



## 6<sup>th</sup> SESSION OF THE MEETING OF THE PARTIES

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*“Making flyway conservation happen”*

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### **GUIDANCE FOR DEALING WITH THE ACCIDENTAL SHOOTING OF LOOK-ALIKE SPECIES IN THE WESTERN PALEARCTIC**

*Compiled by the Technical Committee*

#### **Background**

Resolution 4.3 requested the Technical Committee to provide guidance on a species-by-species basis to the Parties on how to deal with look-alike species with regard to hunting i.e. on how to reduce the risk of accidental shooting of protected species caused by hunting of legitimate ‘look-alike’ quarry species.

Some protected species may be shot by accident because they look like huntable species or because they mix with them, for example in feeding areas or during migration. This is particularly the case for some threatened species, a good example being Slender-billed Curlew *Numenius tenuirostris* which can/could be confused with Eurasian Curlew *Numenius arquata*.

#### **Scope and approach**

This guidance addresses how to manage issues related to the accidental shooting of look-alike species of populations listed in Table 1 column A and B of Annex 3. Given the novelty of the approach to the issue, and the lack of relevant information for many parts of the African-Eurasian range, the guidance is currently limited to species/populations of the Western Palearctic and the list of species further restricted to those with populations listed on column ‘A’ of AEWA Table 1, i.e. high conservation status species where the consequence of accidental shooting would be most severe.

The task of evaluating whether a population is ‘*considerably affected by the hunting of look-alike species*’ as prescribed for Column ‘B’ was not included in this preliminary investigation. Further guidance will be developed as resources permit.

In developing this guidance, the following steps were undertaken:

- identification of the Western Palearctic species/populations listed in Table 1 column A of Annex 3 that are actually or potentially affected by the accidental shooting as look-alike species; and
- development of a risk rating assessment to identify those species/populations most at risk from accidental shooting.

#### **Methods**

The risk of accidental shooting was evaluated for each population against a wide set of criteria, including similarities in, *inter alia*, morphology, habitat use, ecology, seasonal timing of presence (phenology) and behaviour.

Annex II (Part A and B) of the EU Birds Directive (2009/147/CE) was used to check if and where a species/population is huntable. However, this is an obvious limit as it does not include information on non-EU Western Palaearctic states. Furthermore, species included in Annex II could be protected under national or sub-national legislation. A more refined evaluation process will require updated information from all Contracting Parties.

All the species and populations which have no clear look-alike huntable species in Europe, e.g. cranes, herons or cormorants were removed from consideration. Therefore, the problem of accidental shooting during activities of population control of non-huntable species was not taken into account.

In Annex 1 of this document, populations are highlighted in different colours and coded as follows:

**Orange** – Population which is not hunted and might be seriously affected by accidental shooting.

**Yellow** – Population which is hunted in some parts of its European range and might be affected by accidental shooting as a look-alike species where it is not hunted.

**No colour** – Population which has an apparently low risk of accidental shooting as a look-alike species.

These three categories can be taken as a very first classification of risk assessment.

For each species, published literature (especially International Single Species Action Plans) was checked to identify whether accidental shooting is mentioned as a conservation problem and this information is included in Annex 1 of this guidance. Relevant summaries of this information are included in Annex 2.

## **Recommended actions to reduce the risk of shooting of look-alike protected species**

### **1. More detailed national risk assessment**

This initial assessment allows Contracting Parties to undertake a more detailed national spatio-temporal distribution analysis of the different populations of look-alike species listed in Annex 1. There are several examples of populations highly segregated in space and/or time within the same country for example, Taiga and Tundra Bean Geese *Anser f. fabalis* and *A. f. rossicus* in Finland, and in the United Kingdom, populations/races of Brent *Branta bernicla hrota* and *B. b. bernicla*, and populations of Barnacle Geese *Branta leucopsis*.

Even if there is confusion risk due to morphology or behaviour between two populations, a more detailed risk analysis at national level might find that the real risk is negligible or can be reduced through imposition of sub-national hunting regulation(s).

