

# ICES bycatch advice

## Overview and ongoing developments

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ASCOBANS NSG14

April 2026



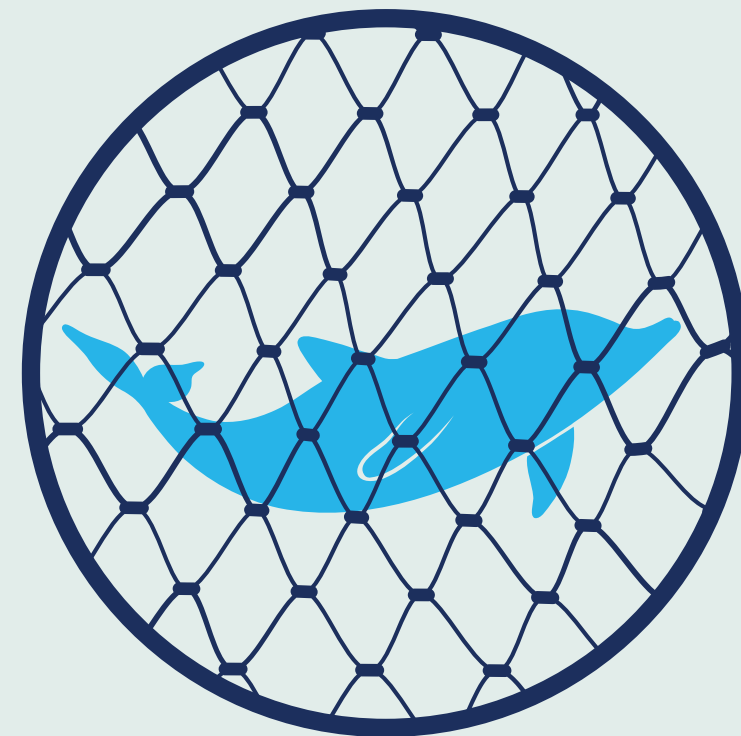
**ICES**  
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International Council for  
the Exploration of the Sea

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l'Exploration de la Mer

# ICES bycatch advice in 2025

- ✓ Revision of the ETP species lists for fish, marine mammals and seabirds
- ✓ Recurring advice: new interactive and searchable online table published with the advice
- ✓ BEAM Benchmark



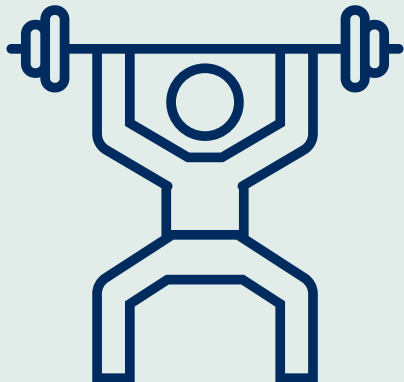
## Bycatch

# Revised ETP species lists

## Annexes

ICES lists of endangered, threatened, and protected (ETP) fish, marine mammal, and seabird species of bycatch relevance (Annexes 1 and 2) were revised in 2025, with contributions from ICES Workshop on Fish of Bycatch Relevance (WKFIBRE) and regional expert groups, ICES Working Group on Marine Mammal Ecology (WGMME) and the Joint OSPAR/HELCOM/ICES Expert Group on Seabirds (JWGBIRD).

Huge lift from the expert community, regional experts, ADG Members and ICES Secretariat:



**JWGBIRD**

**Lise Cronne**

**WKFIBRE**

**Sarah Weisberg**

**WGMME**

**Anna Ellendersen**

**Celine Byrne**



# Revised ETP species lists

**Annex 4. Priority list of species for ICES recurrent advice on bycatch of endangered, threatened, and protected (ETP) species to DGMARE.**  
 Agreed and included in the [Grant Agreement with DGMARE](#).

Marine mammals	
Scientific name	Common name
<i>Delphinus delphis</i>	Common dolphin
<i>Monachus monachus</i>	Mediterranean monk seal
<i>Phocoena phocoena</i>	Harbour porpoise
Seabirds	
Scientific name	Common name
<i>Puffinus mauretanicus</i>	Balearic shearwater
Fish	
Scientific name	Common name
<i>Acipenser sturio</i>	Sturgeon
<i>Acipenser oxyrinchu</i>	Atlantic sturgeon
<i>Acipenser naccarii</i>	Adriatic sturgeon
<i>Acipenser gueldenstaedtii</i>	Danube sturgeon
<i>Acipenser stellatus</i>	Stellate sturgeon
<i>Acipenser ruthenus</i>	Sterlet
<i>Carcharodon carcharias</i>	Great white shark
<i>Carcharias taurus</i>	Sand tiger shark
<i>Dipturus batis and D. intermedius</i>	Common skate
<i>Gymnura altavela</i>	Spiny butterfly ray
<i>Huso huso</i>	Beluga sturgeon
<i>Leucoraja melitensis</i>	Maltese ray
<i>Odontaspis ferox</i>	Smalltooth sand tiger shark
<i>Rhinobatos rhinobatos, Glaucostegus cemiculus</i>	Guitarfish
<i>Squatina squatina, S. aculeata, S. oculata</i>	Angel shark
Turtles	
Scientific name	Common name
<i>Caretta caretta</i>	Loggerhead sea turtle
<i>Chelonia mydas</i>	Green sea turtle
<i>Dermochelys coriacea</i>	Leatherback sea turtle

