

species	data	document	Last updated
Greylag Goose	Summer count	Methodology	27042022

Counts during late summer is the only period in which the size of the population in each MU can be assessed. During this period, the breeding population in Norway, Sweden, Finland and Denmark represent MU1, and the sedentary (and breeding) population in The Netherlands, Belgium, Germany, and a small French population represent MU2.

MU2

Summer counts of Greylag Geese have so far only been carried out in range states of MU2: Flanders, Belgium (first 2009 (Adriaens et al. 2010) and 2014-2018, 2021), Netherlands (first 2005, 2009, annually 2012 (Buij and Koffijberg 2019)), North Rhine Westphalia, Germany (since 2011 (Koffijberg and Kowallik 2018, 2020)) and Lower Saxony in Germany (since 2018 (Nipkow 2019)). Moreover, during 2021-2022 the first survey of the breeding waterbirds have taken place in France. Here they surveyed ca. 2500 500m x 500m squares randomly spread over French wetlands (Table 1). The survey will take place every 6 year and be spread over 2 years, thus next time will be in 2027-2028.

The summer counts in general aim to estimate total population size in summer, along with distribution and productivity. They do not only involve active breeding birds, but also failed breeders and immature birds that belong to the non-breeding cohort. So, this type of census covers more birds than those observed with the breeding bird surveys in spring (delivering only active breeding pairs).

The counts have been carried out around mid-July, after the period of primary moult (which may involve long-distance movements but also geese hiding in inaccessible areas, which are difficult to count). Moreover, distribution is rather stable in this period (shortly afterwards, cereal harvest starts, and birds may widely disperse themselves over suitable farmland areas). In Germany, the counts are also taking place before hunting starts whereas in The Netherlands counts are in place after eventually large numbers have been killed during wing moult (in June).

Belgium, from 2010-2018: The counts took place in a number of selected sites, covering the most important goose areas. Data and methods can be found at <https://data.europa.eu/data/datasets/https://www.gbif-org-dataset-2b2bf993-fc91-4d29-ae0b-9940b97e3232?locale=nl>). No counts were organised in 2019 and 2020 because of a lack of funding. In 2021, a summer count was organized again, not only in a selected number of sites as previously in 2010-2018 but as complete as possible. Therefore, we used the network of waterbird sites and volunteers that has been established for our wintering waterbird counts (see <https://zookeys.pensoft.net/article/38265/>). The main thing is that people were asked to do their counts as much as possible during one fixed weekend (17/18 July). This date was agreed with SOVON in The Netherlands (because there is quite some border crossing moult migration between the two countries during the summer months).

MU1

For MU1, a summer count is currently being explored within the Fennoscandian Greylag Goose Initiative (FGGI). The FGGI was established in 2020, with the aim of:

1. Initiation of counts during late summer (i.e. post-breeding populations), as this is the only period in which total population size (adults + juveniles) and productivity (% young) can be assessed for each MU;
2. Monitoring of survival and movements of the MUs using GPS tags and coloured neck bands.

Currently a best strategy is under construction. When transferring the guidance from MU2 to MU1, an optimal count would imply: 1) counts during summer when flocks have not undertaken larger migratory movements, and are still within the management unit where they breed, 2) after the moulting period in early summer, 3) after the breeding season, when geese have started to congregate at specific sites (instead of occurring highly dispersed in the landscape), 4) preferably before the hunting season starts, and 5) at a time when 1st year birds are still easily separated from adults (2nd year or later) in order to be able to assess productivity. Based on these conditions, the first decade of August was chosen for the counts in MU1. Even if the timing of this count is slightly different from counts in MU2, we do not expect larger problems regarding exchange between the two MUs, thus making separate assessments for both MU1 and MU2 possible.

While the intention in Belgium, Netherlands and Germany is to count all birds, the only possible option in Denmark, Norway, Sweden and Finland may be to count at a limited number of sites selected by stratified sampling based on a habitat suitability model, followed by an estimation of the total population. This is a long and complicated process but since 2021, the preparation of the model is in progress (considering grid size, selection of variables etc.) and the model will be tested by using existing data in as many of the included countries as possible.