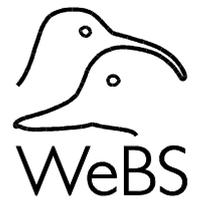


# WeBS Core Counts



## 2 Methodology and counting techniques

### Introduction

The distribution of most species of waterbirds (principally swans, geese, ducks and waders) during the non-breeding period is restricted largely to wetland habitats. Many wetland sites represent relatively discrete areas and, with most species readily visible within these areas, regular monitoring of total numbers can be made with relative ease.

Wetland Bird Survey (WeBS) counts are carried out on a regular monthly basis at the same sites on a priority date. This degree of consistency over many years distinguishes WeBS counts from casual counts, and ultimately allows the monitoring of changes in waterbird numbers and distribution with the added confidence of knowing that these reflect true changes rather than simply different areas being counted.

### Core Count requirements

Prior to carrying out a count, all new counters are requested to contact their WeBS Local Organiser (LO) who has the responsibility for coordinating counts within that particular region or site. The details of all the WeBS LOs are available from the WeBS Office and on the website. This will ensure that your preferred site is not already being covered, and that you receive all necessary details, including instructions on how to enter your data online, a list of priority count dates and a map of the count area (where available).

Each time a count is undertaken we require the following information:

- A total count of individuals of all waterbird species present on a predefined area of wetland habitat
- the date and time of the count
- a measure of the accuracy of the count
- a map of the count area (if not already on record)

### Which species do I record?

WeBS Core Counts record all waterbird species which in the UK, includes divers, grebes, cormorants, herons, swans, geese, ducks, rails and waders (see *Species & Codes* sheet); any vagrant, introduced or escaped waterbirds should also be recorded. We also request that, where possible, counters record numbers of gulls and terns, although recording of these groups is optional. In addition, WeBS also collects data on Kingfisher. Birds flying overhead should be excluded unless they are obviously using your count area.

### How often should I carry out counts?

Numbers of birds at any site will vary according to time of year, time of day, weather, disturbance and the state of the tide (at coastal sites). Consequently,

any count can only be a 'snapshot' of what is happening at a particular site at any given time.

However, with count data spanning many years for most sites, any long term changes in numbers and species composition should be detectable. WeBS Core Counts are made once a month, on or as near as possible to the predetermined priority count dates (see below). The months September to March are identified as the priority period for counts, encompassing the main period when peak numbers of most species occur in the UK, although observations at many coastal sites during spring and autumn passage periods provide valuable information for many wader species. Some WeBS sites are counted monthly throughout the year, producing very useful additional data. The January count is particularly important since these data are included in the International Waterfowl Census.

During particularly cold periods, the numbers of birds at a site may be augmented by influxes from the continent or from adjacent sites/areas. An additional count under these conditions may be useful in identifying potential cold-weather refuges. However, extra care should be taken to avoid disturbing the birds at this time, as they are likely to be suffering from increased levels of stress due to the inclement conditions (see *Disturbance* below).

### How are counts synchronised?

To ensure that the data collected by WeBS can be used to produce national population estimates and to monitor trends, between-site count synchrony is important. Hence, 'priority dates' are recommended for the monthly WeBS Core Counts. This enables counts across the whole country to be synchronised as much as possible, thus reducing the likelihood of birds being double-counted or missed. Such synchronisation is imperative where teams of

counters are required to cover large sites (such as estuaries), and the possibility of local, within-site movements by the birds during the counting period is high. Local Organisers should ensure co-ordination in these cases.

Priority dates are pre-selected with a view to optimising tidal conditions for counters covering coastal sites at high tide on a Sunday. The time of high tide varies around the country, however, and at some coastal sites this may necessitate counts on alternative dates, when the local tidal conditions are more conducive. There may be occasions when a counter is unable to carry out the counts on the specified date due to illness or other prior commitments, and in these circumstances a count made as close to the specified date as possible is preferable to no count at all. However, if you know well in advance that you are going to miss a priority count date, please let your LO know, as it may be possible to arrange temporary replacement cover. On large sites that are sub-divided into individual count sections, and which require more than one counter, synchronisation of the counts on the different sectors takes higher priority than synchronisation with the recommended dates.

