BASC Wing Survey

Annual Report - 2024/2025

BASC
The British Association for Shooting & Conservation

Executive Summary

The BASC Wing survey received its highest number of wing submissions in recent years thanks to increased engagement by regional teams and contributions from BASC members.

In total 3,201 wings were submitted over the 2024/25 season with wigeon being the most commonly submitted duck wing (1,097 wings), followed by teal (825 wings) and woodcock (452 wings). Wildfowl shot in BASC's Northern region made up the largest proportion of wing submissions, followed by BASC Eastern region.

Focussing on the two largest samples, we observed that the percentage of juvenile wigeon within the wing sample has remained below 40% for the second season in a row. The wigeon population wintering in the UK is undergoing a short-term decline, primarily attributed to issues on breeding grounds. This decline in juveniles may reflect decreasing reproductive output within the population and will be monitored closely in future wing survey samples.

The teal wing sample has shown a slight increase in the proportion of juveniles this season, however it remains low compared to historical figures. Despite the low juvenile proportion, this population at a UK, European and flyway level appears to be increasing. Continued collection of teal wings will compliment any population surveys and contribute to understanding of any changes to the teal population going forward.

The BASC wing survey will continue into the 2025/2026 season, with an aim to increase submission numbers again. Focus on increasing small regional sample numbers and distribution of samples from within regions will be key to enhancing the value of this survey further.

Introduction

The BASC Wing Survey (previously named the 'Duck Production Survey') was started in 1965, initially to increase our understanding of the changing duck numbers wintering in the UK each year. The survey has continued since then, with substantial variation in species focus and sample collection effort, with annual sample sizes ranging from 145 wings to 6,564 wings. In recent years, wing submissions have declined in part due to Covid-19 and Avian Influenza. We now encourage all shooters to submit wings from any waterfowl they harvest, with particular focus on teal, wigeon and the species highlighted in the Sustainable Shooting Code of Practice for Wildfowl Quarry Species.

Wing surveys are utilised in other countries to great effect. The 'Migratory Bird Parts Collection Survey' or Wing Survey asks a sample of hunters from around the USA to send one wing from each quarry bird they shoot in pre-paid envelopes. This enables the US Fish and Wildlife Service to collect 90,000 duck wings and 20,000 goose tails and wing tips each year[1]. The data collected from these submissions provide information on the extent and distribution of harvest and most importantly, the data informs population modelling that guides adaptive harvest management. From the submitted wings and hunter reports[2], wildlife managers are able to annually evaluate and adjust hunting season lengths and in some cases, harvest limits.

In Europe, wing surveys are also utilised as a means of understanding population composition of quarry species[3–6]. Wing data complements bird counts and adds further detail about the proportion of adults and juveniles or males and females within the population. When the number of wings submitted is high, these datasets can provide accurate information on the composition of the hunting bag and even when taking into account hunter biases [6,7], this is also representative of the standing population composition.

The ratio of adults to juveniles and the number of juveniles per adult female birds can predict or explain trends in the overall population. For example, a high proportion of juvenile birds can indicate high reproductive productivity, and we would expect future population growth as these youngsters are recruited into the adult population. Low female and/or juvenile numbers may indicate low productivity or high mortality at breeding grounds. This could explain or predict a population decline due to a limited number of young birds adding to the adult population. These ratios can vary between seasons but also within a season as birds of different sexes and ages can migrate at different times. By reporting the date each bird was shot when wings were submitted, we can start to build a picture of migrant arrival and departure each year, as well as annual population trends.

Going forward, BASC aims to provide a report of wing submissions each year, with a more detailed assessment of trends where possible every 3-5 years. This assessment will align with a more comprehensive review of bag return and survey data to inform the Sustainable Shooting Code of Practice for Wildfowl Quarry Species and the species-specific recommendations within it.

