

The Status of Hunttable Birds in the European Union



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Established in 1977, FACE represents the interests of Europe's 7 million hunters, as an international non-profit-making non-governmental organisation. Its members are comprised of the national hunters' associations from 35 European countries including the EU-28. FACE upholds the principle of sustainable use and in this regard its members have a deep interest in the conservation and improvement of the quality of the European environment. See: www.face.eu



Executive Summary

The State of Nature in the EU (2015) report provides the most complete picture of Europe's biodiversity to date. For FACE, the findings are of key importance as they provide a timely health check on the status of huntable birds within Annex II of the Birds Directive.

Drawing on the results of the Article 12 reporting exercise (2008-2012) under the Birds Directive, this report outlines the status of Annex II bird species, while making comparisons to Annex I and non-Annex species. Comparison is also made to the only other comparable baseline assessment of EU birds, undertaken in 2004 by BirdLife International.

The findings illustrate that Annex II birds have the highest proportion of species with a 'secure' population status (55%), with the lowest percentage of species having an 'unknown' population status (6.4%). For Annex I birds, the situation is broadly similar, although a higher proportion of species hold a 'threatened' population status (22.9%), while 47.9% are 'secure', with 15.5% 'unknown'. These findings are broadly similar to the previous 2004 EU assessment.

In terms of trends, however, for the Annex II (breeding) birds, over 40% show a decreasing population trend. This applies to both short-term and long-term trends. The short-term population trends of 46% of the breeding bird taxa in Annex II are decreasing compared to 30% of all breeding bird taxa. With regard to Annex I species, the findings indicate that a relatively high proportion of breeding bird taxa show an increasing population trend, and a relatively low proportion of taxa indicate a decreasing population trend. However, wintering birds are deemed to have increasing population trends with no significant difference between Annex I and Annex II species.

Regarding data quality for the Article 12 reporting exercise (2008-2012), much of the data on breeding population size (approx. 55%) and trends (approx. 40%) was based on 'partial data' and only (approx.) 50% of the wintering data was based on 'complete survey'.

Encouragingly, the trend data indicate that many of the birds listed in Annex I of the Birds Directive, for which Special Protection Areas (SPAs) must be designated, have populations that are increasing, although often these species are not considered 'secure'. This may suggest that the establishment of the Natura 2000 network is an effective conservation measure, which also benefits non-target species (European Commission, 2015). Additionally, birds for which a Species Action Plan has been agreed have a slightly higher proportion with increasing populations.

Through comparing the breeding pairs of Annex II birds between the (EU 25) 2004 and (EU 27) 2008-2012 (Article 12), the report discusses, via examples, some issues between these large-scale assessments. For example, a comparison between the two EU data sets draws different conclusions, with some species increasing more than others have declined (resulting in an increase in the total number of breeding pairs) since the last (2004) EU survey.

The report goes on to discuss the various pressures and threats potentially affecting Annex II birds. In doing so, it argues how different methodologies influence conclusions and, in particular, on how assessors judge hunting when scoring threats for a given species. The report also discusses the link between hunting and conservation and highlights the important role of hunters in creating and managing habitats for huntable species.

Overall, the report draws mixed messages. Although the findings of the Article 12 assessments illustrate that most Annex II bird species have a secure population status, the data on trends requires a more comprehensive analysis. In this regard, the report points to some anomalies with the trend data, specifically when making a comparison to the 2004 EU assessment.

Some of the recommendations outlined in this report include actions that relate to species and habitat conservation, monitoring, research and communication.

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Introduction

As a means to measure progress towards the targets set out in the European Union (EU) Biodiversity Strategy to 2020, FACE welcomes the 'State of Nature in the EU' report (European Commission, 2015), which presents the largest collaborative assessment of nature ever undertaken across the EU. FACE is firmly of the opinion that systematic monitoring and evaluation are integral components of biodiversity conservation as they enable the setting of management and policy objectives, adaptation of interventions and measurement of effectiveness. In this regard, FACE believes there is little prospect of effective action to limit biodiversity loss unless biodiversity can be measured.

Drawing on the findings of the Article 12 reporting under the EU Birds Directive, the State of Nature report provides an up to date evaluation of the status of huntable (i.e. Annex II) bird species in the EU. In doing so, it compares the findings of the recent EU Member State Article 12 assessment with the only other comparable baseline assessment undertaken in 2004 of European breeding birds (BirdLife International, 2004a). The report also draws on the wintering waterbird data from the International Waterbird Census, which is used to inform the assessment of waterbird populations for the African-Eurasian Migratory Waterbird Agreement (AWEA). This provides us with a more comprehensive account of wintering migratory birds.

Background: State of Nature in the EU

EU nature conservation is primarily based around two main pieces of legislation - the Birds Directive of 1979 and the Habitats Directive of 1992. The Birds Directive provides a common framework for the conservation of naturally occurring species of wild birds and their habitats throughout the EU. It owes its origin to the fact that wild birds, which are mainly migratory, represent a shared heritage of the Member States and whose effective protection typically entails common responsibilities (European Commission, 2008).

Under the Bird Directive, Member States are legally required to monitor progress and report back to the European Commission (EC). This currently takes place every six years, although the previous reporting cycle was three years. The most recent reporting exercise covered the periods from 2008 to 2012 for the Birds Directive, where the status of around 450 wild bird species was assessed. It is important to note, however, that this was the first time that EU Member States' included information on the population sizes and trends of birds in their respective countries.

Aside from assessing issues such as the contribution of the nature directives towards meeting the EU's broader biodiversity policy objectives, the State of Nature report serves as useful input to the Mid-Term Review of the EU Biodiversity Strategy 2020. The EC has also stated that the findings will feed into the ongoing Fitness Check of the Birds and Habitats Directives, which is part of a broader exercise of taking stock of EU legislation to ensure that it is fit for purpose. In this regard, FACE considers this as a particularly useful opportunity to take stock of the population status of huntable birds at EU level.

The Birds Directive and Hunting

Hunting is a highly popular form of nature recreation, an activity enjoyed by 7 million people in Europe (FACE, 2010). It is one of the oldest forms of consumptive use of renewable natural resources and provides significant social, cultural, economic and environmental benefits in different regions of Europe (e.g. see Brainerd and Norwegian Ass. for Hunting and Anglers, 2007; European Commission, 2008; Kenward and Sharp, 2008; HUNT, 2015). European hunters are motivated by recreational, consumptive and social aspects, with regionally varying emphasis on these elements.

Sustainable hunting also represents a strong incentive to support the maintenance of habitats and species (e.g. see MacDonald and Johnson, 2000; Stoate, 2002; Oldfield *et al.*, 2003; Ewald *et al.*,

2006; Connor and Draycott, 2010; Rouxel, 2000; Fletcher *et al.*, 2010; Scallan, 2012; Díaz-Fernández *et al.*, 2013). In this regard, hunters frequently contribute to the conservation of game and other species through, for example, habitat provision and the control of mammalian/avian predators. Some of the most important wildlife sites in Europe have survived the pressures of development and destruction as a result of game management interests.

In order to provide an overview of hunters' contribution to conservation, the FACE Biodiversity Manifesto Report (2015) assessed 181 European case studies of various conservation projects undertaken by hunters. The FACE Biodiversity Manifesto Report (2015) also demonstrates the link between the conservation actions of hunters to 4 of the 6 targets of the EU Biodiversity Strategy 2020.

The Birds Directive fully recognises the legitimacy of hunting wild birds as a form of sustainable use. In this context, hunting is limited to certain bird species listed in the Directive. It also provides a series of ecological principles and legal requirements relating to hunting to be implemented through legislation in Member States.

In the case of the Birds Directive, the concept of 'Favourable Conservation Status' is not used (as in the Habitats Directive), but the overall objective is broadly similar: to maintain and restore the populations of all naturally occurring wild bird species present in the EU at a level that will ensure their long-term survival. More specifically, the Birds Directive states:

"Member States of the European Union shall maintain the populations of European bird species at a level that corresponds to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements or to adapt a population to that level".

Article 7 of the Birds Directive allows for the hunting of certain species, which is considered to constitute 'acceptable exploitation'. This is due to the "population level, geographical distribution and reproductive rate" of these bird species throughout the European Community. More specifically, the Directive states:

"Because of their high population level, geographical distribution and reproductive rate in the Community as a whole, certain species may be hunted, which constitutes acceptable exploitation where certain limits are established and respected, as such hunting must be compatible with maintenance of the population of these species at a satisfactory level".

In principle, only the species listed on Annex II of the Directive can be hunted across the EU or in certain Member States, however, in all cases, Member States shall ensure that the hunting of these species does not jeopardise conservation efforts in their distribution area. In other words, the activity must comply with the principles of 'sustainable use' and 'ecologically balanced control'. It should be noted that for migratory birds, the breeding populations subject to hunting often originate from outside of the EU (Madsen *et al.*, 2015), which is an important factor to consider regarding EU assessments of birds.

Annex II Species:

There are 81 species listed on Annex II of the Birds Directive, 23 species and one subspecies on Annex II/1 and 57 species and one subspecies on Annex II/2. The two subspecies listed on Annex II/1 and Annex II/2 are of the same species (the Willow Ptarmigan *Lagopus lagopus*) and have been treated as one species. Annex II/2 includes the Black Francolin *Francolinus francolinus*, which was added after the accession of Cyprus in May 2004 (i.e. 23+57+1=81). Five species of *Corvidae* were added to Annex II/2 along with the removal of three species of waders from Annex II/2 - for Italy (species which closely resemble the globally threatened species Slender-billed Curlew *Numenius tenuirostris*).

The Birds Directive covers all bird species that naturally occur in the Member States, including accidental visitors. It does not extend to introduced species unless they are explicitly mentioned in one of the Annexes to the Directive, (e.g. Canada Goose *Branta canadensis* in Annex II). However, introduced species are covered by the terms of the Directive in a Member State if they are native to another Member State (European Commission, 2008).

Hunting is carried out under national legislation and in this regard, the listing of a species in Annex II does not oblige a Member State to allow for it to be hunted (European Commission, 2008). Aside from the Birds Directive, there are a number of other overlapping frameworks in Europe that guide national hunting regulations for wild birds. These include the Convention on Migratory Species (CMS) the African Eurasian Waterbird Agreement (AEWA) and the Bern Convention.

Methodology: Reporting under the Birds Directive

Birds are an excellent biodiversity indicator (i.e. a barometer of change) and their populations can be measured in various ways. The goal of the recent Article 12 reporting exercise was to combine national data-sets provided by each country into one large EU-level data set, which summarises the population status of each species at EU27¹ level.

EU population status was assessed using an agreed standardised methodology² adapted from the 2004 EU assessment (BirdLife International, 2004a; BirdLife International, 2004b). This provided a baseline to measure progress against Target 1(ii) under the EU Biodiversity Strategy and maximised use of the data reported by Member States under Article 12 (EEA, 2015a).

Under the Birds Directive, the status of a bird's population can be either 'secure', 'near threatened', 'declining', 'depleted', 'threatened' or 'unknown' where data is not sufficient to allow an assessment. This system outlines whether taxa are regionally threatened or near threatened, i.e. if they meet or are close to meeting any of the IUCN Red List criteria at the EU-27 scale (EEA, 2015a)³.

Table 1. Criteria and Threshold used to assess EU population status (Source: EEA, 2015a).

EU population status category	Brief description of criteria and thresholds
Threatened	Meets any of the IUCN Red List criteria for threatened, at EU-27 scale
Near threatened	Close to meeting IUCN Red List criteria for threatened, at EU-27 scale
Declining	EU-27 population or range declined by $\geq 20\%$ since 1980, with continuing decline since 2001
Depleted ⁴	EU-27 population or range declined by $\geq 20\%$ since 1980, but no longer declining since 2001
Secure	Does not currently meet any of the criteria above in EU-27
Unknown	Inadequate information available to assess EU-27 status

This process also feeds directly into the EU Red List of Birds (BirdLife International, 2015), which was prepared in parallel, as a core deliverable of the European Commission-funded contract led by BirdLife International to support the Article 12 assessment. For this reason, overall regional population status assessments at EU level were carried out at species level, following BirdLife International's current taxonomy⁵.

See Appendix 1 for a more detailed analysis on methodological and data quality issues associated with the Article 12 assessment exercise.

¹ Note that the EU27 assessment included data from 26 MS as no report was submitted from Greece.

² See: <https://circabc.europa.eu/sd/a/4b101339-6e13-4379-ada5-400e5d1ec8ac/Point%203%20-%20Background-Paper-%2021%20Nov%202013%20.pdf>

³ The IUCN Red List is widely recognised as the most objective and authoritative listing of species, which relies on detailed assessment of information against a set of objective, standard, quantitative criteria. At a global level, these criteria are firmly established as a valuable tool for assessing species' relative extinction risk (classifying those with a high risk as 'Critically Endangered', 'Endangered' or 'Vulnerable') and thereby helping to set priorities for conservation action. See: <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria>

⁴ The term 'Depleted' is often used to describe populations that have not yet recovered from moderate or large historical declines. Depleted species have an unfavourable population status because they have already suffered the declines that the Birds and Habitats Directives intend to prevent, and have yet to recover (BirdLife International, 2004b).