## What time of day?

Timing of counts is most significant at estuarine sites, or at those close to the coast where bird numbers are influenced by the state of the tide. All counts here should typically be made within two hours (three at most) either side of high tide. The exception to this would be on relatively small estuaries where birds may be hidden at roost but readily counted at low tide. At inland sites, morning is normally best, when many species are most active. Counts should be completed within four hours at the most. Sites requiring more time should ideally be divided into sub-sections, with two or more counters used to cover the site. If substantial numbers of birds are known to

move regularly between nearby sites, perhaps in response to disturbance, then coordination of local count times will help reduce the risk of double-counting. Additional counts at other times of day may be valuable at some sites (see *Supplementary counts* below).

## Counting the same area each time

Any wetland site can be covered for WeBS. Most of the most important sites for waterbirds, e.g. estuaries and large, inland waters, are already covered (although, at many, additional offers of help would be appreciated by the local count teams). All the sites counted in recent years are in the process of being fully documented and mapped, with the site boundary, (and where applicable), the individual count sections marked at the 1:25,000 scale. New counters should contact the WeBS Core Count Organiser or relevant Local Organiser for a map and use the same count boundary (and count sections if applicable) if the site has been covered previously. This ensures comparable data are collected over time.

If the site has not been counted previously, or if count section boundaries are being determined for the first time, care should be taken to choose fixed boundaries that are easily recognisable in the field, and that are likely to remain so in the future. This will help ensure that future data collected by different observers will be directly comparable with previous counts. Before commencing any counts, it may be worth making an initial visit to determine which areas the birds use and the best route to take. Decide upon the count boundary to use only when you are sufficiently familiar with the site.

Changes to existing site or count section boundaries should be necessary only in exceptional circumstances, usually when the area of wetland habitat changes, e.g. when a new gravel pit is dug or an old one in-filled. **We would like counters to consult with the WeBS Office before any changes are made so that any adjustments to the WeBS database can be discussed.**

## Count Conditions

Please record an approximate value for the percentage of the water area within your count area covered by ice.

## Supplementary counts

In some circumstances, supplementary counts of selected species may provide useful additional information when assessing the importance of sites. This may include, for example, roost counts of cormorants or gulls that are absent from the site when the Core Counts are made, or additional counts of seaducks carried out under more suitable weather/sea

### Useful equipment

- Binoculars (typically 8x or 10x magnification).
- Telescope (ideally 30x magnification) and tripod; a wide-angled lens may be an advantage.
- Tally counter (optional); useful on sites with large numbers of birds.
- Dictaphone (optional).
- 1:25,000 map showing boundary of the area to be covered.
- Notebook (for use in the field).
- Two (!) pencils.



conditions. Such counts should be made using the same WeBS boundaries and methodology as above, recording only selected ‘target’ species rather than all the waterbirds present. It is particularly important to record the start and end times of these counts. Supplementary counts can be entered online (see the Guide to WeBS Online) or forms are available from the WeBS Office if you do not have internet access.

## Access

Always ensure you have all the necessary permissions for access to sites. Often, an initial approach and explanation of the work being undertaken is sufficient to gain access. An explanatory letter of introduction is available from the WeBS Office. Please remember to carefully follow any subsequent instructions from the site owner, e.g. many water companies require counters to comply with health and safety regulations when counting reservoirs.

## Safety reminders

Please see the separate leaflet within your Counter Handbook for Health and Safety Advice.

## Disturbance

Care should be taken to avoid disturbing the birds when undertaking WeBS counts. This is especially true of high-tide roosts on tidal sites, as there may be few or no alternative safe roosting locations. Disturbing the birds is also likely to reduce the

accuracy of the counts, and therefore their usefulness to WeBS.