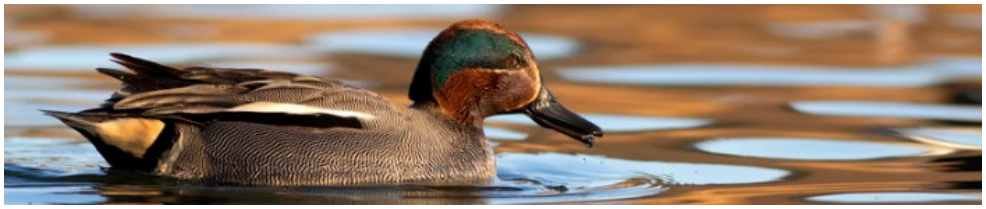
The following report for the 2024/2025 season provides breakdowns of age and sex ratios of submitted wings from this season, alongside an interpretation of trends and BASC harvest advice. Additionally, we provide a focussed case study on common teal, a species we have received substantial samples from providing long-term harvest trends. This case study demonstrates the potential of wing data in understanding species trends when wing submission numbers are large over a number of years.

Case Study: Common Teal

What do we already know about teal?

Common teal are uncommon breeders in the UK, with an estimated 4,000 resident breeding pairs. Surveys of wintering birds show a 25-year wintering population increase in the UK of 17% between 1997/98 and 2022/23[8], with the current population estimated to be 435,000 individuals [9]. The 10-year trend between 2012/13 and 2022/23 is a decline of 1% which suggests the population growth may be slowing. The long-term increase is reflected on the European continent within the wintering population however there are reports that the breeding population has showed declines between 2009 and 2018[10].

Habitat loss and degradation, driven by both climate change (increased drought) and anthropogenic factors (abstraction and agricultural intensification) are likely drivers for this breeding population decline[11, 12].



What does the BASC wing survey data tell us?

Teal wings have been collected throughout the duration of the wing survey and it is one of the most consistently collected species throughout the survey's history. The composition of adults and juveniles, and males to females in the samples contributes to our understanding of historic and ongoing population trends. We can also calculate a 'breeding index' which is the number of juveniles per adult female.

From the wing samples that have been submitted, we observe that from 1986/87 to now, the breeding index for teal declined steadily from around 4-6 juveniles per adult female in the late 80s and early 90s to around 2 juveniles per adult female in the early 2000s. Since the survey restarted in 2017 the breeding index was still low, however we have observed some years with higher juveniles per adult female (Figure 1). When compared to wing survey data from Denmark we also see a decline in the productivity of teal within their sample[13]. With relatively short-lived birds such as teal, the level of juvenile recruitment (i.e. the number of juvenile birds surviving and becoming part of the breeding adult population) can substantially impact population growth[12]. It is possible that this decline in juveniles within the population is contributing to this stabilisation of the teal population across the flyway.

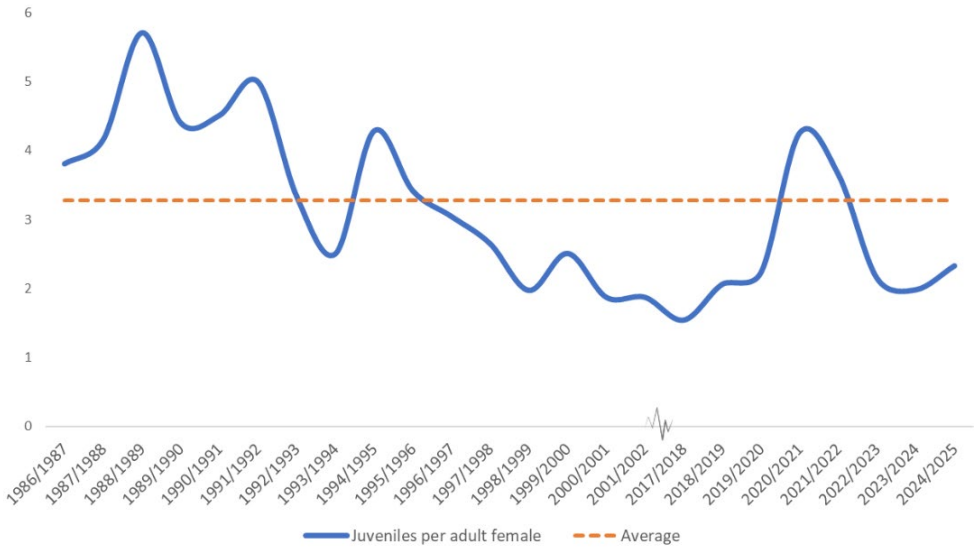


Figure 1. The proportion of juvenile teal in the BASC Wing Survey sample per season between 1986/97 and 2024/25 (Note: the survey was discontinued between 2002 and 2017, indicated by a jagged line).