**Annex 1. List of fish species of bycatch relevance by ecoregion. Revised in 2025.**

**+ 87 ETP fish species** across 11 ecoregions  
 (including *Anguilla anguilla* and *Salmo salar*)

**Annex 2. Seabird and marine mammal species list of of bycatch relevance by ecoregion. Revised in 2025.**

**+ 37 ETP marine mammal species** across 12 ecoregions  
**+ 60 ETP seabird species** across 12 ecoregions



ETP species lists used in the annual ICES bycatch datacall

# Recurring bycatch advice 2025

*ICES Advice*

*Ecoregions in the Northeast Atlantic and adjacent seas*

*Published 04 December 2025*



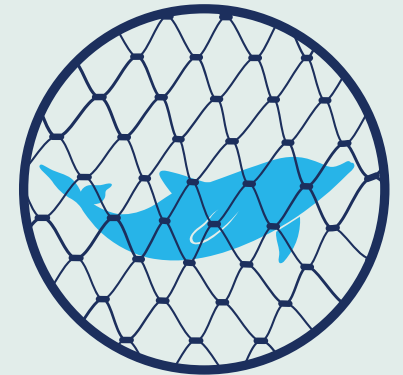
**Bycatch of endangered, threatened and protected (ETP) species of marine mammals, seabirds, marine turtles and selected fish species of bycatch relevance**

<https://doi.org/10.17895/ices.advice.30734714>

- Annual (2024) bycatch estimates for 39 ETP species in 109 combinations of species, ecoregion, and métier (level 4) in 11 ecoregions.
- Multiannual bycatch rates (2017–2024) for an additional 198 combinations of ETP species, ecoregion, and métier
- Subregional (ICES Division) and métier L5 estimates for common dolphins and harbour porpoise
- Mitigation options for harbour porpoise and common guillemot in set gillnets (GNS)

