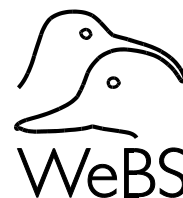


Wetland Bird Survey



6

Guide to recording age and sex ratios of waterbirds

A feature of WeBS Online is recording the age and sex composition of flocks seen during a WeBS Count (Core, Low Tide, Casual or Roost Counts).

Collecting information on age ratios gives us information on breeding success which is an important demographic factor affecting breeding success. Many of the waders we count in winter breed in the high Arctic where it is difficult to monitor breeding success, so by counting the proportion of first calendar year birds we see in a flock, we are able to gain valuable information on breeding success.

Information on sex ratios will give us useful information of the population structure and give a better understanding of the patterns of inter-annual variation, and thus differentiate between long-term

trends and fluctuations between years. We know that there are considerable differences in overall sex ratios in many wintering duck flocks and that a greater proportion of males are found in the north of the flyway. Collection of sex ratio data can provide useful data for investigating differences in survival between the sexes.

Recording age and sex data is not compulsory and need not be done on every WeBS Count. Whilst we are obviously keen that counters record this data, we are aware that not all counters are confident enough to determine the age and sex of certain species. Therefore, this data should only be submitted if counters feel confident enough with their waterbird age/sex identification skills.

General Information

Where to collect information

Please make age and sex assessments in your WeBS count sectors only. You can collect age and sex information during your regular WeBS Core Count or Low Tide Count, or make a separate supplementary visit to your sector and submit the data via a Casual or Roost Count. We are not able to collect information from non-WeBS sectors through WeBS Online, but you can enter plumage data into BirdTrack (www.birdtrack.net).

Ideally the vantage point for making the count should be within few hundred metres of the flock so you are able to get a good view without causing disturbance. You will know your count sector well and will know the best vantage points to make the assessments from.

When to collect information

For recording age ratios, there is a window when first calendar year birds can still be aged using field characters. This will vary by species and will depend on the timing of their moult. For many waders this is a short period in the autumn before they moult into first-winter plumage. The ideal is therefore to aim for the latest time of year at which you are confident that you can pick out all first calendar year birds seen (including those in post-juvenile moult). Juveniles arrive at different times, so you may see a range of

plumages from juvenile to first-winter. For geese and swans which retain juvenile feathers much longer, the period for recording is extended.

The period for recording sex ratios will also vary by species, and will depend on the timing of moult. For some ducks, such as Wigeon, young males are difficult to distinguish from females until December, so early season ratios may underestimate males.

The tables at the end of this guidance document illustrate the optimum periods in the year for specific species assessments in the field.

Which species to record

We have selected a number of wildfowl and wader species for which it is possible to distinguish first calendar year birds in the field using binoculars and telescopes. These are listed in the tables at the end of this guidance document. It is not always easy to age birds in the field and you will need to be sufficiently close in distance to age the majority of birds in the sample. Likewise for sex ratios, we have identified those species where it is possible to separate males and female based on plumage characters.

It is not possible to record age or sex data for species in WeBS Online other than those listed in the tables at the end of this document.



The Wetland Bird Survey (WeBS) is the monitoring scheme for non-breeding waterbirds in the UK which aims to provide the principal data for the conservation of their populations and wetland habitats. WeBS is a partnership, jointly funded by BTO, RSPB, JNCC, in association with WWT, with fieldwork conducted by volunteers.

What skill level is required

The skill level required to make age and sex ratios varies considerably with the species concerned. You must be confident in identifying the plumage characteristics of the particular species that you have chosen to assess.

Weather conditions

It is important to carry out the assessments in good conditions as heavy rain, mist and fog can hamper viewing and make accurate counts difficult.

How to record

You do not need to assess every bird of the species you are assessing within your WeBS sector, unless you wish to. If a species has separated itself into flocks within your WeBS count sector, please record information for each flock separately.

