

## Schedule 2 Species Assessment Proforma – Common Goldeneye

<b>Species</b>	<b>Common Goldeneye <i>Bucephala clangula</i></b>
<b>Conservation status</b>	<p>BOCC5 status: <b>RED</b> due to a severe decline (&gt;50%) in the non-breeding population over the last 25 years and its rare breeder status (UK population &lt;300 pairs: Eaton et al., 2025). <a href="https://rbbp.org.uk/wp-content/uploads/2025/11/2023-RBBP-report-summary-table.pdf">https://rbbp.org.uk/wp-content/uploads/2025/11/2023-RBBP-report-summary-table.pdf</a></p> <p>IUCN GB status: <b>VULNERABLE</b> - considered to have a <b>Vulnerable</b> breeding population due to having a very small breeding population (&lt;1000 mature individuals) or a very restricted distribution, and a <b>Vulnerable</b> non-breeding population due to a reduction in population size (30-50%) (Stanbury et al. 2021).</p> <p>IUCN Global: <b>LEAST CONCERN</b> due to extremely large range and overall stability of population</p>
<b>Habitat and diet</b>	<p>Breeds on nutrient-poor lakes with low fish densities/no fish but with high invertebrate availability, with a supply of tree-holes (or artificial nestboxes) for nesting. This typically includes freshwater lakes, pools, rivers and deep marshes surrounded by coniferous forest.</p> <p>The species winters in inshore waters, shallow bays, estuaries and coastal lagoons (especially in the vicinity of sewage outfalls) and, further to the south, also frequents large rivers, lakes and reservoirs. In estuarine settings, goldeneye can be highly localised and are typically found on the areas around the tidal limit in river mouths.</p> <p>Diet mainly consists of aquatic invertebrates including molluscs, worms, crustaceans, aquatic insects and insect larvae, but also amphibians, small fish and some plant material (as seeds, roots and the vegetative parts of aquatic plants).</p>
<b>Migratory behaviour and movements</b>	<p>A very rare breeder in England and rare breeder in Scotland, most of the non-breeding population is of Scandinavian origin (see Figure 1). Ringing data suggests the strongest linkage for the UK wintering population is with Norway and Sweden, particularly in the north of the UK, but Finnish breeding birds also form part of the UK wintering population. The small UK breeding population is believed to remain in the UK during the non-breeding season.</p> <p>Overwintering birds start to be seen here in October and most have arrived by mid-November (see Figure 2). The timing of arrival of goldeneye in the UK in October correlates closely with the departure from the moulting areas on the continent. Emigration starts in early March and is largely complete by late April.</p> <p>Formerly, there was a significant wintering population in Northern Ireland, mainly focused on Lough Neagh, which has declined due to pollution. This decline has meant that the number of passage birds passing through Great Britain has reduced.</p>
<b>Population status (abundance and distribution)</b>	<p>Non-breeding goldeneye numbers (based on WeBS data for the period 2012/13–2016/17):</p>

	<p>GB = 18,500 individuals<sup>1</sup> UK = 21,000 individuals</p> <p>UK/GB breeding: estimated 200 pairs, nearly all in Scotland; probably 10 – 15 pairs in England, with regular breeding in Northumberland (Woodward et al. 2020; Eaton et al. 2025).</p>
<b>Population trends</b>	<p>The small UK breeding population has appeared to increase slowly in the long-term but there are survey coverage issues which make reliable trends difficult to produce.</p> <p>The UK non-breeding population trend is one of significant decline: -54% between 1997/98 and 2022/23 (Calbrade et al., 2025).</p> <p>The latest medium and long-term trends for England taken from WeBS are as follows (and see Figure 3): 10-year trend (2012/13 - 2022/23) = -20% 25-year trend (1997/98 - 2022/23) = -41% (Calbrade et al., 2025)</p> <p>Current understanding of wintering distribution change is -1% (1981/84 - 2007/11, taken from the last Bird Atlas (Balmer et al. 2013)).</p>
<b>Drivers of population change</b>	<p>Nest box provision has been shown to cause significant breeding range expansions and population increases in some areas, including in Scotland (e.g. Dennis &amp; Dow 1984).</p> <p>Also in Scotland, the introduction of a sewage treatment scheme in the Firth of Forth resulted in a considerable reduction in the goldeneye numbers wintering there, with feeding flocks only remaining at outfalls where sewage continued to be discharged in large quantities. It was unclear whether the changes in the species' distribution were due to reductions in the number of food items borne in the sewage or to reductions in aquatic invertebrate abundance as a result of the new treatment system (Campbell 1984).</p> <p>Studies at Lough Neagh (NI) demonstrated that the declines in the wintering diving duck feeding guild between the late 1980s and early 2000s were likely to be associated with a reduction of submerged macrophytes and wider lake ecosystem structure and function, caused by deteriorating water quality (Tomankova et al 2014). The evidence linking these bird declines to changes to food availability is, however, described as 'circumstantial' by this study.</p> <p>Changes in reproductive success may also be occurring. Analysis of the age and sex ratios of ducks shot by hunters in Denmark between 1982 and 2010 showed a statistically significant decline in the proportion of young goldeneye compared to adults (Christensen &amp; Fox 2014).</p> <p>Despite the above, the more recent declines in the English (and UK) non-breeding population appear to be mainly driven by distributional shifts caused by climate change (see below). This shift may result in elevated pressures on birds overwintering in Scandinavia (as a result of hunting and lack of protection of key sites).</p>