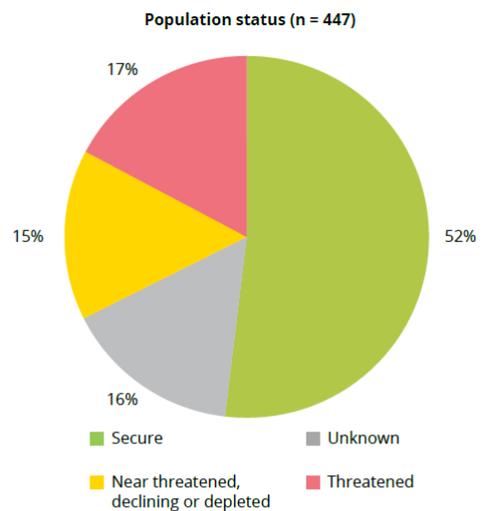
⁵ BirdLife International is the official Red List Authority for birds for the IUCN Red List, supplying the categories and associated detailed documentation for all the world's birds to the IUCN Red List each year.

Results

In total, EU countries produced population status assessments for 447 bird species.

The results indicate that 52% of bird species have a secure population in the EU, 17% a threatened population, and 15% a near threatened, declining or depleted population. The population status of 16% of the bird species in the EU is unknown.

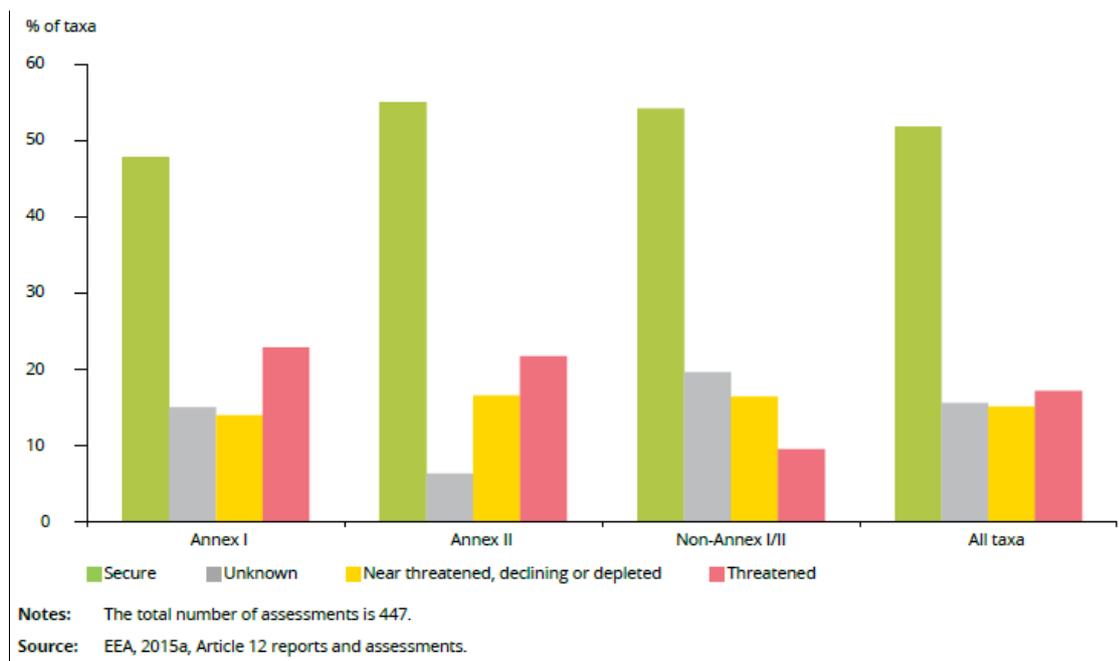
The adjacent pie chart (Figure 1) provides a breakdown of the population status of EU birds, while Figure 2 provides a breakdown on the various bird species as per the different Annexes.



Notes: The total number of assessments is 447 (only species were assessed).

Source: EEA, 2015a, Article 12 reports and assessments.

Figure 1. Population Status of EU's birds



Notes: The total number of assessments is 447.

Source: EEA, 2015a, Article 12 reports and assessments.

Figure 2. EU population status of birds in Annexes I and II of the Birds Directive, birds not in Annexes I or II of the Birds Directive, and all birds⁶.

As illustrated in Figure 2 and more specifically in Table 2, Annex II birds have the highest 'secure' population status (55%) with the lowest percentage of species having an 'unknown' population status (6.4%). The proportion of species 'threatened' (21.8%) is similar to that of Annex I species (22.9%)⁷. For Annex I birds, the situation is broadly similar, although a slightly higher proportion of species hold a 'threatened' population status (22.9%), while 47.9% are 'secure', with 15.5% 'unknown'.

⁶ The total number of assessments for birds under the category Annex I, **Annex II**, Non-Annex I and II, all taxa, is 192, **78**, 188 and 447, respectively.

⁷ See Appendix 1 for a detailed breakdown of the status of Annex II birds.

Note that Appendix 2 contains a table containing the population status of each Annex II bird species. In the table, the data (where available) includes the minimum and maximum EU breeding population size, the previous 'EU25 threat Status' from the only other comparable baseline assessment undertaken in 2004 of European breeding birds (BirdLife International, 2004a) as well as the IUCN Red List at global, geographical Europe, and EU 27 level.

Table 2. EU population status of birds (in %) in Annexes I and II of the Birds Directive; birds not in Annexes I or II of the Birds Directive, and all birds (Source: EEA, 2015a)

Population Status	Annex I	Annex II	Non-Annex I/II	All taxa
Secure	47.9	55.1	54.3	51.9
Near Threatened, Declining or Depleted	14.1	16.7	16.5	15.2
Threatened	22.9	21.8	9.6	17.2
Unknown	15.1	6.4	19.7	15.7

Size of Annex II bird populations

Notwithstanding that some Annex II species have small and threatened populations (e.g. Garganey, *Anas querquedula*), many of the species within Annex II have large populations, which may explain why the majority of birds (i.e. 55%) have a 'secure' population status. Table 3 outlines the percentage of birds in Annex II with breeding EU populations: i) less than 100,000 breeding pairs; ii) between 100,000 and 1,000,000 breeding pairs and iii) populations with over 1 million breeding pairs. To avoid confusion and possible double counting, no wintering data are included. It is important to note that Table 3 only includes the birds breeding within the EU. In this regard, a number of bird species have much of their population breeding outside of the EU (e.g. Woodcock, *Scolopax rusticola*).

Table 3. Percentage of species per population category

Number of Breeding pairs in EU	%
< 100,000	38%
100,000 to 1 million	30%
> 1 million	32%

Comparison with last EU assessment

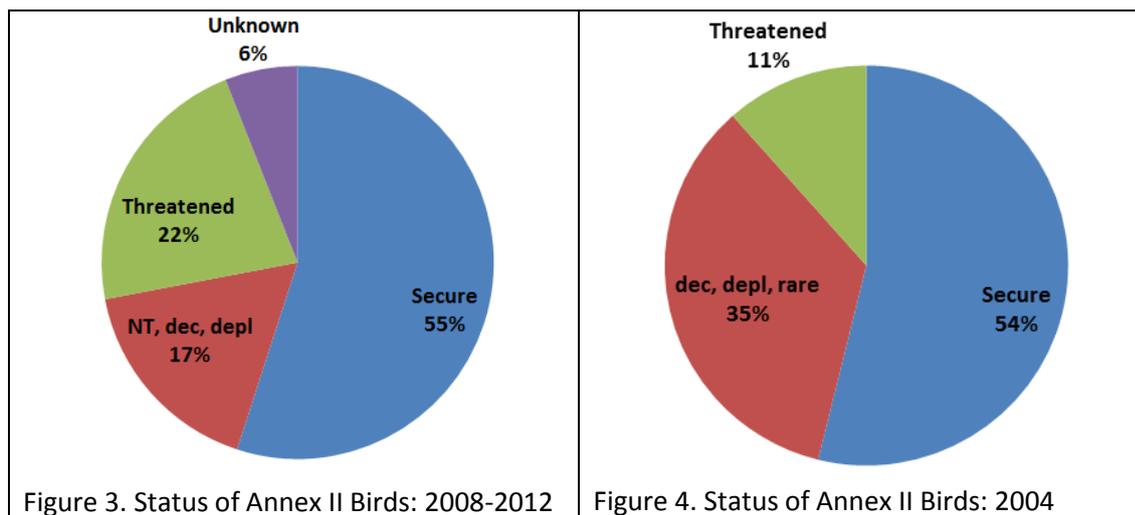
Table 4 and Figure 3 compare the status of Annex II birds from the 2004 assessment (BirdLife International, 2004a) to the most recent 2008-2012 (Article 12) assessment. The 2004 assessment showed that a total of 36 species out of 79 (46%) in Annex II had 'Unfavourable Conservation⁸ Status' at EU25 level and a total of 31 (39%) had the same status at the pan-European level. Some 43 species (54%) were deemed to be 'secure' in the EU 25 in 2004 with 48 (61%) species being 'secure' at the pan-European level.

The main difference between the 2004 EU assessment (BirdLife International, 2004a) and the most recent (2008-2014) Article 12 assessment is the percentage of species classed as "threatened", which has increased from 11% to 23%.

Table 4. Percentage breakdown comparing Article 12 assessment with 2004 assessment

Status	2008-12	2004
Secure	55%	54%
Near Threatened, Declining or Depleted	17%	35%
Threatened	21%	11%
Unknown	6%	0%

⁸ Unlike the State of Nature in the EU report (European Commission, 2015) which referred to 'population status', the BirdLife International report (BirdLife International, 2004) referred to 'conservation' status.



Population Trends

The Article 12 reporting exercise also examined the population trends of birds. In total, 454 EU-27 short-term and 455 long-term breeding population trends were produced⁹. In this regard, data from Member States were combined, weighting each Member State's contribution according to the size of its population (EEA, 2015a). Weightings were based on the geometric mean of the Member State's minimum and maximum population size compared to the geometric mean of the equivalent totals for the overall EU population. This analysis was carried out using a dedicated tool developed by the IUCN¹⁰ to estimate overall trends based on data from multiple (national) subpopulations (European Commission, 2015; EEA, 2015a).

Member States reported population trends for all regularly occurring breeding species for two periods:

- short term, i.e. 12 years: ideally 2001–2012
- long term, i.e. 32 years: ideally since 1980

The findings indicate that a relatively high proportion of breeding bird taxa in Annex I showed an increasing population trend, and a relatively low proportion of taxa indicated a decreasing population trend. This applies to both short and long-term trends, although it is more pronounced in the former. The long-term population trends of 40% of the breeding bird taxa in Annex I are increasing compared to 31% of all breeding bird taxa.

The trends indicate that many of the birds listed in Annex I of the Birds Directive, for which Special Protection Areas (SPAs) must be designated, have populations that are increasing, although often these species are not considered 'secure'. This may suggest that the establishment of the Natura 2000 network is an effective conservation measure, which also benefits non-target species (European Commission, 2015). Additionally, birds for which a Species Action Plan (SPA) has been agreed have a slightly higher proportion with increasing populations.

For the Annex II (breeding) birds, over 40% show a decreasing population trend. This applies to both short-term and long-term trends. The short-term population trends of 46% of the breeding bird taxa in Annex II are decreasing, compared to 30% of all breeding bird taxa. Figures 5 and 6 provide a

⁹ It was only possible to assess overall trends for 81 wintering species (of which 41% i.e. 33 out of 81 species were Annex II species) for which Member State coverage was representative of the overall EU population.

¹⁰ Available at: <http://www.iucnredlist.org/technical-documents/red-list-documents>

detailed breakdown of population trends (short and long term) of birds in Annexes I and II of the Birds Directive, birds not in Annexes I or II of the Birds Directive, and all birds.

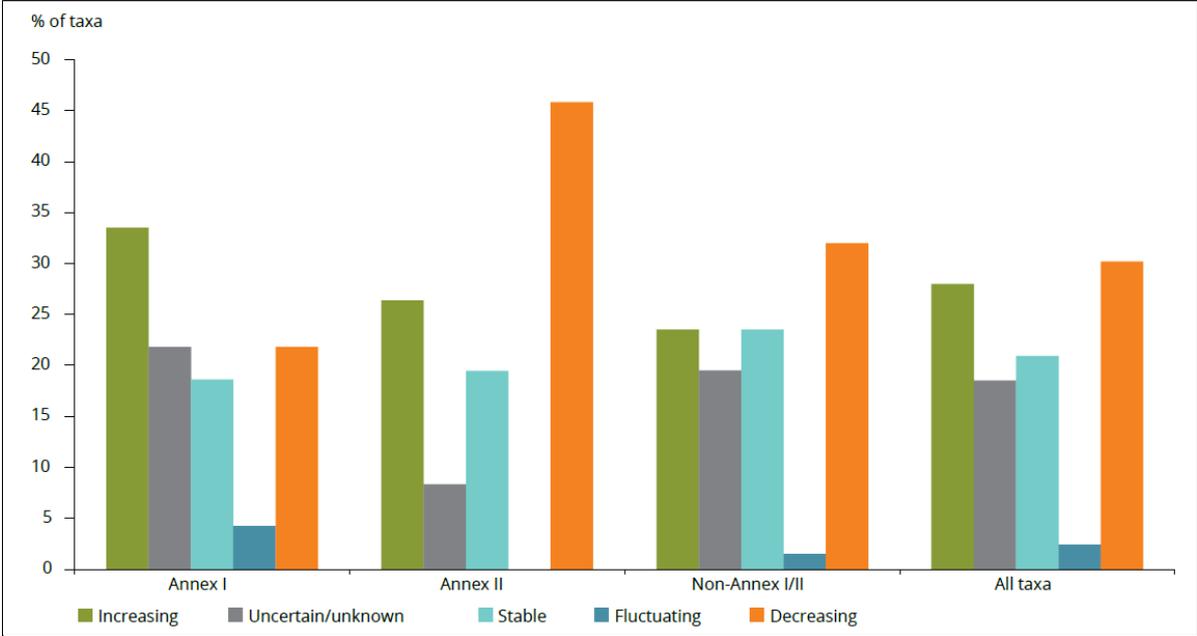


Figure 5. Short-term EU breeding population trends of birds in Annexes I and II of the Birds Directive; birds not in Annexes I or II of the Birds Directive, and all birds (Source: EEA, 2015a).

