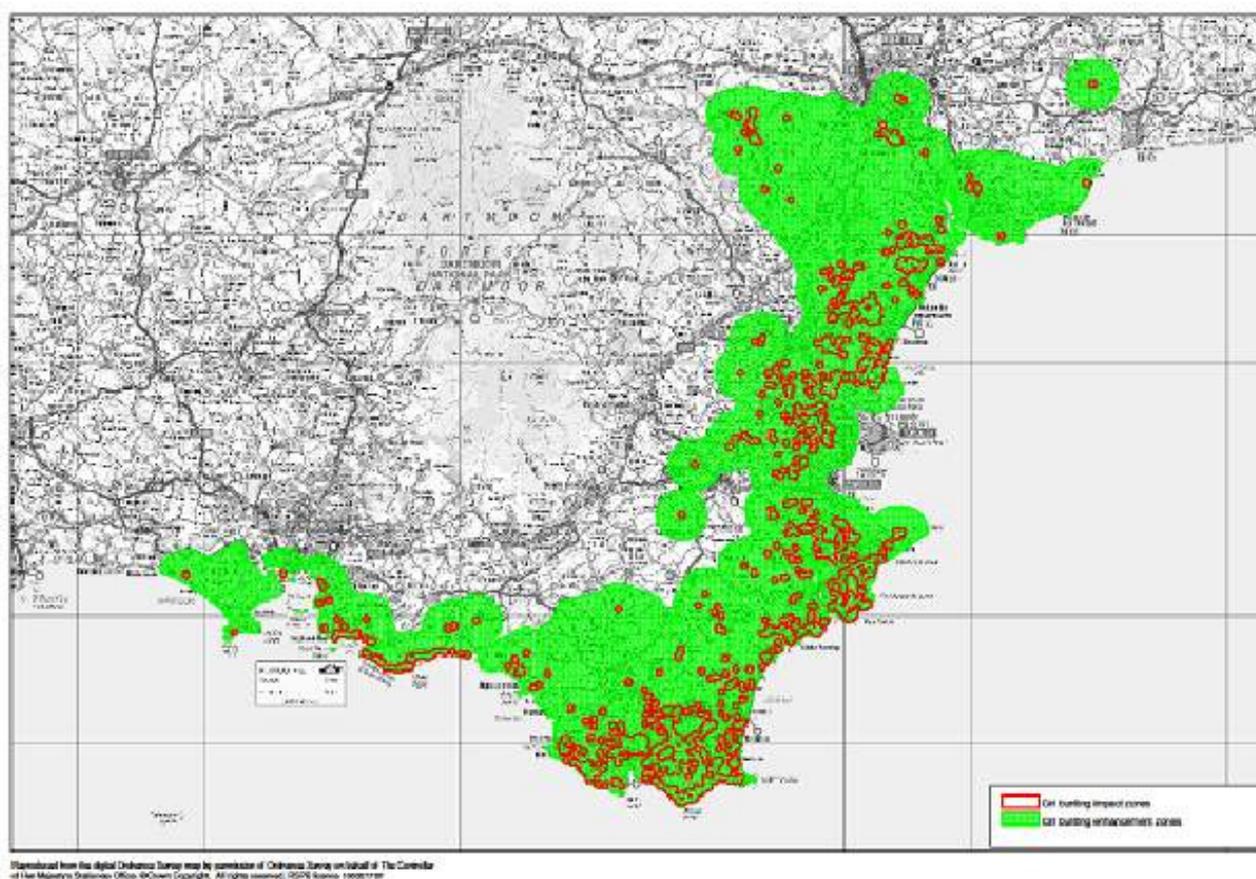


# Survey Methodology to establish presence of cirl bunting on a site

While the presence of a target species can often be confirmed at a site relatively easily, it is generally impossible to confirm a species is absent (MacKenzie et al 2002). The following survey methodology has been designed to give an indication of number of cirl bunting territories on site but many factors such as observer experience, weather conditions and territorial behaviour or lack of it can influence how successful this will be. Cirl buntings when breeding can be very quiet and elusive, particularly isolated pairs where singing can be infrequent. A data search (contact RSPB direct) before surveying the site should be undertaken to give an indication of the historic use of the site. Cirl buntings are very site faithful. However, the national surveys are undertaken from public rights of way so inaccessible sites are less likely to have any data available – this does not mean cirl buntings are not present if the habitat is suitable, especially if the site is within 2km of known breeding pairs.

