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## Methodology for the selection of 15 priority species for the first assessment of hunting sustainability<sup>1</sup>

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Task 5 of the service contract “Supporting the recovery of bird species of Annex II of the Birds Directive in non-secure conservation status” (09.0201/2022/886665/SER/D.3) involves assessing sustainable hunting levels for 30 species of the Annex II of the Bird Directive. For other species concerned by the contract, that information is already available, e.g., the 3 species that were classified into case 1, for which an adaptive harvest management mechanism (AHMM) will be developed; for others, a national approach is more appropriate than a flyway approach, such as the 9 species that are fully resident. This leaves the total number of species needing assessment at 30, and the proposal made is to organise the workload in two batches; 15 species will be assessed by June 2024 and the remaining 15 species will be assessed by December 2024.

The assessment will be undertaken using the R software package “Popharvest” developed by Eraud *et al.* (2021)<sup>2</sup> and further described by Johnson *et al.* (2024)<sup>3</sup>. In it, the Potential Take Level approach allows assessing when a level of hunting is unsustainable with a probability and in relation to set conservation objectives, as detailed in the TFRB document *Approach for assessing the (un)sustainability of hunting in the context of the Birds Directive*<sup>4</sup>.

The present document introduces the criteria used for the assessment and prioritization of the first set of 15 species, which include data availability, IUCN conservation status and a conservation prioritisation criterion known by NADEG as the “additive index”<sup>5</sup>.

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<sup>1</sup> Document prepared in the frame of the service contract with the European Commission “Supporting the recovery of bird species of Annex II of the Birds Directive in non-secure conservation status” (09.0201/2022/886665/SER/D.3) in preparation for the December 2023 meeting of the Task Force on the Recovery of Birds (01/12/2023).

<sup>2</sup> Eraud, C., Devaux, T., Villers, A., Johnson, F. A., & Francesiaz, C. (2021). *popharvest: An R package to assess the sustainability of harvesting regimes of bird populations*. *Ecology and Evolution*, 11, 16562–16571. <https://doi.org/10.1002/ece3.8212>

<sup>3</sup> Johnson, F. A., Eraud, C., Francesiaz, C., Zimmerman, G. S., & Koneff, M. D. (2024). *Using the R package popharvest to assess the sustainability of offtake in birds*. *Ecology and Evolution*, 14, e11059. <https://doi.org/10.1002/ece3.11059>

<sup>4</sup> Available on the EC CIRCABC website <https://circabc.europa.eu/ui/group/e21159fc-a026-4045-a47f-9ff1a319e1c5/library/e491ff89-c352-4c92-9c19-c4d56fdb5c05/details>

<sup>5</sup> Document “Status review of birds listed in Annex II of the Birds Directive and prioritising conservation responses: background review” (Doc Nadeg 20-10-06), available on the EC CIRCABC website <https://circabc.europa.eu/ui/group/fcb355ee-7434-4448-a53d-5dc5d1dac678/library/47f1b82c-2676-4e0c-a1ed-6021c63ae314/details>

As a first step, we propose to exclude species that are not currently being hunted in any of the EU Member States. This is due to the lack of harvest data for recent years, so that any assessment would have to be based on historical or hypothetical data that would need to be explained. This is the case of the Eurasian Curlew (*Numenius arquata*) and Black-tailed Godwit (*Limosa limosa*), currently under moratorium in France, at the proposal of AEWA.

Following that initial screening, as a second step we discard species for which data on hunting bag sizes are not (easily) available, because obtaining the data may require more time. In this situation are two species: Greater Scaup (*Aythya marila*) and Spotted Redshank (*Tringa erythropus*). It is noted that, in line with the approach described in the NADEG document 21-12-03<sup>6</sup> and the latest version of the flow chart below in annex 2, those species fall under case 5. No hunting should be authorised for these two species, because it is currently not possible to ensure compliance with the Birds Directive.