What is next for teal?

With such a large teal population across the flyway and a continually increasing wintering population trend, any changes to the harvest of teal would likely be ineffective at increasing the breeding population. Projects such as that of SOTKA[14], which BASC has provided funding towards, will help to increase the available breeding habitat across Finland, a country which has seen declines in their breeding teal population.

Continued participation in the BASC Wing Survey will enable us to track the productivity of this species as well as our other ducks, allowing us to be informed about the species we are harvesting.

Species summaries for season 2024/25

Here we present the data on wings submitted during the 2024/25 hunting season. With the exception of wigeon and teal, in most cases, sample sizes are too small to draw any meaningful conclusions about population composition and are unlikely to be representative of true harvest. However, the publication of such data is vital to highlight where greater submission effort is required and showcase the potential that this dataset has if sample sizes can be substantially increased.

Ducks

Gadwall – *Mareca strepera*

A total of 54 gadwall wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised a total of 62.9% adults and 37.1% juveniles, and the reproductive index was 1.66 juveniles per adult female. Figure 2 shows a full sex and age breakdown of the gadwall sample. The current available data suggests that annual harvest of gadwall is approximately 4,900 birds[16]. A greater return rate of gadwall wings is required to allow us to have a representative sample of shot birds. This will allow us to confidently assess the population composition.

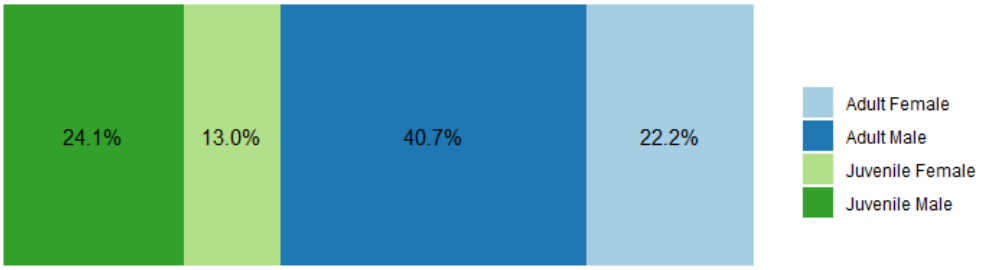


Figure 2. Summary of 54 gadwall wings submitted from the 2024/25 season.

Goldeneye – *Bucephala clangula*

One goldeneye wing was submitted to the BASC Wing Survey in the 2024/25 season which was a juvenile male bird. The current available data suggests an annual harvest of goldeneye is approximately 450 birds[16]. A greater return rate of goldeneye wings is required to allow us to have a representative sample of shot birds. This will allow us to confidently assess the population composition.

BASC's Sustainable Shooting Code of Practice for Wildfowl Quarry Species advises to delay shooting of goldeneye until October where resident breeding goldeneye are present. By delaying shooting until migrant birds arrive, this is intended to alleviate any possible hunting pressure on the small breeding population resident in the UK. The submission of all goldeneye wings is encouraged and will enable BASC to monitor the distribution and timing of goldeneye harvest.

This species wing records are data deficient.

Mallard – *Anas platyrhynchos*

A total of 410 mallard wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised 47% adult mallard and 52% juveniles with 2.2% of wings being classified as unknown. Figure 3 shows a full sex and age breakdown of the sample. We will continue to collect data on mallard wings as this will help us document the composition of the mallard bag. However, we cannot determine the provenance of mallard from wings alone and therefore cannot confidently draw conclusions about the composition of the wild mallard population. BASC specifically asks shooters not to submit mallard wings that were shot on sites that have reared and released mallard however we cannot guarantee that no reared and released mallard are submitted to the survey.

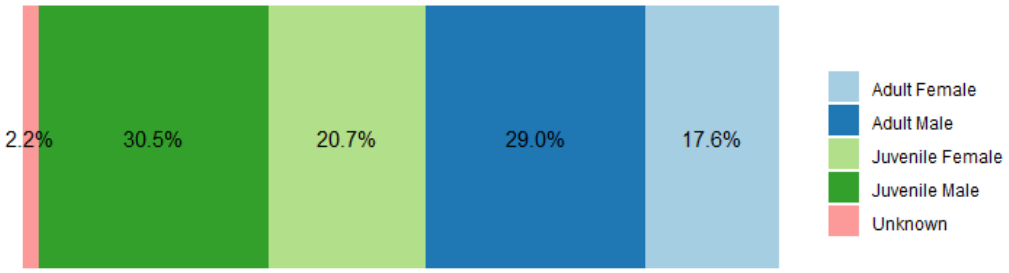


Figure 3. Summary of 410 mallard wings submitted from the 2024/25 season.