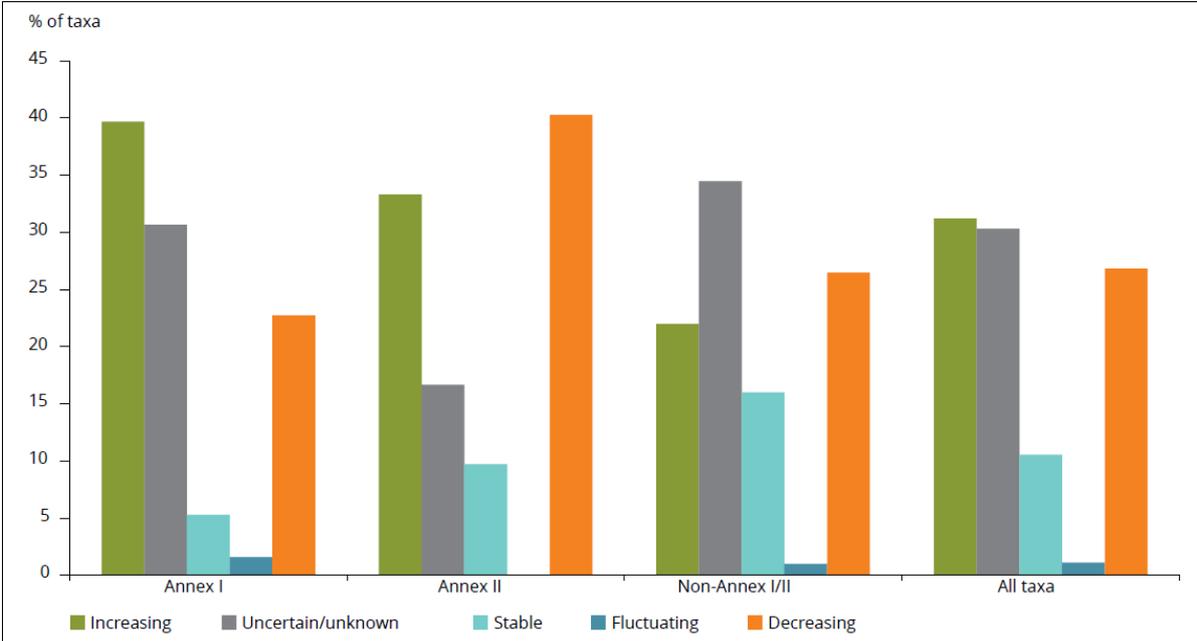


Figure 6. Long-term EU breeding population trends of birds in Annexes I and II of the Birds Directive; birds not in Annexes I or II of the Birds Directive, and all birds (Source: EEA, 2015a).

Waterbird Trends

According to the Article 12 assessments, more wintering bird species in the EU are assessed as having an increasing long-term population trend (63%) than as having an increasing short-term (see Figures 7 and 8) trend (46%). Conversely, more wintering bird taxa are assessed as having a decreasing short-term trend (27%) than as having a decreasing long-term trend (14%). In addition, there are no major differences between the proportions of wintering bird taxa in Annexes I and II that show an

increasing or decreasing population trend, and the proportions of all wintering bird taxa showing these trends. This applies to both short-term trends and long-term trends (EEA, 2015a). Some Member States also had a high number of unknown trends¹¹.

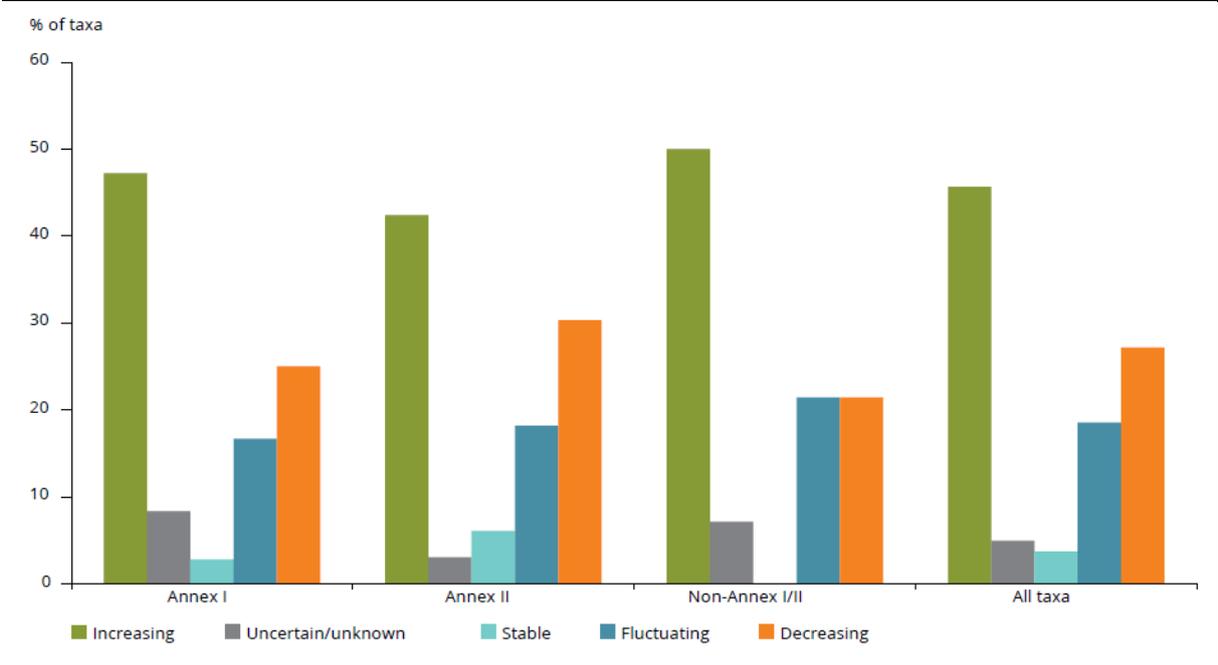


Figure 7. Short-term EU winter population trends of birds in Annexes I and II of the Birds Directive; birds not in Annexes I or II of the Birds Directive, and all birds (Source: EEA, 2015a).

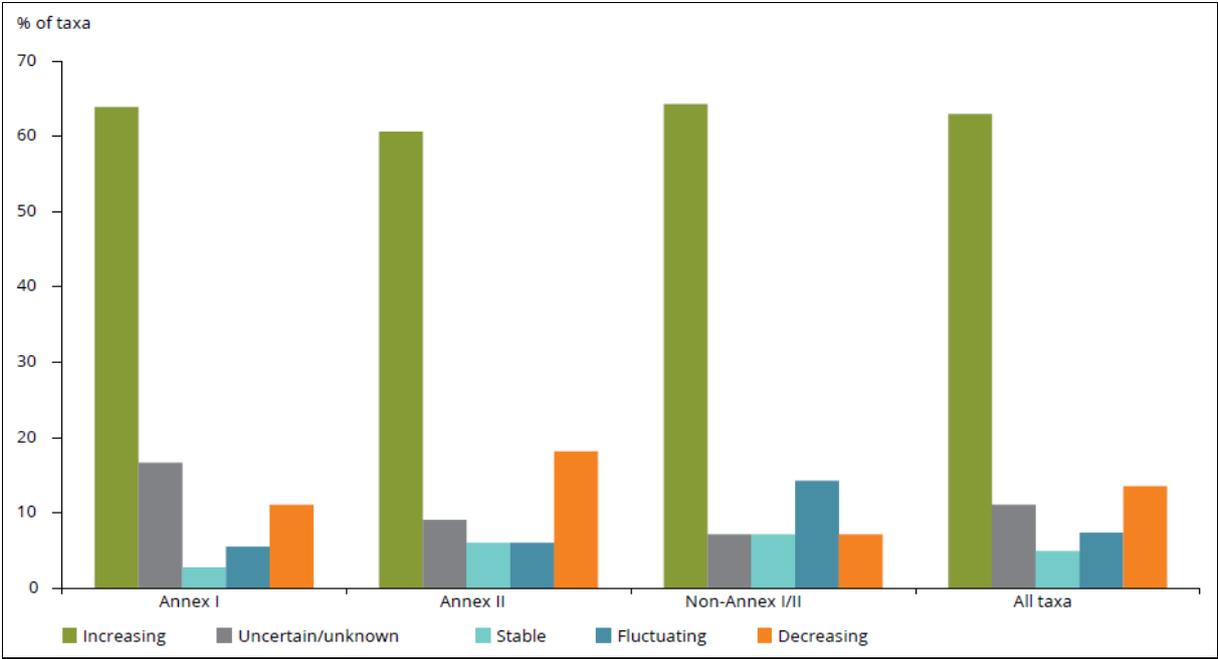


Figure 8. Long-term EU winter population trends of birds in Annexes I and II of the Birds Directive; birds not in Annexes I or II of the Birds Directive, and all birds (Source: EEA, 2015a).

¹¹ Note that the IUCN European Red List covers Russia until Urals. This is important as some bird populations hunted in the EU breed in these territories; hence, the European Red List is particularly useful for many migratory species. The geographic boundaries between the EU 27 and the European Red List are outlined in Figure 2.1 in Appendix 2.

Discussion

Thus far, this report has shown that the population status of Annex II birds is similar (albeit doing slightly better) than to Annex I (and I/II) bird species in Europe. The situation regarding trends, however, differs with over 40% of birds within Annex II showing a decreasing population in both short-term and long-term trends. However, wintering birds are deemed to have increasing population trends with no significant difference between Annex I and Annex II (wintering) species.

In relation to Annex II birds and their decreasing population trends, the State of Nature (2015: 6) report states: “Unfortunately, many of the species listed in Annex II (species which may be hunted) are decreasing; the reasons for this are not clear”. It is the opinion of FACE, however, that a broader discussion is required regarding the trends of Annex II bird species in the EU. The remainder of this section discusses some potential issues associated with large-scale species assessments as well as the potential pressures and threats affecting Annex II birds. It concludes with a discussion of the potential links between hunting and conservation with reference to specific examples.

Comparison between EU assessments

Large-scale assessments can sometimes provide mixed messages, particularly those which group trends for both rare and common species and species across different habitat groups. This is mainly because the species within these groups are often not of comparable size and frequently have different ecological and biological requirements. For example, consider the diversity of Annex II species within *Anatidae* (i.e. ducks, geese, swans) and the *Galliformes*.

Within species groups, there are often contrasting situations with regard to species’ population status. For example, within the taxonomic group *Columbidae*, the status of the Collared dove *Streptopelia decaocto*, which listed in Annex II (Part B), is ‘Secure’ while the Turtle dove *Streptopelia turtur* in the same category is ‘Near threatened’. Similarly, within the *Anatidae*, the Mallard *Anas platyrhynchos* is ‘Secure’, while the Northern Pintail *Anas acuta* is ‘Threatened’.

In order to highlight the challenges associated with large-scale assessments, Figure 9 compares the estimates of breeding pairs (of Annex II birds) from the 2004 assessment (BirdLife International, 2004a) to the recent Article 12 assessment (covering 26 EU Member States) using the Wild Birds Population Indicator (WBI).

The WBI is an all-species index that calculates the geometric mean of all the individual indices, with no weightings, so that each species has the same relative effect on the indicator¹². The baseline (i.e. the 2004 data) was given a value of 100 and thereafter, the index expresses the population as a percentage of this ‘baseline’ (i.e. comparing two points in time). Note that the data only include breeding pairs and not wintering data.

¹² In the UK, the wild bird index (WBI) combines trends from 139 common species using the geometric mean of relative abundance indices (Balmford *et al.* 2003; Gregory *et al.* 2003; Buckland *et al.*, 2005). All species carry the same weight. Wild Bird Indicators are widely used by governments to assess biodiversity progress e.g. in the United Kingdom, Denmark, France, and Sweden.