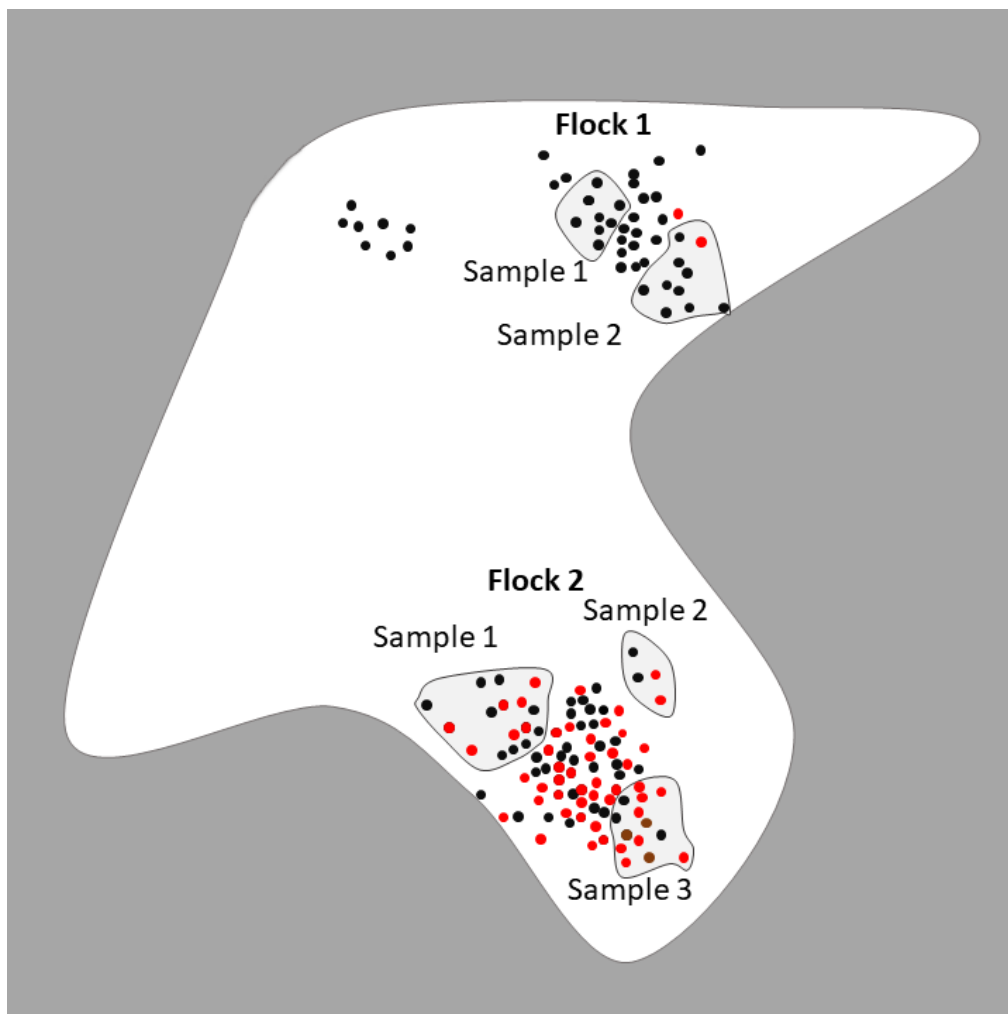
Within each flock, choose representative sample(s). In the sample, when doing an age assessment, note how many adults, how many first calendar year birds, and also note how many birds in the sample you could not identify as either adult or first calendar year as “indeterminate”. When doing a sex assessment, note how many males, how many females, and also how many birds in the sample you could not identify as either male or female as “indeterminate”.

For example, in the diagram below you have counted 142 of a particular species for your Core Count and decide to record some sex ratio data. In the first flock, you count or estimate there are 39 birds. You pick two representative samples; in the first sample you count 8 females (black) and in the second sample you count 9 females and 1 male (red). In the second flock, there are 95 birds. In the first sample you count 9 females and 7 males. In the second sample you count 2 females and 2 males. In the third sample you count 3 females, 8 males and there are 3 birds which are hard to see or in moult (brown), which you will record as indeterminate.

I already record for WWT Goose and Swan Monitoring- what should I do?