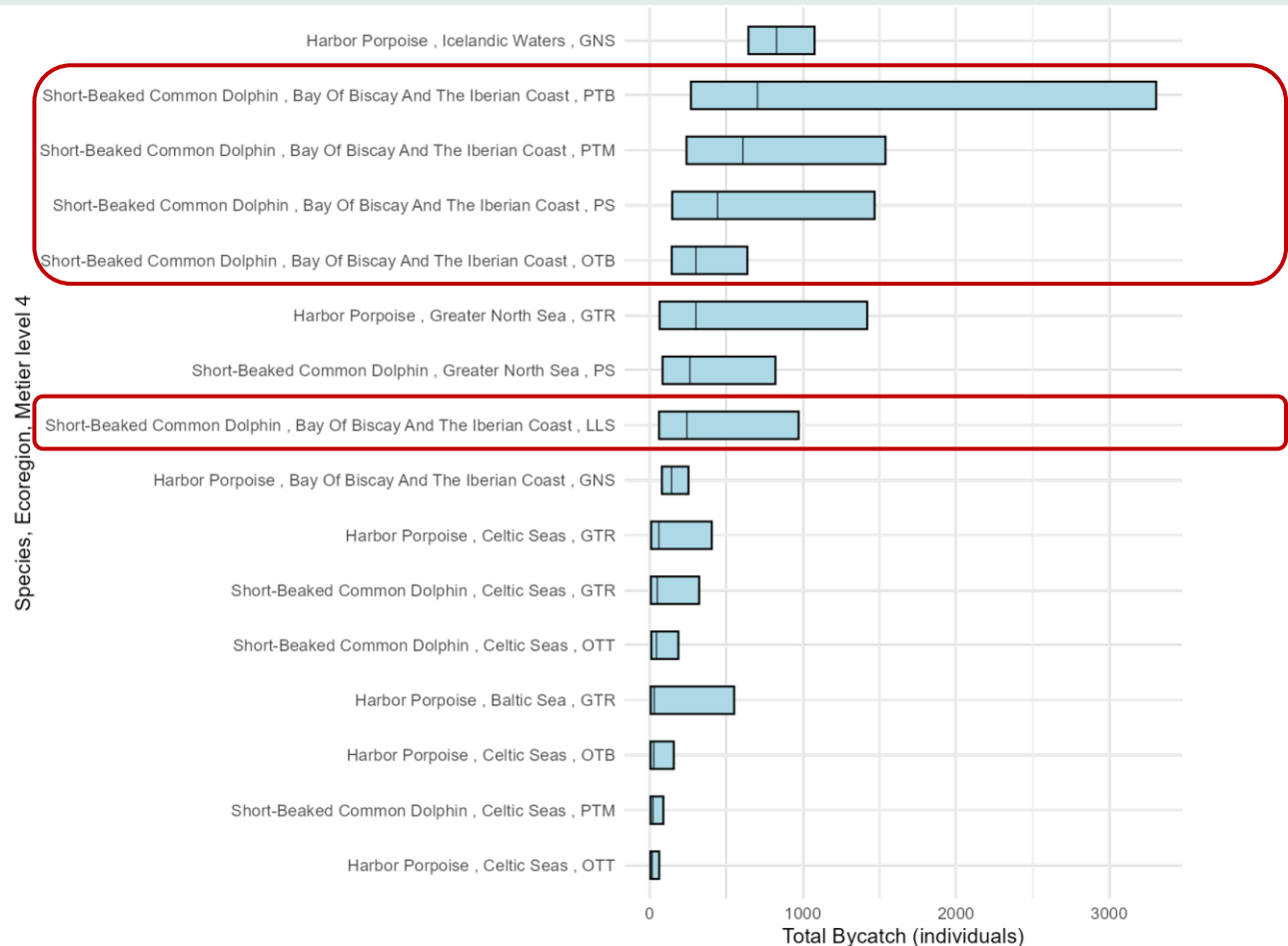
# ICES annual bycatch advice 2025

- Advice based on **bycatch evaluation and assessment matrix (BEAM)**: statistical procedure to quantify precision and ensure representativeness of pooled métier L4 bycatch rates (BPUE) estimated from observed bycatch events from different monitoring programmes.
- As in previous advice: a minimum monitoring ratio (1 monitoring day for every 1000 fishing days) was applied to ensure representativeness of BPUEs, and the accuracy of the fishing effort data (days at sea) was not assessed.
- **New 2025**: reliability of annual bycatch estimates evaluated based on a **precision criterion** (95% CI within 2 orders of magnitude) and **robustness criterion** (leave-one-out procedure resulting in <25% change). Annual bycatch estimates not meeting these criteria were deemed too uncertain for advice.
- *ICES emphasises that several factors, including low sampling/reporting rates, observations of rare species and localised species distribution, can result in bycatch estimates being under or over-estimated.*



**Bycatch**

# Bycatch advice 2025: priority marine mammals



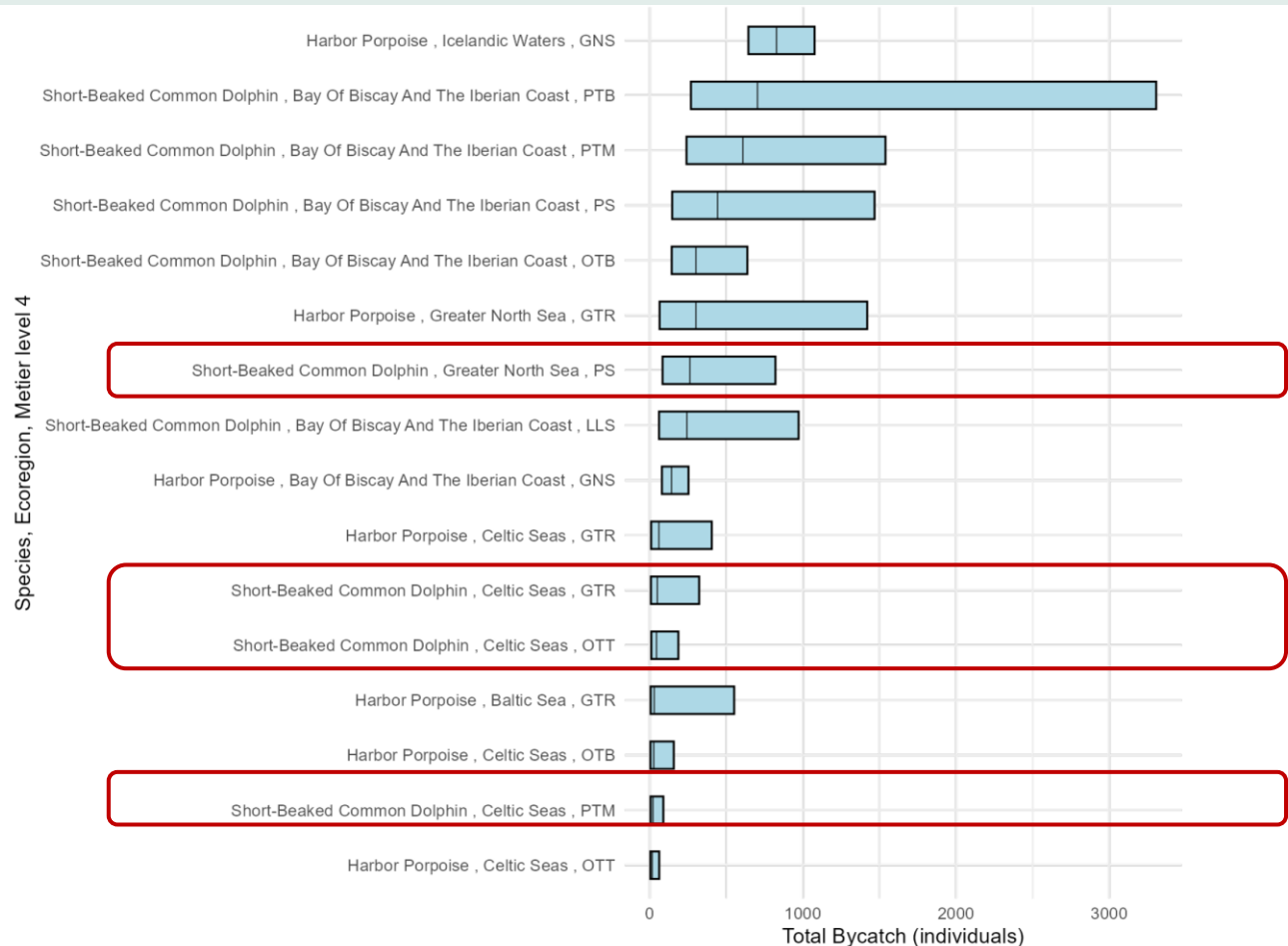
**Figure 1** Annual bycatch estimates of priority marine mammals in 2024 (vertical lines), by species, ecoregion, and métier level 4 combinations, with 95% confidence intervals (bars) and by decreasing order of bycatch (from top to bottom).