### **2. Using differential timing of presence to reduce shooting risk**

Relating hunting regulations to phenology is one of the most effective criteria to reduce or exclude the risk of accidental shooting of protected species. The lack of staggering of opening or closing dates for hunting seasons has been identified as one of the main causes of accidental shooting in the hunting guidance of the European Commission (European Commission 2008). Particular attention should thus be given to differential opening and closing dates of hunting seasons with respect to the presence of protected look-alike species/populations.

To deal with look-alike species/populations, the following procedure is proposed:

- If one or more column A populations are implicated, when populations are spatially and/or temporally segregated, hunting seasons should be open only in the areas of occurrence and/or for the time of occurrence of the huntable population(s) (and should always exclude breeding seasons or pre-nuptial migration periods).
- Where the overlap of populations is neither temporally limited nor spatially distinct, the legislation should be tailored to the population with the poorer conservation status (i.e. the population listed in a higher column in AEWA Table 1).

### **3. Types of hunting**

Some hunting modes, such as night shooting of ducks and geese, are often assumed as factors potentially increasing the risk of accidental shooting of protected species. However, shooting distance should also be considered in this context. There is some evidence that reduced shooting distance, in low light conditions, decreases the risk of accidental shooting (Noer et al. 2006).

### **4. Identification skills**

The issue of hunting licenses should be conditional on passing a proficiency test which includes not only the identification of quarry species but also of those protected species which look similar.

### **5. Enforcement of hunting legislation**

Contracting Parties should enforce their relevant hunting legislation.

### **6. Awareness-raising of measures than can reduce risk**

It is important to make hunters aware of the conservation problems linked to the risk of shooting protected, look-alike species. Some awareness-raising projects have already been undertaken. Two of them refer to Italian hunters and were prepared and disseminated by the Italian Hunters' Association ACMA (Associazione Cacciatori Migratoristi Acquatici). The first deals with the possible confusion of Ruff *Philomachus pugnax* with other similar medium- and large-sized waders, the second relates to Ferruginous Duck *Aythya nyroca* and its look-alike species.

The problem of bird identification or misidentification in bad condition of light or at a great distance, is often well-understood by hunters. Both in the United States and Italy, identification guides of waterfowl 'at distance' have been published (e.g. Hines undated; Realini 1999) and in France, a guide has been produced a guide for hunting wildfowl in poor light conditions (du Cheyron 1995).

Other identification guides specifically targeted at hunters have been published in Russia (Syroechkovski 2011) and Latvia (Viksne 2003). The development of further targeted publications should be encouraged by Contracting Parties.

## References

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**Realini, G.** 1999. *Gli uccelli acquatici d'Europa da lontano*. Edizioni R.G.F.

**Syroechkovski, E.E., et al.** 2011. [*Field guide of waterfowl species of Russia*]. (In Russian). Zoological Museum, Moscow. 223 pp.

**Viksne, J.** 2003. *Meijamo Udensputnu Noteicejs*. Latvijas Valst Mezi

## Annex 1 - List of species/populations in Column A of AEWA Table 1 limited to species/populations of the Western Palearctic

The species have been assessed against the following categories of similarity with their look-alike counterparts and where these criteria have been met it is indicated with “x”:

- **Morphology:** the species shares common morphological traits or gives the same general impression of size and shape with one or more huntable species;
- **Habitat use:** the species shares one or more habitats for feeding, breeding, resting or protection with one or more huntable species;
- **Ecology:** the species has the same or similar relations/interactions to the environment with one or more huntable species;
- **Phenology and distribution:** the species occurs in the same areas and at the same time of the year with one or more huntable species;
- **Behaviour:** The species shows behavioural traits similar to those of one or more huntable species.

	Population which is hunted in some parts of its European range and might be affected by accidental shooting as a look-alike species where it is not hunted
	Population which is not hunted and might be seriously affected by accidental shooting

