Waterfowlers' Network

ANNUAL REPORT 2025

INTERNATIONAL WING SURVEY

Photo: Thomas Iversen

Colophon

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Publisher:	Waterfowlers' Network Molsvej 34, DK – 8410 Rønde
Data sources:	Sweden: The Swedish Association for Hunting and Wildlife Management Denmark: Danish Centre for Environment and Energy, Aarhus University (DCE/AU) https://fauna.au.dk/jagt-og-vildtforvaltning/vingeundersoegelsen UK: BASC Ireland: NARGC

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Content

Summary

Wing collections from migratory birds provide valuable insights into population demographics, particularly age and sex ratios of harvested species, which are essential for sustainable management. Although current data remain limited and dependent on hunter participation, and collection methods vary across countries, these surveys are an important first step toward building a stronger knowledge base.

Long-term consistency is key: without continuous data collection, we cannot track trends, respond to emerging pressures, or ensure responsible management. New tools—such as digital reporting and improved participation incentives—can help strengthen both data quality and quantity.

Importantly, wing collections support flyway-level management, aligning with international conservation obligations and providing the cross-border perspective needed to safeguard migratory game bird populations. Despite existing challenges, the long-term benefits make continued and expanded wing collection efforts essential for both conservation and sustainable hunting.

Introduction

Every spring and autumn, migratory birds cross numerous manmade borders on their annual journeys between breeding and wintering grounds. These cross-border movements presents challenges for management, as these birds depend on the preservation and sustainable management of habitats along their entire flyways rather than within any single country.

This need for international coordination was one of the reasons behind the establishment of the Waterfowlers' Network in 2019. The Network brings together hunters, researchers, and conservation organizations from across Europe with the shared goal of protecting migratory birds and ensuring their sustainable use. Many huntable migratory species travel great distances and cross multiple national borders, making coordinated, flyway-level management interventions essential.

This is the second year that this report is published, and scope has expanded. For the first time, it includes data from Ireland as well as data on mallard (*Anas platyrhynchos*), strengthening the overall picture of migratory waterfowl populations. Hunters' contributions of data on migratory game species remain central to this work, particularly in improving our understanding of population dynamics such as age structure and sex ratios. Wing surveys carried out in each participating country provide only part of the picture individually, but when combined, they reveal clearer patterns in how populations change over time and across regions.

By sharing research and data across borders, countries can gain a more accurate understanding of species' behavior, population trends, and the pressures they face. This knowledge is crucial for making informed decisions that both safeguard migratory bird populations and ensure that hunting remains sustainable in the long term.

The purpose of this report is to present data from wing collections carried out in countries represented within the Waterfowlers' Network and to highlight the importance of close collaboration between hunters and researchers in this process. By systematically monitoring migratory species, we can better understand the impacts of climate change, habitat loss, and human activities on these populations, and we can work together to secure a truly sustainable harvest. The challenges ahead are significant, making it more important than ever to strengthen and expand international cooperation.

Together, we can make a difference.

Method

This report contains data from wings collected by Swedish, Danish, The United Kingdom (hereafter UK) and Irish hunters. The wing Surveys collects wings, voluntarily collected by hunters from a range of huntable bird species.

Sweden

Since 1938, through the voluntary efforts of hunters, the Swedish Hunters Association have collected data on the number of birds harvested in Sweden. Wing collection have been used to determine the age and sex of the harvested birds during periods, most recently in 2007. Historical data has provided knowledge, which has been crucial in discussions on matters such as the length of hunting seasons. In 2023 a new wing survey program was launched and data in this report reflect work during a pilot year when focus was on building up methodology and logistics.

To contribute to the Swedish wing survey, hunters are asked to cut one wing from each harvested bird, which can be geese or ducks, but not released birds, as far as it is possible to determine. The wings are cut at the shoulder joint, ensuring that the surrounding feathers, known as scapular feathers, are included. After removing the wing, it is placed in a plastic bag. The hunters include a note in a separate bag, specifying the species, the date of harvest, and the location where the harvest took place. Once this is done, they must contact wing survey to arrange drop-off or transport of the wings.

Wings from derogation (geese) are also collected.

Species	**Season**
Wigeon	Aug – Nov-Dec*
White fronted goose	Oct 1 – Jan 31**
Mallard	Aug – Nov- Dec*
Greylag goose	Aug 11 – Jan 31
Canada goose	Aug 11 – Jan 31
Golden eye	Aug 21 – Jan 31
Teal	Aug – Nov ***
Common scoter	Sep 21 – Jan 31
Tufted duck	Aug 21 – Jan 31
Barnacle goose	General license (derogation) Jul 1 – Jun 30

* Local hunting seasons.
** Only huntable in Skåne.
*** Local hunting seasons.

Denmark

In Denmark the wing Survey is undertaken by DCE - Danish Centre for Environment and Energy, Aarhus University (DCE/AU). Since the 1970s, wings from selected bird species in Denmark has been collected in different ways. Hunters submit the wings, and Aarhus University compiles the results of the survey.