Cirl bunting surveys should be undertaken on sites with suitable habitat within 2km of the known range of cirl buntings. See map below. Note that our most comprehensive data on cirl buntings is based on the most recent national survey in 2009 and so it is possible that cirl buntings may now be present in other areas. Please contact RSPB for advice on survey requirements for 'edge of range' sites.



## Habitat Survey

Before any species surveys are undertaken, habitats on site should be assessed and mapped to identify areas potentially suitable for cirl bunting. For details of important habitats and how to identify them, please see Appendix 1.

## Breeding Survey

To establish how many circl buntings are utilising a site, detailed observations over the breeding season will be required. However, it is not necessary to locate or examine nests; this is both highly disturbing to circl buntings and not needed to assess importance of a site for circl buntings. Whilst every effort to avoid disturbance should be made, it is recommended that surveyors obtain a Natural England licence for this Schedule 1 species.

Circl buntings can be difficult to survey so it is important that the work is carried out by a competent ornithologist, preferably with previous experience of circl buntings. If the surveyor has no or little experience with circl buntings a prior visit to a site with high densities, such as Labrador Bay - <http://www.rspb.org.uk/reserves/guide/l/labradorbay/about.aspx> - should be undertaken to gain some experience of the species, particularly its calls which are invaluable in locating them.

Any additional species/habitat survey should be done separate to the circl bunting survey.

Information required:

- Presence of circl bunting
- Number and approximate location of breeding territories
- Habitat location and use

### Survey method

A minimum of **five survey visits** between mid April and the end of August are required. At least two should be in mid April-May and two in June-August. At least one visit must be after mid-August as this is a good time to detect family parties. More visits would help to build a complete picture of bird use on the site, or if there is a high concentration of pairs. Territories can overlap and singing males are known to use the same singing posts as their neighbours. Nests can be within 100m of each other which makes assessing number of pairs difficult. In cold springs breeding activity may be delayed and birds can still be in loose flocks in April and early May. However, this will still give an indication of where birds may subsequently go on to nest.

The duration of each visit (which should be recorded) will depend on the size and features present at each individual site. It is recommended that at least 5 minutes is needed per hectare surveyed plus 45 minutes per site.

For example

1 ha site = 45 minutes + 5 minutes = total time on site 50 minutes

20 ha site = 45 minutes + (20x5 minutes = 100 minutes) = total time on site 145 minutes

A site of up to 50ha of suitable habitat would require almost 5 hours.

Avoid poor weather conditions, specifically heavy rain, poor visibility and strong winds, as bird activity and detectability will be much reduced. Complete a single visit in a single morning.

The site should be mapped and a route taken that approaches to within 10m of every hedge or suitable area of scrub on the survey area. The route should be walked slowly to aid detection. Vary the direction route is walked between visits. All hedgerows and areas of scrub will need to be walked on each visit. The survey should preferably be carried in the morning after sunrise and before 1100hrs. However, circl buntings can be active at all times of day so timing could vary between visits as long as the majority of visits are undertaken in the morning. If it is a hot day, avoid between 1100 and 1500hrs.

The song of the male may be audible from up to 500m on a calm day. It is best described as a slightly accelerating, rattled trill lacking rhythm. It can resemble that of greenfinch, wren, yellowhammer and lesser whitethroat with individual males varying the quality and tone of the song though not the general structure during a bout of song. Their other calls, heard only at close range, are more difficult to pick up without previous knowledge and experience, but these are often the best way of detecting birds so it is vital surveyors know these calls. The

commonest call is a sharp, thin, quiet 'tsip' very like that of a young robin: this call is often given in flight. Other calls, including alarm and contact calls, are similar and inconspicuous. The calls of chicks and recently-fledged young are distinctive and can be useful in identifying breeding sites. The calls are similar to those of adults, though are more frenetic and typically comprise two or more staccato notes given in quick succession, rather than just the single note given by the adult.