List of species/populations in Column A of AEWA Table 1	Column A category	Morphology	Habitat use	Ecology	Phenology and distribution	Behaviour	Confusable species in groups	Notes
<b>ANATIDAE</b>								
<i>Oxyura leucocephala</i>								International Action Plan (AEWA)
- West Mediterranean (Spain & Morocco)	1a 1b 1c	x	x	x	x	x	Diving ducks	
- Algeria & Tunisia	1a 1b 1c	x	x	x	x	x	Diving ducks	
- East Mediterranean, Turkey & South-west Asia	1a 1b 1c	x	x	x	x	x	Diving ducks	
<i>Cygnus cygnus</i>								
- Iceland/UK & Ireland	2	x	x	x		x	<i>Cygnus olor</i>	<i>Cygnus olor</i> protected in the wintering range
- N Europe & W Siberia/Black Sea & E Mediterranean	2	x	x	x	x	x	<i>Cygnus olor</i>	
- West & Central Siberia/Caspian	2	x	x	x	x	x	<i>Cygnus olor</i>	
<i>Cygnus columbianus bewickii</i>								International Action Plan (AEWA)
- Western Siberia & NE Europe/North-west Europe	2	x	x	x	x	x	<i>Cygnus olor</i>	

List of species/populations in Column A of AEWa Table 1	Column A category	Morphology	Habitat use	Ecology	Phenology and distribution	Behaviour	Confusable species in groups	Notes
- Northern Siberia/Caspian <i>Anser fabalis fabalis</i>	1c	x	x	x	x	x	<i>Cygnus olor</i>	
- North-east Europe/North-west Europe <i>Anser albifrons albifrons</i>	3c*	x	x	x	x	x	Grey geese	
- Northern Siberia/Caspian & Iraq <i>Anser albifrons flavirostris</i>	2	x	x	x	x	x	Grey geese	International Action Plan (AEWA)
- Greenland/Ireland & UK <i>Anser erythropus</i>	2*	x	x	x	x	x	Grey geese	International Action Plan (AEWA)
- NE Europe & W Siberia/Black Sea & Caspian	1a 1b 2	x	x	x	x	x	Grey geese	
- Fennoscandia <i>Branta leucopsis</i>	1a 1b 1c	x	x	x	x	x	Grey geese	
- Svalbard/South-west Scotland <i>Branta bernicla hrota</i>	3a	x	x				<i>Branta bernicla</i>	International Action Plan (AEWA)
- Svalbard/Denmark & UK	1c	x	x	x	x	x	<i>Branta bernicla</i>	
- Canada & Greenland/Ireland <i>Branta ruficollis</i>	3a	x	x	x	x	x	<i>Branta bernicla</i>	International Action Plan (AEWA)
- Northern Siberia/Black Sea & Caspian <i>Tadorna ferruginea</i>	1a 1b 3a 3c	x			x		<i>Branta bernicla</i>	
- East Mediterranean & Black Sea/North-east Africa <i>Marmaronetta angustirostris</i>	2							European Action Plan (EU)
- West Mediterranean/West Medit. & West Africa	1a 1b 1c	x	x	x	x	x	Dabbling ducks	
- East Mediterranean	1a 1b 1c	x	x	x	x	x	Dabbling ducks	
- South-west Asia <i>Netta rufina</i>	1a 1b 2	x	x	x	x	x	Dabbling ducks	
- Black Sea & East Mediterranean	3c	x	x	x	x	x	Diving ducks	

List of species/populations in Column A of AEW Table 1	Column A category	Morphology	Habitat use	Ecology	Phenology and distribution	Behaviour	Confusable species in groups	Notes
<i>Aythya nyroca</i>								National Action Plan (Italy)
- West Mediterranean/North & West Africa	1a 1c	x	x	x	x	x	Diving ducks	
- Eastern Europe/E Mediterranean & Sahelian Africa	1a 3c	x	x	x	x	x	Diving ducks	
- Western Asia/SW Asia & NE Africa	1a 3c	x	x	x	x	x	Diving ducks	
<i>Polysticta stelleri</i>								International Action Plan (EU)
- Western Siberia/North-east Europe	1a 1b 2	x	x	x	x	x	Sea ducks, Dabbling ducks	
<i>Melanitta fusca fusca</i>								
- Black Sea & Caspian	1c	x	x	x	x	x	Sea ducks	
<i>Mergellus albellus</i>								
- North-west & Central Europe (win)	3a	x	x	x	x	x	females <i>Mergus</i> spp., <i>Bucephala clangula</i>	
<i>Mergus merganser merganser</i>								
- North-east Europe/Black Sea	1c	x	x	x	x	x	females <i>Mergus</i> spp., <i>Bucephala clangula</i>	
- Western Siberia/Caspian	2	x	x	x	x	x	females <i>Mergus</i> spp., <i>Bucephala clangula</i>	
<b>RALLIDAE</b>								
<i>Fulica cristata</i>								
- Spain & Morocco	1c	x	x	x	x	x	<i>Fulica atra</i>	International Action Plan (EU)
<b>CHARADRIIDAE</b>								