<sup>1</sup> Note that GB estimates for this species have been recently updated (Caulfield et al. 2025). The GB estimate has now reduced to 18,000 individuals (peak mean 2017/18 to 2022/23), but as there has been no update to UK estimates, the reference to Woodward et al. (2020) remains relevant.

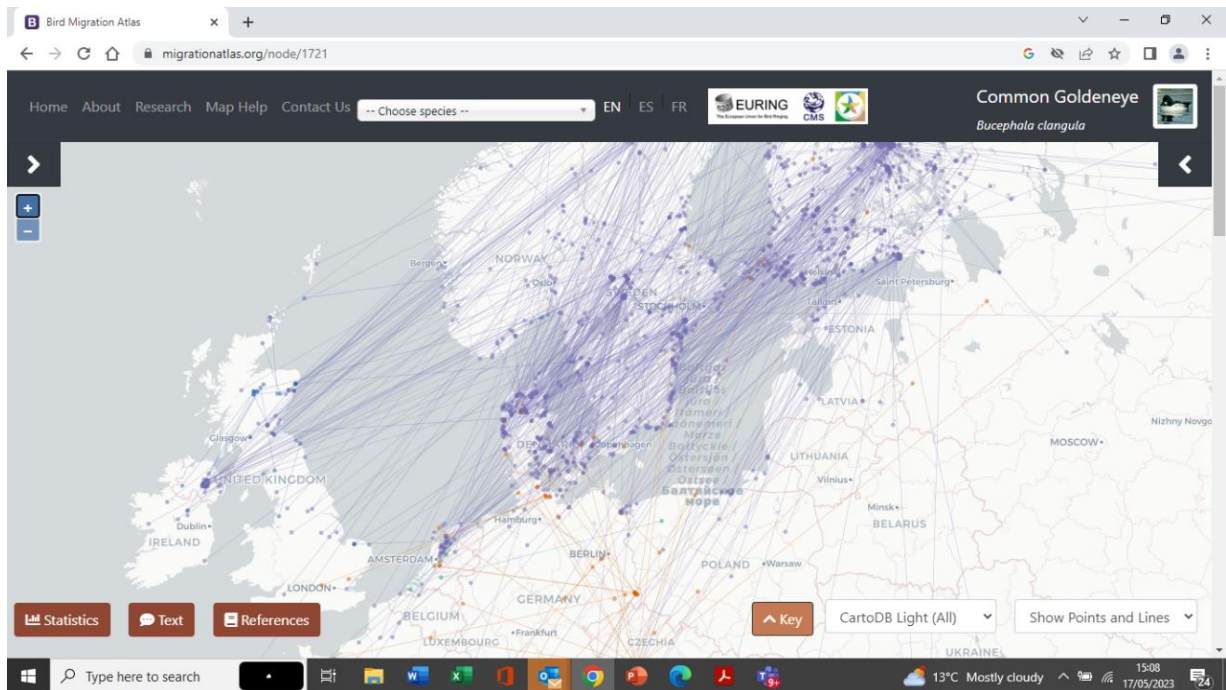
**Impacts from climate change**

A trend towards warmer winter temperatures across the flyway is associated with a shift in the wintering areas, in a north-easterly direction, of three species of diving duck (tufted duck, goldeneye and gosander) leading to increasing population trends in Finland and Sweden since the 1980s (Lehikoinen et al. 2013). Changes to bird abundance were demonstrated at both ends of the flyway, although increases in numbers at the northern edge of the wintering ranges were more apparent than decreases at the south-western edge.