The wing Survey adds more nuance to the mandatory game harvest reporting in Denmark, which all hunters must submit annually. Together with the game harvest statistics, the wing Survey forms the scientific basis for managing hunting in Denmark and, alongside national and international counts of huntable bird populations, plays a crucial role in determining hunting seasons.

It is free to submit wings to the wing Survey, and hunters can request special envelopes with prepaid postage. Hunters can also choose to drop off the wings at one of the freezers set up around the country. The wing Survey requires one whole wing from each harvested bird, along with the date and location of the harvest.

Not all wings are relevant for the wing Survey. Below is a list of the species from which wings are requested:

Species	**Terrestrial**	**Territorial Sea**
Dabbling ducks *	Sep 1 – Dec 31	Sep 1 – Jan 31
Diving ducks **	Oct 1 – Jan 1	Oct 1 – Jan 31
Common eider	Oct 1 – Jan 31 ++	Oct 1 – Jan 31 ***
Greylag goose	(Aug 1 – Aug 31) +++ Sep 1 – Jan 31	Sep 1 – Jan 31
Bean goose	Sep 1 – Nov 30 ##	
White fronted goose	Sep 1 – Jan 31	Sep 1 – Jan 31
Pink footed goose	Sep 1 – Jan 31 ###	Sep 1 – Jan 31
Canada goose	(Aug 1 – Aug 31) +++ Sep 1 – Jan 31	Sep 1 – Jan 31
Barnacle goose	Only derogation with permit	
Egyptian goose	Sep 1 – Jan 31 General license (derogation) all year	Sep 1 – Jan 31
Coot	Oct 1 – Jan 31	Oct 1 – Jan 31

Woodcock	Oct 1 – Jan 31	Oct 1 – Jan 31
Common snipe	Sep 1 – Dec 31	Sep 1 – Jan 31
Herring gull	Sep 1 – Jan 31	Sep 1 – Jan 31

* Dabbling ducks: mallard, pintail, gadwall, Eurasian wigeon, teal, shoveler, garganey.
** Diving ducks: common scoter, goldeneye, tufted duck, scaup.
++ Only hunting season on male eider, and no hunting in SPA's designated for eider.
+++ Hunting allowed on arable area.
Only hunting season in southeastern part of Denmark.
Hunting season can change because of adaptive harvest management.

UK

The BASC Wing survey was started in 1965, and it ran annually up until 2002 when it was discontinued due to lack of funding. Over this time the species requested has changed with only wigeon and teal being consistently collected. The survey was restarted in 2017/18 and has been conducted annually since with the aim of collecting wings from all huntable waterfowl species within the UK. The table below outlines the quarry seasons for each country and specifies the species from which wings are accepted. In the UK, hunters are asked to remove one wing from each bird they shoot cutting as close to the body as possible, and to label the wing with the date and county of harvest before sending it to the head office of BASC.

Species	England, Scotland & Wales	Northern Ireland	Isle of Man
Ducks and geese* inland	Sep 1 – Jan 31	Sep 1 – Jan 31	Sep 1 – Jan 31 – Duck July 1 – Mar 31 – Geese**
Ducks and geese* below HOST (see below)	Sep 1 – Feb 20	Sep 1 – Jan 31	Sep 1 – Jan 31- Duck Jul 1 – Mar 31 – Geese **
Common snipe	Aug 12 – Jan 31	Sep 1 – Jan 31	Sep 1 – Jan 31
Jack snipe	Protected	Sep 1 – Jan 31	Protected
Woodcock	Oct 1 – Jan 31	Oct 1 – Jan 31	Oct 1 – Jan 31
Golden plover	Sep 1 – Jan 31	Sep 1 – Jan 31	Protected
Coot/moorhen	Sep 1 – Jan 31	Protected	Protected

HOST – high water mark of ordinary spring tides England, Wales and Scotland: Any area below high-water mark of ordinary spring tides

*Gadwall, Goldeneye, Mallard, Pintail, Pochard, Shoveler, Scaup, Teal, Tufted duck, Wigeon, Canada geese, Greylag geese, Pink-footed geese, White-fronted geese.
**Geese can only be shot under general licence under the Wildlife Act 1990.

Ireland

In 2025, NARGC has launched a new national wing survey aimed at improving the understanding of migratory and resident waterfowl populations. The wing survey collects wings from all huntable birds, and have this year received wings from gadwall, shoveler, tufted duck, teal and wigeon.

Species	**Season**
Mallard	Sep 1 – Jan 31 *
Teal	Sep 1 – Jan 31 *
Gadwall	Sep 1 – Jan 31 *
Wigeon	Sep 1 – Jan 31 *
Shoveler	Sep 1 – Jan 31 *
Tufted Duck	Sep 1 – Jan 31 *
Golden Plover	Sep 1 – Jan 31 *
Snipe	Sep 1 – Jan 31 *
Jack Snipe	Sep 1 – Jan 31 *
Woodcock	Nov 1 – Jan 31*
Canada Goose	Sep 1 – Oct 15*
Canada Goose	Oct 16 – Jan 31**
Greylag Goose	Sep 1 – Oct 15*
Greylag Goose	Oct 16 – Jan 31 ***

Ruddy Duck	Sep 1 – Jan 31 *

* Throughout the State
** The counties of Cavan (exclusive of the townlands of Eonish Island, Rinn, Deramfield) and Leitrim (exclusive of the River Shannon).
***Lady's Island, in the county of Wexford Gearagh East & Gearagh West, in the county of Cork.