Territories can overlap or be very close. For example, nests can be within 100m of each other. In addition, where they are at a low density they may sing very little and singing males are known to use the same singing posts as their neighbours, or do not necessarily sing at each other, making assessing number of territories difficult. Singing birds will often stop singing when approached. If birds are heard singing from different locations but not all at the same time do not assume this is the same bird moving around. They will often sing at different times to each other. If you have not seen birds flying between song posts, sit and wait for singing to resume and see if it can be determined if these are different birds.

If birds have not been picked up on early visits, spend 45-60 minutes in suitable breeding habitat to pick up birds that may be being inactive and quiet. This can happen when there is a very low density of birds. Cirls can be extremely unobtrusive and can spend time just sitting quietly in hedges so it is important to spend time in suitable areas and not just walk through. Change the location of where time is spent on different visits.

If birds are suspected of nesting off the site but foraging within the site boundaries, this information is equally important. For this reason it would be useful to survey within 250m of the site boundary (this can be done by scanning from the survey site boundaries but ideally by walking suitable habitat in this 'buffer' zone if access is possible) and record any birds seen just off site.

Use separate maps at an appropriate scale (e.g. 1:10000) for each visit, or use a different colour to indicate different visit dates. On each map note the visit number, date, times, observer and weather (eg Visit 1, 21/04/14, 0730-1100 BST, observer: JW, weather: cool, bright and wind speed force 2).

On each visit, map the location of every cirl bunting, indicating its behaviour with the appropriate BTO behaviour code (see Appendix 2). Use separate maps for each visit or use a different colour to indicate different visit dates. The most important point to concentrate on is the location of individuals which are recorded at the same time. For example, three males singing simultaneously indicates three separate territories

#### Interpretation of data

After the final visit, put all the sightings on one map and circle the cluster of sightings considered to be from each territory on the site. From this the minimum number of territories using the site can be assessed. Retain field maps as well as final season maps to submit to the local planning authority with the application. Record as much detail as possible, such as the age and sex of each bird.

A cluster is, in general, a spatially distinct group of registrations, in which not more than one male and female are represented. However, as already said, cirl buntings are not always easy to pick up. For example, if a singing male has been recorded on more than one visit an assumption that he is part of a breeding pair should be made. Normally there should be at least two registrations per cluster for the series of visits, unless conditions on other visits were not ideal. However, as cirl buntings are so elusive and may move between nesting attempts (ie to just off site), if birds are seen in appropriate nesting habitat on just one occasion then record as possible breeding.

A single record of a nest containing eggs or young (but note that nest finding is not required as part of this survey), an adult carrying nesting material or food, or recently fledged young can be counted as a territory with confirmed breeding even if the adults have not been seen enough to qualify as a cluster. As cirl buntings can nest within 100m of each other, territories

can be close together and in fact overlapping. This is something that needs to be considered when interpreting data. They tend to forage within 250m of the nest, but this can occasionally be further. Using this as a basis, a pair of circl buntings may range over 19ha during the breeding season.

Records of more than two birds together, other than mates or juveniles, should be treated as belonging to more than one cluster. If a group of birds show any sign of aggression, then it would be reasonable to put them on the boundary between clusters. If during field-work two records fall very close together on a single visit, it is worth another few minutes of waiting to see if they are from two different birds.

Ideal clusters show both a series of registrations of territorial behaviour spanning most of the visits and dotted lines (indicating birds recorded simultaneously and therefore indicative of separate territories) radiating out to neighbouring clusters (see Appendix 3). However, in reality, map analysis can involve a certain amount of subjectivity in interpretation. It is therefore important to retain field maps as well as final season maps as these may be required to explain interpretation of data and to justify the number of territories considered to be using the site.

It is important to remember that the boundaries drawn around clusters, although useful in understanding the number of territories on the site, do not represent the limit of where the birds range and should therefore not be used for this. To understand how the birds use the site through the season would require far more detailed and more frequent observations.

