

CONSTANT EFFORT SITES SCHEME

The Constant Effort Sites (CES) scheme is a national ringing scheme that has been running since 1983. Each year, CES provides valuable information on productivity, adult survival rates and adult and juvenile abundance for a range of common songbirds. CES ringers operate the same nets in the same location over the same time period at regular intervals throughout the breeding season.

INTRODUCTION

The Constant Effort Site scheme collects data from a network of over 140 sites across Britain & Ireland to monitor abundance, breeding success and survival rates of a suite of 24 widespread resident and migrant songbird species (www.bto.org/ces). These data help to identify the drivers of long-term changes in abundance monitored by other surveys, such as the BTO/JNCC/RSPB Breeding Bird Survey.

CES monitoring is focussed on the breeding season and the coverage is standardised between sites and years to ensure that results are comparable. While individual sites operate in different ways with respect to number of nets and duration of ringing sessions, activity is undertaken consistently between years.

To run a CES, you require a site at which you can capture a minimum total of 200 songbirds across 12 visits evenly distributed across the period May-August without using artificial bait or sound lures. Nets need to be placed in the same position each year and run for the same duration, starting at the same time, to allow catches to be comparable between years.

A major objective of the CES scheme is to monitor long-term changes in the abundance and survival rates of songbirds. For a site to generate useful information on these changes, it is essential that they are run for at least five years, and preferably longer.

1. CHOOSING A SITE

a) Habitat type and management

It is helpful if your chosen site is one that you are already familiar with, as prior experience of mist netting helps to identify the best places to position nets, and to predict the number of birds you are likely to catch. There is no minimum or maximum size for a CE site but it should be big enough to catch a manageable number of birds, without over-stretching you in late summer when there are lots of juveniles around; this may result in smaller catches early in the season before the juveniles have fledged. **Suitable sites should aim to produce a minimum catch of 200 birds, and ideally at least 300, across the 12 annual CES visits in a typical year, a total that includes retraps both from previous years and within the same season.**

The majority of registered CE sites fall into one of the following categories: reedbed, dry scrub, wet scrub and deciduous woodland. Habitat changes during the life of a CE site are likely to make the data more difficult to interpret, so those where vegetation develops rapidly (e.g. young coniferous woodland) are not suitable. CES works best in habitats that can be managed to minimise change but we appreciate that this may not always be under the control of the ringer; even if this cannot be undertaken at the site level, it is important to ensure that vegetation height next to the nets is kept constant and does not impact on catches over time. If this is not possible and you are considering moving nets, please contact the CES Organiser (ces@bto.org) as your site may need to be re-registered. Sites cannot be accepted into the scheme if major habitat alterations are anticipated in the near future.

b) Capture methods and lures

Due to the effort recording protocols, which are based on erection and take down times, mist nets are the only capture technique that can be used for CES. **Artificial bait (e.g. feeders) and sound lures should not be used at CE sites** as they could potentially introduce additional annual variation in catches, both within and between sites.

c) Other monitoring activities

Monitoring for the Nest Record Scheme occurs at many CE sites and collecting data for both surveys at the same site can significantly increase the value of both datasets. Nest recording in areas close to nets should be avoided during or immediately prior to CES sessions where it has the chance to influence catches. CE sites can be operated in areas with nest boxes present but the number of boxes should be kept consistent to avoid influencing the population sizes of species using them.

2. TRIALLING YOUR SITE

The first year on a new site is always classed as provisional. We strongly recommend that you record which net each capture occurs in as then, if you decide to drop unproductive nets from the CE site at the end of the season, you will be able to adjust the net set up retrospectively, including in your submission only those birds that were caught in the nets that are being retained, and the provisional year can then become Year 1. We also advise all ringers trialling a CE site to consider the size of site and the duration of sessions that will be sustainable in the long term, taking into account the amount of support available; a site producing smaller totals that runs for a long time is preferable to a site that catches very large numbers but only runs for a few years.

