WADER HUB

Breeding Wader Transect Guidance

REDSHANK, LIZ CUTTING / BTO

FIRST PRINCIPLES

See **Local Wader Monitoring: decision-making guidance** before deciding on either transect method outlined here. Then see the **Breeding Wader Survey Guidance** for general advice on conducting breeding wader surveys. **Note:** you should seek landowner permission before undertaking any wader surveys.

Once you have decided to undertake breeding wader transects as part of your project's monitoring, it is crucial you clearly define your total **survey area** (regardless of which census method you choose). Then assign your **transects** (or **monitoring site(s)**) within your survey area. Once you have clearly defined transects you can plan your survey visits in earnest (allocating surveyors, printing your survey maps).

Note: observations of nests and broods are helpful but not the focus of wader transects – transect surveys produce estimates of breeding abundance based on a standard methodological approach that everyone follows (i.e., do not necessarily provide the true number of pairs breeding in the area). If you are keen to pin down where exactly pairs are breeding and locate nests (rather than the broad estimates that surveys provide), please see the **Wader Nest Monitoring Guidance**.

BREEDING BIRD SURVEY (BBS) METHOD FOR WADERS

BTO and our partners developed this method to monitor bird populations in the UK, and the national network of thousands of 'official' BBS squares underpins the breeding bird trends that inform conservation decision-making on birds. However, you can use this method to sample any 1-km Ordnance Survey (OS) grid square in the UK as an 'unofficial' BBS square, and you can use the method to only record waders ('official' BBS squares record all breeding birds seen or heard).

It is especially useful to use this method as your transects will be readily comparable with national, regional, and habitat-based trends for waders. Though it is unlikely, please check none of your proposed 1-km squares overlap an 'official' BBS square by emailing **waders@bto.org**. If one does, and it is not already allocated to a volunteer, please consider taking part in the official BBS survey (though you require sufficient bird identification skills of all British breeding bird species, not just waders, in your area for 'official' BBS visits). If one does and it is allocated to a volunteer, you can request data from that square(s) from BTO, to save you monitoring that square.

Target species: As many or as few wader or other bird species can be included as wished (or able to identify and detect).

Essential equipment:

- binoculars
- BBS 'Breeding Wader' Recording Forms and/or 1:10,000 map(s) of 1-km OS grid square.

When to visit: Two to four visits are needed. Two core 'early' and 'late' visits April to mid May and mid May to June, respectively, and one to two additional 'Breeding Wader visits' in June (see **www.bto.org/bbs-waders**).

Table 1: Visit date ranges for the Breeding Bird Survey (BBS) methodology.

Visit number	Visit type	Visit date ranges
1	'Early' visit	April to mid May
2	'Late' visit	Mid May to June
3 or 4	'Breeding Wader' visit	Early June for early breeding species (e.g., Lapwing), late June for later breeding species (e.g., Curlew)

Field methods: see the **BBS survey instructions** and recording forms for full methods. However, if you are undertaking this method to record waders in a 1-km OS grid square, a key difference is **recording wader behaviour and presence of young** (which BBS does not ask for), see the **Breeding Wader Survey Guidance** for guidance on how to record behaviour and the presence of young waders.

Outputs: for each transect **survey visit**, report the following for each wader species encountered:

- Total **adults** observed
- Total **adults displaying**
- Total **adults apparently chick-rearing***
- Total **chicks** observed

See **www.bto.org/wader-survey-behaviour-guide** for guidance on recognising display and chick-rearing behaviours.

***Adults apparently chick-rearing** are any adults observed:

- Directly with chicks
- Intensely and persistently alarm-calling
- Reluctant to leave the area
- Flying towards/circling the observer
- Engaging in distraction display (e.g., 'broken-wing display')
- Flushing at short distances

Estimating breeding success: for each monitoring site, each year, you can calculate a crude **index of productivity** by dividing the number of **adults apparently chick-rearing** during the final survey visit (latest visit in May for Lapwing) by your greatest total count of territorial adults (**adults displaying** + **adults apparently chick-rearing**) from any one survey visit.

> **Productivity Index = adults apparently chick-rearing during final survey visit (or latest survey visit in May for Lapwing) / greatest total count of territorial adults (adults displaying + adults apparently chick-rearing) from any one survey visit that year**

This produces a number between 0 and 1, which represents the proportion of territorial adults that were apparently chick-rearing during the survey visit closest to the species' key chick-rearing period. A **productivity index** of '1' would mean all territorial adults were showing behaviour consistent with chick-rearing during the final survey visit, and a productivity index of '0' would mean no territorial adults were showing behaviour consistent with chick-rearing during the final survey visit.