**Common dolphin:** highest 2024 bycatch in **BoB and Iberian Coast** ecoregion:

- Min: 243 dolphins (95% CI 61-973) in **LLS**
- Max: 704 dolphins (95% CI 269-3308) in **PTB**
- Highest bycatch in **métiers L5 targeting demersal fish**
- Highest bycatch in **Division 27.8.a** (OTB, PTM and GNS) and **27.8.b** (GTR)
- **Highest BPUE** in **OTM** (0.2, 0.02-1.95)



# Bycatch advice 2025: priority marine mammals



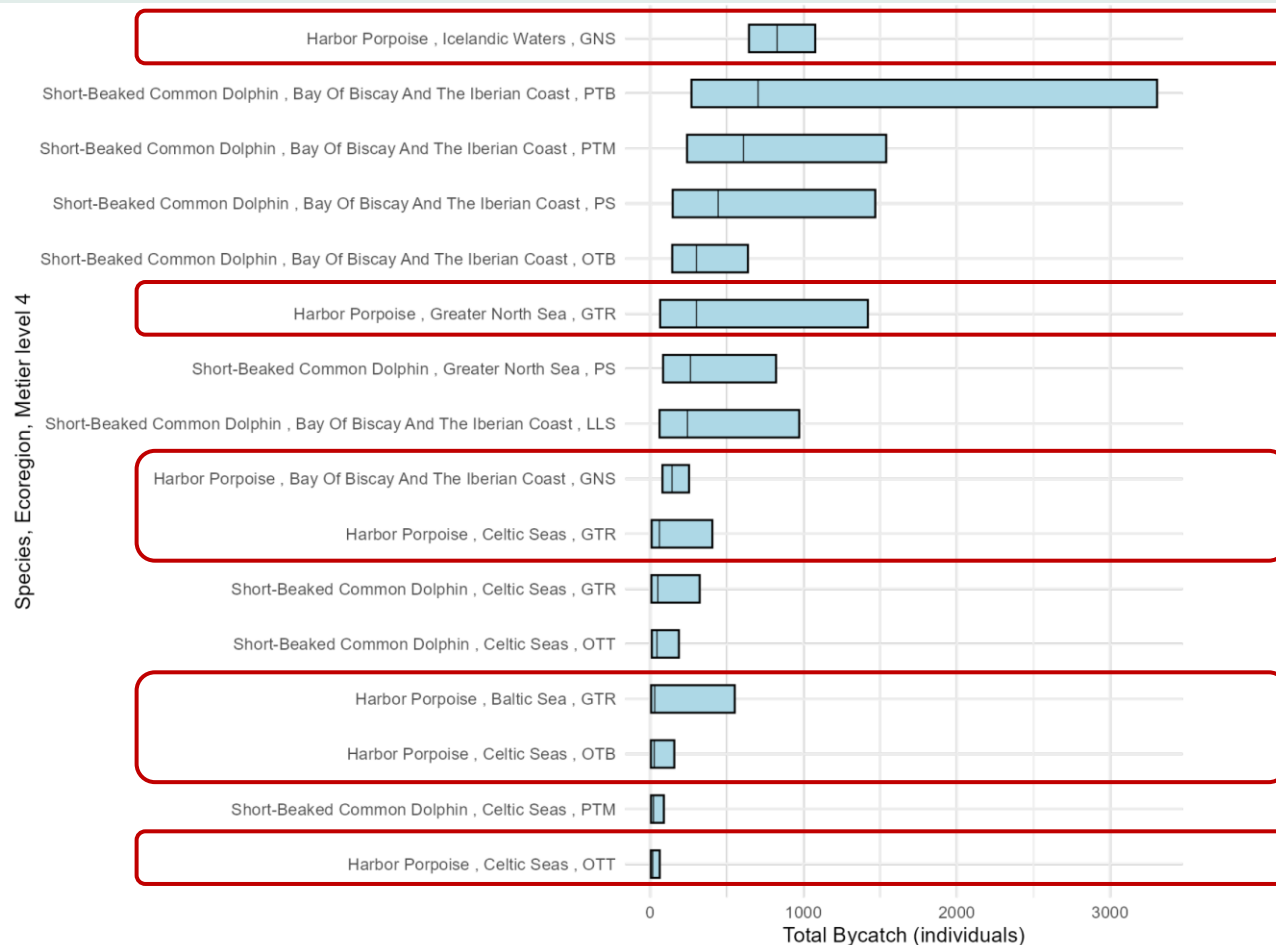
**Figure 1** Annual bycatch estimates of priority marine mammals in 2024 (vertical lines), by species, ecoregion, and métier level 4 combinations, with 95% confidence intervals (bars) and by decreasing order of bycatch (from top to bottom).

