
Breeding bird survey methodology

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Survey effort

Getting the appropriate level of survey effort correct is difficult and is likely to be dependent on a range of site-specific factors.

Clearly a single visit is unlikely to provide a robust level of information. Whereas, the more visits undertaken, the more species you record, until, due to the law of diminishing returns, the species detection curve flattens out.

As standard it is recommended that six bird survey visits be undertaken as part of a survey for breeding birds.

Six visits is considered sufficiently robust to identify the majority of bird species using lowland deciduous woodland in the breeding season and establish a good understanding of the numbers and distribution of species present. Lowland deciduous woodland is one of the most complex habitats to survey, due to the range of bird species it can support, and the dense vegetation leading to a heavy reliance on vocal encounters. Six visits is therefore considered to be a proportionate survey effort for all terrestrial and freshwater habitats. This number is based on a small amount of research and the collective opinion of the steering group. A more substantive piece of research is planned to inform this element

of the guidelines but until the evidence suggests otherwise, six is the recommendation.

Any deviation in the number of surveys must be supported with detailed and robust justification. Additional survey effort may need to be considered for large-scale projects with the potential to have significant impacts on birds, and/or for high profile, sensitive projects. On the other hand, fewer survey visits may be justified for projects with very limited impacts, or sites with habitats of low value for birds.

Additional, or species-specific surveys, should also be considered and, for particularly large sites, may require several surveyors.

Survey timings

Generally, surveys of the breeding bird community should start between half an hour before sunrise and half an hour after sunrise. Surveys should typically be concluded by around mid-morning (10–11 am, with some regional variation) as activity levels (and hence detectability) of many species will have tailed off.

Consideration should be given to species which are active earlier or later in the morning, making sure that both are covered by the survey. Species vary in their detectability throughout the day, some may be more detectable after the main dawn chorus and others may sing strongly shortly before sunrise or shortly after sunset (e.g. black redstart), so survey timing may need to be tailored to suit certain potential species, or varied between visits to increase the potential to detect a full range of breeding species. For larger sites this may be

achievable by alternating the starting point and/or direction of routes walked.

As species vary in their detectability throughout the day, at least one of the six visits should be in the evening (i.e. during the last few hours of the day, and extending beyond sunset for at least one hour) to pick up species not readily recorded by conventional surveys early in the morning. Certain species call into the dusk and after dark. These include several common species (e.g. robin) and some which can be difficult to detect during the day (e.g. grasshopper warbler, nightingale, nightjar and several owl species). Dusk survey visits also provide a good opportunity to identify roost sites.

Deviations from recommended timings (for example, due to access restrictions) should be noted as a potential limitation.

Planning survey dates

The bird breeding season is generally acknowledged to occur from late February to early August inclusive, although the majority of breeding activity occurs between March and early July.

Therefore, as a general framework, breeding bird survey visits should be spread evenly between late March and early July in order to ensure that the surveys cover resident breeders which start breeding early, as well as migrant breeders which arrive later.

Should the number of breeding season survey visits exceed six, consider an early (February or early March) and / or late season survey visit (August – September). Visits in February or early March may also be required if there is potential for early

nesting species to be present at the site (see Species-specific surveys section).

For wetland/coastal sites, survey design should be built around peak counts of priority species and therefore wintering or passage season surveys may be more appropriate than a breeding bird survey.

Factors to consider when planning survey times and survey dates:

- How has the weather been – good weather in spring may mean resident species have started nesting early, conversely, bad weather in spring may delay the breeding period and the arrival of migrant breeding species.
- Does your site have seasonally constrained features – such as temporary pools that might only be present early in the season or in wet years? If your survey coincides with a dry year you may underestimate the importance of a site or miss important birds such as lowland waders.
- Do you need data from more than one breeding season?
- Do you have suitable habitat or another reason to suspect that you might have early or late nesting species – for example hobby are a migrant breeder and tend to breed later in the breeding season therefore a visit(s) in August/September may be required, whilst goshawk nest early and are best detected in February when they are undertaking aerial display flights.
- Do you have reason to suspect species that are more readily detected by nocturnal surveys such as barn owl or nightjar will be present?

Recording conditions

Prior to starting the survey, record the date, start time, time of sunrise / sunset, temperature (°C), wind (Beaufort scale 0–12),

cloud cover (Okta 0–9, '9 Okta's represents sky obscured by fog or other meteorological phenomena' and therefore is unlikely to be appropriate for a bird survey) and rain (as a brief description e.g. dry, light drizzle). The end time, and closing weather conditions (if there has been a substantial change during the survey), should also be recorded.

Where possible, surveys should be carried out in good conditions, avoiding heavy rain, strong winds (Beaufort force >5) and any scenario where visibility/detection is negatively affected (e.g. fog, excessive disturbance on site etc.). If surveys are carried out in less than ideal conditions, this should be noted as limitation in the report, with justification and a consideration of potential impacts.

Field methods

A survey transect should be walked at a slow, ambling pace, stopping to scan priority habitat/features where appropriate. Priority habitat/features could include (but are not limited to) trees, dense hedgerows or berry-bearing shrubs, reed bed, or small bodies of water – generally any area associated with skulking and shy species with low detection (e.g. dunnock during the summer months).

One or more survey transects should cover the entirety of the site to a minimum distance of 50 m dependent on terrain and habitats present, but without excessive disturbance of the habitats on site. This is currently considered best practice but will be constrained by the topography of the site itself. The key principle is that the survey transect should enable the surveyor to see and hear everything on site and it may be possible (and most appropriate) to survey from existing footpaths. Where

areas within a site cannot be accessed, this should be noted in the report as a constraint to the survey.

Additional consideration should be given to any hazards identified in the site-specific risk assessment. Under no circumstances should observers enter into a hazardous situation in order to complete a survey. Instead, surveys of inaccessible or hazardous habitats should be undertaken from a vantage point or other safe distance, and any limitations should be recorded in the report, with justification and a consideration of potential impacts. Where appropriate these hazards should be reported and any site specific risk assessment changed in light of this new information.

Care should also be taken to avoid causing damage to arable crops or disturbance to livestock present within a survey area. In these situations, it is acceptable for observers to keep to field margins or tram lines, but also consider a vantage point, or supplementary survey, from a reasonable distance.

Surveyors should be mindful of the zone of influence of the development scheme (i.e. the distance beyond the redline boundary that a scheme may still have an impact on breeding birds, either during construction or operation). Surrounding habitat (outside of the redline boundary) should also be surveyed to a reasonable distance – particularly land immediately surrounding the site itself, and any nearby potentially valuable habitat which is likely to be impacted by development/disturbance (including but not restricted to waterbodies and woodland).

Species recording

All species encountered on the site or adjacent land should be reported.

The approximate locations of priority species should be plotted on a site map together with behavioural notation where appropriate. Counts of secondary species should be recorded separately and based on the highest number of each species in a distinct location, being careful to avoid repeat counting of individuals (see survey methods).

Observations of birds moving high overhead, and not associating with the site itself, should be summarised together with recordings of secondary species or omitted all together. Exceptions should be made for **Priority species** that are likely to associate with the site itself (e.g. gulls over arable farmland in winter), or, those priority species which could be associated with habitats present (e.g. a common quail over an arable farmland site).

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