Prolonged periods of cold weather cause additional stress for birds, when simply finding enough food to meet the increased energy demands of staying warm can literally be a matter of life or death. During prolonged cold spells, a ban may be imposed on wildfowling with the primary aim being to reduce the associated disturbance, enabling birds to conserve their energy. Whilst wildfowling bans are an obvious way to reduce disturbance during cold weather, it is perhaps worth being extra cautious at such times to avoid disturbance during counts. Counters would be notified in such an eventuality, but WeBS counts should continue.

## Data submission

WeBS data are most easily submitted using the WeBS Online system; please see the separate ‘Guide to WeBS Online’ for details on how to get set up for this. We request that you submit your data promptly after each monthly count. This allows for any queries to be dealt with quickly whilst the counts are still fresh in your memory. If you do not have internet access, Core Count recording forms are available from the WeBS Office or from your LO. You will be provided you with sufficient recording forms for the sites you cover. As the WeBS recording year runs from July to June, we request that any outstanding forms up to and including the June count are returned promptly to the LO after the June count. .

## Carrying out a count

Total counts of all waterbird species are conducted on a ‘look-see’ basis (see Bibby *et al.* 2000; Gilbert *et al.* 2005). Efforts should be made to ensure all areas are searched, though birds hidden in channels and secretive or cryptic species, e.g. Snipe, are likely to be systematically undercounted. Only counts of birds seen should be recorded on the form; estimates of birds thought to be hidden should not be recorded, although if a species is heard but not visible it may be recorded as ‘present but not counted’ (NC) on the recording form. If large numbers of birds are known or suspected to be out of sight (e.g. if fog obscures part of a count area known to regularly hold birds) then the count of the species should be noted as an undercount (see *Accuracy* below). Counts of naturally secretive or cryptic species should not be automatically recorded as undercounts; it is accepted as part of the methodology that these species are under-recorded. Counts of gulls and terns for WeBS Core Counts are optional, although we would

encourage counters to record these species if at all possible.

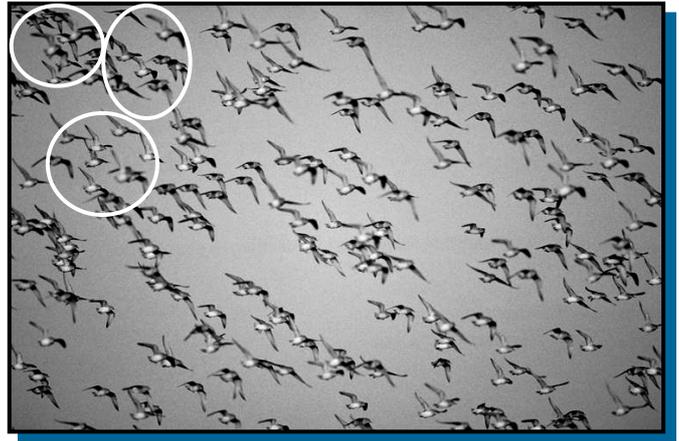
Any points peculiar to coverage of the site (e.g. a particular route to avoid disturbance) should be documented to enable future counts to be made in exactly the same way. The route should be designed to ensure that the whole count area is viewed (the reliable range of most binoculars is around 500 m, especially if species are in mixed flocks; with a telescope, if topography and weather conditions allow, experienced observers can identify birds up to 3 or 4 km away). Observers cannot expect to predict where winter flocks will be from year to year. Flocks are highly mobile and observers should be prepared to search their areas thoroughly. Waterfowl that are at least  $\frac{3}{4}$  grown should be included in count totals; small ducklings and wader chicks should be excluded.

It is best to use a notebook (or dictaphone) in the field, and transfer the data to WeBS Online as soon as possible after the count (if you do not have internet

access please ask the WeBS office for a copy of *3a - Recording Form*. In which case please keep your notebook or Dictaphone tape safe in case your recording forms get lost or damaged in the post).