## Common dolphin 2024 bycatch :

- **Greater North Sea** : 262 dolphins (95% CI 84–821) in **PS**
- **Celtic Seas**:
  - 50 dolphins (95% CI 8–323) **GTR**
  - 44 (95% CI 11-188) **OTT**
  - 21 (95% CI 5–89) **PTM**



# Bycatch advice 2025: priority marine mammals



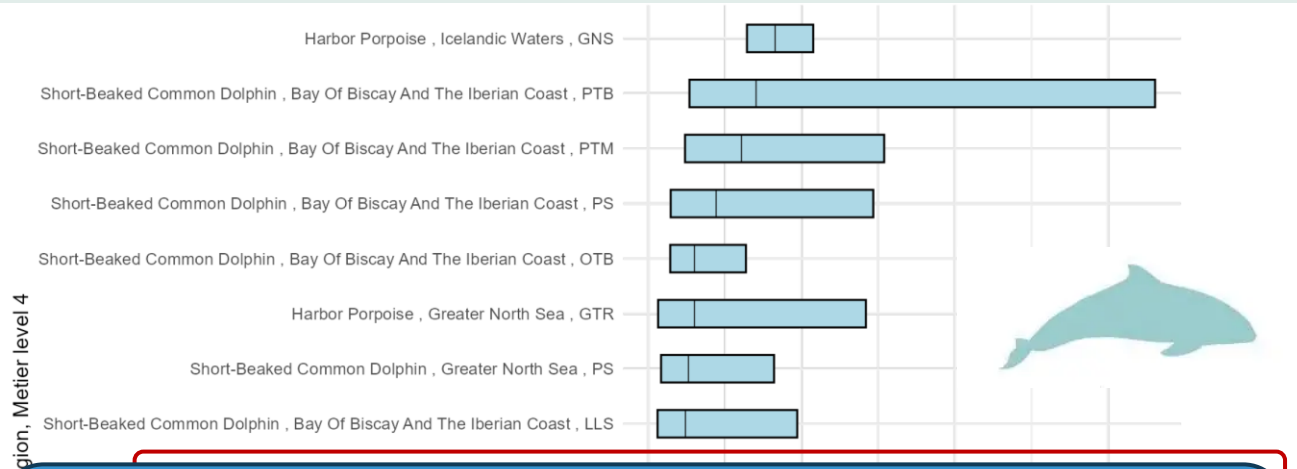
**Figure 1** Annual bycatch estimates of priority marine mammals in 2024 (vertical lines), by species, ecoregion, and métier level 4 combinations, with 95% confidence intervals (bars) and by decreasing order of bycatch (from top to bottom).

## Harbour porpoise 2024 bycatch:

- Highest in **GNS** in **Icelandic Waters** (828 porpoises, 95% CI 61–973)
- **Greater North Sea:** 302 porpoises [95% CI 65–1421] in **GTR**
- **BoB and Iberian Coast:** 142 porpoises [95% CI 80–254] in **GNS**
- **Celtic Seas:** min 16 porpoises (95% CI 4–62) in **OTT** to max 60 porpoises (95% CI 9–406) in **GTR**
- **Baltic Sea:** 29 porpoises (95% CI 6–552) in **GTR**



# Bycatch advice 2025: priority marine mammals



No data for Norwegian Sea in 2024  
(highest bycatch (>2000 porpoises in GNS) in 2023)!



**Harbour porpoise** subregional bycatch estimates in 2024 :

- **Baltic Sea:** highest in **27.3.c.22** in **GNS**
- **BoB and IC:** highest in **GTR** in Divisions **27.8.a** and **27.8.b**

➤ High BPUE in **GNS** in **Norwegian Sea** and **Barents Sea**

**Table 1** Ecoregion and métier combinations with the highest bycatch rates of priority marine mammals in 2017–2024 in cases for which a 2024 bycatch estimate was unavailable.

Species	Ecoregion	Métier	Bycatch per unit effort (BPUE <sub>[2017–2024]</sub> ; 95% CI)
Common dolphin	Bay of Biscay and the Iberian Coast	Midwater otter trawls (OTM)	0.20 (0.021–1.95)
Harbour porpoise	Norwegian Sea	Set gillnets (GNS)	0.040 (0.0174–0.090)
Harbour porpoise	Barents Sea	Set gillnets (GNS)	0.040 (0.0013–1.22)



# ICES bycatch advice 2025

New online, searchable table!

