recording form. Playback points should be distributed so no suitable habitat is more than 100m from a point, and the location of each point should be marked on the tetrad map (as P1, P2, P3, etc). **To gain access to all potentially suitable habitat in the tetrad, it may be necessary to gain access to private land. If you are unable to gain access to all areas of suitable habitat in the tetrad, the playback point should be from the nearest public access.**

At each stop the standard recording of Willow Tit call and song should be played for two minutes (this is the full length of the standard recording). A further two minutes should then be spent looking and listening for a Willow Tit response. A response is recorded if there are any Willow tit vocalisations heard or they are seen at the survey point. If a response is achieved during playback the recording is stopped and you should move on to the next playback point.

Although the recording used for the survey contains Willow Tit calls and song, a wide range of other species can sometimes respond; Marsh Tits and other tit species regularly respond to this recording.

Recording information

For each visit, record the date, visit number and start/finish times. Record the bird observations on the accompanying tetrad map for each visit. **ALL** Willow Tit contacts (including any contacts between playback points) should be marked on the **tetrad map** by using standard BTO (CBC) symbols. A list of the symbols is included later in these instructions. Where individual birds are known to have moved within a visit, join their sequential locations with a solid line. On the first visit mark the locations of the first territorial contact on the tetrad map as A1, the second as B1, etc; on the second visit map as A2, B2, etc.

Record ALL Willow Tit contacts on the **Survey form**, using the same territory codes as on the **tetrad map**. After each visit, on the **Survey form** please complete the 'summary of observations' for each territory, including the appropriate '**Territory Evidence**' code (enter more than one, if necessary) and a summary of the activities under '**Other notes**'. Also note the number of birds seen or heard. If possible, include details of where birds are seen

feeding. If no observations were recorded for a particular territory on a particular visit, please state this by entering 'nil' in the '**Territory Evidence**' column.

Include whether the contact was located at a playback point and, if so, whether the bird was detected due to its response to playback (although this may not always be clear). Note if the response to playback was call, song or agitated behaviour, and note the time taken for the bird to react to the playback. Please also record the distance to the Willow Tit when first detected. The '**Territory Evidence**' and '**Playback Response**' codes are listed on page 2 of the **Survey form**.

Record the date of each visit under '**visit details**' against the appropriate visit number, even if no Willow Tits were recorded.

Recording other bird species

It will also be useful to also record any Marsh Tit sightings, which also respond well to Willow Tit calls, on the **Survey form**. Record the same information as for Willow Tits, and please mark ALL Marsh Tit contacts on the tetrad map using standard BTO (CBC) symbols: on the first visit mark the locations of the first territorial contact on the tetrad map as MT_A1, the second as MT_B1, etc; on the second visit map as MT_A2, MT_B2, etc.

As Marsh and Willow Tits can be difficult to tell apart, it may be worth spending some time before your first visit to make a note of the key differences in calls and plumage. This BTO id video is a very useful resource:

<https://www.bto.org/develop-your-skills/bird-identification/videos/telling-apart-marsh-and-willow-tits>

Habitat recording

For each Willow Tit and Marsh Tit record, please assess the structure (and height) of the woody habitat and add A, B or C to column 1 of the Habitat Codes section, and add one (or more) category code to column 2. Further information can be given in the notes box if the habitat doesn't fit in to the given categories or you wish to provide more details.

Suitable Willow Tit habitat

Willow Tit habitats vary across the UK and Europe. In Northern Europe they favour conifer forests where they forage in winter during heavy snowfall, while during the breeding season they nest in areas with more birch trees on peaty soils. In the UK they are associated with a number of scrubby habitats, which may include overgrown hedges on river valleys and floodplains, young regrowth in conifer plantations, birch and willow scrub on former industrial sites, linear scrub along railway lines and canals, or scrubby areas on the edge of mature plantation or woodland. A key feature of these sites is the prevalence of pioneer tree and shrub species such as willow, birch, elder and hawthorn with few mature canopy trees. These sites are often but not exclusively on wetter areas.