To prioritize species with higher conservation needs, species with a NADEG additive index below 6 are excluded. This would temporarily leave out Red-breasted Merganser (*Mergus serrator*), Common Teal (*Anas crecca*), Common Quail (*Coturnix coturnix*), Water Rail (*Rallus aquaticus*), Common Coot (*Fulica atra*), Rook (*Corvus frugilegus*), Eurasian Skylark (*Alauda arvensis*), Common Starling (*Sturnus vulgaris*) and Redwing (*Turdus iliacus*).

This leaves a list of 17 species. To maintain consistency between the two evaluations, based on an equal number of 15 species, we relied on expert judgement to temporarily remove two species: Black-headed Gull (*Larus ridibundus*) and European Herring Gull (*Larus argentatus*). It is noted that, in line with the approach described in the NADEG document 21-12-03 and the flowchart reminded in Annex 2, the Black-headed Gull is in case 5 and the European Herring Gull in case 5. Therefore, no hunting should be authorised for those two species.

As a result, the following list of species were selected for the first assessment:

- Long-tailed Duck (*Clangula hyemalis*)
- Velvet Scoter (*Melanitta fusca*)
- Common Pochard (*Aythya ferina*)
- Tufted Duck (*Aythya fuligula*)
- Garganey (*Spatula querquedula*)
- Northern Shoveler (*Spatula clypeata*)
- Eurasian Wigeon (*Mareca penelope*)
- Pintail (*Anas acuta*)
- Eurasian Oystercatcher (*Haematopus ostralegus*)
- Northern Lapwing (*Vanellus vanellus*)
- Ruff (*Calidris pugnax*)
- Common Snipe (*Gallinago gallinago*)
- Common Redshank (*Tringa totanus*)
- Mew Gull (*Larus canus*)
- Great Black-backed Gull (*Larus marinus*)

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<sup>6</sup> <https://circabc.europa.eu/ui/group/fcb355ee-7434-4448-a53d-5dc5d1dac678/library/044a1b53-a243-4a5f-a70c-c6c494aaf11c/details>

The table in annex 1 contains basic information on these species.

**Annex 1. List of selected 15 species, prioritized for the first batch of assessment of hunting sustainability.**

N	Species	English name	EC case	# pops	Add index	hunt MS	bag size	Art12 long trend	Art12 short trend	EU RedList	Eur RedList	Global RedList	IUCN Eu trend	ISSAP	AEWA	AEWA trend	PECBMS long trend	PECBMS short trend	EBBA2 trend	EBBA1/2 %change
1	<i>Clangula hyemalis</i>	Long-tailed Duck	2	2	7	5	>6k	unknown	stable	NT	LC	VU	decreasing	yes	yes	stable?			stable	+0.4
2	<i>Melanitta fusca</i>	Velvet Scoter	5	2	9	3	>4k	decreasing	decreasing	VU	VU	VU	decreasing	yes	yes	increasing?			loss	-8.6
3	<i>Aythya ferina</i>	Common Pochard	3	2	8	18	10ks	decreasing	decreasing	VU	VU	VU	decreasing		yes	decreasing			stable	+0.4
4	<i>Aythya fuligula</i>	Tufted Duck	3	2	7	21	10ks	decreasing	decreasing	VU	NT	LC	decreasing		yes	decreasing			gain	+1.1
5	<i>Spatula querquedula</i>	Garganey	3	1	7	15	>60k	decreasing	decreasing	VU	LC	LC	decreasing		yes	decreasing?			loss	-2.7
6	<i>Spatula clypeata</i>	Northern Shoveler	3	2	6	14	>150k	decreasing	decreasing	NT	LC	LC			yes	increasing			gain	+5.0
7	<i>Mareca penelope</i>	Eurasian Wigeon	3	2	7	18	100ks	decreasing	decreasing	VU	LC	LC			yes	stable			stable	-0.8
8	<i>Anas acuta</i>	Pintail	5	3	10	16	10ks	decreasing	decreasing	EN	VU	LC	decreasing		yes	decreasing?			loss	-14.7
9	<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	2	1	10	1	10k	decreasing	decreasing	VU	VU	NT	decreasing		yes	stable/	moderate decline	stable	gain	+7.7
10	<i>Vanellus vanellus</i>	Northern Lapwing	2	1	10	5	>100k	decreasing	decreasing	VU	VU	NT	decreasing		yes	decreasing	moderate decline	moderate decline	loss	-1.6
11	<i>Calidris pugnax</i>	Ruff	2	1	8	3	2k	decreasing	decreasing	NT	NT	LC			yes	decreasing			loss	-31.1
12	<i>Gallinago gallinago</i>	Common Snipe	3	2	6	15	>100ks	decreasing	decreasing	LC	VU	LC			yes	decreasing/	moderate decline	stable	loss	-5.7
13	<i>Tringa totanus</i>	Common Redshank	2	4	10	1	>11k	decreasing	decreasing	VU	VU	LC	decreasing		yes	decreasing	moderate decline	moderate decline	loss	-1.5
14	<i>Larus canus</i>	Mew Gull	2	2	6	3	10k	decreasing	decreasing	LC	LC	LC			yes	decreasing?			gain	+1.1
15	<i>Larus marinus</i>	Great Black-backed Gull	5	1	6	3	100s	decreasing	decreasing	NT	LC	LC			yes	stable			gain	+5.4
				<b>28</b>																