<https://bycatch.ices.dk/BycatchAdvice>

## BYCATCH

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2025 ICES Advice on bycatch of endangered, threatened and protected (ETP) species of marine mammals, seabirds, marine turtles and selected fish species of bycatch relevance.

For details, see ICES, 2025. Bycatch of endangered, threatened and protected (ETP) species of marine mammals, seabirds, marine turtles and selected fish species of bycatch relevance. In Report of the ICES Advisory Committee, 2025. ICES Advice 2025, byc.eu. <https://doi.org/10.17895/ices.advice.30734714>

For explanations of columns, see Annex 7 in the above document.

ICES ecoregion: 
 Metier 4: 
 Species:

Common Name: 
 Taxon: 
 Priority:

ICES ecoregion	Metier L4	Taxon	Species	Common Name	Reported Bycatch 2024	Fishing effort (DaS) 2024	monitoring effort (DaS) 2017-2024	BPUE	BPUE lower CI	BPUE upper CI	Bycatch 2024	Bycatch lower CI	Bycatch upper CI	Priority
western mediterranean sea	lld	seabirds	calonectris diomedea	cory's shearwater	224	34340.8	2453	0	0	0.0486	NA	NA	NA	No
western mediterranean sea	lld	turtles	caretta caretta	loggerhead	106	34340.8	2608	0.0006	0	0.1718	NA	NA	NA	Yes

# ICES bycatch advice 2025

Advice on mitigation options for reducing bycatch of harbour porpoise in set gillnet (GNS) fisheries:

- Acoustic deterrents (pingers) remain the most effective mitigation tool that does not require a change in fishing practices
- Results from trials on net modifications such as the use of acrylic pearl nets or reduced net height, remain inconclusive and require further validation
- A combination of alternative fishing gears, closures, and acoustic deterrents offers the best mitigation potential, but may impact fisheries yields and other species
- Solutions to mitigate ETP bycatch are complex and context-specific and often require multiple technical and/or spatial management measures and species-, area-, and métier-specific approaches

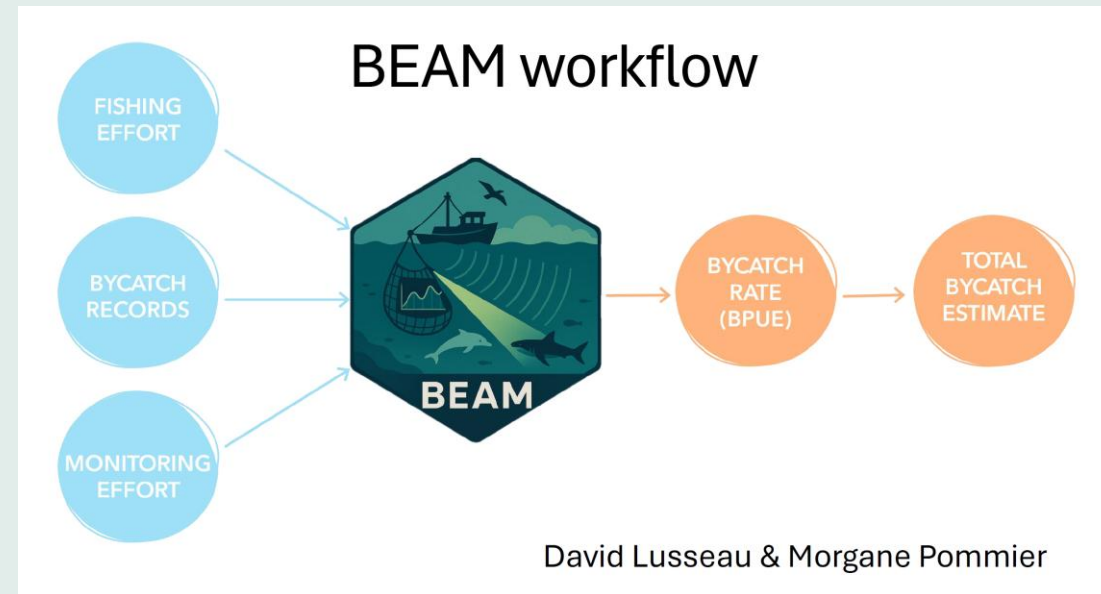


# Benchmark Workshop on the Bycatch Estimation and Assessment Matrix (WKBBEAM)

Chairs: Graham Pierce and Massimiliano Cardinale (December 2025)

Context:

- BEAM is applied to derive multiannual BPUE estimates for up to 14,000 combinations of ecoregion, métier L4, and up to 300 ETP species from 5 taxa (marine mammals, seabirds, marine turtles, fish and elasmobranchs)
- BEAM has been developed and applied incrementally to provide advice (learning by doing)
- Benchmarking to consolidate, quality assure, and independently peer-review the BEAM procedure as basis for recurring advice on bycatch of ETP species