Northern pintail – *Anas acuta*

A total of 35 pintail wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised total of 42.7% adults and 42.7% juveniles, and the reproductive index was 2.50 juveniles per adult female. The high rate of unknowns of 14.3% was due to only half of the wing being submitted. Figure 4 shows a full sex and age breakdown of the sample. The current available data suggests an annual harvest of pintail is approximately 680 birds[16]. Although this harvest should remain small, a greater return rate of pintail wings is required to allow us to have a representative sample of shot birds. This will allow us to confidently assess the population composition.

BASC's Sustainable Shooting Code of Practice for Wildfowl Quarry Species advises to preferentially shoot adult male pintail where possible. This is intended to alleviate any possible hunting pressure on reproductive females and enhance the number of juveniles produced that can add to the adult population. Although this may lead to a biased submission of male wings to the Wing Survey, it will enable BASC to monitor any changes in selective shooting of pintail over time.

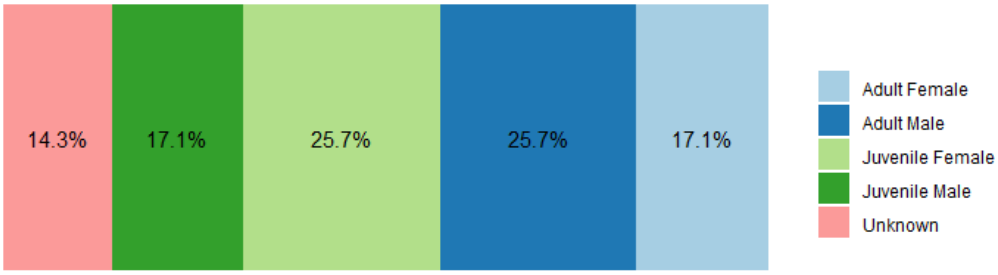


Figure 4. Summary of 35 pintail wings submitted from the 2024/25 season.

Common pochard – *Aythya farina*
Only 2 pochard wings were submitted to the BASC Wing Survey in the 2024/25 season. The current available data suggests an annual harvest of pochard is approximately 370 birds[16]. As a result, the number of wings submitted to the Wing Survey are low. However, a greater return rate of pochard wings is required to allow us to have a representative sample of shot birds. This will allow us to confidently assess the population composition.

BASC's Sustainable Shooting Code of Practice for Wildfowl Quarry Species advises a voluntary moratorium on the shooting of pochard. This is intended to alleviate any possible hunting pressure on ongoing population declines. However, wings of any pochard shot should be submitted to the BASC Wing Survey to help us understand the composition of the declining population in the UK and the distribution of its harvest.

Greater scaup – Aythya marila
Scaup can only be harvested in Northern Ireland. The BASC Wing Survey has not received any wing submissions of scaup since 1982/83.

This species wing records are data deficient.

Shoveler – *Spatula clypeata*
A total of 34 shoveler wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised of 32.4% adult and 67.6% juvenile. Figure 5 shows a full sex and age breakdown of the sample The current available data suggests and annual harvest of 1,900 birds[16]. A greater return rate of shoveler wings is required to allow us to have a representative sample of shot birds. This will allow us to confidently assess the population composition.

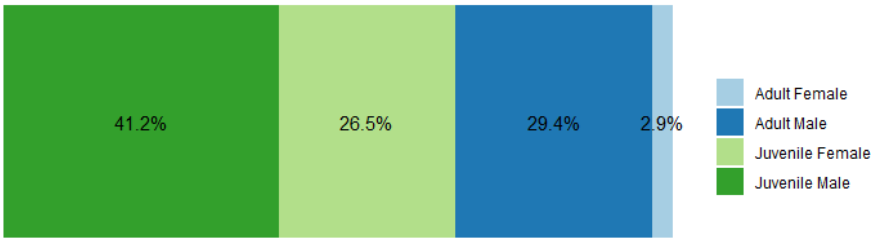


Figure 4. Summary of 34 shoveler wings submitted from the 2024/25 season.