List of species/populations in Column A of AEWa Table 1	Column A category	Morphology	Habitat use	Ecology	Phenology and distribution	Behaviour	Confusable species in groups	Notes
<i>Charadrius alexandrinus alexandrinus</i>								
- West Europe & West Mediterranean/West Africa	3c	x	x	x	x	x	<i>Calidris canutus</i>	
- Black Sea & East Mediterranean/Eastern Sahel	3c	x	x	x	x	x	<i>Calidris canutus</i>	
<i>Charadrius leschenaultii columbinus</i>								
- Turkey & SW Asia/E. Mediterranean & Red Sea	1c							
<i>Eudromias morinellus</i>								
- Europe/North-west Africa	(3c)	x	x	x	x	x	<i>Pluvialis apricaria</i>	
<i>Vanellus gregarius</i>								International Action Plan (AEWA)
- SE Europe & Western Asia/North-east Africa	1a 1b 2	x	x	x	x	x	<i>Vanellus vanellus</i> , <i>Pluvialis apricaria</i>	
<b>SCOLOPACIDAE</b>								
<i>Gallinago media</i>								International Action Plan (AEWA)
- Scandinavia/probably West Africa	4	x	x	x	x	x	<i>Gallinago gallinago</i>	timing of migration only partially overlapping with hunting season
- Western Siberia & NE Europe/South-east Africa	4	x	x	x	x	x	<i>Gallinago gallinago</i>	timing of migration only partially overlapping with hunting season
<i>Limosa limosa limosa</i>								
- Western Europe/NW & West Africa	4	x	x	x	x	x	<i>Numenius</i> spp., <i>Limosa</i> spp., <i>Philomachus pugnax</i> , <i>Tringa totanus</i> , <i>Tringa erythropus</i> ,	

List of species/populations in Column A of AEW Table 1	Column A category	Morphology	Habitat use	Ecology	Phenology and distribution	Behaviour	Confusable species in groups	Notes
							<i>Tringa nebularia</i>	
- Eastern Europe/Central & Eastern Africa	4	x	x	x	x	x	<i>Numenius</i> spp., <i>Limosa</i> spp., <i>Philomachus pugnax</i> , <i>Tringa totanus</i> , <i>Tringa erythropus</i> , <i>Tringa nebularia</i>	
<i>Limosa limosa islandica</i>								
- Iceland/Western Europe	4	x	x	x	x	x	<i>Numenius</i> spp., <i>Limosa</i> spp., <i>Philomachus pugnax</i> , <i>Tringa totanus</i> , <i>Tringa erythropus</i> , <i>Tringa nebularia</i>	
<i>Numenius tenuirostris</i>								International Action Plan (CMS)

List of species/populations in Column A of AEW Table 1	Column A category	Morphology	Habitat use	Ecology	Phenology and distribution	Behaviour	Confusable species in groups	Notes
- Central Siberia/Mediterranean & SW Asia	1a 1b 1c	x	x	x	x	x	<i>Numenius</i> spp., <i>Limosa</i> spp., <i>Philomachus pugnax</i> , <i>Tringa totanus</i> , <i>Tringa erythropus</i> , <i>Tringa nebularia</i>	
<i>Numenius arquata arquata</i>								
- Europe/Europe, North & West Africa	4	x	x	x	x	x	<i>Numenius</i> spp., <i>Limosa</i> spp.	
<i>Numenius arquata orientalis</i>								
- Western Siberia/SW Asia, E & S Africa	3c	x	x	x	x	x	<i>Numenius</i> sp., <i>Limosa</i> sp.	
<i>Numenius arquata suschkini</i>								
- South-east Europe & South-west Asia (bre)	1c	x	x	x	x	x	<i>Numenius</i> sp., <i>Limosa</i> sp.	
<i>Calidris maritima maritima</i>								
NE Canada & N Greenland (bre)	3c	x			x	x	<i>Calidris canutus</i>	
<i>Calidris alpina schinzii</i>								
- Britain & Ireland/SW Europe & NW Africa	2	x	x	x	x	x	<i>Calidris canutus</i>	
- Baltic/SW Europe & NW Africa	1c	x	x	x	x	x	<i>Calidris canutus</i>	
<i>Calidris alpina arctica</i>								