The interpretation of behaviour to assess breeding is as follows:

Possible breeding	Probable breeding	Confirmed breeding
<ul style="list-style-type: none"> <li>Bird recorded in suitable breeding habitat</li> <li>Singing male</li> </ul>	<ul style="list-style-type: none"> <li>Pair in suitable nesting habitat</li> <li>Territorial behaviour</li> <li>Display</li> <li>Visiting probable nest site</li> <li>Agitated behaviour</li> <li>Carrying nesting material</li> </ul>	<ul style="list-style-type: none"> <li>Adult carrying faecal sac or food for young</li> <li>Recently fledged young</li> <li>Chicks heard</li> </ul>

It is not necessary to have evidence of confirmed breeding to know that a site is important for the species. Records of birds exhibiting behaviours for possible and probable breeding in suitable habitat in the breeding season indicate that a site has importance for circl buntings.

#### Breeding Survey Summary

- Map habitats on site
- Undertake 5 survey visits: at least two in mid April-May, at least two in June-August (with one visit after mid August).
- Map route taken, weather and time spent on site for each visit.
- Map all sightings and behaviour – retain field maps as well as final season map.
- Interpret sightings on a final territory map – assess minimum number of territories on site.

### Winter Survey

Circl buntings will move up to 2km to find favourable foraging habitats, mainly winter stubble. They can use several different sites throughout the winter. To identify if a site is used by circl buntings, regular systematic searches are required.

Information required:

- Presence of circl bunting
- Maximum numbers using site

- Habitat locations
- Foraging areas

### Survey method

Map suitable habitats on the site (for details of what habitats circl bunting use in winter see Appendix 1).

The site should be checked at least **4 times** over the winter period (October- March) – two visits should be before Christmas and two after. Surveys should be undertaken in the morning one hour after sunrise as this is when the birds are most actively foraging. Leave at least 10 days between each visit. The duration of each visit will depend on the size and features present at each individual site, but as a guide 10ha should take 1hour. Avoid poor weather conditions, specifically heavy rain, poor visibility and strong winds as bird activity and detectability will be much reduced.

Ensure survey route takes you with 10m of each field boundary. Circl buntings are unlikely to feed in the middle of large fields but may do if there are patches of scrub/cover. Surveyors should be familiar with calls made by circl buntings as this is often the way they are picked up. If birds are flushed take note of where they fly to and record on field maps to help avoid double counting.

Though there can be several species feeding in the same fields, circl buntings often stick together rather than join mixed flocks, though this is sometimes the case.

The maximum number of birds seen on the site on any one visit should be reported along with where they were feeding.

### **Disturbance**

Circl buntings are specially protected by law; a Schedule 1 licence must be obtained from Natural England to undertake any work that may involve disturbing breeding territories. Keep disturbance to a minimum. It is not necessary to find nests to confirm breeding sites, as suitable behaviour in appropriate habitat is enough to indicate breeding.

### **References**

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***To be reviewed annually each March, contact RSPB for up to date version.***

## Appendix 1: Cirl Bunting Habitats

### References:

- Advisory sheet: [http://www.rspb.org.uk/Images/CirlBunting\\_tcm9-148726.pdf](http://www.rspb.org.uk/Images/CirlBunting_tcm9-148726.pdf)
- Advice for farmers: <http://www.rspb.org.uk/ourwork/farming/advice>

Cirl buntings favour an extensively managed mosaic of mixed farmland, with fields typically of 2ha and smaller, though this is not always the case as they will use suitable habitat in large fields. They nest in dense cover provided by particularly thick hedgerows or scrub, typically foraging within 250m of the nest. In the summer months they rely on extensively managed grassland (often cattle grazed) and field margins/corners for the invertebrates, particularly grasshoppers and crickets. In the winter they forage in cereal stubbles, particularly those from spring-sown barley. Other winter habitats include wild bird seed crops, stubble turnips, fallows, field margins and game cover that have an open structure that allows the birds to access the seeds. They feed on seeds from broad-leaved weeds such as fat hen, chickweed and annual meadow grass. They winter usually within 2km of breeding habitat and cirl buntings can use a number of sites during the winter. As well as arable habitats, they may also use pasture fields where stock is over-wintered and fed with grain or hay.