If you already undertake field-based age assessments for WWT, please continue to submit your counts to WWT in the usual way. WWT undertake age assessments on Whooper Swan and Bewick's Swan and eleven goose populations native to the UK. They collate information on breeding success using the proportion of young (first-winter) birds in non-breeding flocks and the average brood size. For further information contact:

<https://monitoring.wwt.org.uk/contact-us/>



Resources:

The following books contain useful information on aging and sexing wildfowl and/or waders:

Chandler, Richard. 2009. *Shorebirds of the Northern Hemisphere*. Christopher Helm, Bloomsbury, London.

Gejl, Lars. 2016. *Waders of Europe: A Photographic Guide*. Christopher Helm, Bloomsbury, London.

Hume, Rob, Still, Robert, Swash, Andy, Harrop, Hugh & Tipling, David. 2016. *Britain's Birds: An Identification Guide to the Birds of Britain and Ireland*. WildGuides, Princeton University Press, Woodstock.

Message, Stephen & Taylor, Don. 2005. *Waders of Europe, Asia and North America*. Christopher Helm, Bloomsbury, London.

Reeber, Sébastien. 2015. *Wildfowl of Europe, Asia and North America*. Christopher Helm, Bloomsbury, London.

Svensson, Lars, Mullarney, Killian, Zetterström, Dan, Grant, Peter & Christie, David. 2009. *Collins Bird Guide: The Most Complete Guide to the Birds of Britain and Europe, Second Edition*. Harper Collins, London.

The following online resources contain useful information on aging and sexing certain species:

Whooper and Bewick's Swan age assessments:
<https://monitoring.wwt.org.uk/wp-content/uploads/2015/12/Whooper-Bewicks-age-assessment-methodology.pdf>

Bar-tailed Godwits:
<https://www.osnz.org.nz/age-ratio-scans-bar-tailed-godwits>

Snipe:
<https://www.tandfonline.com/doi/pdf/10.1080/03078698.2007.9674368>

Duck Specialist Group have a *Guide to the Age and Sex of European Ducks (English version)*, focused on identification within the hand but with some general information:
<http://www.ducksg.org/resources/field-techniques/>

Members of Wader Study Group can access a series of papers here:
<https://www.waderstudygroup.org/wader-study/ageing-and-sexing-series>

Adding age and sex recordings into WeBS Online

Submitting Core & Low Tide Counts

Log into WeBS Online and enter count data. You will see that there is a percentage symbol (%) next to each species where recording of age or sex is permitted.

▼ 2. Species seen

These are the common species you have recorded previously at this site. If the species is not shown in the relevant tab below, add them using Section 3. Use square brackets to enclose gross underestimates, e.g. [100]. Tick present if a species was present which you were unable to count. Enter counts where possible.

Did you look for gulls during this visit? Yes No

Did you look for terns during this visit? Yes No

Waterbirds **Gulls** Terns Other Common Species

Please tick 'Present' for any birds you saw and enter a count if known, or tick that you did not see any.

No waterbirds were present

Species	Present	Count		%
Barnacle Goose (BY)	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	%
Bewick's Swan (BS)	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	%
Bittern (BI)	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	
Canada Goose (CG)	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	%
Common Sandpiper (CS)	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	%

To enter age/sex recordings for a particular species, click on this symbol. Note, that if you have not marked this species as present first, it is not possible to select this option. You must ensure that the species is either marked as present or a count has been added before you can add age/sex recordings.

Unless you are recording age and sex composition for all birds within your WeBS count sector, please enter data for samples for separate flocks, so that we can calculate proportions correctly. The reason we ask for samples divided into flocks is that sometimes birds separate into flocks with e.g. mostly adults or mostly males in one part of a count sector.

To enter data, select the green '+Add Flock' button. From here, you can enter the size of Flock 1. The size of Flock 1 will default to your WeBS sector total. If the flock you are sampling from is smaller than this, as the sector is split into separate flocks, please estimate the size here, so we know how representative your samples are.

Age/Sex Recording for Shelduck (SU)

Unless you are recording Age and Sex composition data for all birds within your WeBS count sector, please enter data for samples for separate flocks, so that we can calculate proportions correctly. ?

[Age/Sex Recording Guidance notes](#)

▼ Flock 1 🗑️

Flock Size: ?