List of species/populations in Column A of AEW Table 1	Column A category	Morphology	Habitat use	Ecology	Phenology and distribution	Behaviour	Confusable species in groups	Notes
- NE Greenland/West Africa	3a	x	x	x	x	x	<i>Calidris canutus</i>	
<i>Limicola falcinellus falcinellus</i>								
- Northern Europe/SW Asia & Africa	3c	x	x	x		x	<i>Calidris canutus</i>	
<b>LARIDAE</b>								
<i>Larus audouinii</i>								
- Mediterranean/N & W coasts of Africa	1a 3a	x	x	x	x	x	Large gulls	
<i>Larus fuscus fuscus</i>								
- NE Europe/Black Sea, SW Asia & Eastern Africa	3c	x	x	x	x	x	Large gulls	
<i>Larus ichthyaetus</i>								
- Black Sea & Caspian/South-west Asia	3a	x	x	x	x	x	Large gulls	

## Annex 2

### LIST OF INTERNATIONAL SPECIES ACTION PLANS OR OTHER RELEVANT PAPERS WHERE ACCIDENTAL SHOOTING OF LOOK-ALIKE SPECIES IS MENTIONED

#### International Single Species Action Plan for the conservation of the Greenland White-fronted Goose (*Anser albifrons flavirostris*)

##### Conservation objectives and top priority actions

The long-term goal of this plan (by 2020) is to establish and then maintain the favourable conservation status<sup>1</sup> of the international population of Greenland White-fronted Geese throughout its global range. In the short term (by 2015), the aim is to identify the causes of current low productivity which is leading to a rapid decline of the population, and then put in place measures to address (to the extent that is feasible) these factors in order to halt and reverse the decline. [...]

##### a. minimise additional sources of mortality;

Take all possible steps to eliminate avoidable sources of mortality and disturbance, particularly shooting and collisions with man-made structures.

- 3.1. Introduce and/or maintain protection from hunting throughout the year (and critically during the crucial spring migration and pre-breeding period) whilst the population has its currently unfavourable conservation status. **Applicable to: All Range States (especially DEFRA & NAW in England and Wales respectively)**
- 3.2. Work through relevant hunter's organisations to promote knowledge of relevant hunting regulations. **Applicable to: All Range States**
- 3.4. Enforce legislation on hunting *e.g.* especially action against illegal spring shooting. **Applicable to: All Range States**

#### International Single Species Action Plan for the conservation of the Lesser White-fronted Goose (*Anser erythropus*)

The Lesser White-fronted Goose (LWfG) is one of the classic examples of a globally threatened species in decline for which the threat of accidental shooting remains one of the main conservation challenges. The species is very similar in appearance to the Greater White-fronted Goose (*Anser albifrons*), which is a common quarry species across its range. The two species often migrate together in mixed flocks and utilize, in particular, the same key stop-over and wintering sites. Although legally protected across most of its range, more than 95% of the global population is estimated to be affected by over-hunting (UNEP/WCMC, 2003).

##### Activities included in the Action Plan for the Conservation of the Lesser White-fronted Goose

The revised International Single Species Action Plan for the Conservation of the Lesser White-fronted Goose submitted to MOP 6 recognizes (illegal) killing as one of the main threats to the species across its range.

Activities in the Action Plan with regard to reducing mortality rates and addressing the look-alike issue in particular include, but are not limited to:

- Modifying the timing of hunting to avoid the time of LWfG presence (all Range States);

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<sup>1</sup> As defined by Article 1 of the Convention on Migratory Species.

- Ensuring that hunting legislation affords adequate protection to the LWfG and that sufficient human and financial resources are deployed to control and manage hunting effectively and sustainably (all range states);
- Ban goose hunting by 2018 – in the absence of other feasible protection alternatives – at all critical sites for the LWfG during the period when LWfG are usually present, given the difficulty of reliably distinguishing goose species in flight (all Range States);
- By 2018 establish no hunting zones (covering both roosting and feeding sites) at all LWfG IBAs, SPAs and Ramsar Sites (all Range States).