More wing surveys

It is not only Sweden, Denmark, UK and Ireland that are collecting wings from harvested ducks and geese. Wing surveys are also developing in the other countries represented in Waterfowlers' Network. Germany has developed an app, that in the future will be used to collect data. The artificial intelligence behind the system is being trained to recognize different sex and age groups of mallards, and the results so far looks very promising. We hope to include as many surveys as possible in future reports.

Finland

Currently, no wing collection is carried out in Finland in any form. Hunters are required to submit mandatory harvest reports for certain species, such as the northern pintail (*Anas acuta*) and the eurasian wigeon (*Mareca penelope*). Within the reporting system, it is possible to indicate the age and sex of the harvested birds, but providing this information is voluntary. For other commonly hunted species, such as the mallard (*Anas platyrhynchos*), teal (*Anas crecca*), and common goldeneye (*Bucephala clangula*), harvest reporting is not mandatory at all. Consequently, the age and sex distribution of the harvested birds is not systematically documented.

In addition to harvest report, waterfowl populations are monitored through annual counts coordinated by researchers and volunteers[1]. These surveys provide important information on population trends and breeding success but do not capture detailed demographic data from hunting bags. The only systematic collection of bird parts currently in place concerns the bean goose (*Anser fabalis*): hunters are asked to provide wing and head samples, which are used to determine age and sex ratios as well as subspecies (*A. fabalis fabalis / A. fabalis rossicus*) composition[2].

The Finnish Hunters' Association aims to create opportunities and practices for the development of wing sample collection and related analysis in Finland. This activity would support other wing sample collections conducted along the migration route, improve the overall understanding of waterfowl populations, and promote the implementation of sustainable use.

The Finnish Hunters Association sees this as an important step forward, given that Finland is a key breeding area for European waterfowls. Gaining insights into harvest demographics would provide valuable information on hunting impact and contribute to sustainable management of waterfowl populations.

[1] https://www.luke.fi/en/luonnonvaratieto/science-and-information/waterfowl

[2] https://metsastajalehti.fi/sv/jakt/begransningarna-i-sjofageljakten-2025/ (in Swedish)

The second report

This is the second year that the report is being published, and for the first time, it also includes data from Ireland as well as information on mallard populations. With this expanded scope, Waterfowlers' Network continues its commitment to supporting the sustainable use of waterfowl populations. We recognize that effective conservation and management cannot be addressed at the level of individual countries alone but must instead consider the dynamics of entire flyways. By retrieving knowledge and data across borders for analysis of covariation between countries, we aim to contribute to informed, coordinated decisions that benefit both waterfowl populations and the communities that depend on them.

Results

Total number of wings collected

The number of wings collected per country, and species are displayed in the below table. Currently sample sizes vary substantially between the countries due to the differing levels and states of establishment of the surveys and programmes across countries. The aim is to have representative samples of the country specific harvest.

	SWEDEN	**DENMARK**	**UNITED KINGDOM**	**IRELAND**	**TOTAL**
GREYLAG GOOSE	1010	1090	39	N/A	**2139**
TEAL	352	4261	794	197	**5604**
WIGEON	169	4763	1117	118	**6167**
MALLARD	490	4433	402	N/A	**5325**
TOTAL	**2021**	**14547**	**2352**	**315**	**19325**

Species summaries

Wigeon (*Mareca Penelope*)

Picture 1 & 2: Left: male, right: female

The percentage of the total sample per month is represented below in Figure 1 for Denmark, UK and Sweden. Swedish data is presented according to calendar year and not the hunting season. Please note that Swedish data from December is missing as it has not yet been finalized.