There is evidence that female goldeneye, in particular the more experienced birds, return as soon as the ice has melted on Finnish lakes, a date which has advanced more than two weeks over the past 24 years: circumstantial corroboration that wintering distributions are shifting towards the breeding grounds (Clark et al. 2014).

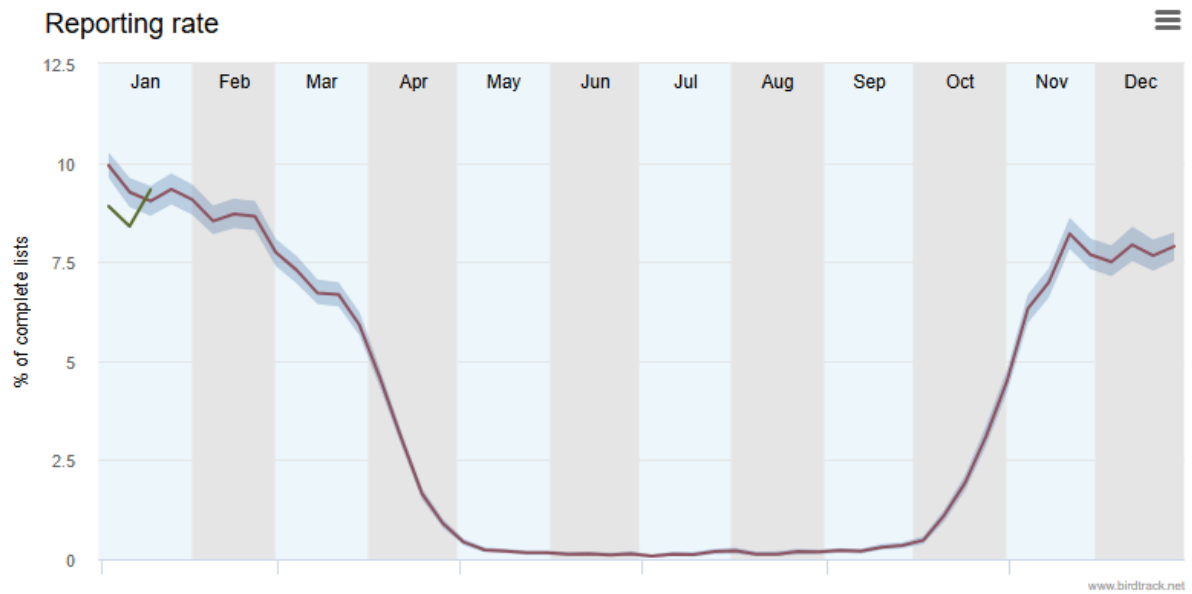
However, maintenance of UK non-breeding range between the winter Atlas periods (only 1% decline in overall winter range between early 1980s and 2007-11), and the ongoing increase in the UK breeding range since establishment in the 1970's, suggests that climate change alone is not driving population reductions, and other factors are involved. The loss of a significant wintering area to diffuse pollution on the western edge of the wintering range will also have the effect of shifting the population centroid to the east (a pattern that mirrors anticipated climate change impacts). A continued reduction in the numbers of birds wintering in the UK/England (due to climate change-induced distributional shifts or 'short-stopping') might increase the likelihood that UK breeding birds (and their offspring) could form part of hunting bags.