+ Add Sample

+ Add Flock

Cancel
OK

To add age recordings, select the blue ‘+ **Add Sample**’ button and select ‘**Age**’. This will then show options for you to type in the number of birds seen which were at ‘**Adult**’, ‘**1st Calendar Year**’ and

‘**Indeterminate**’ ages. You can add as many samples as required.

Age/Sex Recording for Shelduck (SU)

Unless you are recording Age and Sex composition data for all birds within your WeBS count sector, please enter data for samples for separate flocks, so that we can calculate proportions correctly. ?

[Age/Sex Recording Guidance notes](#)

▼ Flock 1 🗑️

Flock Size: ?

▼ Sample 1 ? 🗑️

Sample Type: Age Sex

	Adult	1st Calendar Year	Indeterminate
Count	<input type="text" value="10"/>	<input type="text" value="15"/>	<input type="text" value="5"/>

Birds assessed in sample: 30

+ Add Sample

You assessed a total of 30 birds for age from the 30 birds present in this flock.
 You assessed a total of 0 birds for sex from the 30 birds present in this flock.

+ Add Flock

You assessed a total of 30 birds for age from the birds present on your WeBS count (in 1 flock assessed for age containing an estimated 30 birds).
 You assessed a total of 0 birds for sex from the birds present on your WeBS count.


Cancel
OK




Age/Sex Recording for Shelduck (SU)


Unless you are recording Age and Sex composition data for all birds within your WeBS count sector, please enter data for samples for separate flocks, so that we can calculate proportions correctly. [?](#)

[Age/Sex Recording Guidance notes](#)

▼ Flock 1 

Flock Size: [?](#)

> Sample 1 [?](#) Type: Age, birds assessed: 30 

▼ Sample 2 [?](#) 

Sample Type: Age Sex

	Male	Female	Indeterminate
Count	<input type="text" value="25"/>	<input type="text" value="5"/>	<input type="text"/>

Birds assessed in sample: 30

+ Add Sample

You assessed a total of 30 birds for age from the 30 birds present in this flock.
You assessed a total of 30 birds for sex from the 30 birds present in this flock.

+ Add Flock

You assessed a total of 30 birds for age from the birds present on your WeBS count (in 1 flock assessed for age containing an estimated 30 birds).
You assessed a total of 30 birds for sex from the birds present on your WeBS count (in 1 flock assessed for sex containing an estimated 30 birds).

To add sex recordings, once again select **'Add Sample'** and select **'Sex'**. This will then show options for you to type in the number of birds seen which were at **'Male'**, **'Female'** and **'Indeterminate'** sex. You can add as many samples as required.

If you are recording both age and sex samples, these do not necessarily have to be the same. You could for example record three samples from the flock for Sex and only one for Age.

You will see that the total number birds assessed for age and the total assessed for sex within the flock is kept up-to-date underneath the **'Add Sample'** button, so that you can ensure the numbers recorded for age and recorded for sex for the samples do not exceed the total flock size.

To add data for additional flocks, select **'Add Flock'** and carry out the same process. The total for

all the flocks is given underneath the **'Add Flock'** button, so that you can ensure the totals do not exceed the WeBS count total.

You can delete specific flocks, age and sex counts by selecting the red bin button at the top right hand corner of the corresponding sections.

Once you have entered all the Age/Sex recordings for a specific species, select **'OK'** and the box will disappear. If sample numbers are too large within a specific flock e.g. you have recorded a total of 26 birds across all samples in Flock 1, which is greater than the flock size (10), an error message will occur and you cannot submit the data until this has been corrected.

Once all age/sex recordings have been noted, please submit your data by selecting **'Submit Count'**.

Optimum months in which to make age and sex recordings

These tables illustrate the optimum periods in the year for specific species assessments in the field, according to the available literature. This is intended as a guide only: the timing of moult can vary greatly between years and individuals.

The months highlighted in **bold** indicate the core months for age assessments for some species.