Eurasian teal – *Anas crecca*

A total of 825 teal wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised of 50.7% adults and 40.8% juveniles, and the reproductive index equated to 2.33 juveniles per adult female. The higher rate of unknowns was due to wings being in poor condition or missing key feathers. Figure 6 shows a full sex and age breakdown of the sample between 2017/2018 and 2014/2025. The current available data suggests an annual harvest of teal is approximately 140,000 birds[16]. This highlights the potential for greater submission rates in future seasons. A greater return rate of teal wings will allow us to continue to confidently assess the population composition. However, in 2024/2025 we received a record number of wings for teal since 1999/2000 but as is apparent from Figure 6, 8.6% of the wings had to be listed as 'Unknown' due to poor condition or missing feathers.

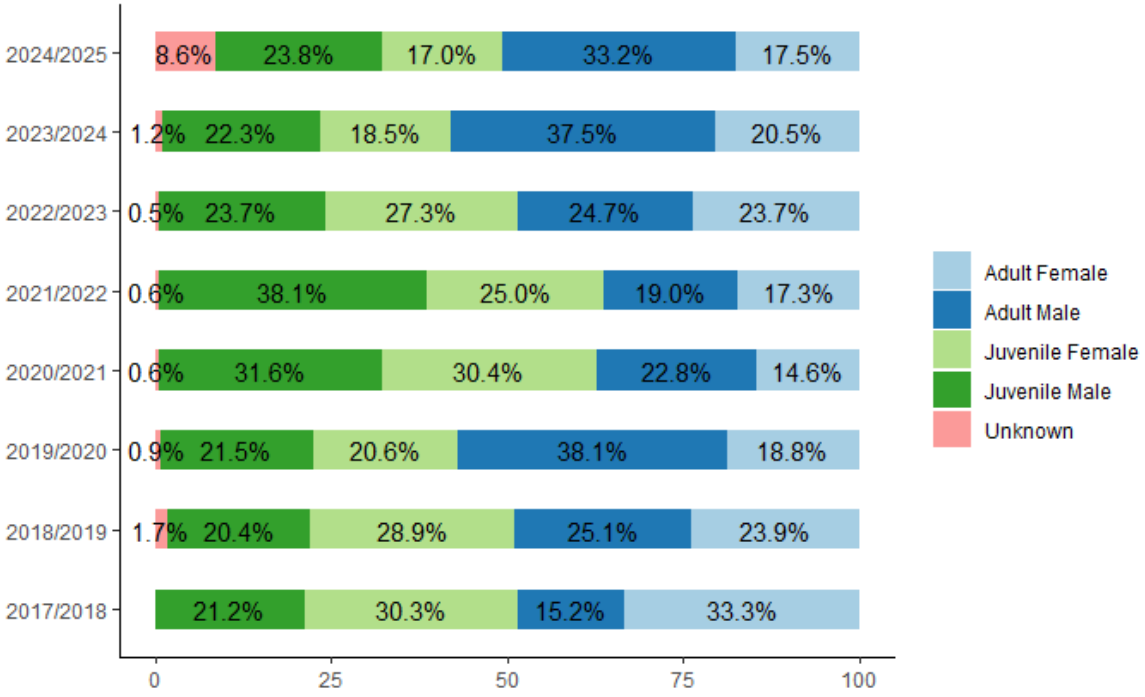


Figure 6. Summary of 336 Eurasian teal wings submitted from the 2024/25 season.

Tufted duck – *Aythya fuligula*

A total of 22 tufted duck wings were submitted to the BASC Wing Survey in the 2024/25 season. Due to the challenges in sexing tufted duck from the wing alone, we only record age data from this species. The ratio of adult to juvenile birds in the sample is displayed in Figure 6. The current available data suggests that the annual harvest for tufted duck is 4,900 birds[16]. A greater return rate of tufted duck wings is required to allow us to have a representative sample of shot birds. This will allow us to confidently assess the population composition.