## Counting techniques

Birds present in relatively small numbers or dispersed widely may be counted individually. The number of birds in large flocks is generally estimated by initially counting five or ten individuals, and then by counting the number of such groups comprising the flock. Very large flocks may be estimated by counting in groups of 50 or 100, or exceptionally, even 1,000 individuals. In these cases, allowance should be made for varying densities of birds in the flock, making the block size larger or smaller as appropriate. In general, large flocks of waterbirds are



more dense towards the centre than at the edges, although this is not an infallible rule. Tally counters are particularly useful for this approach.

If large numbers of birds are moving, or are thought likely to leave (e.g. because of impending disturbance), the following should allow at least an approximate count:

1. make a quick total count (don't separate species)
2. make a quick assessment of proportions of species
3. start with the most common species; if all birds leave, you can probably make a reasonable guess at the others (e.g. recording that Oystercatcher are twice as common as Redshank is better than nothing).
4. re-scan slowly for less common species; slow scans also help to locate smaller, less obvious species, including diving ducks in mixed flocks which may have been missed on the first scan.
5. scan slowly through the whole flock, a dictaphone can be useful

## Accuracy

It is important to record the accuracy of the counts. It is occasionally the case that the accuracy of the counts for all or one particular species may be considered low. This might be for a number of reasons, including poor visibility due to fog or heavy rain, high disturbance levels causing birds to fly around, or because access to all of the usual count area was not possible on a particular date.

WeBS records accuracy both for counts of individual species ('count accuracy') and for the whole visit to the count unit ('visit accuracy'). The visit accuracy is either described as 'OK' or as 'Low', the latter indicating that caution should be used when interpreting the count data. If factors like those described above affect counts of all species, the overall visit accuracy should be recorded as 'Low'. Visit accuracy should always be recorded as 'Low' when coverage of the whole of the usual count area is

### Accuracy – how it makes a difference

Recording the accuracy of counts correctly can make a huge difference to how a site is perceived in terms of its importance to waterbirds. It allows us to be more confident in the use of the data you provide and ensures that we can take into account any circumstances which have adversely affected your counts.

To illustrate this, we can take the case of an imaginary WeBS volunteer who counts their local reservoir every month. The reservoir is an important site for Goldeneye, with up to 200 birds each winter. In the last four winters, the peak counts were 180, 200, 160 and 160. This winter, the counts in February are disrupted by thick fog, and only 100 birds are recorded. It is likely that there are large numbers of Goldeneye at the far end of the reservoir, hidden from view by the fog. Even so, this count is still the highest of the winter.

Taking the counter's figures literally, the average peak count of Goldeneye in the last five years at their local Reservoir is 160, which is just below the 170 birds required for the site to qualify as holding nationally important numbers. If the counter marks their visit accuracy for the February count as 'Low', we are able to take account of this when assessing the value of the site. Because we know that the counts were poor due to bad weather, we are able to exclude the latest count from the average (the figure will appear in brackets in the WeBS annual report). The average peak count (for the four 'OK' counts) now becomes 175, the site is deemed nationally important for Goldeneye and is listed in the WeBS report for all to see.



not achieved. If a count of just one or two individual species is adversely affected, these should be flagged accordingly by bracketing the count (see *Guide To WeBS Online* sheet) and the overall visit accuracy remains 'OK'. Note that counts of large flocks may be only estimates, and that counts, even by very experienced observers, may miss the true total by as much as 10%; such counts are considered 'OK' in terms of accuracy.

If poor weather or other factors prevent a proper count, a repeat could be made. This should be made as close to the recommended date as possible, though

consideration should be given to co-ordination with adjacent sites. If monthly counts are made throughout the winter period, the absence of one count is unlikely to bias the results too much.

If it is not possible to positively identify a species, please record birds as 'unidentified' or within a given category, e.g. unidentified *Aythya* spp, unidentified scoter spp, unidentified grey goose spp; if you cannot be accurate, be honest! See *Species & Codes* sheet for a list of unidentified species categories used by WeBS.

## Useful references

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Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S. 2000. *Bird Census Techniques*. 2nd edition. Academic Press, London.

Gilbert, G., Gibbons, D.W. & Evans, J. 1998. *Bird Monitoring Methods*. RSPB, Sandy.