Months in which age composition can be assessed

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Brent Goose			Y	Y	Y	Y	Y	Y	Y	
Canada Goose	Y	Y	Y	Y	Moulting to first Summer plumage					
Barnacle Goose	Y	Y	Y	Y	Y	Y				
Greylag Goose		Y	Y	Assess Icelandic, but care needed						
Taiga Bean Goose	Y	Y	Y	Y	Y	Y	Y	Y		
Tundra Bean Goose	Y	Y	Y	Y	Y	Y	Y	Y		
Pink-footed Goose	Y	Y	Y	Y	Y	Moulting to first Summer plumage Dec-Mar				
White-fronted Goose	Y	Y	Y	Y	Y	Y	Y	Y		
Mute Swan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bewick's Swan			Y	Y	Y	Y	Y	Y		
Whooper Swan			Y	Y	Y	Y	Y	Y		
Egyptian Goose	Y	Y	Y	Y						
Shelduck	Y	Y								
Mandarin Duck	Y	Y								
Garganey		Y	Y							
Tufted Duck	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Scaup	Y	Y	Y	Y	Y	Y	Y	Y		
Oystercatcher	Y	Moult out of Juvenile plumage								
Avocet		Y	Y							
Lapwing	Y	Moult out of Juvenile plumage								
Golden Plover	Y	Y	Y	Difficult					Y	Y
Grey Plover	Y	Y	Y	Moult from late Sep, with some birds not moulting from Juvenile plumage until spring						



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Ringed Plover	Y										
Little Ringed Plover	Y	Moult out of Juvenile plumage - unlikely to be seen in UK after end Sep									
Whimbrel	Y	Y		Moult out of Juvenile plumage Oct/Dec - Jan/April							
Curllew	Y	Y	Moult out of Juvenile plumage								
Bar-tailed Godwit	Y	Y	Y	Moult out of Juvenile plumage							
Black-tailed Godwit	Y	Y	Y	Moult out of Juvenile plumage							
Turnstone	Y	Y	Y	Moult out of Juvenile plumage							
Knot	Y	Y	Moult out of Juvenile plumage								
Ruff	Y	Y	Y	Moult out of Juvenile plumage							
Curllew Sandpiper	Y	Y	Moult out of Juvenile plumage - unlikely to be seen in UK after end Oct								
Sanderling	Y	Y	Moult out of Juvenile plumage								
Dunlin	Y	Y	Moult out of Juvenile plumage								
Purple Sandpiper	Y	Y									
Little Stint	Y	Y	Moult out of Juvenile plumage - unlikely to be seen in UK after end Oct								
Snipe	Y	Moult out of Juvenile plumage									
Common Sandpiper	Y	Y	Y								
Green Sandpiper	Y	Y	Moult out of Juvenile plumage Aug/Oct - Apr								
Redshank	Y	Moult out of Juvenile plumage									
Wood Sandpiper	Y	Y	Y								
Spotted Redshank	Y	Y	Moult out of Juvenile plumage								
Greenshank	Y	Y	Moult out of Juvenile plumage Aug/Oct - Mar								

Months in which sex composition can be assessed

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Shelduck	From first Winter onwards		Y	Y	Y	Y	Y	Y	Y	Y
Mandarin Duck	Eclipse				Y	Y	Y	Y	Y	Y
Garganey	Eclipse						Y	Y	Y	Y
Shoveler	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Gadwall	Eclipse			Y	Y	Y	Y	Y	Y	Y
Wigeon	Eclipse					Y	Y	Y	Y	Y
Mallard	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Pintail	Eclipse			Y	Y	Y	Y	Y	Y	Y
Teal	Eclipse			Y	Y	Y	Y	Y	Y	Y
Red-crested Pochard	Eclipse		Y	Y	Y	Y	Y	Y	Y	Y
Pochard	Eclipse			Y	Y	Y	Y	Y	Y	Y
Tufted Duck	Eclipse			Y	Y	Y	Y	Y	Y	Y
Scaup	Eclipse			Y	Y	Y	Y	Y	Y	Y
Eider	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Velvet Scoter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Common Scoter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Long-tailed Duck	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Goldeneye	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Smew	Eclipse			Y	Y	Y	Y	Y	Y	Y
Goosander	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red-breasted Merganser	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Ruddy Duck	Juvenile/female similar			Y	Y	Y	Y	Y	Y	Y
Ruff	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