Based on earlier research, the key properties of Willow Tit habitat are: Dominant tree/shrub species are Hawthorn, Elder, Alder, Birch and Willows, and undesirable tree species are Oak, Beech, Sycamore and mature Conifers where there is little or no shrub layer. Shrub cover at 2-4m above ground and canopy cover are roughly 50%. There are typically lots of standing small dead trees. Younger woods are preferred but only if they contain favoured tree species. Wetter soils are preferred, which retain moisture for longer during the breeding season i.e. poorly draining soils, or peat soils. Patches of suitable habitat can be as small as 1ha for breeding as they will use surrounding habitats and move between patches.

Willow Tits excavate holes in soft rotten stumps to nest in; they may excavate more than one hole before deciding where to nest. Nests are typically 1-2.5m above the ground in trunks of 10-20 cm in diameter. The most frequently used trees for nests are willow, birch and elder, although nests have been recorded in more than 20 other species.

Notes on disturbance and confidentiality

Breeding birds and their nest sites should not be disturbed, although it is very unlikely to find nesting Willow Tits during the survey period. It should be noted here that the RSPB and RBBP believe that playback does not cause undue disturbance and is essential for successful surveying of Willow Tits. It is not necessary to find a nest to confirm breeding. Data will be stored securely and only used for appropriate conservation purposes.

STANDARD BTO SYMBOLS FOR BIRD ACTIVITY


Rather than use the standard BTO code for Willow Tit (WT) when mapping the location of contacts, please use the terms A1, B1, etc., to denote records from the first visit and A2, B2, etc., from the second visit.

A1, 2A2 Willow Tit sight records with age, or number of birds if appropriate.
A1♂ indicates one pair; 2A♂ means two pairs together.

A1 A calling Willow Tit.

A1 A Willow Tit repeatedly giving alarm calls or other vocalisations (not song) thought to have strong territorial significance.

Ⓐ A singing Willow Tit.

 An aggressive encounter between Willow Tits.

*A1 An occupied nest of Willow Tits; do not mark unoccupied nests, which are of no territorial significance by themselves.

A1 mat Willow Tit carrying nesting material.

A1 food Willow Tit carrying food (during courtship display).

Willow Tit movements can be shown as follows:

—A1→ A calling Willow Tit in flight (seen only in flight).

Ⓐ→ A singing Willow Tit perched then flying away (not seen to land).

→A1 A Willow Tit flying in and landing (first seen in flight).

The following conventions indicate when registrations relate to different birds, and when to the same bird:

A1→A1 A Willow Tit moving between two perches. The solid line indicates it was definitely the same bird.

Ⓐ-----Ⓑ A Two Willow Tits in song at the same time, i.e. definitely different birds. The dotted line indicates a simultaneous registration and is of great value in separating territories.

Ⓐ———Ⓐ The solid line indicates that the registrations refer to the same bird.

Ⓐ—?—Ⓐ A question-marked solid line indicates that the registrations probably relate to the same bird.

A Ⓐ No line joining the registration indicates that the birds are probably different but depending on the pattern of other registrations they may be treated as if only one bird was involved.

WILLOW TIT COLOUR RINGING SCHEMES IN BRITAIN

There are 10 current registered projects colour ringing Willow Tits across the country. Although Willow Tits are not thought to travel far it is always worth checking the legs of any birds seen for colour rings. To be able to attribute a bird to a particular individual you will need to record what rings are present on each leg and the order they occur, e.g. left leg - blue ring above BTO ring and right leg – red ring only. The numbers of rings on each leg vary between projects and are detailed below. More information is available from the European colour-ring Birding website <http://cr-birding.org/> - where any colour ring sightings can be recorded.

Berkshire

Combination of 2 colour rings: 1 colour ring above metal ring (on left leg) and 1 colour ring (on right leg).

Cumbria

Combination of 2 colour rings: metal ring (on left leg), 2 colour rings (on right leg).

Used colours are dark-pink, light-green, yellow, orange, mauve, black, light-blue and dark-blue.