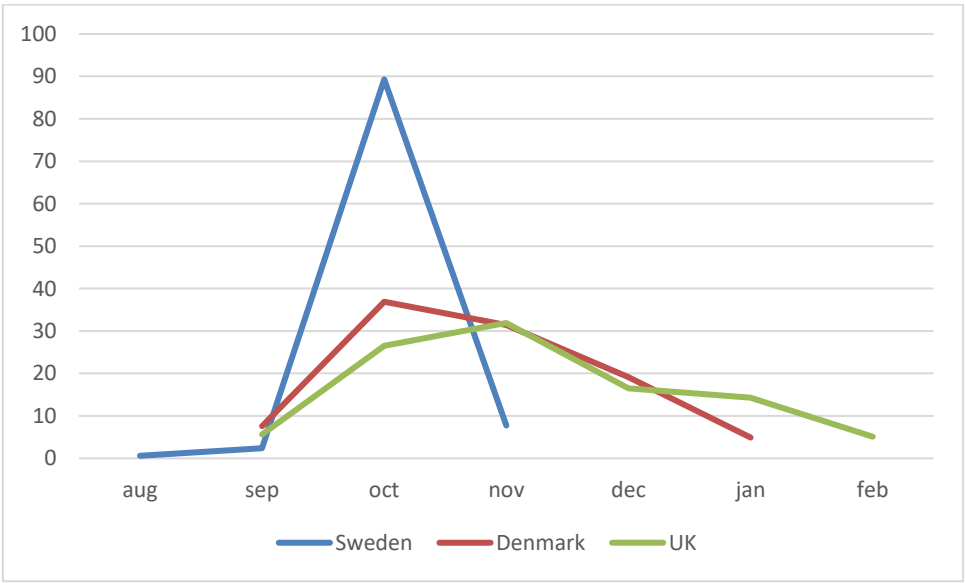

Figure1: The distribution of harvested wigeons throughout the hunting season
Sweden n=169, Denmark n=4763, UK=1083

Age distribution in harvest bag

The age distribution shows the percentage of first-winter birds (juveniles) compared to the percentage of adult birds in the wing sample. The results for all four countries are shown below in Figure 2.

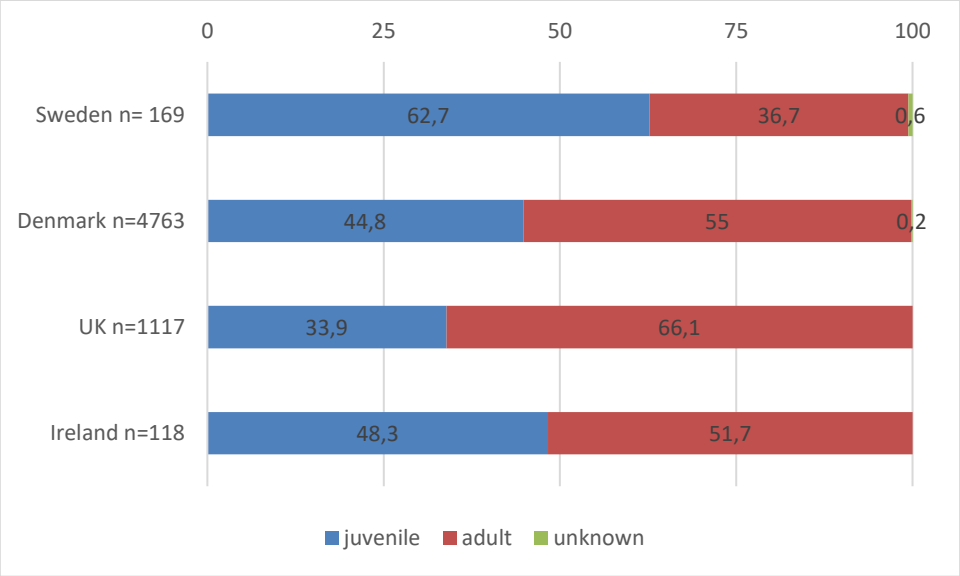

Figure 2: The percentage distribution of juvenile and adult harvested wigeons in Sweden, Denmark, UK and Ireland.

Picture 3: Eurasion wigeon

Age and sex distribution in harvest bag

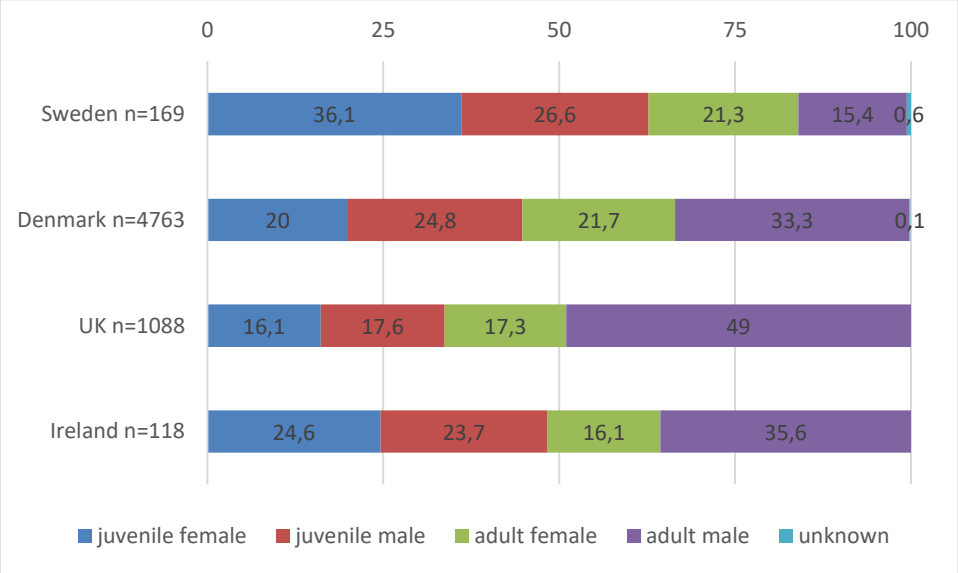

Figure 3: The percentage distribution of juvenile/adult and male/female harvested wigeons.