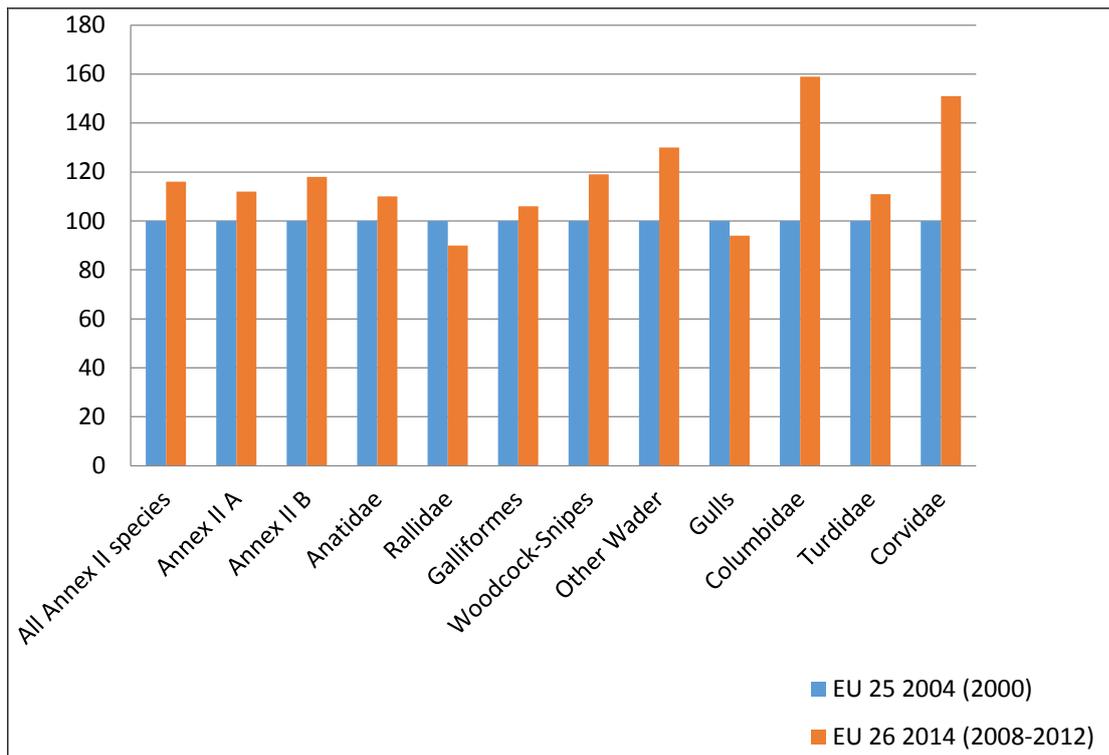


Figure 9. Comparison of breeding pairs of Annex II birds from the EU25 2004 assessment and Article 12 assessment.

Of interest, this analysis draws different conclusions to the Article 12 population trends as outlined in the State of Nature report, with some species increasing more than others have declined (resulting in an increase in the total number of breeding pairs) since the last (2004) EU survey. More specifically, Figure 9 illustrates a 31% increase in the number of breeding birds, or if any index is used to provide equal weighting for abundant and less abundant species, then the increase is 16%. The data also show that, of the species breeding in the EU with comparable data: 35 have increased, 15 declined and 23 are stable.

When looking at the species groups, there are also interesting comparisons to be made when individual species are considered. For example, consider the (10-year) breeding trend of *Rallidae* – a taxonomic group in Annex II (part B) represented by only two species - for Water rail *Rallus aquaticus* and Common moorhen *Gallinula chloropus*. Figure 9 shows a decrease in the numbers of breeding pairs of *Rallidae* since 2004 despite that fact that the Article 12 assessments suggests that the EU population status for Water rail *Rallus aquaticus* is 'Unknown' and Common moorhen *Gallinula chloropus* is 'Secure' with stable short and long term breeding population trend in the EU27.

In attempting to understand the differences between the two scenarios (i.e. the increase in breeding pairs between in Figure 9 and the Article 12 data showing decreasing trends), one caveat is that the EU Article 12 reports cover 26 EU Member States (not GR), and the 2004 data covered 25 EU Member States (not BU & RO). However, even after removing the data for these three countries from both data sets for some species, the differences are not major. During the 2004 assessment, it was also found that the accession of Bulgaria and Romania had little impact on the EU status of bird species, reflecting the widespread distribution of many European birds and the lack of any endemics in these countries¹³.

¹³ <https://circabc.europa.eu/sd/a/4b101339-6e13-4379-ada5-400e5d1ec8ac/Point%203%20-%20Background-Paper-%2021%20Nov%202013%20.pdf>

Another possible reason to explain the difference in breeding population change could be increased sampling efforts during the Article 12 (2008-2012) process. For the latter assessment, Member States were legally obliged to report on the status of birds (under the Birds Directive), whereas in 2004, the reporting was non-legally binding for Member States (i.e. the process was led, in many cases, by the respective BirdLife partners). In any case, large-scale assessments are known to raise complex questions with regard to species abundance and trends as well as the types of indices and temporal change points to rely on (e.g. see Buckland *et al.*, 2005).

Waterbirds

The Article 12 data indicate that the trends of Annex II waterbirds are increasing in both the short and long term. However, Figure 10 shows that many of the *Anatidae* species (i.e. the ducks, geese and swans) are decreasing with some species showing no change. The species with a noticeable increase include: Greylag Goose *Anser anser*, Gadwell *Anas strepera*, Red-crested Pochard *Netta rufina*, Common Scoter *Melanitta nigra* and Common merganser *Mergus merganser*.

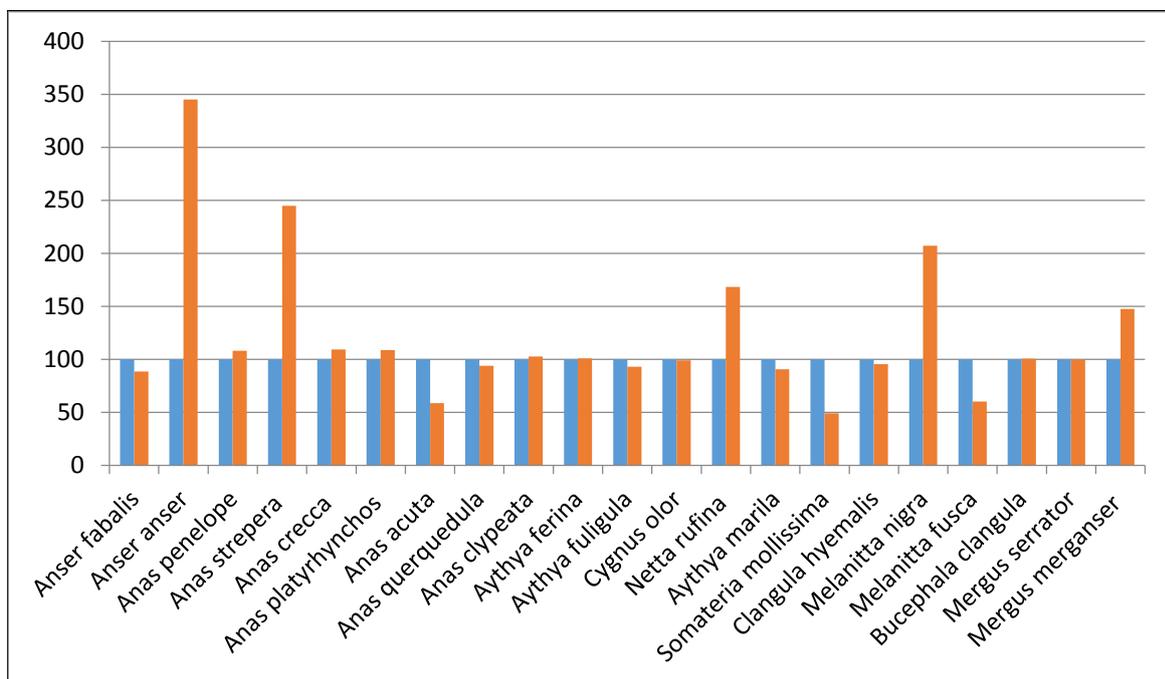


Figure 10. Annex II: Anatidae (ducks, geese and swans) - Comparison of breeding pairs of Annex II birds from the EU25 2004 assessment and Article 12 assessment.

Considering the variance within the two EU-wide data-sets, it is useful to consider the AEWA data on migratory waterbirds (coordinated by Wetlands International), which builds on the information collected through the International Waterbird Census (IWC). The AEWA data indicate that of the short-term (10-years) trends of the 83 Annex II populations; 35 species (42%) have declined over the last decade, 27 species (32%) were stable, fluctuating or uncertain and 21 species (25%) have increased.

Some of the key Annex II species of concern to AEWA (also represented with the Article 12 assessment) are Long-tailed Duck *Clangula hyemalis*, Velvet Scoter *Melanitta fusca*, Black-tailed Godwit *Limosa limosa*, Eurasian Curlew *Numenius arquata*, Common Pochard *Aythya ferina*, Eurasian Oystercatcher *Haematopus ostralegus* and Red Knot *Calidris canutus*. The AWEA trend data on all (50) waterbirds are outlined in Figure 11 and Figure 12.

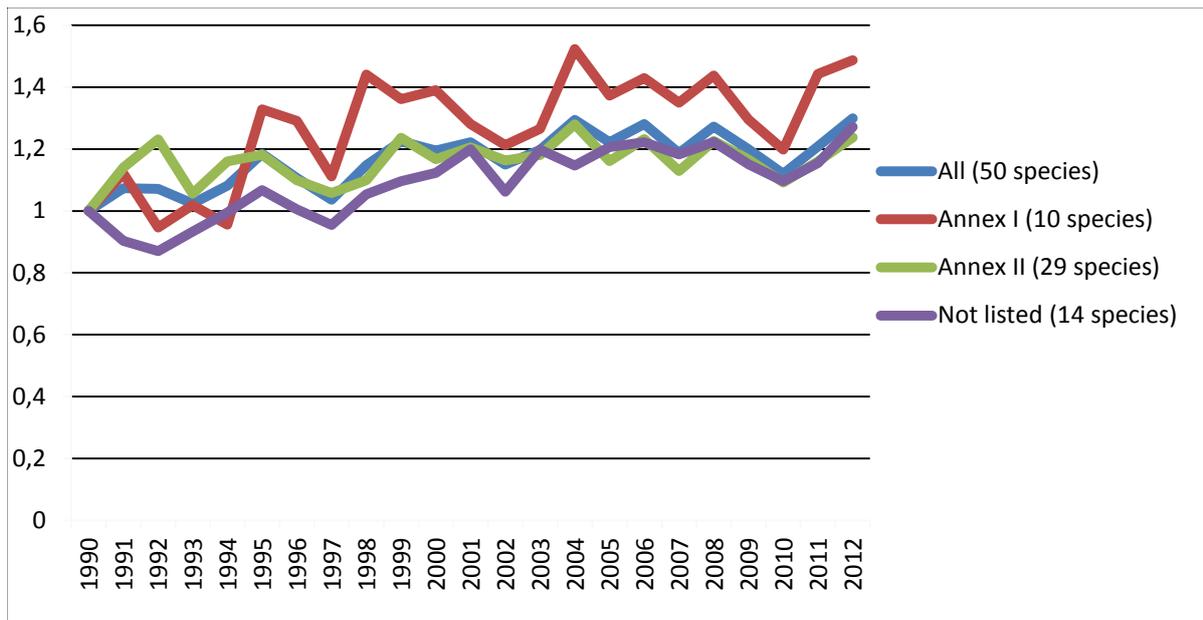


Figure 11. AEWA data on waterbirds. Source: Wetlands International/AEWA data on waterbirds.

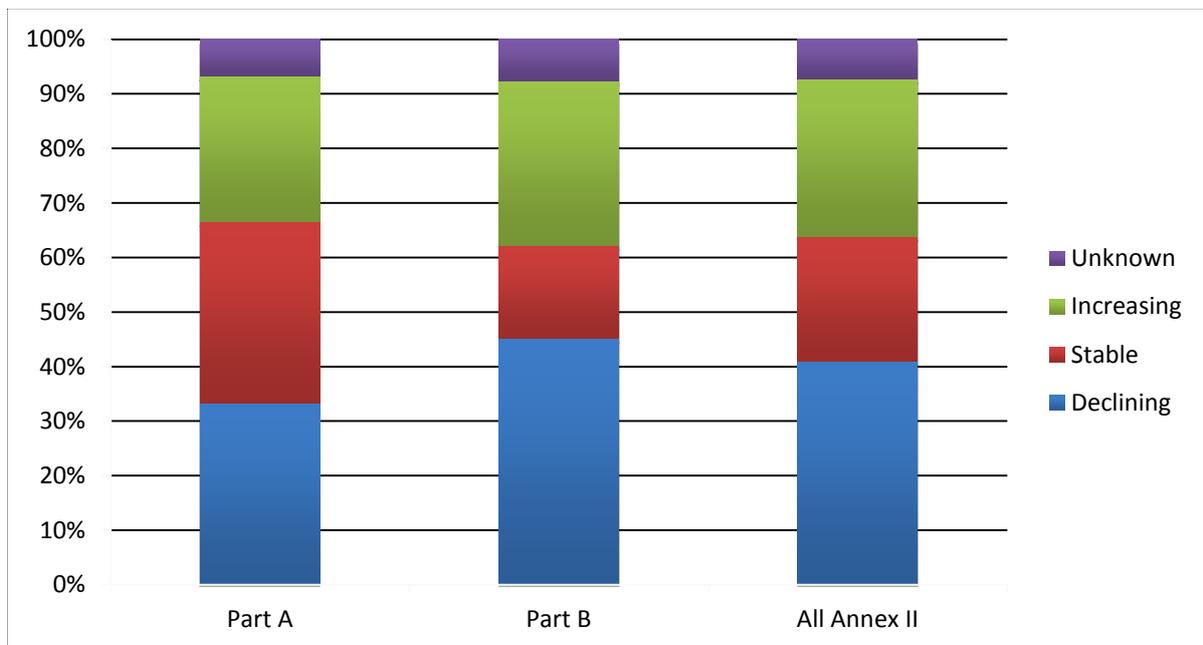


Figure 12. AEWA data on waterbirds. Source: Wetlands International/AEWA data on waterbirds.