Note: you can only generate these indices for wader species that vociferously and repeatedly alarm-call during the chick-rearing period (i.e., not Snipe). If you have any questions regarding estimates of breeding success please contact **waders@bto.org** for support.

3. BREEDING WADER TRANSECT (BWT)

This method is flexible and designed to fit around a busy work/personal life. Its origins were in a method designed to fit around gamekeepers' work activities, but anyone can set up a transect and contribute to local trends in abundance and productivity using the method.

Target species: As many or as few wader or other bird species (even other animal species) can be included as wished, though the more species included the more complex the survey becomes. It is important to report which species you searched for (and which species surveyors were comfortable identifying).

Essential equipment:

- prefrably binoculars (though not essential)
- 1:10,000 map(s) of transect and visible area(s) surrounding the transect
- Breeding Wader Transect Cover Sheet (see webpage materials)

When to visit: A minimum of two visits, one in April (ideally second half), a second mid May (ideally second half). Further 'productivity' visits in June are useful, if possible (ideally second half of June, or one early, one late, if completing two 'productivity' visits). Ensure all survey visits are at least two weeks apart.

However, there is no limit to the number of survey visits you can undertake to a site (more visits increase the accuracy of counts for that year, though two to four visits is sufficient).

Table 2: Visit date ranges for the Breeding Wader Transect (BWT) methodology.

Visit number	Visit type	Visit date ranges
1	'Early' visit	April
2	'Late' visit	May
3 and/or 4	'Productivity' visit	June (one early June, one late, if completing four visits in total)

Field methods: Follow your predetermined transect route, walking a steady pace; it is fine to stop intermittently for work duties.

Using your maps and BTO symbology, record the location, behaviour, and movements of all waders encountered; do your best not to double-count birds (i.e., put the same bird(s) on your survey maps twice) and note when birds are observed simultaneously using a dashed line (e.g., CU♀ ----- CU♂).

If possible (but not essential), walk in the opposite direction over your transects in your second visit (and switch each time you complete a visit). At least every 100 m, ensure you scan round in every direction as far as is visible and listen out for wader calls; it helps to stop and watch for a few minutes from any good vantage points on your route.

Outputs: for each transect **survey visit**, report the following for each wader species encountered:

- Total **adults** observed
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- Total **adults apparently chick-rearing***
- Total **chicks** observed

See **www.bto.org/wader-survey-behaviour-guide** for guidance on recognising display and chick-rearing behaviours.

***Adults apparently chick-rearing** are any adults observed:

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- Flushing at short distances

Estimating breeding success: for each monitoring site, each year, you can calculate a crude **index of productivity** by dividing the number of **adults apparently chick-rearing** during the final survey visit (latest visit in May for Lapwing) by your greatest total count of territorial adults (**adults displaying** + **adults apparently chick-rearing**) from any one survey visit.

> **Productivity Index = adults apparently chick-rearing during final survey visit (or latest survey visit in May for Lapwing) / greatest total count of territorial adults (adults displaying + adults apparently chick-rearing) from any one survey visit that year**

This produces a number between 0 and 1, which represents the proportion of territorial adults that were apparently chick-rearing during the survey visit closest to the species' key chick-rearing period. A **productivity index** of '1' would mean all territorial adults were showing behaviour consistent with chick-rearing during the final survey visit, and a productivity index of '0' would mean no territorial adults were showing behaviour consistent with chick-rearing during the final survey visit.

Note: you can only generate these indices for wader species that vociferously and repeatedly alarm-call during the chick-rearing period (i.e., not Snipe). If you have any questions regarding estimates of breeding success please contact **waders@bto.org** for support.

4. DATA ENTRY

We have provided survey cover sheets to use on transect surveys in combination with your field maps to capture core information from each transect method supported by the Wader Hub; please use these with your survey maps to record your visit info and wader observations in the field.

Usually, summary data are the key information you need to submit from your transect surveys; these are the totals/estimates provided on your survey cover sheet. You can submit your summary data from any survey method supported to the Wader Hub.

4.1. Data Entry Options:

Data Entry Spreadsheets: visit **www.bto.org/wader-hub** to download the relevant spreadsheet for your chosen survey method. Please complete your spreadsheet and email it to **waders@bto.org**.

Paper Return: email **waders@bto.org**, attaching your survey cover sheets and survey maps, to submit survey data by paper.

We are still in the early stages of establishing the Wader Hub; at this stage by submitting data, you would be helping to develop a universal data entry system to start protecting wader populations monitored by local individuals and groups (by representing these data at a national level) and beginning to investigate demographic patterns and trends across the UK, to inform conservation decision-making. With further development, we hope to provide greater levels of support to local individuals and groups to interpret and report upon the results of their survey data.

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