Teal (*Anas crecca*)

Picture 4 & 5: Left: male, right: female

The percentage of the total sample per month is represented below in Figure 4. Please note that Swedish data from December is missing as it has not yet been finalized. Swedish data is presented according to calendar year and not the hunting season.

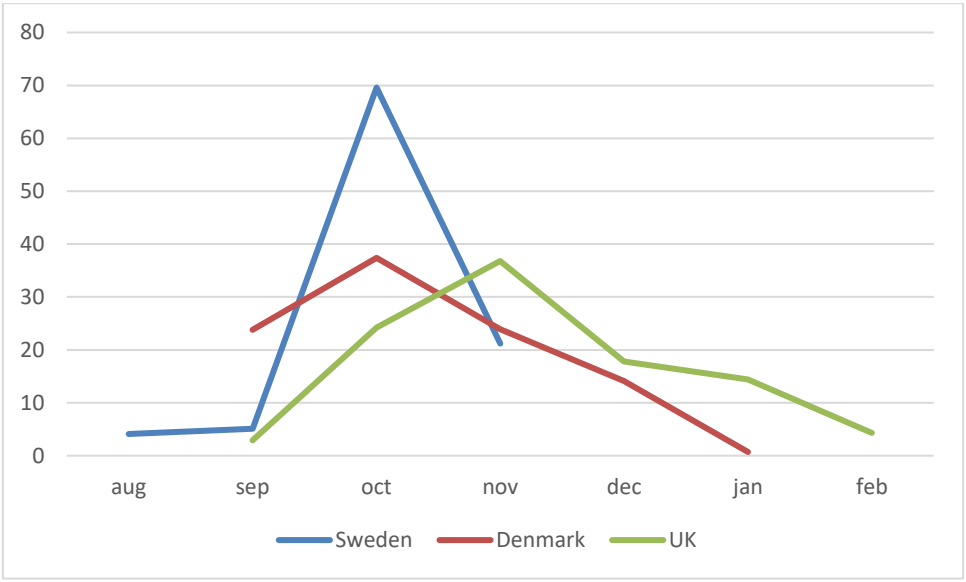

Figure 4: The distribution of harvested teal throughout the hunting season
Sweden n=217, Denmark n=4261, UK n= 794

Age distribution in harvest bag

The age distribution shows the percentage of first-winter birds (juveniles) compared to the percentage of adult birds in the wing sample.

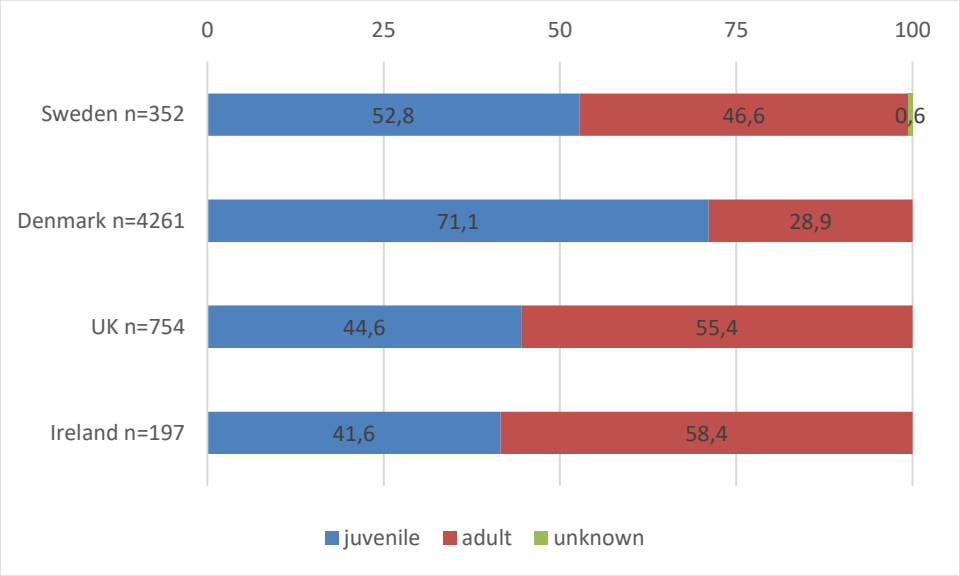

Figure 5: The percentage distribution of juvenile and adult harvested teals in the four countries.