AEWA also classifies waterbird populations into various management categories. For example, the 22 populations (from Part B of Annex II) are listed in Column B of AEWA. This means that these populations should have their harvest regulated with the view to restoring them to or maintaining them in favourable conservation status (Madsen *et al.*, 2015). The populations listed within categories 2, 3 and 4 in Column A can only be hunted within a sustainable use framework, ideally following the principles of adaptive harvest management. In this regard, contracting Parties to AEWA are obliged to ensure that any harvest is sustainable.

Pressures and Threats

In the EU reporting exercise, pressures are considered to be factors that are acting now or which were acting during the reporting period, while threats are factors that are expected to act in the future. However, judging the impact of these factors and finding evidence regarding specific

influences on the populations can be a challenging process. Under the Article 12 reporting exercise pressures from threats were not reported on separately. This means that it is not possible to distinguish between pressures acting at present, and potential future threats. Pressures and threats were reported using a hierarchical classification. Further, in the State of Nature (2015) report, information on pressures and threats is only available for SPA trigger species at national level (EEA, 2015b)¹⁴.

Regarding the overall rankings, ‘agriculture’ is the most frequently reported pressure/threat at Level 1 (16% of all reported pressures/threats), followed by the ‘modification of natural conditions’ (13%), ‘use of living resources (other than agriculture and forestry)’ (12%) and ‘disturbances due to human activities’ (11%). For level 2 pressures/threats ‘Hunting and collection’ was reported as a high-impact pressure/threat in 71 instances for 29 taxa, mainly birds of prey, gamebirds and waterfowl, 23 of which are listed in Annex I of the Birds Directive. The main Level 3 pressures/threats reported in these instances were hunting, trapping, poisoning and poaching (EEA, 2015a).

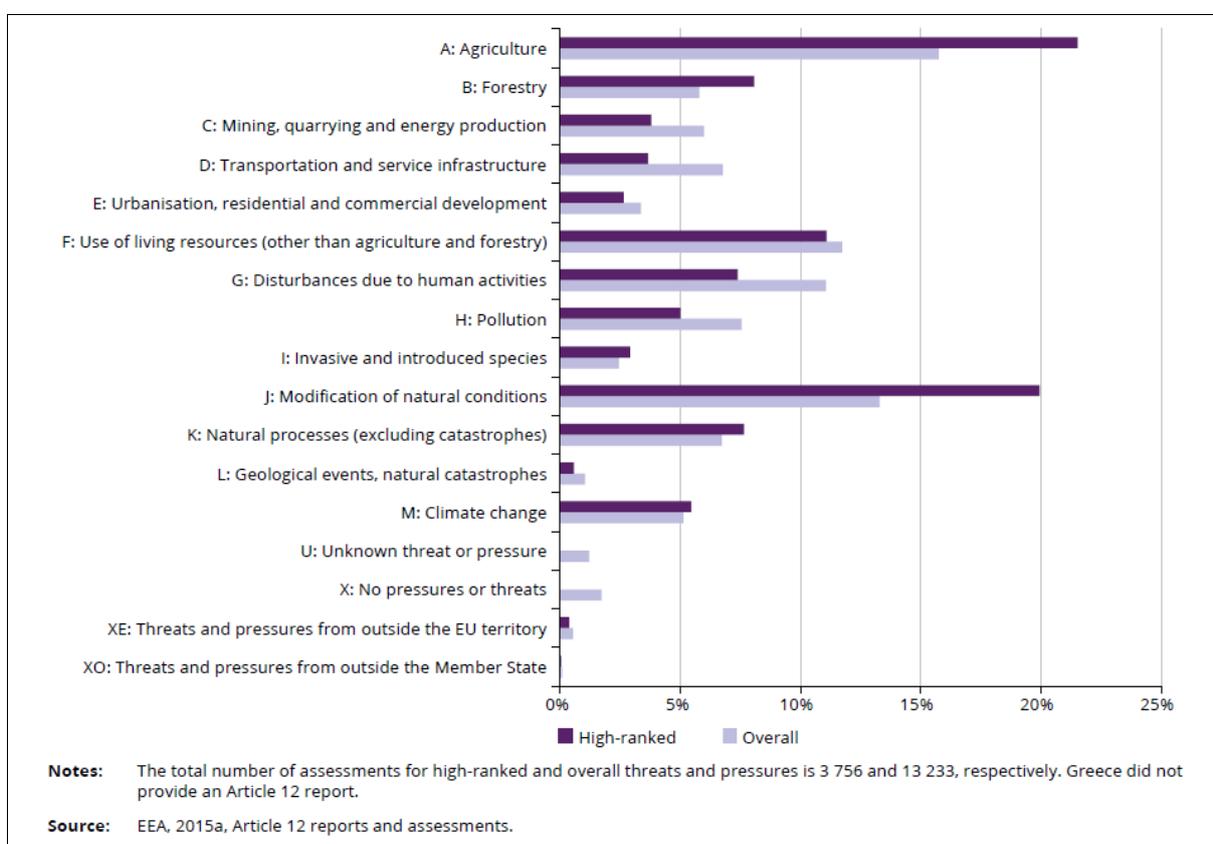


Figure 13. Frequency (%) of high-ranked and overall Level 1 pressures/threats reported for birds

However, in the European Red List of Birds (BirdLife International, 2015), which covered all species, ‘biological resource use’ then ‘agriculture and aquaculture’ were the highest ranked threats, followed by ‘climate change and severe weather’, ‘pollution’, ‘invasive and other problematic species, genes and diseases’ and ‘natural system modifications’. Within the category ‘biological resource use’, ‘hunting and collecting of terrestrial birds’ is represented as the greatest threat, but mainly related to illegal killing/persecution (see Figure 14).

¹⁴ For the SPA trigger species not listed in Annex I (about half of the trigger species), information on pressures and threats is not homogeneous. This limits its use in order to describe general pressures and threats to which bird species are exposed across the EU.

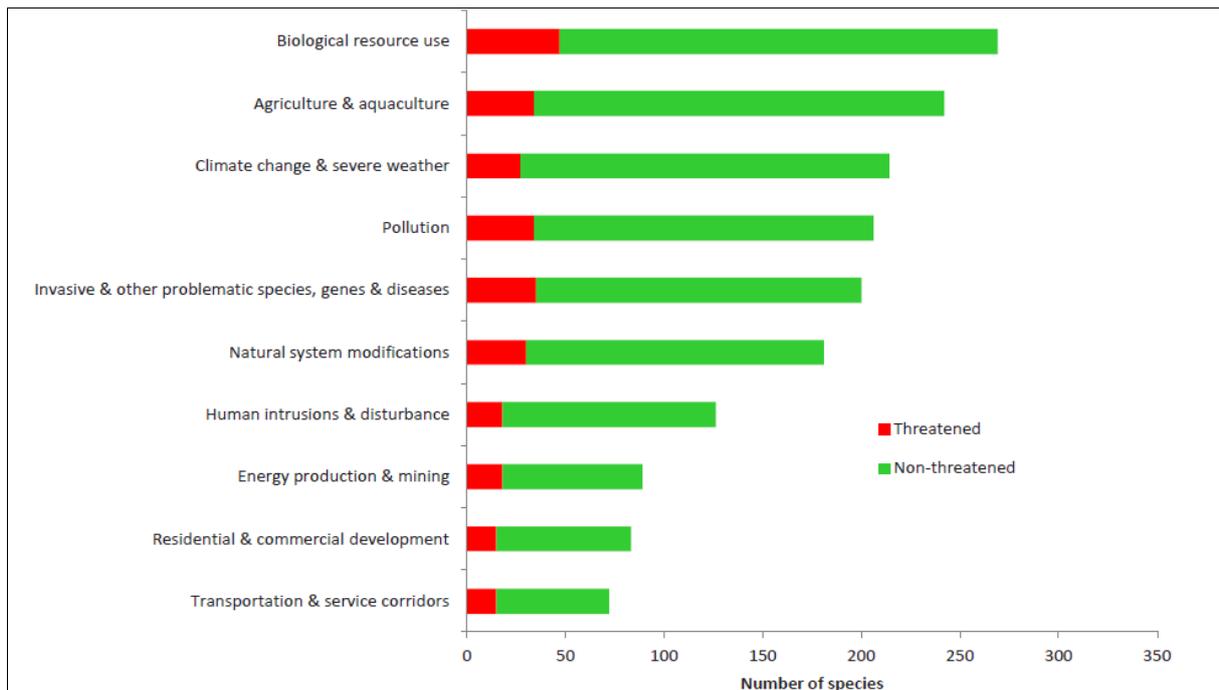


Figure 14. Threats to European Red List of Birds (Source: BirdLife International, 2015)

Regarding the potential role of hunting as a pressure/threat, different conclusions emerge from other assessments using meta-analysis rather than aggregation of individual assessments (i.e the State of Nature report and the European Red List). For example, Vickery *et al.* (2014) examined the evidence for declines in Afro-Palaeartic migrants, and demonstrated that long distance migrants and species dependent on agricultural systems are suffering the greatest declines. They found that human-related habitat change is the most important factor across both the breeding grounds (78%) and for the non-breeding grounds (89%). Persecution/hunting was the most important factor for only 1% (on non-breeding grounds) and for 3% (on breeding grounds) of these species. For waterfowl at global level, similar conclusions have been drawn. Long *et al.* (2007) found that significant predictors of population declines were wetland loss in the species' range (measured indirectly by the increase in area of agricultural land), and the total number of different threat processes that threaten a species. They also found that while many wildfowl were hunted, contrary to expectation, hunting did not influence population trends.

This raises some important questions on how methodologies influence conclusions, and in particular on how assessors judge hunting when scoring threats for a given species. It is possible that direct, intentional mortality (such as harvesting or hunting) is an obvious threat, and therefore somewhat uncritically recorded by assessors at species level, even though it may be difficult to empirically assess its impact on the species. By contrast factors that indirectly reduce population growth rate are less evident to assessors, although empirical analyses may uncover the evidence of their importance. In areas of intensive land use or high disturbance, birds may not even attempt to breed, so no decline can be observed and the impact may therefore be less evident.

Agriculture

In Europe, the decline in birds breeding on farmland from about 1970 onwards is well documented and largely attributable to agricultural intensification (e.g. see Pain and Pienkowski, 1997; Donald *et al.*, 2001). In this regard, broad-scale analyses and modelling have shown the hypothesis of agricultural change driving the decline of farmland birds and examined the probable mechanisms. In fact, the level of knowledge of the interaction between farmland management and biodiversity is

exceptional (Aebischer *et al.* 2000; Vickery *et al.* 2004), a trend that is linked to the Common Agricultural Policy.

The State of Nature report also shows that farming-related activities (modification of cultivation practices and changes in grazing regimes) are the most prominent pressures and threats to birds. For habitats: fertilisation and changes in grazing by livestock are the most frequently reported high-ranked pressures and threats. The same report shows that more than half of the bird species associated with agricultural and grassland habitats are in unfavourable population status (25% are Threatened and 28% are Near Threatened, Declining or Depleted), while the European Red List of Birds shows that this is the most threatened group of birds in Europe (BirdLife International, 2015a).

A better understanding of trend declines in Annex II birds can be gained through looking at the factors affecting specific species groups and individual species. For example, a relatively high proportion of breeding waders, pheasants, partridges and grouse that depend on agricultural systems are assessed as having a decreasing population trend. This applies to both short-term trends and long-term trends, which is worrying, particularly set against a background of increasingly fragmented semi-natural habitats due to current land use practices.

Regarding waterbirds, Delaney and Scott (2006) cited land-use changes and resulting habitat destruction as the most frequent known cause of population decrease. In most cases, this is mainly as a result of agricultural expansion and intensification, which is widespread in developing regions and continues in more developed countries. Newton (2004) noted that population sizes might be limited by severe competition at restricted stop-over sites, where bird densities are often high and food supplies heavily depleted (Jeff *et al.*, 2008).

Christensen and Fox (2014) analysed data on age and sex ratios of common duck species from the long-term collection of wings provided by Danish hunters during 1982 to 2010. They were exploring long-term changes in proportions of first-winter birds and in adult female/male ratios and associated links to the population dynamics of these species in Western Europe. Their findings showed significant declines in the proportions of young (i.e. an index of reproductive success) in the samples of wings from a number of duck species, which reflected (declining) population trends based on monitoring.

