

## BirdLife position on Good Environmental Status threshold criteria for Descriptor 1: seabird bycatch and population abundance

September 2019

### Summary

This paper sets out the BirdLife position on threshold values for ensuring Good Environmental Status (GES) in relation to **seabird bycatch** and **population abundance**. The BirdLife position is that threshold values are only applicable for assessing Member States' achievement of GES and should not be used to set a minimum trigger for managing the impact of fisheries and other human activities on seabirds.

BirdLife recommends that:

- The threshold mortality rate from incidental bycatch (Criterion D1C1) should be **1% of natural annual adult mortality of the species**.
- The method for defining thresholds for population abundance (Criterion D1C2) should follow OSPAR guidance on setting baselines and species-specific assessment values.
- For integrating assessments across species, a target value of 90% should be adopted as the percentage of species that should exceed the relevant threshold value.
- Criterion D1C3 (population characteristics) should be adopted as primary criterion instead of D1C2 under certain circumstances.

### Introduction

The Marine Strategy Framework Directive (MSFD) (2008/56/EC), under Descriptor 1 for determining GES, requires Member States to address the 'maintenance of biological diversity'. Subsequently, in order to assess whether Member States are achieving GES, Commission Decision 2017/848<sup>1</sup> sets out the '*criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment...*', including for the 'Criteria elements' of, respectively 'incidental bycatch' (D1C1) and 'population abundance' (D1C2).

#### 1. Seabird bycatch

##### 1.1 Context

Annex Part II (p. 66) of the 2017 Commission Decision, under Criterion D1C1 for birds (and other species) at risk from incidental bycatch, states that '*The mortality rate is below levels which threaten the species, such that its long-term viability is ensured*'. Furthermore, in order to achieve this, it also

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<sup>1</sup><https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017D0848&from=EN>

states that *'Member States shall establish threshold values for the mortality rate from incidental bycatch per species, through regional or sub-regional cooperation.'*

The BirdLife position is that, as set out in the objective of the EU Seabird Plan of Action (COM (2012) 665 final<sup>2</sup>), Member States are to *'minimise and, where possible, eliminate the incidental catches of seabirds...'* as this is coherent with achieving the objectives of the Birds Directive. It should be noted that there is extreme uncertainty in most cases around establishing the baseline population level of the species at risk, the natural mortality, and what additional level of mortality is attributable to bycatch. This is due to poor levels of monitoring and reporting, plus the intrinsic difficulty of properly estimating bycatch figures. Therefore, the use of a threshold value/level for the purpose of setting a minimum trigger for managing fishing activities is a hazardous approach as even attaining seabird mortality rates below the threshold may fail to ensure long-term viability, despite best intentions. Moreover, to do so effectively sets an 'acceptable level' of bycatch and *de facto* a 'bycatch quota', which is contrary to the Birds Directive.

The MSFD is clear that threshold values are to be used to assess whether a Member State has achieved GES. The criterion threshold value is not meant to be used to manage the impact of fisheries on seabirds. Therefore, even if Good Environmental Status is reached for D1C1, we continue to uphold the position that measures are still required to minimise and where possible eliminate bycatch in accordance with other legislation and agreements, in particular the EU Birds Directive and EU Seabird Plan of Action.

## 1.2 BirdLife position

BirdLife believes that the threshold mortality rate from incidental bycatch under Criterion D1C1 should be **1% of natural annual adult mortality of the species**.

*Justification:* This threshold aligns with the ORNIS Committee definition of "small numbers" within the context of allowing a derogation under Article 9 of the Birds Directive (in a bird-hunting context) from no deliberate bird killing. As such, the 1% threshold exists as a precedent, accepted by the European Commission and upheld in European Court of Justice Rulings, albeit in other contexts.

*Working example (rough estimate) - 1% threshold for UK population of Northern Fulmar:*

- UK population = ca 1 million adult birds
- If natural (or 'baseline') annual adult mortality is ca 5% = 50,000 birds
- 1% threshold therefore = 500 birds annually

Given the difficulty of distinguishing adults from immatures (either because of morphometric similarity or because bycatch observers lack these identification skills), we recommend the precautionary approach of using a baseline natural mortality rate based on the age group with the

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<sup>2</sup><https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0665&from=EN>

lowest estimated mortality rate (i.e. adults), and that the threshold number of individuals relates to individuals *of whatever age*.

#### *Geographic application*

For reporting purposes, assessing whether the 1% threshold has been exceeded will be required at the Member State level. However, this scale may not align well with the geographic boundaries of the relevant 'reference population'<sup>3</sup>, which may span multiple Member States (or a Member State may host parts of multiple reference populations). If each Member State applies the 1% threshold repeatedly throughout the range of the reference population, there is a risk of cumulatively adding up to a considerable percentage mortality that far exceeds the 1% threshold, even if it does not for individual Member States (or individual sub-zones within Member States). This may be further exacerbated if reference populations are inappropriately or inconsistently defined across Member States. It will be particularly challenging to define the relevant reference population for more mobile wintering populations and migratory species compared to breeding populations or species with a localised distribution. Over and above these issues, impacts may still be acute at a local level even if the threshold has not been exceeded at the Member State level.