Habitat type	Function	Ideal Outline Management
Rough, tussocky semi-improved grassland supporting invertebrates	Summer foraging	Cattle or mixed grazing. Management regime necessary to maintain access to the ground for foraging birds and a sward suitable for grasshoppers. Must have good surrounding hedges or dense areas of scrub e.g. gorse or bramble.
Species rich UK BAP priority grassland habitats (including coastal grasslands).		
Arable field margins/field corners	Summer foraging	Rough grassland, cut on rotation. Some areas retained uncut each year, whilst other areas are cut during the growing season to allow birds access to the ground to forage.
Low-input spring cereals and winter stubbles, usually barley	Summer and winter foraging	Birds will forage for insects during summer, often take fledged young into crops. Retained as overwintered stubble through until April. See agri-environment description for further information. Must have good cover, hedges/scrub around field. Must be within 2km of an existing breeding territory to be used in winter.
Wild Bird Cover crop	Winter foraging	Crop grown specifically for a winter food source for Cirls. Example mix: Spring barley (80%), millet, quinoa (20%). Dense growing crops such as kale are not suitable. Established annually after mid April. Must have good hedges/scrub around field. Must be within 2km of an existing breeding territory.
Scrub	Nesting	Gorse, bramble, blackthorn – managed on rotation to maintain suitable nesting habitat and to create open areas within the scrub good for foraging. Need to be within an area of summer foraging habitat.
Hedgerows	Nesting	Traditional hedge, thick with dense vegetation such as blackthorn, hawthorn, bramble. Must have a sympathetic cutting regime, ie not regularly flailed or cut every year and only cut in winter as they can nest into September.

**Cirl bunting breeding and summer foraging habitat**



**Winter foraging habitat**



Photos: RSPB

## Appendix 2: BTO Behaviour Codes

Standard symbols for bird activities.

The standard BTO list of conventions is shown. These are designed for clear and unambiguous recording. Symbols can be combined where necessary. Additional activities of territorial significance, such as displaying or mating, should be noted using an appropriate clear abbreviation.

CH, CH♂, CH♀	Chaffinch sight records, with age, sex or number of birds if appropriate. CH♂ indicates one pair; 2CH♂ means two pairs together.
3 CH juv, CH♂1♀	
R fam	Juvenile Robins with parents(s) in attendance.
<u>R</u>	A calling Robin
<u><u>R</u></u>	A Robin repeatedly giving alarm calls or other vocalisations (not song) thought to have strong territorial significance.
(R)	A Robin in song
⋆ R R ⋆	An aggressive encounter between two Robins.
⋆ R	An occupied nest of Robins; do not mark unoccupied nests, which are of no territorial significance by themselves.
BT	Blue Tits nesting in a specially provided site (e.g. nest-box)
⋆ PW on	Pied Wagtail nest with an adult sitting.
PW mat	Pied Wagtail carrying nest material
PW food	Pied Wagtail carrying food.

Movements of birds can be indicated using the following conventions:

- GR →	A calling Greenfinch flying over (seen only in flight)
(D) →	A singing Dunnock perched then flying away (not seen to land)
→ B♂	A male Blackbird flying in and landing (first seen in flight)

The following conventions indicate when registrations relate to different birds, and when to the same bird. Their proper use is essential for the accurate assessment of clusters.

WR → WR	A Wren moving between two perches. The solid line indicates it was definitely the same bird.
(WR) --- (WR)	Two Wrens in song at the same time, i.e. definitely different birds. The dotted line indicates a simultaneous registration and is of very great value in separating territories.
⋆ LI --- ⋆ LI	Two Linnets nests occupied simultaneously and thus belonging to different pairs. This is another example of the value of dotted lines. Only adjacent nests need be marked in this way.
(CK) — (CK)	The solid line indicates that the registrations definitely refer to the same bird.
(SP) ? — (SD)	A question-marked solid line indicates that the registrations probably relate to the same bird. This convention is of particular use when the census route returns to an area already covered—it is possible to mark new positions of (probably the same) birds recorded before, without the risk of double recording. If birds are recorded without using the question-marked solid line, overestimation of territories will result.
(WR) WR mat	No line joining the registrations 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. (It is possible to use a question-marked dotted line, indicating that the registrations were almost certainly of different birds.)
C* C*	Where adjacent nests are marked without a line, it will often be assumed that they were first and second broods, or a replacement nest following an earlier failure.

In all cases the standard BTO codes for British birds should be used.

Taken from Bibby *et al* (1992).