Hunting and Conservation

Although hunting contributes to species mortality, it is important to recognise the role of hunting in species and habitat conservation. The beneficial consequences of game management are most evident with sedentary species, however, it is also the case many wetlands have been actively managed for migratory waterfowl (e.g. Camargue in France). There is also management of bogs directly linked to the hunting of Snipe *Gallinago gallinago* in France (European Commission, 2008) and for Red grouse *Lagopus lagopus* in Ireland (Scallan, 2012; Scallan and Carlslake, 2014).

In this context, allowing the hunting of a species can provide a strong incentive to manage habitats and address other factors contributing to population declines, therefore contributing to the objective of restoring populations to favourable status. Furthermore, steps taken to improve the condition for target species can not only enhance the sustainable yield, but also benefit a range of other animals and plants that have similar ecological requirements.

Regarding farmland habitats, the Grey Partridge *Perdix perdix* is good example of a species affected by agricultural change in Europe. The breeding population trend in the EU27 is 'Decreasing' in the short-term and 'Decreasing' in the long-term, although the EU population size is estimated to be 1,030,000-2,040,000 pairs. Although it is a species mainly in decline, there are many examples of

successful conservation projects established by hunters to restore populations at a local level. Sometimes these projects have an effect on Article 12 reports (e.g. see Figure 15, with Ireland).

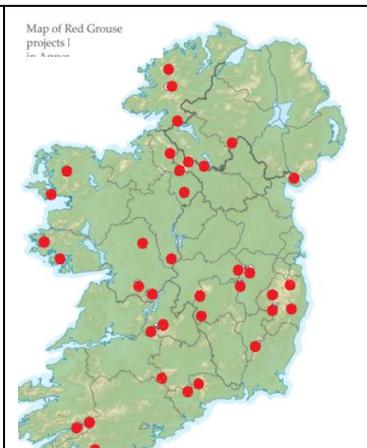
MS	Data from Member States reports													
	Breeding Population							Breeding Range						
	Population			Trend				Surface			Trend			
	Size&Unit	% MS	Period	ST Trend	Period	LT Trend	Area	% MS	Period	ST Trend	Period	LT Trend		
AT	12000 - 24000 p	1.2	2001-2012	-(10 - 30)	1980-2012	-(20 - 50)	54172	2.8	2001-2012	0	1980-2012	0		
BE	5400 - 13600 p	0.6	2000-2012	-(1 - 25)	1980-2012	0	21535	1.1	2000-2012	0	1980-2012	-(24 - 24)	#	
BG	14000 - 25000 p	1.4	2000-2012	x	1980-2012	x	116000	6.1	2000-2012	x	1980-2012	x		
CZ														
DE	37000 - 64000 p	3.4	1998-2009	-(4 - 78)	1990-2009	-(88 - 99)	297614	15.6	1998-2009	0	1985-2009	0	#	
DK	6000 - 6000 p	#	0.4	1999-2011	-(30 - 50)	1980-2011	-(30 - 50)	41558	2.2	1999-2011	0	1980-2011	0	#
EE	2000 - 4000 p	0.2	2001-2012	-(20 - 50)	1980-2012	-(50 - 70)	42900	2.2	2001-2012	-(20 - 50)	1980-2012	-(28 - 28)		
FI	9000 p	#	0.9	2001-2012	+(150 - 200)	1980-2012	+(200 - 250)	71600	#	3.8	2001-2012	x	1980-2010	+(54 - 54)
FR	640868 - 1222710 p	62.4	2001-2012	F	1980-2012	-(11.50 - 11.50)	366300	19.2	1998-2008	0	1985-2013	-(20 - 20)		
GR														
HU	11388 - 12419 p	#	0.8	2003-2012	-(72 - 72)	1980-2012	-(87 - 87)	58047	#	3.0	2000-2012	-(20 - 30)	1980-2012	-(70 - 80)
IE	180 - 200 p	#		2001-2012	+(3700 - 3700)	1980-2012	x	600	#		2001-2012	+(50 - 50)	1981-2012	-(74 - 74)
IT	2000 - 4000 p	#	0.2	2001-2012	x	1980-2004	-(50 - 80)	97000	5.1	2002-2013	-(10 - 10)	1983-2013	-(11 - 11)	
LT	4000 - 7000 p	0.4	2001-2012	-(30 - 60)	1980-2012	-(60 - 80)	69000	3.6	2001-2012	0	1980-2012	0		
LU	30 - 50 p		2000-2012	-(20 - 40)	1980-2012	-(70 - 90)	271	#	2000-2012	0	1980-2012	-(50 - 70)		
LV	443 - 902 p			x	1994-2004	-(- 91)	50868	2.7		x	1980-2004	+(30 - 30)		
NL	5838 - 11595 p	0.6	2002-2011	-(12 - 32)	1984-2011	-(72 - 84)	40279	2.1	1998-2012	0	1977-2012	0		
PL	90000 - 350000 p	#	13.2	2000-2012	-(30 - 55)	1980-2012	-(50 - 70)				x		x	
RO	120000 - 180000 p	10.5	2001-2013	x	1980-2012	x	253400	13.3	2001-2013	x	1980-2012	x		
SE	7000 - 15000 p	#	0.8	2001-2012	-(10 - 30)	1980-2012	-(20 - 60)	153400	8.0	2001-2012	0	1980-2012	x	
SI	100 - 1000 p	#	2001-2012	-(10 - 20)	1980-2012	-(40 - 80)	3135	0.2	2001-2012	x	1980-2012	-(60 - 80)		
SK	1000 - 3000 p	0.2	2000-2012	-(20 - 80)	1980-2012	-(20 - 80)	47895	2.5	2000-2012	-(0 - 20)	1980-2012	-(0 - 20)		
UK	43000 - 43000 p	#	3.2	1998-2010	-(44.10 - 44.10)	1980-2010	-(86.78 - 86.78)	122600	6.4	1989-2009	-(24 - 24)	1970-2009	-(40 - 40)	

Figure 15 *Perdix perdix* - <http://bd.eionet.europa.eu/article12/summary?period=1&subject=A644>

In countries with larger populations, however, it can be difficult to see the effects of conservation work at a local level, notwithstanding there is also positive work taking place in, for example, in France (Bro *et al.*, 2003), the United Kingdom (Ewald *et al.*, 2012), Sweden (Jönsson *et al.* 2010) and Hungary (Fargo *et al.* 2012).

In Ireland, the Irish Red Grouse *Lagopus lagopus hibernicus* is another example of a declining and threatened hutable species. The results of the most recent Irish Red Grouse survey indicate that the population in the Republic of Ireland is just over 4,200 birds (average 1.1 per 1km² surveyed). This suggests a 50% decline in range in the last 40 years (Cummins *et al.*, 2010).

A Red Grouse Species Action Plan (2013) developed with a variety of stakeholders demonstrates that although the species is declining, some 36 conservation projects have been established by hunters to address local declines. Specific actions include habitat management, predator control, disturbance control, provision of grit, improving public awareness and monitoring.



Map of Red Grouse projects

There is also significant conservation and management work undertaken for Red Grouse in the United Kingdom, whereby large areas of heather moorlands are managed for hunting interests. The existence of this rare heathland habitat is largely due to its value for Red Grouse and other threatened birds, which provides a strong basis for protecting this habitat against other less-nature-friendly land use interests, such as commercial afforestation. Notwithstanding, there are often conflicts between the conservation of Hen Harrier *Circus cyaneus* and the management of Red Grouse *Lagopus lagopus scoticus* (e.g. see Thirgood and Redpath, 2008).

The practice of predator control, which is frequently undertaken by European hunters, can also bring conservation benefits to huntable and other species of birds. For example, Haworth and Thompson (1990) found that Golden Plover, Curlew *Numenius arquata*, and Redshank *Tringa totanus* were more frequent in upland areas managed by gamekeepers. Similarly, Tharme *et al.* (2001) found that densities of breeding Golden Plover and Lapwing *Vanellus vanellus* were five times higher, and those of Red grouse and Curlew, twice as high on grouse moors as on other moors. Fletcher *et al.* (2010) also showed that managing the numbers of common predators can significantly increase the breeding success of Red grouse and other ground-nesting birds of conservation concern.

In other research, Cote and Sutherland (1996) assessed the results of 20 published studies of predator removal programmes using a meta-analysis. Their analysis showed that removing predators had a large, positive effect on hatching success of the target bird species, with removal areas showing higher hatching success, on average, than 75% of the control areas. Predator removal also increased post-breeding population sizes (i.e. autumn densities) of the target species. However, in terms of increasing breeding bird population sizes, the analysis shows that predator control is less consistent, possibly due to inherent characteristics of avian population regulation, but also ineffective predator removal and inadequate subsequent monitoring of the prey populations.

Empirical evidence from throughout Europe also suggests that the levels of predation on wader nests are unsustainably high in many cases (MacDonald and Bolton, 2008). For example, work in Scotland by Ratcliffe *et al.* (2008) showed how managing North American mink delivered considerable benefits for Common Terns *Sterna hirundo* in west Scotland. In the Netherlands, the significance of nest predation on grassland breeding shorebirds was demonstrated by Teunissen *et al.* (2008) in highlighting the importance of multiple approaches to bird conservation at the site-specific level. In Ireland, the Bolebrack Red Grouse Habitat Management Project (Scallan and Carslake, 2014; Scallan 2016) and the Grey Partridge Project in Boora, Co. Offaly (Buckley *et al.*, 2013; McMahon *et al.*, 2013) have shown that game management strategies that include effective predator control can lead to improved productivity for a variety of bird species (e.g. Red Grouse, Grey Partridge, Lapwing and Golden Plover).

In terms of human-wildlife conflict reduction, it is also important to consider that some of the Arctic-breeding geese are increasing as demonstrated in the EU 2004 and 2008-2012 data-sets. Although these geese are a highly valued resource, the growing numbers are causing agricultural conflicts in wintering and staging areas as well as to vegetation on their breeding grounds. In this regard, the African-Eurasian Migratory Waterbird Agreement (AEWA) provides mechanisms to manage certain populations (through, for example, hunting), which cause conflicts with certain human economic activities. In most cases, the management of such populations requires an adaptive management framework to maintain their population at levels that correspond to ecological, scientific and cultural requirements while taking account of economic and recreational requirements (Madsen *et al.*, 2015b).

Finally, while fluctuations within the frame of population dynamics are common, the Birds Directive sets out to ensure that the EU and its Member States strive to protect birds and their habitats. At the

same time, however, it is important to be aware of the ecological concept of competition, which recognises that all species may struggle to maintain an increasing population trend, due to limited resources and limited space¹⁵. This manner of thinking relates to the classical density-dependent fashion (Hairston *et al.*, 1960).

¹⁵ Competition can exist among different and similar species as well as at different trophic levels (Begon *et al.* 1996). This can relate to, for example, resource competition for food, nesting sites or predation. An increase in the population of one species can mean that that same species will require more resources, therefore possibly reducing (resource) availability for other species that require the same resources.

Recommendations

FACE believes that there are a number of key recommendations which, if implemented, would greatly strengthen the long-term conservation of Europe's Annex II (hunnable) and other birds. Some of these recommendations are summarised below.

Species Conservation:

- Conservation programmes need to be more targeted (e.g. outputs driven) and flexible to make better use of landowner/hunter knowledge and experience.
- More funding needs to be directed into targeted management programmes involving a diversity of stakeholders, empowering community-based conservation.
- Ensure that the threats to migratory hunnable birds are tackled on a flyway scale through existing international agreements e.g. AEWA.
- For hunnable bird species of the highest conservation concern, action plans should be developed at the appropriate geographic scale using a multi-stakeholder approach for the recovery of the species¹⁶.
- Ensure that invasive alien species are detected early and, where appropriate, rapidly managed and/or eradicated.

Habitat Conservation:

- Ensure that land use policies, such as the CAP, safeguard farmland biodiversity through appropriate incentives, such as greening mechanisms.
- Improve the effectiveness of agri-environment schemes (under Pillar II of the CAP) within MS by setting specific long-term objectives incorporating targeted and measurable mechanisms that support biodiversity.
- Ensure that Pillar II (agri-environmental) incentives provide suitable mechanisms to allow for the creation and management of habitats for hunnable bird species. Such mechanisms may have a greater uptake by farmers and support the ongoing conservation investments by the hunting community.
- Enhance policy to strengthen the implementation of the Natura 2000 Network through incorporating sustainable use and community-based conservation approaches.
- Promote the conservation and better management of High Nature Value (HNV) farmland.
- Ensure key habitats¹⁷ for waterbirds are protected through existing instruments e.g. AEWA via greater dedication from Contracting Parties.

¹⁶ In total, EU Management Plans (MP) were produced for 13 hunnable species considered to be threatened in the EU. Of these 13 taxa, four are the species are secure, one is unknown, three are near threatened, declining or depleted and five are threatened. Two had increasing short-term population trends, one was stable, one was fluctuating and nine were decreasing. However, since several MPs were prepared between 1997 and 2000, it is possible that they did not deliver the expected conservation results (European Commission, 2015).

¹⁷ Waterbirds, like all wildlife, require specific habitats (or habitat features) to complete critical phases of their life cycle.

Monitoring:

- Ensure that hunting is sustainable by placing greater priority on the annual reporting of harvest levels of game birds¹⁸. If such general systems are not possible to implement in the short term, priorities should be given to declining populations of species, for example, to those waterbirds listed in Column A and B of AEWA.
- Encourage the development of EU bag collection monitoring schemes that make better use of distribution and demographic data to help understand the mechanisms of reduced growth rate.