Figure 1 Movements of goldeneye in northern Europe based on ringing recoveries



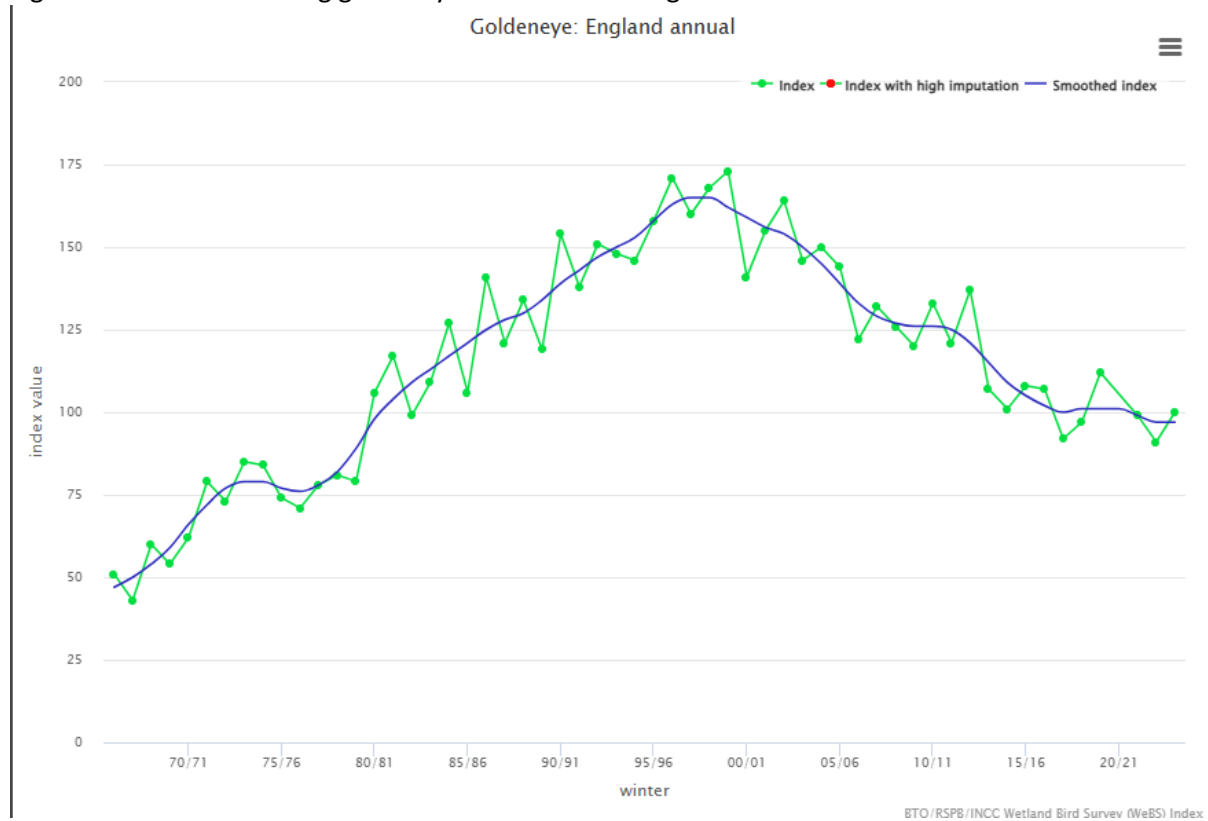
Spina, F.<sup>1</sup>, Baillie, S.R.<sup>1</sup>, Bairlein, F.<sup>1</sup>, Fiedler, W. and Thorup, K. (Eds) 2022. The Eurasian African Bird Migration Atlas. <https://migrationatlas.org>.

Figure 2



Source: BirdTrack, Jan 2026, [BirdTrack BTO/RSPB/BWI/SOC/WOS](#)

Figure 3 Trend in wintering goldeneye abundance in England



Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B.M., Caulfield, E.B., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M. & Frost, T.M. 2025. Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/ NatureScot. Thetford

## Impacts of hunting on populations

The goldeneye is listed on Schedule 2 Part 1 of the Wildlife and Countryside Act 1981 and is legal quarry outside the close season which runs from 1 February to 31 August (21 February to 31 August below high-water mark).

Estimates of bag sizes have varied over time and have a wide margin of error. Aebischer (2019) estimated the size of the annual UK harvest to be (95% confidence intervals in brackets):

2004: 680 (150 – 1500)                      2012: 200 (60-420)                      2016: 450 (100 – 2000)

BASC and GWCT have produced the followed revised (unpublished) estimates of the size of the hunting bag for the UK and England based on data for the 2019 season (as supplied by Matt Ellis):

Scale	Lower 95% confidence interval	Estimate (2019)	Upper 95% confidence interval
UK	180	<b>680</b>	2500
England	0	<b>140</b>	1800

This level of take represents c. 3.2% of the UK non-breeding population estimate, although it could be as high as c. 12% (based on the upper 95% confidence interval).