3. OPERATING YOUR SITE

a) Visit periods

The CES period runs from **late April / early May until the end of August / early September**, and is divided into 12 visits, each 10 or 11 days long to ensure that each includes at least three days that fall over a weekend. Period start and end dates are listed on the BTO website (www.bto.org/ces) and **one formal CES session should be held within each period, with a minimum of six days between them** to ensure even coverage. We appreciate that visits may be missed on occasion and this can be addressed statistically using data collected previously at your site as long as the number of omissions is small and they do not fall at the same time in each year.

It is possible to run additional sessions at your CE site during each visit period but we ask that you **refrain from doing so in the three days before the formal visit** to prevent totals being impacted by net avoidance. It is vital that the date of the formal visit is determined in advance; selecting the most productive session from a suite of potential candidates may bias the annual trends. Captures made during additional sessions will not contribute to the annual total or trends.

Intensive ringing in April should be avoided, particularly if intensity is highly variable between years, as it has the potential to influence captures at the start of the CES period.

b) Net length and position

The total length of mist nets used will vary between sites according to the number and abilities of the ringers regularly available, but **it is important that the net positions, as well as the number and type (i.e. length, height and mesh) of nets, remain constant between years.** Only captures from these standard nets will contribute to annual totals and trends, but **it is permitted to erect extra nets during the session, as long as they are sufficiently distinct from the standard nets to avoid impacting catches and that total length does not exceed that of the standard nets.**

Please discuss any enforced alterations to your CE site with the CES Organiser (ces@bto.org). Substantial changes are likely to make your data incomparable between years and therefore may result in the need to re-register your site.

c) Catching period

The time at which each formal CES session begins and its duration is determined by the ringer, and varies between sites to ensure that maximum catch sizes are achieved. **Some sites begin and end sessions at a set time, whereas others start at dawn and continue for a set period, or run for a set period before dusk; the only stipulation is that the protocol selected should be held constant across years.** The end time of each formal session must be recorded accurately but **there is no issue with ringing continuing after the CES session ends;** any birds caught will be excluded from the CES totals.

Only in the event of inclement weather or unforeseen circumstances should the time of day or length of the visit be changed. If a visit is shortened to less than half of the normal duration it should, if possible, be repeated within the same visit period.

d) Session data

All session dates, start and finish times for both formal CES visits and additional sessions are recorded via the functionality available in DemOn and IPMR. Simple data on weather conditions, e.g. rain, wind and cloud cover are also collected to inform exclusion of data where this may have impacted captures.

e) Capture data

CES catches are generally smaller than those made in autumn/winter when birds are more congregated, and weather conditions are generally less challenging, so we would encourage all ringers to make the most of the data collection opportunities provided. All standard fields (date, time, ring number, species, location) are required for CES captures. As one of the main outputs generated from CES is an estimate of breeding success, **it is important to ensure that age is recorded as accurately as possible**, and recording sex is also important where possible as males and females may exhibit different survival trends. **The focus on productivity also increases the importance of recording evidence of breeding (brood patches/cloacal protuberances) and the stage of moult**, which can be used to identify variation in the timing of breeding, as well as providing evidence to support ageing decisions. Given that data are comparable year on year, collection of biometric information (wing/weight) is also strongly encouraged.

f) Habitat data

Protocols for capture of habitat development are currently under development and we will be contacting CES ringers once the new systems are in place.

4. SUBMITTING YOUR DATA

We ask all ringers to submit their data by mid-October to enable us to incorporate it in the preliminary trends produced in late November/early December.

a) DemOn

CES ringing and re-encounter data are entered into DemOn in the normal way. At the end of the season, you will need to complete an Effort Recording form in DemOn that includes your visit dates, times and weather information, which enables the data to be extracted from the database by staff at BTO HQ. Detailed instructions on using DemOn for CES can be found under the Help menu in DemOn ([Comprehensive Guide to CES in DemOn](#)).

b) IPMR

CES ringing and re-encounter data are entered into IPMR in the normal way. Data are then extracted and sent to the CES Organiser at the end of each season, along with a summary sheet for your project. Detailed instructions on using IPMR for CES can be found in the [A Guide to Using IPMR for CES data](#), which is available in the CES section of the BTO website.