**Annex 2. Flow chart of the stepwise approach to determine necessary action for Annex II taxa not in secure status**

Red = steps, purple = actions to take

<b>1) List of Annex II species and sub-species (taxa) that are not in a secure status (taxa that are in a “threatened/bad” status or in a “non-secure/poor” status according to the Article 12 report 2013-2018): 42 taxa.</b>				
<b>Prioritization of the 42 taxa done according to a multi-element additive index based on six elements (population trend status, breeding population size, EU Red List status, EU’s global responsibility for the taxon, prior existence of an EU Management Plan)</b>				
<b>2) Resident or migratory species?</b>				
<b>Fully resident species</b>	<b>Fully migratory species and species with both migratory and resident populations</b>			
No immediate need for EU co-ordination. For MS to take necessary measures to increase species survival and/or fecundity to recover species status	<b>3) Is [adult] survival a critical/important factor for the population dynamics?</b>			
	<b>Yes (including cases where both survival and fecundity are important)</b>		<b>No (case 3)</b>	<b>Unable to currently assess (case 4)</b>
	<b>4) Does hunting play a critical/important role on [adult] survival?</b>		<b>Short-term response:</b> Assess sustainable hunting level before opening hunting season. Limited & controlled hunting (*) could take place based on assessment and other key actions identified (e.g. prepare habitat management plan)	<b>Short term response:</b> No hunting. If it can be demonstrated that off-take by hunting does not play a critical role, assess sustainable hunting level before opening hunting season. Limited and controlled hunting (*) could take place based on the assessment and build knowledge
	<b>Yes (case 1)</b>	<b>No (case 2)</b>		
	<b>Short-term response:</b> No hunting until an adaptive harvest management mechanism is in place and other key action identified (e.g. on habitat management)	<b>Short-term response:</b> Assess sustainable hunting level before opening hunting season. Limited and controlled hunting (*) could take place based on the assessment and other key actions identified (e.g. habitat management plan and/or threat-specific action plan prepared)	<b>Short term response:</b> No hunting until an assessment is possible and build knowledge	<b>Medium/long term response:</b> assess sustainable hunting level before opening hunting season. Limited and controlled hunting (*) could take place based on the assessment + other key action implemented (e.g. implementation of an habitat management plan)

<p><b>Medium/long term response:</b> Adaptive harvest management mechanism and other key actions implemented if needed (e.g. on habitat management)</p>	<p><b>Medium/long term response:</b> assess sustainable hunting level before opening hunting season. Limited and controlled hunting (*) could take place based on assessment and other key action implemented (e.g. habitat management plan and/or threat-specific action plan implemented)</p>	<p><b>Medium/long term response:</b> based on acquired knowledge, carry out the assessment (case 1 or 2) and follow-up accordingly</p>	
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(\*) Limited and controlled hunting requires at least the collection of bag data and a periodic assessment of the impact of hunting