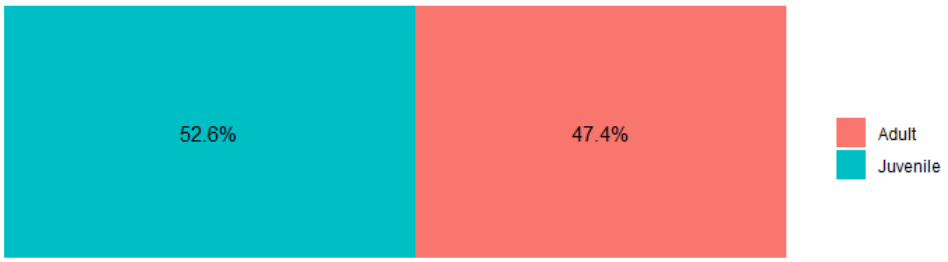


Figure 6. Summary of 22 tufted duck wings submitted from the 2024/25 season.

Eurasian wigeon - *Mareca Penelope*

A total of 1,097 wigeon wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised of 65.7% adults and 33.6% juveniles, and the reproductive index equated to 1.95 juveniles per adult female. Figure 7 shows a full sex and age breakdown of the sample. The current available data suggests an annual harvest of wigeon is approximately 43,000 birds[16]. A greater return rate of wigeon wings will allow us to continue to confidently assess adult-juvenile and male-female ratios.

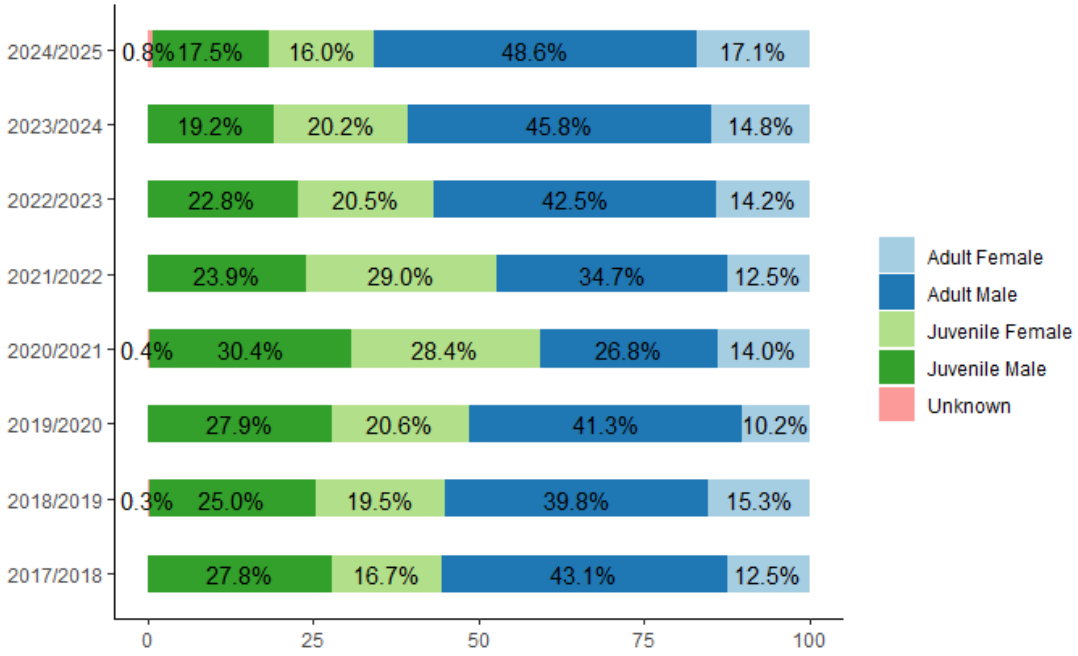


Figure 7. Summary of 1,097 Eurasian wigeon wings submitted from the 2024/25 season.

Geese

NOTE:

- *Goose wings can be submitted to the BASC Wing Survey as photographs through the EpiCollect app and do not need to be posted.*
- *Sex cannot be determined from goose wings so we are unable to comment on the ratio of males and females for all goose species.*

Canada goose – *Branta canadensis*

A total of 13 Canada goose wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised 57.1% juveniles and 42.9% adults. The current available data suggests an annual harvest of 27,000 birds[16]. A greater return rate of Canada goose wings will allow us to continue to confidently assess adult-juvenile ratios.