Thus, extreme caution is required when reporting using the threshold, requiring that account be taken of these issues on a case-by-case basis, ideally through a coordinated approach within and across Member States. Birdlife recommends that these issues be further discussed and clarified via an expert group such as OSPAR/HELCOM/ICES JWGBIRD.

#### *Other considerations*

The calculation of the metrics is challenging, especially given that the prevailing overall observer coverage is so low. The 1% threshold should be applied based on adequate monitoring effort and, if such effort is inadequate, efforts should be made to improve on this. In the meantime, extrapolations should be made from available evidence, using a precautionary approach. If there are any indications of bycatch occurring but no data are available, it should be assumed that the 1% threshold is exceeded.

In the case of species where bycatch already contributes substantially to our current estimate of 'baseline' mortality, i.e. the true 'natural' (not impacted) baseline mortality is unknown, the 1% threshold risks allowing inflation of the mortality attributable to bycatch. In these cases, it may be appropriate to use a lower threshold and/or use natural mortality estimates from similar species that are known to be unaffected by bycatch or other anthropogenic threats. Given the limitations of on-board observers to identify similar seabirds to species level, 1% threshold levels could be derived at the family level (e.g. shearwaters) based on existing knowledge of their annual survival rates, providing that threshold was based on the lowest estimated mortality rate for the group of species within each family.

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<sup>3</sup> The reference population is used to calculate the number of birds equating to 1% of natural annual adult mortality

When it comes to assessing population level impacts of bycatch (as opposed to whether or not Criterion D1C1 is met), BirdLife advocates the use of Population Viability Analysis (PVA), regardless of whether the threshold is deemed to be exceeded or not. When using PVA, account should be taken of the uncertainty in the underlying data. PVA outputs are best interpreted as the relative change in population size (or growth rate) after a fixed amount of time in the presence of additional mortality<sup>4</sup>.

Furthermore, there are currently difficulties in determining the true (not impacted) baseline mortality rate, together with the lack of information regarding how both natural mortality rates and mortality due to bycatch vary between age classes. We therefore recommend that official expert guidance (e.g. from OSPAR/HELCOM/ICES JWGBIRD) is sought on what hierarchy of approaches should be used given the quality of available data, and to endorse our recommended preferred default approach in the absence of good information (e.g. thresholds should be set based on the lowest natural mortality rates, whether for different age classes or different families of seabird).

## 2. Population abundance

### 2.1 Context

Annex Part II (p. 67) of the 2017 Commission Decision (see footnote 1, above), Criterion D1C2 for birds (etc.) is that: *'The population abundance of the species is not adversely affected due to anthropogenic pressures, such that its long-term viability is ensured. Member States shall establish threshold values for each species through regional or sub-regional cooperation, taking account of natural variation in population size and the mortality rates derived from D1C1, D8C4 and D10C4 and other relevant pressures. For species covered by Directive 92/43/EEC, these values shall be consistent with the Favourable Reference Population values established by the relevant Member States under Directive 92/43/EEC.'*

#### 2.1.1 Baseline level

The Commission is looking at using historic baselines for the GES thresholds of population abundance, as in OSPAR and HELCOM guidance. BirdLife believes that this could lead to a serious risk of returning populations to seriously depleted levels and we recommend that the threshold should at least reflect a healthy population.

However, the OSPAR Common Indicator for Marine Bird Abundance<sup>5</sup> does recognise the risk of an unhealthy baseline in stating that *'The baseline for each species should be set at a population level that is considered desirable for each individual species within each geographical area.'*

OSPAR guidance is that baselines should therefore be set based on the following:

- a) 'Historical reference' where we know abundance long before the time series began; but don't know why it may have changed since;

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<sup>4</sup> i.e. the counterfactual of population size ([Green et al. 2016](#), J. App. Ecol, 53, 1635–1641)

<sup>5</sup><https://www.ospar.org/documents?v=38978>

- b) Reference level – where we would expect the population size to be if anthropogenic impacts were negligible (this can be derived from known population sizes either historically or from within time-series);
- c) Start level of time-series.

(a) and (b) are considered the preferable, more objective approaches, (c) less so (more arbitrary) though it may be used in the absence of other information.