Picture 6: Teal

Age and sex distribution in harvest bag

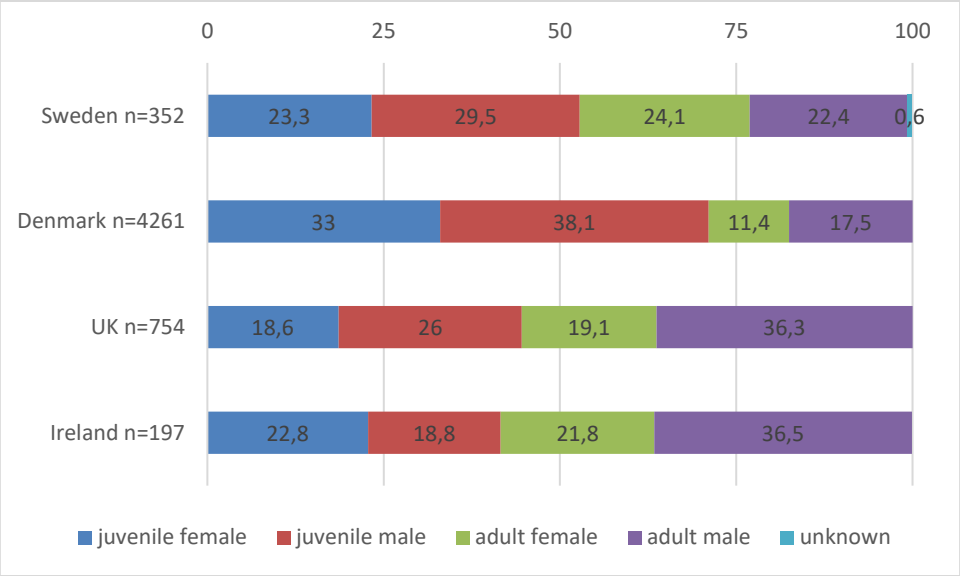

Figure 6: The percentage distribution of juvenile/adult and male/female harvested teals.

Greylag goose (*Anser anser*)

The percentage of the total sample of retrieved greylag goose wings per month is represented below in Figure 7. Swedish data is presented according to calendar year and not the hunting season. A lot of wings from Swedish greylag geese are collected from geese shot on derogation.

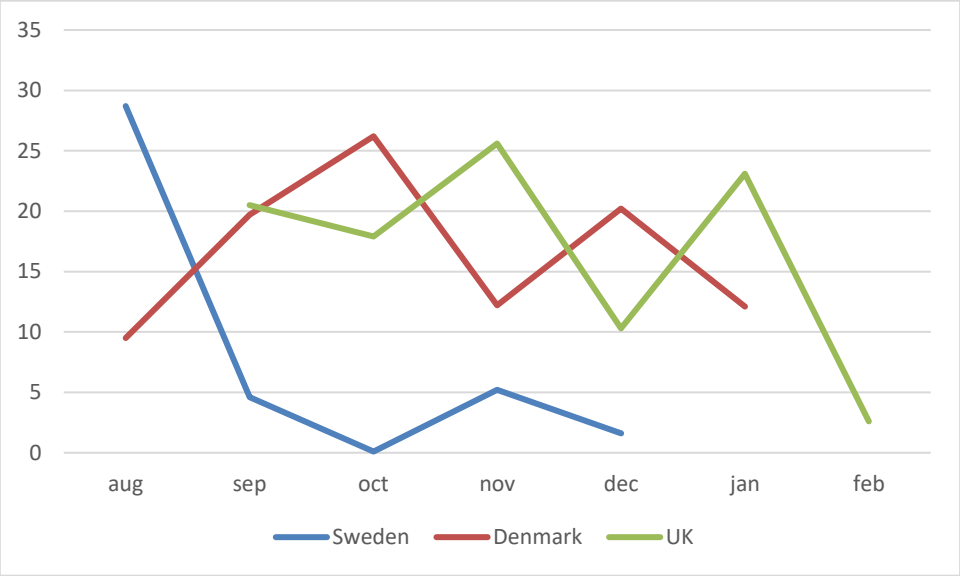

Figure 7: Percentage distribution of retrieved greylag goose wings.
Sweden n= 417, Denmark n=1090, UK n=39
Please note that the number of wings may reflect harvest pressure, but other confounding factors may also play a role.

Age distribution in harvest bag

The age distribution shows the percentage of first-winter birds (juveniles) compared to the percentage of adult birds in the wing sample. The results for are shown below in Figure 8.