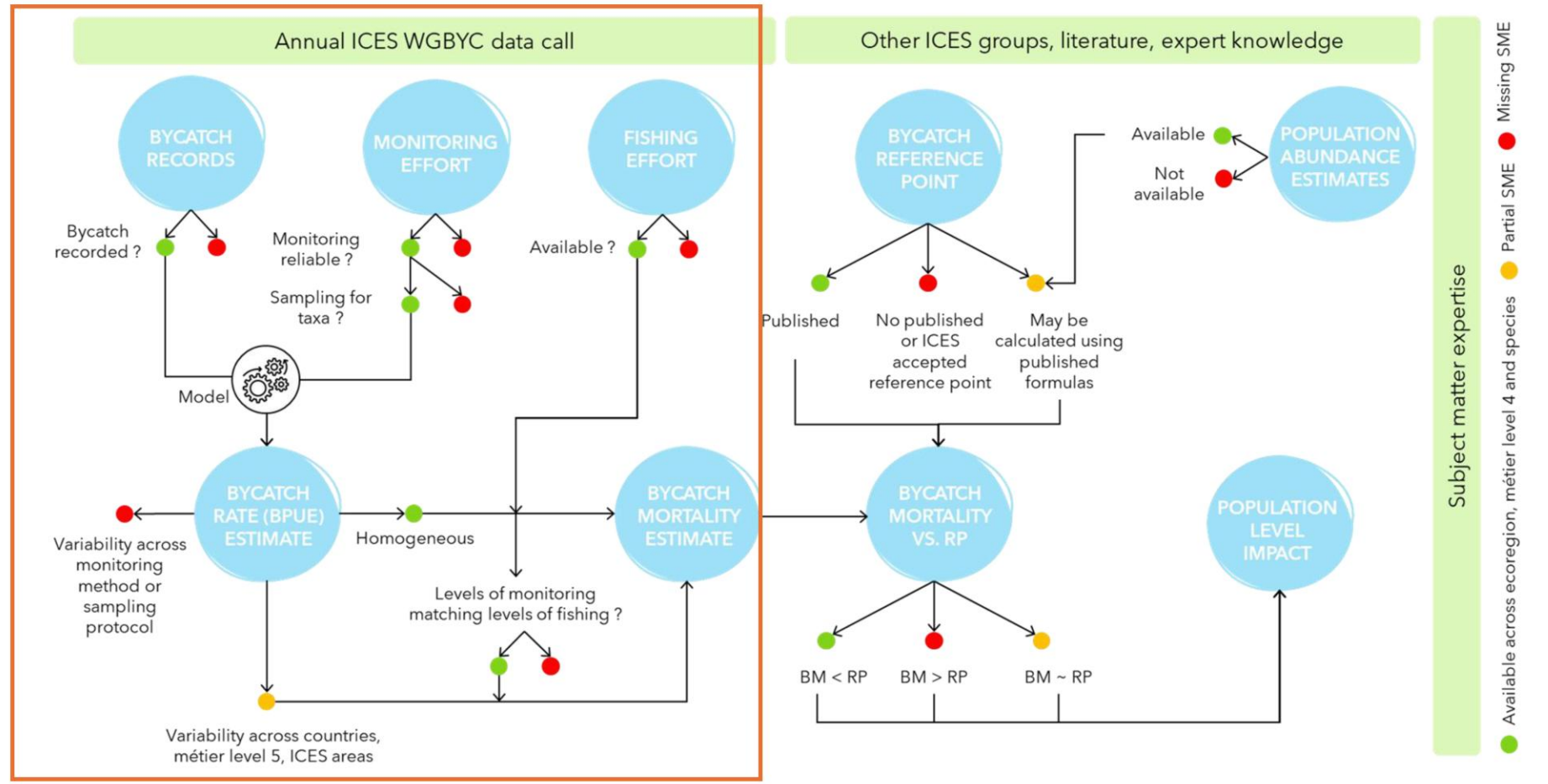
# Benchmark Workshop on the Bycatch Estimation and Assessment Matrix (WKBBEAM)

ToRs completed vs **future work**:

- a. Evaluate the procedure for estimation of representative bycatch rates of Endangered, Threatened and Protected (ETP) species
- b. Review and agree on the procedures to include or exclude fishing effort data for use in the estimation of annual total bycatch
- c. Review and agree on accuracy and precision criteria to evaluate the representativeness of annual bycatch estimates
- d. **Provide recommendations to operationalize BEAM criteria 4-8 considering the appropriateness of current spatial and temporal scales**
- e. **Develop recommendations for future improvements to the assessment methodology**
- f. Draft technical guidelines on the application of the BEAM framework, including quality control procedures

# Benchmark Workshop on the Bycatch Estimation and Assessment Matrix (WKBBEAM)

## BEAM: Bycatch Estimation and Assessment Matrix



# Benchmark Workshop on the Bycatch Estimation and Assessment Matrix (WKBBEAM)

Reviewers report indicates support for the use of BEAM to derive advice on bycatch of ETP species, with main recommendations to:

- Address and prevent multicollinearity and overparameterization of the retained models
- Explore other model selection criteria beyond AIC
- Assess information content of zeroes and how these affect outcomes
- Further investigate instances where bycatch estimates cannot be provided or are unreliable, with the aim to increase comprehensiveness of the results
- Introduce weighting of historical data