This hierarchy is also recognised in OSPAR’s 2017 Intermediate Assessment<sup>6</sup>: *‘The baselines used in this indicator assessment were assigned to the start of the data series being assessed. It would be more objective to set baselines that include ‘historical reference levels’, which reflect abundance at a point in the past long before the time series began, or ‘reference levels’, where anthropogenic impacts on population size are assumed to be negligible.’*

#### 2.1.2 Species-specific assessment values

The assessment values for each species-specific indicator of trends in relative abundance are set on the magnitude of change relative to a baseline of 1.0:

- species-specific annual relative breeding or non-breeding abundance should be more than 0.8 for species that lay one egg,
- or more than 0.7 for species that lay more than one egg (ICES 2008, 2010, 2011<sup>7</sup>).

OSPAR guidance states that these different assessment values were set according to the resilience of populations to decline and could be changed or set individually for each of the species-specific trends.

#### 2.1.3 Integration of species-specific assessments

The status of marine bird communities is assessed by calculating the percentage of species exceeding the relevant threshold value. Earlier proposed criterion target options were for this percentage to be set at 75-90% of species that are assessed. OSPAR Common Indicator for Marine Bird Abundance recommends the lower limit of 75% be taken.

## 2.2 BirdLife position

Birdlife supports and welcomes the use of the ICES and OSPAR developed work on Ecological Quality Objectives (EcoQOs) for population abundance, which has since been officially adopted by OSPAR. We maintain that OSPAR and other regional sea conventions should be strongly encouraged and supported to further develop this work in the light of the MSFD, to ensure this approach to seabird targets is taken across sub-regions and Member States.

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<sup>6</sup><https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/biodiversity-status/marine-birds/bird-abundance/>

<sup>7</sup> ICES. 2008. Report of the Workshop on Seabird Ecological Quality Indicator, 8–9 March 2008, Lisbon, Portugal. ICES CM 2008/LRC:06. 60 pp. ICES. 2010. Report of the Working Group on Seabird Ecology (WGSE). 15–19 March 2010, Copenhagen. ICES CM 2010/SSGEF:10. 81 pp. ICES. 2011. Report of the Working Group on Seabird Ecology (WGSE). 1–4 November 2011, Madeira, Portugal. ICES CM 2011/SSGEF:07. 77 pp.

Therefore, concerning baselines, BirdLife supports the OSPAR guidance on setting GES thresholds of population abundance. Furthermore, BirdLife supports species-specific assessment values based on ICES 2008, 2010 and 2011, and in line with OSPAR guidance. As for the integration of species-specific assessments, review of scientific literature and expert judgement in the UK has produced advice that states that a more appropriate target for equating to GES would be that up to 90% (rather than 75%) of species should exceed the relevant threshold (Moffat et al. 2011, p. 95<sup>8</sup>). Birdlife supports the Moffat et al. (2011) advice and recommends adopting a threshold value of 90% for integrating species.

### 3. Primary and secondary criteria

#### 3.1 Context

The Commission decision (EU) 2017/848 that lays down criteria and methodological standards on good environmental status of marine waters classifies criteria as either primary or secondary. Primary criteria should be used to ensure consistency across the EU; flexibility should be granted with regard to secondary criteria. The use of a secondary criterion should be decided by Member States, where necessary, to complement a primary criterion or when, for a particular criterion, the marine environment is at risk of not achieving or not maintaining good environmental status.

According to the abovementioned decision, there are five criteria to evaluate seabirds, under Descriptor 1 (biodiversity). These include two primary criteria, bycatch (D1C1) and population abundance (D1C2), and three secondary criteria, population characteristics (D1C3), distributional range (D1C4) and habitat extent (D1C5).

#### 3.2 BirdLife position

While this classification makes sense in general terms, there are some cases for which it is believed that demographic characteristics would provide a far more reliable assessment of the status of a given seabird population than its abundance, and in these cases it is proposed to use D1C3 as primary. Specifically, for those species which nest in crevices and boulders in areas that are difficult to access, and which visit their colonies at night, such as shearwaters and storm-petrels, assessing their abundance usually requires indirect methods (e.g. raft counts, rates of vocalization, etc.), subject to potentially high biases. At the same time, those nests that are accessible may be easily monitored, as birds tend to be easily captured, and remain faithful to their nesting area throughout their life. In such situations, well-designed monitoring of selected nests, including capture-recapture analysis, to infer demographic parameters (breeding success, adult survival, recruitment, etc.) may be far more reliable than attempting to estimate the whole breeding population, and then assessing trends by comparing population figures across time.

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<sup>8</sup> [http://jncc.defra.gov.uk/pdf/2011\\_UKMMAS\\_FinalReport\\_BiodivTargetsIndicators\\_v1.pdf](http://jncc.defra.gov.uk/pdf/2011_UKMMAS_FinalReport_BiodivTargetsIndicators_v1.pdf)



It is therefore proposed that, for those species whose accurate census requires a major effort and is subject to potentially strong bias, status should be instead based on demographic information, coming from well-designed monitoring programmes, and therefore D1C3 should be considered as primary.

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