Gloucestershire

Dark-green ring with a white two alpha-numeric code (on right leg) and metal ring (on left leg).

Greater Manchester

Combination of three colour rings: 1 colour ring above metal ring (on left leg) and two colour rings (on right leg). Used colours are red, light-green, light-blue, white, orange, black and yellow.

Norfolk

Combination of 3 colour rings: 1 colour ring above metal ring (on right leg) and 2 colour rings (on left leg). In total 8 colours are used.

Norfolk/Suffolk

Combination of 3 colour rings: 2 colour rings (on left leg) and metal ring above 1 colour ring (on right leg). Used colours are red, yellow, white, dark-green, dark-blue and black.

Powys

Combination of 3 colour rings: 2 colour rings (on left leg) and metal above 1 colour ring (on right leg).

South Yorkshire (2 schemes)

Combination of two colour rings: 1 colour ring (on left leg), 1 colour ring above metal ring (on right leg). Used colours are yellow, red, orange, dark-green, light-blue, dark-blue, dark-pink, black, white and grey.

Combination of colour rings: 2 colour rings (on left leg), metal ring (on right leg). Used colours are red, yellow, white, dark-blue and dark-green.

Wiltshire

Combination of three colour rings: 1 colour ring above metal ring (on left leg) and two colour rings (on right leg). Used colours are dark-blue, light-blue, dark-pink, red, white, orange, yellow and purple.

HEALTH & SAFETY

Please follow the Health & Safety advice provided by your Bird Club, Study Group or other Project. If you are surveying a tetrad on your own, please read the following.

Working alone

All volunteers, especially those undertaking work alone, must follow the recommended procedures:

If possible, take a fully-charged mobile telephone with you, although be aware that you may not always be able to get a signal. Do take a whistle - an emergency is indicated by six short blasts of a whistle in quick succession -repeated after a one-minute interval. Three short blasts of a whistle indicates message understood, not an emergency.

Before going out on a survey, tell a responsible person, such as your partner, a close relative or neighbour (referred to below as the nominated person) the following:

- Your mobile telephone number (if you have one)
- Your whereabouts (including OS grid reference)
- Your mode of travel to and from the area of work (including car registration number and model)
- A contact for your survey location, e.g. the telephone number and name of the landowner
- The nature of your work
- Your departure time, and estimated time of return
- The action to be taken if you fail to return (see below)

If you fail to return, or contact the nominated person, within an agreed period, the nominated person should follow this procedure:

- First, attempt to contact you using the contact points that they have been given, e.g. your mobile telephone and the site where you are surveying. It may be that you have decided to visit someone on your way home – so your nominated person should contact friends and relatives in the area
- If these initial enquiries draw a blank, contact project staff about further appropriate action, including, where necessary, the involvement of the emergency services
- If these enquiries draw a blank, contact the police. To do so any earlier is likely to result in the police asking the nominated person to follow the procedure explained above
- If you do return late, safe and well after such enquiries have been made, call each of the people who have been contacted to tell them that all is well.

Biological hazards

- There is a small risk of contracting Lyme disease, through tick bites, whilst walking in woodland sites. Ticks may be encountered in any season.
- Action:
 - Please follow the precautions listed here <https://www.lymediseaseaction.org.uk/about-ticks/tick-bite-risk-reduction/>
 - Ensure your tetanus inoculation is up to date.
 - Carry any medication you may need, and check yourself for ticks after surveying
 - If you find ticks attached, remove immediately using tweezers or a specialist tick removal tool.

Please visit your doctor if you sustain any injury.

General precautions

- Please obtain permission from the landowner or the agent/tenant, before entering privately-owned land. A letter confirming your participation in this survey can be provided on request.
- It is important to arrange safe places to leave your car. This is likely to be off main track ways and access roads, but not blocking smaller access routes.
- Action:
 - Always turn your vehicle round before parking, so that it is ready to drive off immediately in an emergency and do not take a vehicle beyond its capabilities, particularly off road
 - Take particular care on roads, if surveying along roads consider wearing some brightly coloured clothing.