Within the framework of the Action Plan and the activity regarding awareness-raising amongst local hunting and nature conservation communities, the partners of the current AEWA Lesser White-fronted Goose EU LIFE+ project are also in the process of developing identification and monitoring guidance including identification training materials, which will be made available to stakeholders in the various range states.

#### **EXAMPLE**

Monitoring data collected at various key sites in the Russian Federation indicates that Lesser White-fronted Geese from the Western main population which breed in northern Russia are amongst the first goose species to start their autumn migration. They are subsequently amongst the first to arrive at key goose sites – for example along the Ob River Valley - and are also amongst the first to be targeted by hunters. In order to lessen the threat of hunting to the Lesser White-fronted Goose some local authorities have – amongst other activities – temporarily delayed the start of the autumn goose hunting season in order to allow for the passage of (the majority of) Lesser White-fronted Geese. Additional monitoring is being conducted to determine the effect of such measures.

**International Single Species Action Plan for the conservation of the Light-bellied Brent Goose (*Branta bernicla hrota*) - East Canadian High Arctic population**

Purpose	Priority	Result	Priority	Objectively verifiable indicator	Means of verification <sup>1</sup>
<b>To end illegal and accidental shooting by 2014</b>	<b>LOW</b>	Strict enforcement of species protection legislation across the range by 2008	LOW	By 2008, a measurable increase in the number of penalties issued to those infringing national and international legislation regarding the species and its habitat	<p>Within three years:</p> <ul style="list-style-type: none"> <li>All known incidences of illegal shootings investigated</li> <li>Guilty parties penalised according to national legislative requirements</li> </ul> <p>Within six years:</p> <ul style="list-style-type: none"> <li>Financial penalties for contravening national legislation</li> <li>Annual assessment of illegal shootings</li> </ul>
		No conflict between ECHA Light-bellied Brent Goose and agricultural interests on the non-breeding areas after 2014	LOW	By 2014, a measurable increase in the number of Goose Management Schemes designed to reduce conflict between ECHA Light-bellied Brent Goose and agricultural interests	<p>Within nine years:</p> <ul style="list-style-type: none"> <li>Goose Management Schemes developed and implemented in areas where there is known conflict between ECHA Light-bellied Brent Geese and agricultural interests</li> <li>National monitoring of the success and efficacy of Goose Management Schemes designed to reduce conflict between ECHA Light-bellied Brent Goose and agricultural interests</li> </ul>
		A reduction in the number of birds taken accidentally during the non-breeding season by 2008	LOW	By 2008, a measurable decrease in the number of accidental shootings reported	<p>Within three years:</p> <ul style="list-style-type: none"> <li>Articles on identification and conservation of the ECHA Light-bellied Brent Goose published in shooting magazines across the non-breeding range</li> </ul> <p>Within six years:</p> <ul style="list-style-type: none"> <li>Annual assessment of accidental shootings</li> <li>Introduction of an identification test for hunters; where one exists already, to include ECHA Brent if not already done so</li> </ul>

**International Single Species Action Plan for the conservation of the Red-breasted Goose (*Branta ruficollis*)**

3.2.6 Hunting is a key threat to Red-breasted Geese throughout the flyway. It results in direct mortality, from both accidental and deliberate shooting, while disturbance from hunting activities, regardless of the species targeted, can result in reduced survival. As a long-lived, slow-breeding species, the population is sensitive to changes in adult mortality more than in fecundity.

Whilst no specific studies have been undertaken for Red-breasted Geese, data from other geese species strongly suggest that anthropogenic mortality (such as hunting and collision) is primarily additive. Thus, it is not compensated for by a density-dependent reduction in natural mortality, and has a direct negative effect on the population trend.

Although the Red-breasted Goose is protected throughout its range, there is significant deliberate hunting in some areas, particularly on migration in Russia, Kazakhstan and Ukraine, primarily for sport. Low level 'aboriginal' hunting occurs in the Arctic breeding grounds.

Red-breasted Geese often form mixed flocks with Greater White-fronted Geese *Anser albifrons albifrons*, which is a legal quarry species, and so are frequently shot in error by hunters who misidentify it or are unaware of its presence. As an 'incidental' target of hunters who are primarily targeting a different species, there is little chance of a density-dependent relaxation of hunting since as they are not the primary target, hunting pressure does not lessen as they become rarer.