Research:

Managing to create, restore, or enhance habitats and food resources for huntable (and other) birds can be challenging not only because such needs may vary greatly across seasons (breeding, migration, winter) and among species, but such efforts also must balance the needs of other wildlife and humans. In this context, additional research should be conducted into:

- *Limiting factors* – for Annex II birds ranked of high conservation priority, conduct studies on the life stages and factors (at both local and landscape scales) that limit reproductive success or overwinter survival. Combine distribution and demographic data to help understand the mechanisms of reduced growth rate.
- *Disturbance effects* – study the effects on nesting or foraging waterbirds of human disturbance and if and how such effects can be mitigated.

Communication:

- Communication strategies on best-practice habitat and species management should be directed towards resource-users e.g. hunters and land managers as well as policy-makers and the general public.

¹⁸ Collection of waterbird hunting bag statistics has a long history in Europe, in some countries dating back to the first half of the 20th century (Lampio, 1983) and nowadays, systems exist in the majority of European countries (www.artemis-face.eu). However, the way in which data are collected and the species and geographical resolution and coverage vary greatly between countries.

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Appendix 1: Methodology and Data Quality

Article 12 Reporting

For each Member State, the Article 12 reports comprised two sections:

- a) general information about the implementation of the Birds Directive, including main achievements, classification of SPAs, SPA management plans and details of any introductions of non-native bird species; and
- b) reports on the size and trend of populations and distribution of individual bird taxa, including sections for reporting on the main threats and pressures affecting taxa for which SPAs have been classified (designated 'SPA trigger species'), as well as their coverage by the SPA network and relevant conservation measures taken (EEA, 2015a).

To allow total EU population sizes to be calculated, all Member States were requested to report their national data using a common population unit. Population units for most breeding birds were 'breeding pairs', except for a minority of taxa with unusual or complex breeding biology or cryptic behaviour, for which other units such as calling (or lekking males) were used.

Within Annex II, some 76 out of the 81 bird species had breeding data. Generally speaking, breeding data originates from bird surveys that can entail a variety of field methods (e.g. spot/territory mapping methods, line or point transects). These sample surveys generally record all bird species encountered, but, by their very nature, are unlikely to cover very rare species and so the trends represent the commoner/more widespread birds¹⁹.

On the other hand, the unit for wintering birds was 'individuals' as the populations of migratory wildfowl and waders are often best monitored in the winter when they congregate in large numbers. Wintering bird surveys generally entail counting waterbirds at wetland sites on predefined count days over the winter months. In many cases, wetlands of all types and sizes are monitored, including estuaries, coastlines, bays, rivers, lakes, streams and flooded fields.

Although the EU receives an annual influx or passage of wintering birds, it is important to note that a range of species originate (i.e. breed) outside of the EU. In order to provide the most comprehensive account of migratory birds, the report draws on the wintering waterbird data from the International Waterbird Census, which is used to inform the assessment of waterbird populations for the African-Eurasian Migratory Waterbird Agreement (AWEA).

Annex II of the Birds Directive lists 50 waterbird species of which 16 are listed in Part A. These 50 species correspond to 83 biogeographic populations. From these 83 populations, 30 are listed in Part A and 53 in Part B of Annex II (Madsen *et al.*, 2015). For the Article 12 reports, five Annex II species had no breeding data (only wintering) whereas 40 Annex II species of waterbirds had wintering and breeding data.

After the reporting process at Member State level, the European Environment Agency (EEA) then combined the national data sets provided by each country to produce one EU-level data set, which summarises the size and trend of each species population and range at EU27 level. This process was relatively straightforward relying on standardised methods, weighting each country's contribution accordingly, following the methodology used by BirdLife International (2004a). However, some

¹⁹ It is often the case that the rare species are well monitored and the (data) problematic species, for example, those which have intermediate population sizes (e.g. too rare to be covered well by sample surveys) or complex breeding behaviour, need greater monitoring effort.

caution should be applied as different Member States used different methodologies, potentially leading to differing interpretations²⁰ (EEA, 2015b).

Data Quality: Methods used to estimate parameters of bird status

Breeding bird data:

The estimates of breeding population sizes and range trends were most often based on partial data. In this regard, only 25% of the breeding data (population size and trends) were based on 'complete survey'; 46% were based on 'partial' data; 18% were based on expert opinion, and 11% had 'absent data'. Further, data on breeding range and trends were mainly based on 'partial data' (39%); 35% on 'complete survey'; 12% on 'expert opinion', and 13% were based on 'absent data'.

Wintering population sizes:

The data on winter population sizes and trends were based on 'complete survey' in 51% of cases, while 34% were based on 'partial data'; 7% on 'expert opinion', with 9% 'absent data'. It is important to note that the State of Nature report was only able to rely on trend data for **81 species** of wintering birds of which 41% (i.e. 33 out of 81 species) were Annex II species.

Table 1.1 Methods used to estimate parameters of bird status

		Complete survey	Partial data	Expert opinion	Absent data	Not reported	%
Breeding	Size	26	56	17	1	0	100
Breeding	S. trend	29	45	14	12	0	100
Breeding	L. trend	20	37	23	19	1	100
MEAN		25	46	18	10.7	0.33	
Winter	Size	55	40	5	3	0	100
Winter	S. Trend	55	30	6	9	0	100
Winter	L. Trend	44	32	10	14	0	100
MEAN		51.3	34	7	8.7	0	
B. range	Area	53	38	4	5	0	100
B. range	S. Trend	22	36	21	21	0	100
B. range	L. Trend	31	43	12	13	1	100
MEAN		35.3	39	12.3	13	0.3	

Note: Percentages were estimated from manual extraction from Figure 1.1 so may not be 100% precise²¹.

²⁰ A variety of additional methodological issues are discussed in the State of Nature in the EU Technical Report (EEA, 2015b).

²¹ Note: The total number of reports was 5,346 and 1,022, respectively for breeding and wintering birds. Greece did not provide an Article 12 report. Source: EEA (2015a), Article 12 reports and assessments.

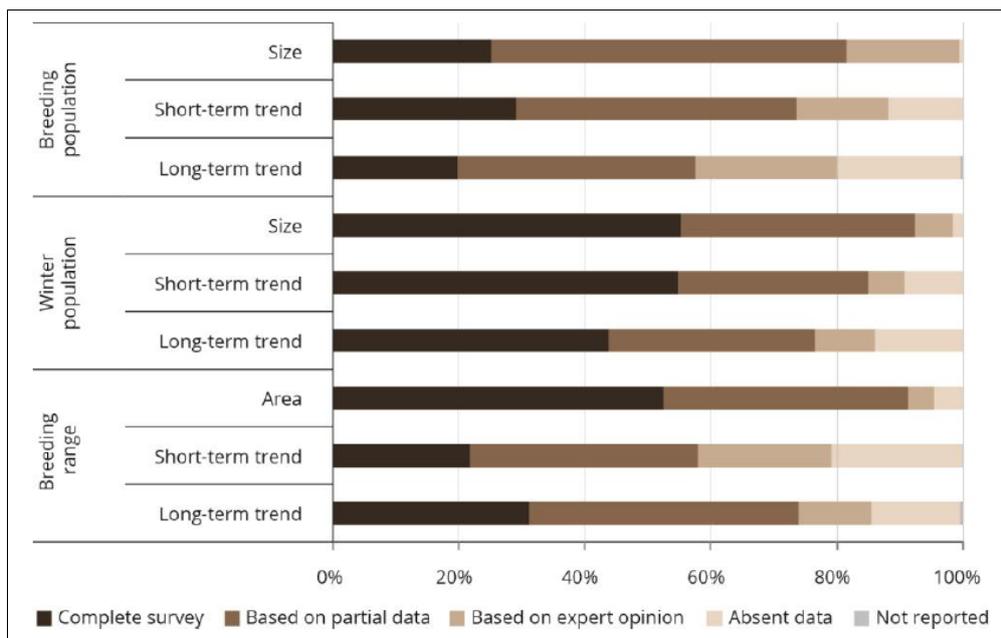


Figure 1.1. Data type/source relied on. Source: EEA 2015b

Data quality of parameters of bird status

Breeding population data:

Approximately 28% of the breeding data on population size and trends were considered 'good', with 45.7% of the data considered 'moderate'; 19.7% 'poor', with 6% 'absent'.

Wintering population sizes:

Approximately 53% of the wintering data on population size and trends were considered 'good' with 33% of the data considered 'moderate'; 8% 'poor', with 6% 'absent'.

Breeding range population data:

Approximately 40% of the breeding area data incorporating population size and trends was considered 'good' with 38% of the data considered 'moderate'; 13% 'poor' with 10% 'absent'.

Table 1.2. Data quality. Source: EEA 2015b

		Good	Mod.	Poor	Absent data	%
Breeding	Size	30	54	15	1	100
Breeding	S. trend	33	43	17	7	100
Breeding	L. trend	22	40	27	11	100
MEAN		28.3	45.7	19.7	6.3	
Winter	Size	57	36	5	2	100
Winter	S. Trend	58	29	6	7	100
Winter	L. Trend	43	35	14	8	100
MEAN		52.7	33.3	8.3	5.7	
B. range	Area	57	30	9	4	100
B. range	S. Trend	28	41	15	16	100
B. range	L. Trend	34	43	14	9	100
MEAN		39.7	38	12.7	9.7	

Note: Percentages were estimated from manual extraction from Figure 1.2 so may not be 100% precise

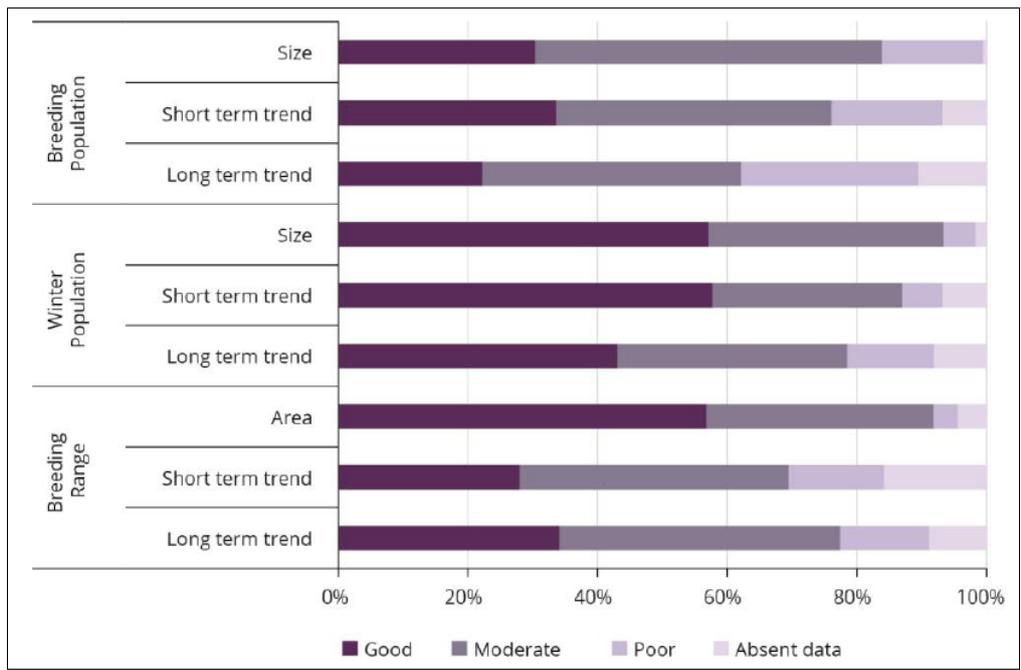


Figure 1.2. Data quality. Source: EEA 2015b

Appendix 2: Status of Annex II Birds

Bird Status Art. 12	Threat Status 2004	IUCN Red List
Threatened	Endangered	CR - Critically Endangered
Near Threatened	Vulnerable	EN - Endangered
Declining	Declining	VU - Vulnerable
	Rare	
Depleted	Depleted	NT - Near Threatened
Secure	Secure	LC - Least Concern
Unknown	Data Deficient	Data Deficient

PART A		EU Breeding population (pairs) 2008-2012		BirdLife Int. Threat Status 2004	Article 12 Population Status 2008-2012	IUCN Red List Category (2015)		
		Low	High			EU 27	European	Global
ANATIDAE								
Bean Goose	<i>Anser fabalis</i>	1,650	3,500	Secure	Secure	LC	LC	LC
Greylag Goose	<i>Anser anser</i>	197,000	344,000	Secure	Secure	LC	LC	LC
Canada Goose	<i>Branta canadensis</i>	35,418	47,418	Not assessed	Not assessed		LC	LC
Eurasian Wigeon	<i>Anas penelope</i>	79,500	124,000	Secure	Near Threatened	VU	LC	LC
Gadwall	<i>Anas strepera</i>	37,300	69,900	Secure	Secure	LC	LC	LC
Eurasian Teal	<i>Anas crecca</i>	226,000	420,000	Secure	Secure	LC	LC	LC
Mallard	<i>Anas platyrhynchos</i>	1,700,000	2,920,000	Secure	Secure	LC	LC	LC
Northern Pintail	<i>Anas acuta</i>	8,600	17,400	Declining	Threatened	VU	LC	LC
Garganey	<i>Anas querquedula</i>	12,000	24,000	Vulnerable	Threatened	VU	LC	LC
Northern Shoveler	<i>Anas clypeata</i>	27,100	42,900	Declining	Depleted	LC	LC	LC
Common Pochard	<i>Aythya ferina</i>	85,300	127,000	Declining	Threatened	VU	VU	VU
Tufted Duck	<i>Aythya fuligula</i>	181,000	293,000	Declining	Secure	LC	LC	LC
GALLIFORMES								
Red Grouse	<i>Lagopus lagopus</i>	360,738	704,168	Declining	Threatened	VU	VU	LC
Rock Ptarmigan	<i>Lagopus mutus</i>	48,892	122,488	Declining	Threatened	VU	NT	LC