5. CES OUTPUTS

CES data are used to produce three population-level measures:

- i) Adult abundance – total number of new and retrapped adults (age >3) encountered
- ii) Productivity – ratio of juvenile (age 1J, 3J or 3) to adult captures
- iii) Survival – survival rate of adult birds, using recapture from previous years

Preliminary CES results, comparing the season to the previous five years, are published on the BTO website, alongside the preliminary Nest Record Scheme results, in late November/early December, with more comprehensive results included in the spring edition of *LifeCycle*. Long term abundance, survival and productivity trends are published in the annual BirdTrends report (www.bto.org/birdtrends) towards the end of the following year. A breakdown of CES facts and figures is available on the [CES results section of the BTO website](#).

6. CES REBATES AND GRANTS

All CES projects undertaking the minimum number of visits are eligible to claim a refund of 20 p for each new bird ringed, provided that data are submitted to BTO by the end of February. Subject to funding being available, new and existing CES (and RAS) projects can apply for additional support of up to £100 towards capital costs of the project (such

as nets, poles etc.). Approximately 45 projects are supported each year, with preference given to those contributing the most towards the Demographic Targeting Strategy (e.g. those focussing on target species or in poorly covered areas of the country). Application forms are available at the end of November each year and can be found on the [CES section of the BTO website](#); the deadline for applications is 31 January each year.

7. FREQUENTLY ASKED QUESTIONS

I suspect a Schedule 1 species might be breeding on my CE site. Do I need a Schedule 1 licence?

A licence is not needed for every site where Schedule 1 birds may be caught, but would be if nests are being actively searched for. For further guidance, contact the CES Organiser (ces@bto.org) or the BTO Licensing Team (ringing.licensing@bto.org)

I ring pulli in numerous nest boxes on my proposed CE site. Can I still do a CES there?

Yes. Providing you don't drastically change the number of nest boxes present on your site whilst you are also operating a CES there, this isn't a problem. If a large change in the number of nest boxes occurs, you may need to re-register the site as altering this could impact trends.

Can I use sound lures on my CE site?

Not during a CES visit but you can once the visit has finished, or on another date, providing you are not mist netting up to three days prior to a CES visit.

Can I use bait on my CE site?

No. It is not permitted to bait your CE site at any time during the CES season as is likely to increase variability of the annual totals.

How long do I have to be able to commit to a CES for?

To generate useful data, a CE site needs to have been going for at least three, and preferably five, years. The longer your project runs for, the more useful the data are.

What happens if I miss a year?

The CES programmes can cope with one missed year of data. If you can't operate your site for more than one year, you will need to re-register it.

I missed a couple of visits this year? Do you still want my data?

Yes please. The computer models can compensate for a small number of missed visits in a season so your data are still valuable. Sites will be included if at least four of the first six, and four of the second six visits are completed.

Can I also do a RAS on my CE site?

Yes, if it is in a separate area of the site or on a species that you don't catch as part of your CES (Tree Sparrow or Tawny Owl for instance). If, for example, you wanted to do a RAS on the Blackcap population that you were catching as part of your CES, this is unlikely to add information as CES monitors survival as well as productivity and abundance.

The owners of my CE site have carried out extensive habitat management of the site. Will this affect my CES?

Possibly. You will need to discuss this with the CES Organiser who will advise whether you need to re-register the site or not.

Which species form the core for CES monitoring?

Chiffchaff, Willow Warbler, Blackcap, Garden Warbler, Lesser Whitethroat, Whitethroat, Sedge Warbler, Reed Warbler, Blue Tit, Great Tit, Willow Tit, Long-tailed Tit, Cetti's Warbler, Treecreeper, Wren, Blackbird, Song Thrush, Robin, Dunnock, Chaffinch, Bullfinch, Greenfinch, Goldfinch, Reed Bunting.

CONTACT DETAILS

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www.bto.org/ces

CES Organiser – ces@bto.org

Licensing – ringing.licensing@bto.org

Nest Record Scheme – nrs@bto.org

CES is supported by a partnership between the BTO and the Joint Nature Conservation Committee (JNCC) (on behalf of the country agencies (Natural England, Natural Resources Wales, Scottish Natural Heritage and the Department of Agriculture, Environment and Rural Affairs, Northern Ireland)). It is also part of the BTO Ringing Scheme which is funded by the BTO/JNCC Partnership, The National Parks and Wildlife Service (Ireland) and the ringers themselves.