There is little quantitative information on the scale of mortality or to evaluate its impact. However, research in Bulgaria during 1995–2009 indicated that 3–5% of the Red-breasted Goose population is killed or injured by hunting each year. It is likely that hunting levels of mortality are higher in the eastern part of the flyway.

Hunting may also cause high levels of disturbance, even when the intended target is legal quarry species. In particular, as well as shooting birds as they fly to or from roost sites, hunters pursue flocks of geese feeding in fields (which are mostly not within protected areas), causing considerable disruption and loss of feeding time, and which may be critical, for example, during periods of severe weather or prior to migration. The long hunting season in some countries, for example, extending into late winter is a particular cause of concern, as this affects the birds' ability to increase energy reserves prior to migration and breeding. Although the species is protected, a significant proportion of hunters are either unaware of regulations or choose to ignore them. It is believed that in some range countries, numbers of foreign sport hunters (primarily from west European countries) have increased and that they are more likely to ignore restrictions preventing hunting on certain days of the week.

Enforcement of hunting regulations is poor in many areas, and the situation is further exacerbated by lack of dialogue with hunters to raise awareness of regulations and goose identification.

Importance: High

#### **International Single Species Action Plan for the conservation of the Crested Coot (*Fulica cristata*)**

2.4.3. Where hunting bans cannot be established, use other methods to minimise the number of Crested Coot shot. It will be politically impossible to ban hunting totally at all sites where Crested Coot occur regularly. The number of Crested Coots shot can be reduced through effective hunter education, restricting the number of hunters and banning the hunting of the look-alike species *Fulica atra*. Crested Coot are easily confused with Common Coot *Fulica atra* under normal hunting conditions. Hunting of Common Coot should be prohibited throughout the Crested Coot range.

Priority: high; Time-scale: short

#### **International Single Species Action Plan for the conservation of the Great Snipe (*Gallinago media*)**

##### *Hunting*

The behaviour of the birds makes them very easy to catch while lekking. The species is therefore particularly vulnerable to such harvesting, and this may have accelerated the dramatic population decrease during the first part of the last century. Such harvesting seems to have ceased for the moment. The short flushing distance and short straight-line flight of the birds when flushed makes them also vulnerable to hunting during migration and wintering.

The species is legally protected in all breeding countries with the exception of the Russian Federation, Ukraine and Belarus. In Russia the annual bag is estimated at 32,000 birds (80% of which are juveniles) (Sergei Fokin pers. com.), which seems to represent a limited proportion of the breeding population. No bag statistics are available for Ukraine and Belarus.

The species is also hunted in Africa and shooting pressure is reported to be high for some areas (locally). The total effect by hunting in Africa is unknown, but at present it is probably of restricted importance. The Common Snipe *Gallinago gallinago* hunting can result in some accidental mortality of Great Snipes at the beginning of the hunting season (August and early September). [...].

#### **EU Species Action Plan for the conservation of the Marbled Teal (*Marmaronetta angustirostris*)**

Hunting is still considered an important threat. The species has a high risk to be mistaken for other duck species such as Common Teal *Anas crecca* or the juveniles of Red-crested Pochard *Netta rufina* which are both quarry species; illegal shooting remains a problem throughout the distribution area.

#### **International Single Species Action Plan for the conservation of the Slender billed Curlew (*Numenius tenuirostris*)**

1.2. To promote the full and effective legal protection for the Slender-billed Curlew and its “look-alikes” throughout its range

1.2.1. Encourage legal protection of the Slender-billed Curlew. Encourage the listing of the Slender-billed Curlew in each range-state as a strictly protected species, with maximum applicable penalties for contravention of the law. Countries where the species is not specifically protected in this way include Italy, Spain (not included in Royal Decree 439/1990), Tunisia and Ukraine (fine too low); the situation is unclear in Kazakhstan, Iran, Iraq and Russia.