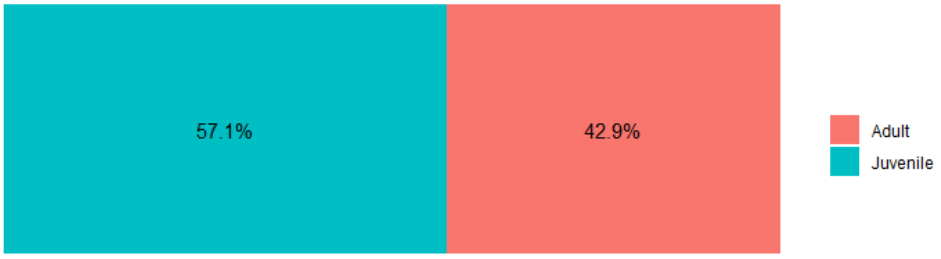


Figure 8. Summary of 39 Candan goose wings submitted from the 2024/25 season.

Greylag goose – *Anser anser*

A total of 40 greylag goose wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised 45.5% juveniles and 27.3%% adult. The high rate of unknowns was due to photographs of the wrong side of the wing being submitted on the Epicollect app. The current available data suggests an annual harvest of 58,000 birds[16]. A greater return rate of greylag goose wings will allow us to continue to confidently assess adult-juvenile ratios.

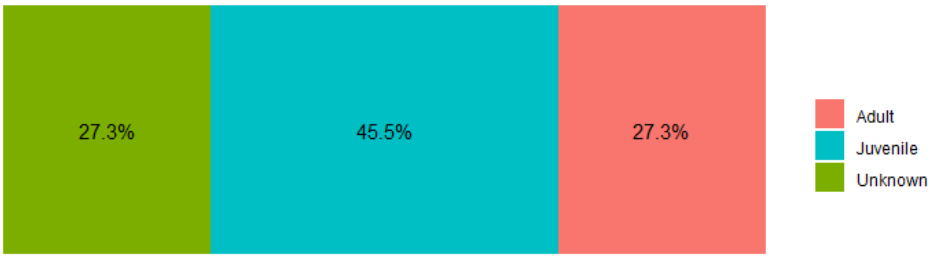


Figure 9. Summary of 41 greylag goose wings submitted from the 2024/25 season.

Pink-footed Goose – *Anser brachyrhynchus*

A total of 158 pink-footed goose wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised 66.7% juveniles and 33.3% adult. The current available data suggests an annual harvest of pink-footed goose is approximately 10,000 birds[16]. A greater return rate of pink-footed goose wings will allow us to continue to confidently assess adult-juvenile ratios.

Figure 10. Summary of 90 pink-footed goose wings submitted from the 2024/25 season.

European white-fronted goose – *Anser albifrons*

NOTE

- *This species can be harvested in England and Wales only.*

No EWFG wing were submitted to the BASC Wing Survey in the 2024/25 season. The current available data suggests the annual harvest of EWFG is less than 100 birds [16]. All wings of shot EWFG should be submitted to BASC Wing Survey to allow us to confidently assess adult-juvenile ratio.

BASC's Sustainable Shooting Code of Practice for Wildfowl Quarry Species advises to take a maximum of two birds, per person, per day. Due to the species distributional shift driven by climate change, it is important that we collect data on the remaining individuals overwintering in the UK. We therefore encourage all wings of shot EWFG to be submitted to the BASC Wing Survey so we can better understand the population composition and distribution in the UK.

This species wing records are data deficient

Waders

NOTE

- *Wader sex cannot be determined from wings so we are unable to comment on the ratio of males and females in all samples.*

Common snipe – *Gallinago gallinago*

A total of 55 common snipe wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised a total of 38.2% adults and 61.8% juveniles (Figure 11). The current available data suggests the annual harvest of common snipe is approximately 85,000 birds[16]. A greater return rate of snipe wings is required to allow us to confidently assess adult-juvenile ratios.

BASC's Sustainable Shooting Code of Practice for Wildfowl Quarry Species advises to delay shooting of snipe until September where resident snipe are present. This is intended to alleviate any possible hunting pressure on breeding snipe early in the season. Increased submission of snipe wings is required to enable BASC to assess the adult-juvenile ratios of the UK population as well as the distribution and timing of harvest.