Using the 2016 estimate produced by Aebischer (2019), Ellis and Cameron (2022) considered that level of harvest level fell well within sustainable limits for this species. There is no evidence of hunting impacts at wider scale, but BirdLife International/IUCN has proposed that ‘monitoring and research should be introduced to determine the impact of hunting on this species’ and there have been calls for an international flyway plan to be developed (BirdLife International 2023).

After the arrival of continental birds from October, harvest is likely to be dominated by continental birds. Any take in September, however, is likely to emanate from UK breeding birds and their offspring.

## Potential benefits to the species of a change to Schedule 2

Hunting-take in September and, to a lesser degree, during early October is likely to have a bias to UK breeding birds and their offspring. Extending the close season to 30 September or, ideally, to 15 October, would reduce any possible impact of hunting on UK breeding birds and their offspring.

Whilst there is no firm evidence that hunting is a driver of the observed declines in the non-breeding population in England (and the wider biogeographic population remains in a healthy state), the uncertainty over the size of the UK harvest justifies considering removal from Schedule 2 (or, at least, encouraging voluntary restraint) based on the precautionary principle, until more accurate data is available to show that recreational shooting of this species can be managed on a sustainable basis. The small size of the hunting bag in England (<150 birds) means that removal from Schedule is unlikely to have a significant impact on the sport of shooting in this country.

## **RECOMMENDATION**

**Remove from Schedule 2 to reduce the potential impact of hunting on the breeding and non-breeding populations, based on the precautionary principle, until more accurate data is available to show that recreational shooting can be managed on a sustainable basis.**

## References

- Aebischer, N.J. (2019). Fifty-year trends in UK hunting bags of birds and mammals, and calibrated estimation of national bag size, using GWCT's National Gamebag Census. (2019) *Eur J Wildl Res* **65**, 64.
- Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. & Fuller, R.J. (2013). Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland. Book title: Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland BTO Books, Thetford.
- BirdLife International (2023). Goldeneye fact sheet. Downloaded from [goldeneye BL IUCN](#) on 27/06/2023.
- Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B.M., Caulfield, E.B., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M. & Frost, T.M. 2025. Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/ NatureScot. Thetford.
- Campbell, L.H. 1984. The impact of changes in sewage treatment on seaducks wintering in the Firth of Forth, Scotland. *Biological Conservation* **28**, 173-180.
- Caulfield, E., Woodward, I., Peck, K., Wotton, S. & Frost, T. 2025. Overwinter population estimates of waterbirds in Great Britain. *British Birds* **118**: 642–657.
- Christensen, T.K. & Fox, A.D. (2014). Changes in age and sex ratios amongst samples of hunter-shot wings from common duck species in Denmark 1982-2010. *Eur J Wildl Res* **60**, 303-312.
- Clark, R.G., Pöysä, H., Runko, P. & Paasivaara, A. (2014). Spring phenology and timing of breeding in short-distance migrant birds: phenotypic responses and offspring recruitment patterns in common goldeneyes. *J Avian Biol* **45**, 457–465.
- Dennis R.H. & Dow H. (1984) The establishment of a population of goldeneyes *Bucephala clangula* breeding in Scotland. *Bird Study*, **31**, 217-222.
- Eaton, M. A., Stroud, D. A., Francis, I. S., Norman, D., Baker, H., Holling, M., King, A., Stanbury, A. J., & Balmer, D. E. (2025). Rare breeding birds in the UK in 2023. *British Birds*.
- Ellis, M.B. & Cameron, T.C. (2022). An initial assessment of the sustainability of waterbird harvest in the United Kingdom. *J Appl Ecol.* **59**: 2839–2848.
- Lehikoinen, A., Jaatinen, K., Vähätalo, A.V., Clausen, P., Crowe, O., Deceuninck, B., Hearn, R., Holt, C.A., Hornman, M., Keller, V., Nilsson, L., Langendoen, T., Tománková, I., Wahl, J. & Fox, A.D. (2013). Rapid climate driven shifts in wintering distributions of three common waterbird species. *Glob Chang Biol*, **19**: 2071-2081.
- Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. & Win, I. (2021). The Status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of man and second IUCN assessment of extinction risk for Great Britain. *British Birds* **114**: 723-747.
- Tomankova, I., Harrold, C., Fox, D. A. & Reid, N. (2014). Chlorophyll-a concentrations and macroinvertebrate declines coincide with the collapse of overwintering diving duck populations in a large eutrophic lake. *Freshwater Biology*, **59**, 249-256.

Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, D.A. & Noble, D. (2020). Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 113: 69–104.