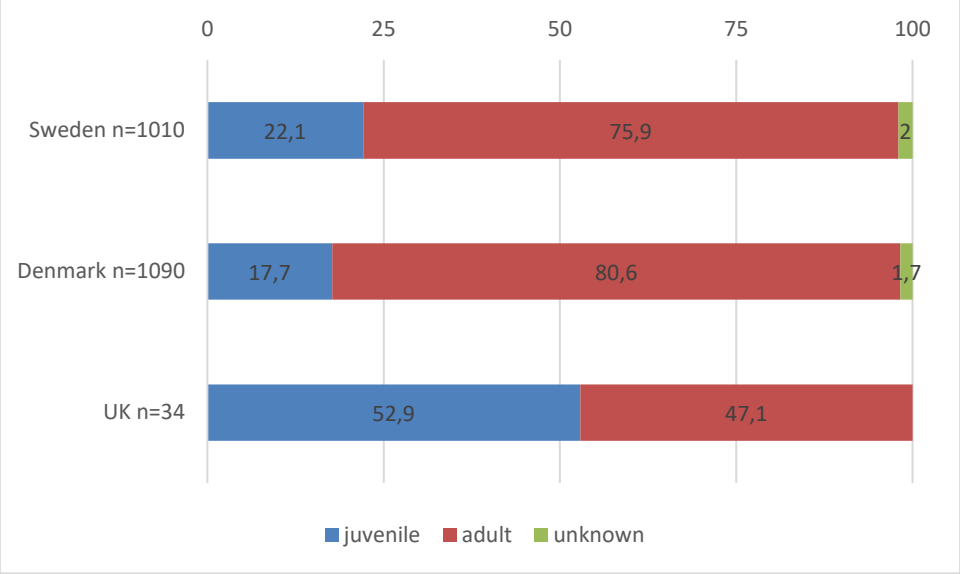

Figure 8: The percentage distribution of juvenile and adult harvested greylag geese. Please note, that the Swedish data also includes geese shot from January to August.

Picture 7: Greylag geese

Mallard (*Anas platyrhynchos*)

Picture 8 & 9: Left: male, right: female

The percentage of the total sample per month is represented below in Figure 9. Swedish data is presented according to calendar year and not the hunting season.

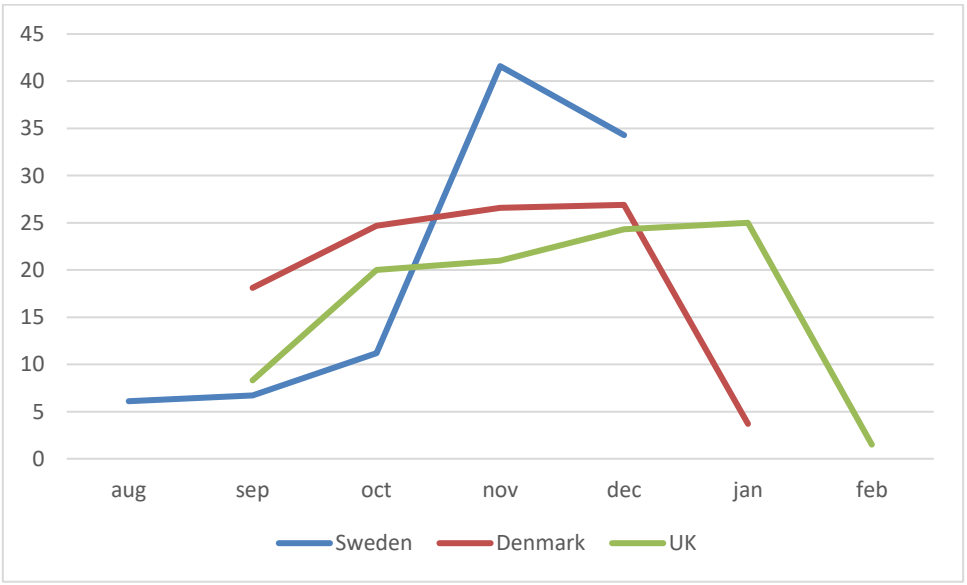

Figure 9: The distribution of harvested mallard throughout the hunting season. Sweden n=490, Denmark n=4433, UK n=400

Age distribution in harvest bag

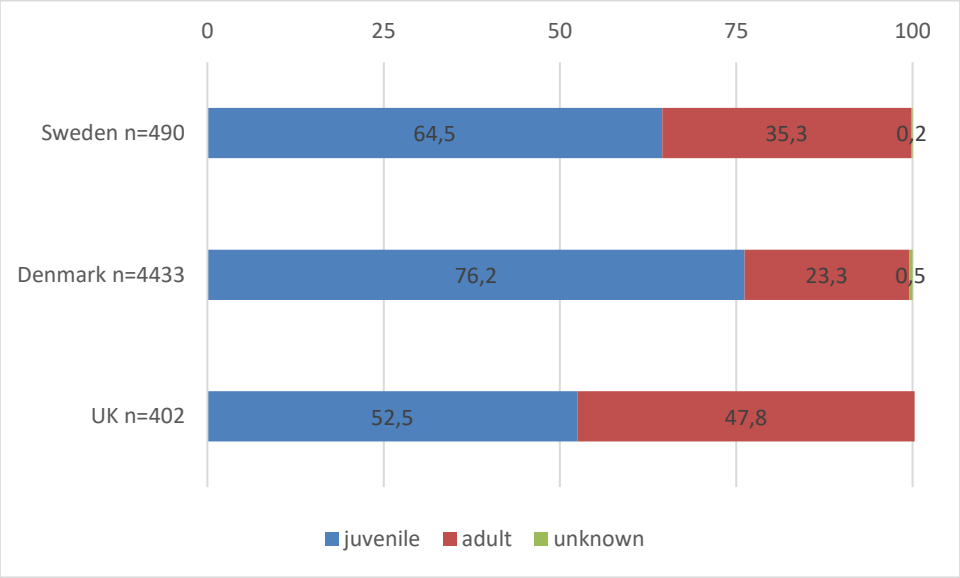

Figure 10: The percentage distribution of juvenile and adult harvested mallards in Sweden, Denmark and UK.