Benchmark report is being finalised, some recommendations will be implemented in the 2026 benchmarked procedure



# Looking ahead: ICES bycatch advice in 2026

Enhanced focus on **common dolphins** and **harbour porpoise**:

- Review and update of available population abundance and trend information, including relevance at different spatial scales

For both species in Bay of Biscay and Iberian Coast ecoregion:

- BEAM implementation to provide annual bycatch estimates and/or multiannual BPUE by ICES Division and quarter
- BEAM implementation to provide recent (2022-2025) **bycatch trend information**
- Advice on mitigation measures for reducing bycatch risk of common dolphin in high bycatch metiers (GNS, PTB, PTM, OTB, LLS and GTR)



<https://www.gettyimages.ca/editorial-images>



# Looking ahead: ICES bycatch advice in 2026

**OSPAR Special request (MAMBY):** marine mammals bycatch estimates within OSPAR assessment units (harbour porpoise, common dolphin, grey seal, minke whale, harbour seal)

- Dedicated data call on bycatch of species of interest aggregated by ICES rectangle
- Extension of BEAM methodology to different spatial scales
- 2 workshops (April and June 2026)
- Advice publication December 2026



# Looking ahead: ICES bycatch advice in 2026

Revised contribution (bycatch module) for [fisheriesXplorer](#)

- Ecoregion-scale annual estimates and multiannual BPUE in interactive figures
- Concise, standardised text
- To be released in 2026

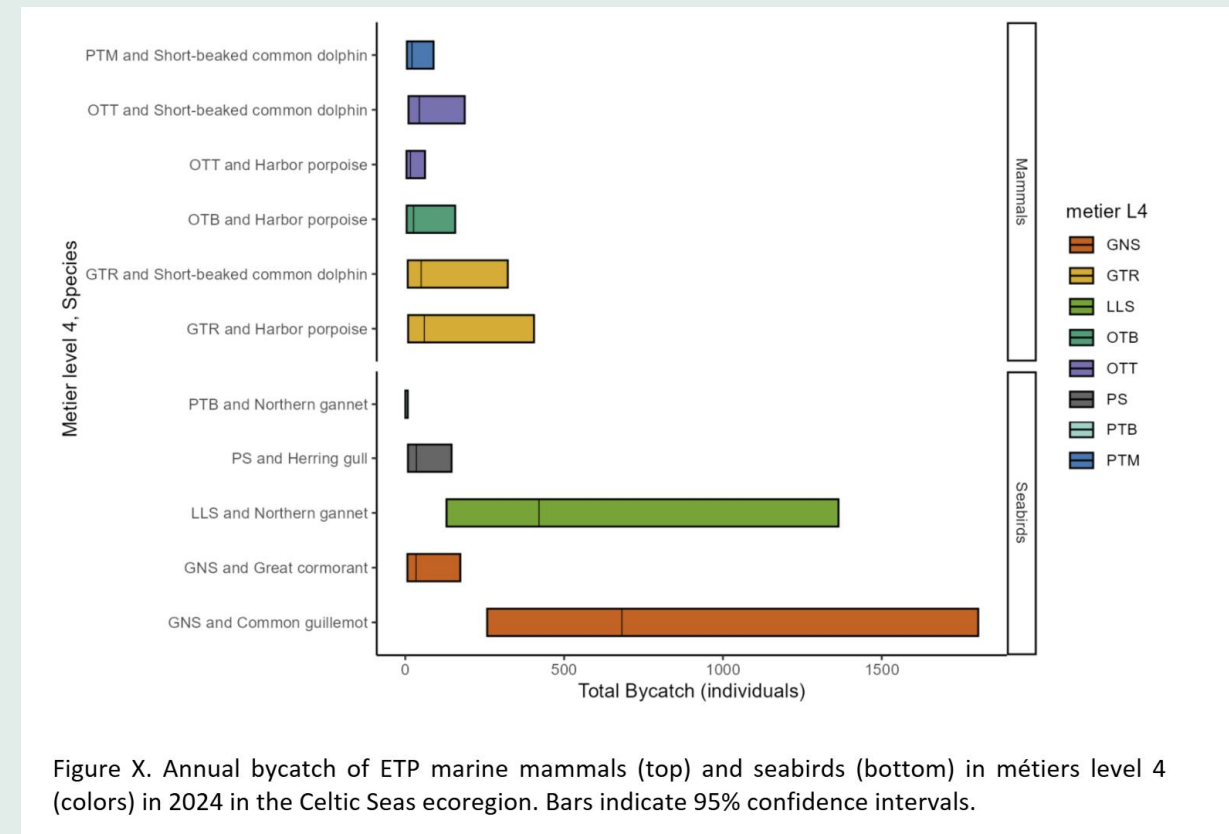



Figure X. Annual bycatch of ETP marine mammals (top) and seabirds (bottom) in métiers level 4 (colors) in 2024 in the Celtic Seas ecoregion. Bars indicate 95% confidence intervals.

# Thank you!


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