Rock Partridge	<i>Alectoris graeca</i>	5,780	7,840	Declining	Threatened	VU	NT	NT
Red-legged Partridge	<i>Alectoris rufa</i>	5,140,000	7,170,000	Declining	Declining	LC	LC	LC
Grey Partridge	<i>Perdix perdix</i>	1,016,507	1,959,476	Vulnerable	Declining	LC	LC	LC
Common Pheasant	<i>Phasianus colchicus</i>	3,736,224	4,549,425	Secure	Not assessed	LC	LC	LC
COOT								
Common Coot	<i>Fulica atra</i>	548,000	870,000	Secure	Near Threatened	LC	NT	LC
WOODCOCK & SNIPES								
Jack Snipe	<i>Lymnocyptes minimus</i>	9,500	23,100	Declining	Unknown	LC	LC	LC
Common Snipe	<i>Gallinago gallinago</i>	378,000	699,000	Declining	Declining	LC	LC	LC
Eurasian Woodcock	<i>Scolopax rusticola</i>	728,000	1,480,000	Declining	Secure	LC	LC	LC
COLUMBIDAE								
Rock Pigeon	<i>Columba livia</i>	5,210,000	11,400,000	Secure	Secure	LC	LC	LC
Common Wood-pigeon	<i>Columba palumbus</i>	19,000,000	26,400,000	Secure	Secure	LC	LC	LC
PART B								
ANATIDAE B								
Mute Swan	<i>Cygnus olor</i>	67,700	92,900	Secure	Secure	LC	LC	LC
Pink-footed Goose	<i>Anser brachyrhynchus</i>			Secure	Secure	LC	LC	LC
Greater White-fronted Goose	<i>Anser albifrons</i>			Secure	Secure	LC	LC	LC
Brent Goose	<i>Branta bernicla</i>			Vulnerable	Secure	LC	LC	LC
Red-crested Pochard	<i>Netta rufina</i>	10,331	13,819	Secure	Secure	LC	LC	LC
Greater Scaup	<i>Aythya marila</i>	1,300	2,500	Endangered	Threatened	VU	VU	LC
Common Eider	<i>Somateria mollissima</i>	224,000	321,000	Secure	Threatened	EN	VU	NT
Long-tailed Duck	<i>Clangula hyemalis</i>	2,400	3,800	Secure	Threatened	VU	VU	VU
Black Scoter	<i>Melanitta nigra</i>	6,000	9,900	Secure	Secure	LC	LC	LC
White-winged Scoter	<i>Melanitta fusca</i>	11,750	24,100	Declining	Threatened	VU	VU	VU
Common Goldeneye	<i>Bucephala clangula</i>	267,000	382,000	Secure	Secure	LC	LC	LC
Red-breasted Merganser	<i>Mergus serrator</i>	48,600	68,700	Secure	Threatened	VU	NT	LC

Common Merganser	<i>Mergus merganser</i>	56,050	84,929	Secure	Secure	LC	LC	LC
GALLIFORMES B								
Hazel Grouse	<i>Bonasa bonasia</i>	663,000	912,000	Declining	Secure	LC	LC	LC
Black Grouse	<i>Tetrao tetrix</i>	797,503	1,028,675	Declining	Depleted	LC	LC	LC
Western Capercaillie	<i>Tetrao urogallus</i>	553,845	816,295	Declining	Depleted	LC	LC	LC
Barbary Partridge	<i>Alectoris barbara</i>	7,500	20,100	Declining	Unknown	LC	LC	LC
Chukar	<i>Alectoris chukar</i>	71,500	143,000	Declining	Secure	LC	NT	LC
Black Francolin	<i>Francolinus francolinus</i>	3,000	7,000	Rare	Secure	LC	LC	LC
Common Quail	<i>Coturnix coturnix</i>	1,260,000	2,980,000	Secure	Unknown	LC	LC	LC
Wild Turkey	<i>Meleagris gallopavo</i>	23	44	Not assessed	Not assessed			LC
RAILS & MOORHENS								
Water Rail	<i>Rallus aquaticus</i>	76,800	191,000	Secure	Unknown	LC	LC	LC
Common Moorhen	<i>Gallinula chloropus</i>	743,000	1,120,000	Secure	Secure	LC	LC	LC
OYSTERCATCHERS, PLOVERS & SANDPIPERS								
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	226,000	267,000	Secure	Threatened	VU	VU	NT
Eurasian Golden-plover	<i>Pluvialis apricaria</i>	244,000	355,000	Depleted	Secure	LC	LC	LC
Grey Plover	<i>Pluvialis squatarola</i>			Secure	Secure	LC	LC	LC
Northern Lapwing	<i>Vanellus vanellus</i>	906,000	1,410,000	Vulnerable	Threatened	VU	VU	NT
Red Knot	<i>Calidris canutus</i>			Declining	Secure	LC	LC	NT
Ruff	<i>Philomachus pugnax</i>	22,200	49,000	Vulnerable	Threatened	EN	LC	LC
Black-tailed Godwit	<i>Limosa limosa</i>	43,396	70,293	Vulnerable	Threatened	EN	VU	NT
Bar-tailed Godwit	<i>Limosa lapponica</i>	2,100	3,300	Endangered	Secure	LC	LC	NT
Whimbrel	<i>Numenius phaeopus</i>	39,100	70,100	Declining	Secure	LC	LC	LC
Eurasian Curlew	<i>Numenius arquata</i>	163,980	185,132	Declining	Near Threatened	VU	VU	NT
Spotted Redshank	<i>Tringa erythropus</i>	15,000	38,000	Declining	Near Threatened	NT	LC	LC

Common Redshank	<i>Tringa totanus</i>	93,700	130,000	Declining	Threatened	NT	LC	LC
Common Greenshank	<i>Tringa nebularia</i>	66,100	112,000	Secure	Secure	LC	LC	LC
GULLS								
Common Black-headed Gull	<i>Larus ridibundus</i>	882,000	1,150,000	Secure	Depleted	LC	LC	LC
Mew Gull	<i>Larus canus</i>	262,000	353,000	Declining	Secure	LC	LC	LC
Yellow-legged Gull	<i>Larus cachinnans</i>	3,500	6,000	Secure	Secure	LC	LC	LC
Lesser Black-backed Gull	<i>Larus fuscus</i>	288,477	340,481	Secure	Secure	LC	LC	LC
Herring Gull	<i>Larus argentatus</i>	414,000	493,000	Secure	Near Threatened	VU	NT	LC
Great Black-backed Gull	<i>Larus marinus</i>	40,500	47,000	Secure	Secure	LC	LC	LC
PIGEONS & DOVES								
Stock Pigeon	<i>Columba oenas</i>	524,000	960,000	Secure	Secure	LC	LC	LC
Eurasian Collared-dove	<i>Streptopelia decaocto</i>	5,940,000	9,780,000	Secure	Secure	LC	LC	LC
European Turtle-dove	<i>Streptopelia turtur</i>	2,330,000	4,060,000	Vulnerable	Near Threatened	NT	VU	VU
SKYLARK & THRUSHES								
Eurasian Skylark	<i>Alauda arvensis</i>	24,100,000	36,900,000	Declining	Declining	LC	LC	LC
Eurasian Blackbird	<i>Turdus merula</i>	47,300,000	70,200,000	Secure	Secure	LC	LC	LC
Fieldfare	<i>Turdus pilaris</i>	3,050,000	4,700,000	Secure	Threatened	VU	LC	LC
Song Thrush	<i>Turdus philomelos</i>	12,700,000	21,900,000	Secure	Secure	LC	LC	LC
Redwing	<i>Turdus iliacus</i>	1,980,000	3,280,000	Secure	Threatened	VU	NT	NT
Mistle Thrush	<i>Turdus viscivorus</i>	2,370,000	4,590,000	Secure	Secure	LC	LC	LC
CORVIDAE & STARLING								
Eurasian Jay	<i>Garrulus glandarius</i>	4,560,000	8,020,000	Secure	Secure	LC	LC	LC
Magpie	<i>Pica pica</i>	7,050,000	11,200,000	Secure	Secure	LC	LC	LC
Eurasian Jackdaw	<i>Corvus monedula</i>	5,280,000	9,330,000	Secure	Secure	LC	LC	LC
Rook	<i>Corvus frugilegus</i>	3,740,000	6,630,000	Secure	Secure	LC	LC	LC
Carrion Crow	<i>Corvus corone</i>	5,850,000	9,640,000	Secure	Secure	LC	LC	LC
Common Starling	<i>Sturnus vulgaris</i>	18,200,000	33,600,000	Declining	Secure	LC	LC	LC

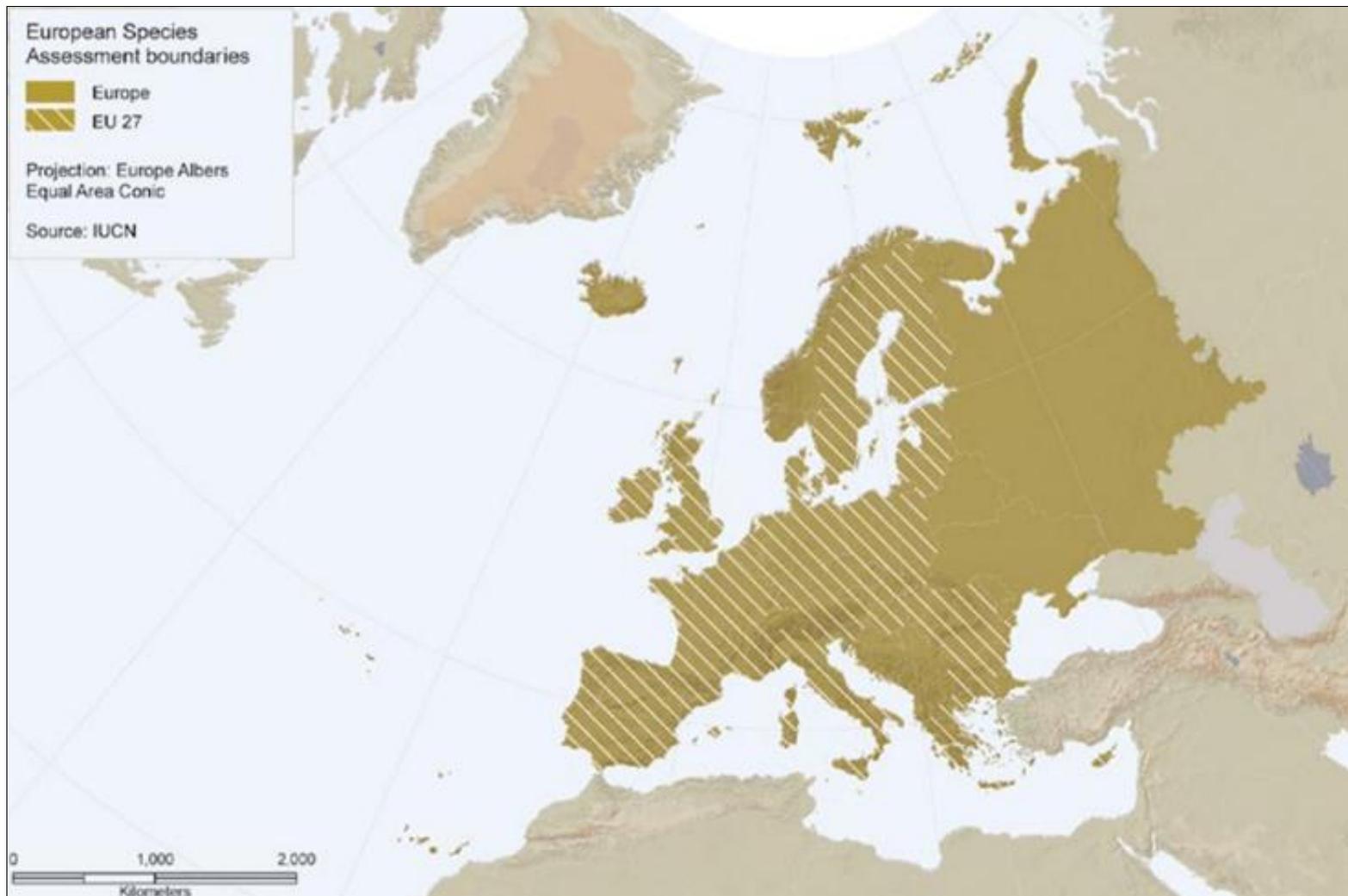


Figure 2.1. IUCN EU and European assessments are broadly based on two areas – continental Europe and the EU.