Priority: essential; Time-scale: short

1.2.2. Encourage legal protection of look-alike species

Encourage the listing of other *Numenius* and *Limosa* species (and *Limnodromus* in Russia) as protected species. This is necessary due to the problem of identifying Slender-billed Curlew; few hunters would be sure to make the correct identification until it was too late. This objective applies to Albania, Algeria, Croatia, Kazakhstan, Iran, Iraq, Italy (Black-tailed Godwit, and perhaps Eurasian Curlew and Bar-tailed Godwit if these are listed as quarry species), Morocco (*Limosa*), Romania, Russia, Tunisia (specific protection needed), Turkey (Black-tailed Godwit), Ukraine (*Limosa*) and former Yugoslavia. Thus only Bulgaria, Greece, Hungary and Spain have the necessary legislation on look-alike species.

Priority: high; Time-scale: short

#### **International Single Species Action Plan for the conservation of the White-headed Duck (*Oxyura leucocephala*)**

Accidental shooting is mentioned.

#### **International Single Species Action Plan for the conservation of the Steller’s Eider (*Polysticta stelleri*)**

Hunting in the winter quarters Steller’s Eider is not a legal quarry species in Europe outside of Latvia and the bag in this country is probably zero (A. Stipniece pers. comm.). From 1997 Steller’s Eider has been removed from the official list of game species in Lithuania (S. Svazas pers. comm.). Illegal hunting of Steller’s Eider probably takes place on a very small scale in winter in Norway (G. Henriksen pers. comm.), and probably to a larger scale during migration in western Russia (Y. Krasnow pers. comm.). The size of the problem is unknown but is, so far, considered less important.

Occasional misidentification, particularly of females and juveniles, with Mallard *Anas platyrhynchos* probably results in some limited shooting of Steller's Eider.

Importance: unknown, but probably medium-low.

### **International Single Species Action Plan for the conservation of the Bewick's Swan (*Cygnus columbianus bewickii*)**

#### Illegal/Accidental shooting

The species is protected throughout the flyway; however, cases of illegal (deliberate or accidental) shooting of birds occur. Analysis of the cause of death reported with ring recovery data shows that the swans are being shot along the migration route (Rees & Bowler 2002, Newth et al.2011) including the wintering range (e.g. about 15 birds are known to have been killed by hunters in the United Kingdom).

A high percentage of live swans x-rayed when caught for ringing were found to have shotgun pellets in their body tissues: 34% of birds x-rayed in the 1970s, rising to 39% in the 1980s and dropping to 23% in the 2000s (Rees et al.1997, Newth et al.2011). Shooting and hunting of other waterbirds occurs at various staging areas, and accidental or intentional shooting of Bewick's Swans may also occur at this time (B. Nolet pers comm.). Additionally, hunting activity leads to disturbance and displacement of foraging swans. Hence, when flying around, the birds are confronted with lower food intake rates and higher energetic costs. In the Pechora Delta, Korovinskaya Bay and on the Russkii Zavorot Peninsula (northern Russia), many cases of illegal swan hunting were encountered in the years 1992-1996 (J.H. Beekman pers. comm.).

Given that the species' demography is sensitive to variation in survival (due to its high survival and low productivity rates), a substantial increase in shooting pressure could lead to rapid population decline. This threat therefore is considered potentially high.

Importance: Medium (potentially High)

### **International Single Species Action Plan for the conservation of the Sociable Lapwing (*Vanellus gregarius*)**

#### Stopover/wintering sites

Importance: Critical

Large-scale hunting at stopover sites currently appears to be the most important threat influencing the species' survival. There is evidence from known stopover sites in north-eastern Syria and some areas in Iraq from 2008 and 2009 that Sociable Lapwings are widely taken by local hunters and visiting falconers from the Gulf States (Hofland & Keijl 2008; A. Aidek, S. Jbour, M. Salimand O. Al-Sheikly pers. comm).

Hunting has been reported on spring migration when Sociable Lapwings congregate in large numbers; this is of particular concern as these are birds returning to breed in central Asia. The reasons why Sociable Lapwings are targeted are unclear, but it seems that hunting pressure is a combination of subsistence hunting from locals and sport for visiting hunters.

The species is considered to be quite an easy prey for falcons, probably replacing other bird species traditionally hunted (but now much depleted) such as Macqueen's (Asian Houbara) Bustard *Chlamydotis macqueenii* and sandgrouse *Pterocles* spp.