Picture 10: Mallard

Age and sex distribution in harvest bag

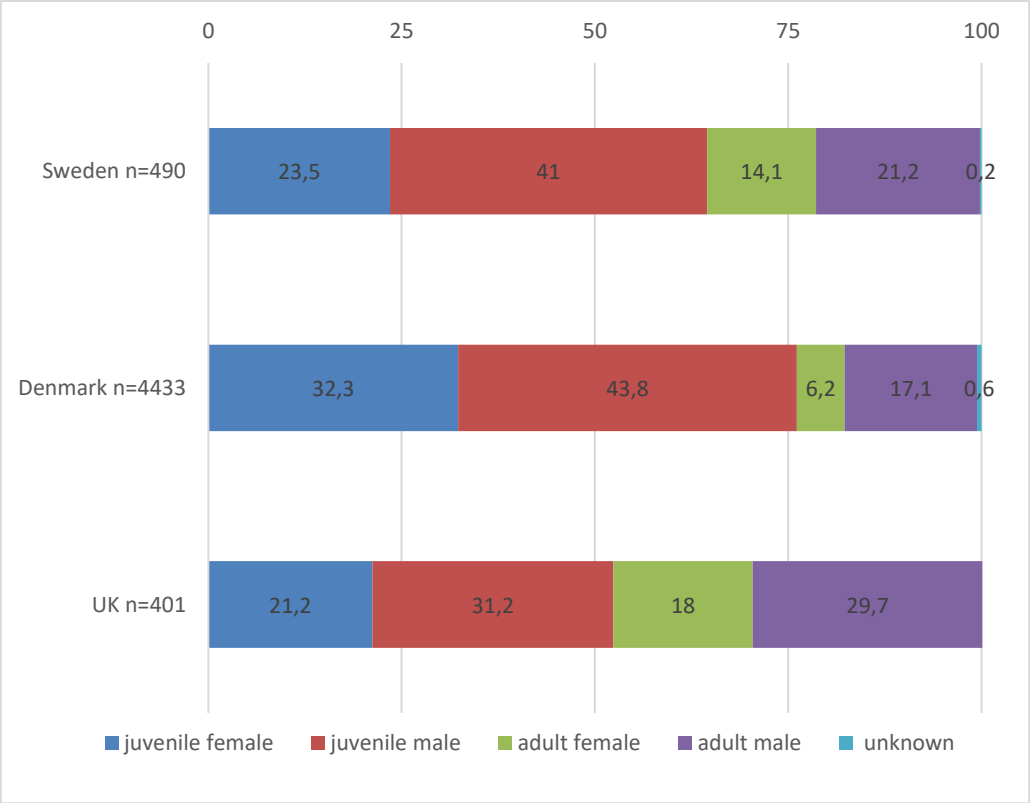

Figure 11: The percentage distribution of juvenile/adult and male/female harvested mallards.

Please note that it cannot be ruled out that the dataset contains data from released mallards. However, hunters were encouraged to refrain from submitting wings if they knew the birds in question were released individuals.

Discussion

Wing collections from migratory birds remain an important and proven tool for monitoring both populations and harvest effects on population levels. For decades, such data has provided valuable insights into the age and sex composition of harvested birds, aiding us better understand population demographics, effect of harvest and reproductive output. This type of information is essential for making sound management decisions, particularly when striving to ensure that hunting remains sustainable.

At the same time, it is important to acknowledge the current limitations. Wing collection data depend heavily on the active participation of hunters, and the material available is still relatively limited. Furthermore, this report only represents a subset of European countries, and the lack of full standardization in collection and reporting methods of hunting harvest and age distribution across borders may introduce a degree of bias. This raises an important question: is the current dataset sufficient to reliably reflect the status and development of migratory waterfowl populations, or do we need to strengthen and harmonize our efforts to ensure that it is both representative and robust?

Despite these challenges, the need for continuity is clear. Wing collections gain increased value over time; without long-term, consistent data, it becomes impossible to track trends, detect changes, or management to respond effectively to new pressures. Fortunately, new opportunities—such as digital reporting tools, improved logistics, and incentives to increase hunter participation—offer ways to enhance both the quality and quantity of collected material.

Wing collections also play a crucial role in meeting international commitments to the conservation of migratory birds. Flyway-level management depends on data that transcend borders, and by contributing to broader monitoring efforts, these collections help build the knowledge base required to protect populations at the scale at which they function.

For these reasons, maintaining and improving wing collection programs is essential. While challenges remain, the long-term benefits—in the form of reliable data, better understanding of population trends, and strengthened cooperation between hunters, researchers, and conservation organizations—make this investment worthwhile. Ultimately, this work supports the sustainable management and conservation of migratory waterfowl, benefiting both ecosystems and the people who depend on them.

Thanks!

We would like to express our sincere gratitude to all the hunters who have contributed to the wing survey. Your valuable input plays a crucial role in improving our knowledge of waterfowl populations and ensuring their sustainable management.