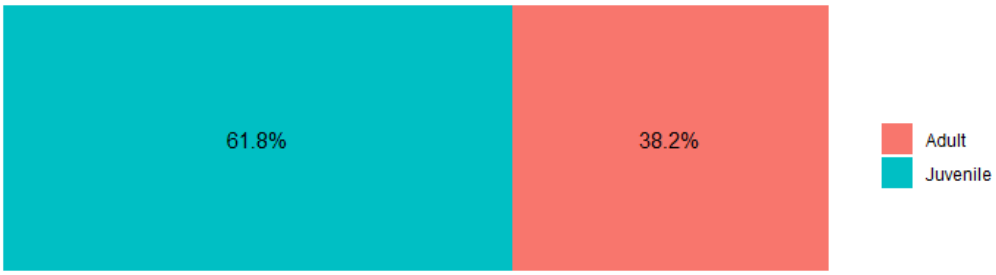


Figure 11. Summary of 15 snipe wings submitted from the 2024/25 season.

Golden plover – *Pluvialis apricaria*

No golden plover wings were submitted to the BASC Wing Survey in the 2024/25 season. A total of five wings have been submitted to the survey since the 2018/19 season. The current available data suggests the annual harvest of golden plover is approximately 870 birds [16]. A greater return rate of golden plover wings is required to allow us to confidently assess adult-juvenile ratios.

This species wing records are data deficient

Jack snipe - *Lymnocryptes minimus*

Note: This species can be harvested in Northern Ireland only.

No jack snipe wings were submitted in the 2024/25 season, nor have have ever been submitted to the BASC Wing Survey. The current available data suggests the annual harvest of jack snipe is less than 100 birds[16].

This species wing records are data deficient

Eurasian woodcock – Scolopax rusticola

A total of 452 woodcock wings were submitted to the BASC Wing Survey in the 2024/25 season. This comprised a total of 49.6% adults and 50.4% juveniles (See Figure 12). The current available data suggests the annual harvest of woodcock is less than approximately 140,000 birds[16]. A greater return rate of woodcock wings is required to allow us to confidently assess adult-juvenile ratios.

BASC's Sustainable Shooting Code of Practice for Wildfowl Quarry Species advises to delay shooting of woodcock until late-November where resident woodcock are present. This is intended to alleviate any possible hunting pressure on resident breeding woodcock. Continued submission of woodcock wings will enable BASC to continue to monitor the timing and distribution of woodcock harvest in the UK.

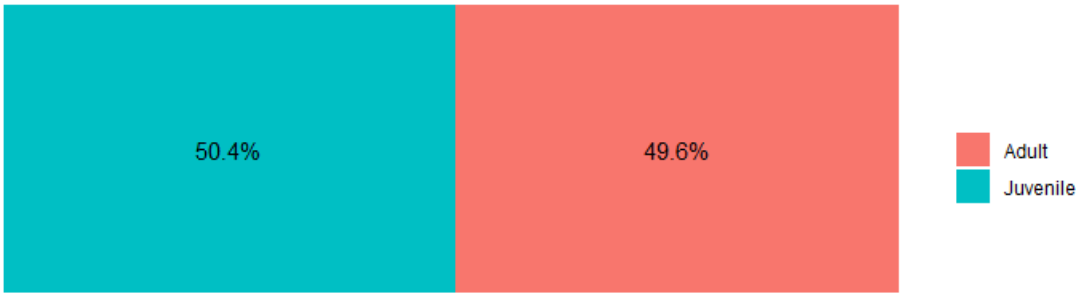


Figure 12. Summary of 452 woodcock wings submitted from the 2024/25 season.

Rails

NOTE

- *These species can be harvested in England, Wales and Scotland only.*
- *Rail sex cannot be determined from wings so we are unable to comment on the ratio of males and females in all samples.*

Eurasian coot – *Fulica atra*

No coot wings were submitted in the 2024/25 season, nor have any coot wings ever been submitted to the BASC Wing Survey.

Wings from any birds shot should be submitted to BASC to enable us to better understand the distribution of harvest and the adult-juvenile ratios of shot birds.

This species wing records are data deficient

Common Moorhen – *Gallinula chloropus*

No moorhen wings were submitted in the 2024/25 season. The BASC Wing Survey has only received two moorhen wings which were submitted in 2022/23.

Wings from any birds shot should be submitted to BASC to enable us to better understand the distribution of harvest and the adult-juvenile ratios of shot birds.

These species wing records are data deficient

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