



Activity 2:
A2 – Improved regional assessment of biodiversity



BLUES



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European Union

HELCOM BLUES – Activity 2: Biodiversity

Task 2.1: Bycatch

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HELCOM

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Overview of Task A2.1 - bycatch

Task 2.1 Bycatch	Deliverables
Subtask 2.1.1.	Further development of risk area mapping
Subtask 2.1.2.	Evaluating bycatch assessment approach developed in OSPAR-HELCOM bycatch workshop



Popov et al. 2020



Glemarec et al. 2022

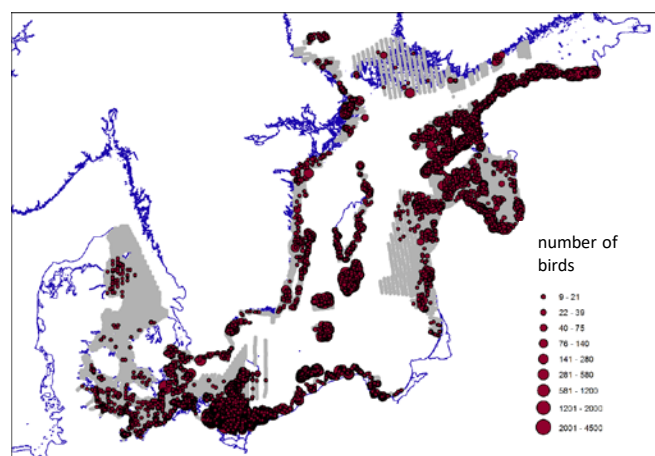




Results A2.1.1

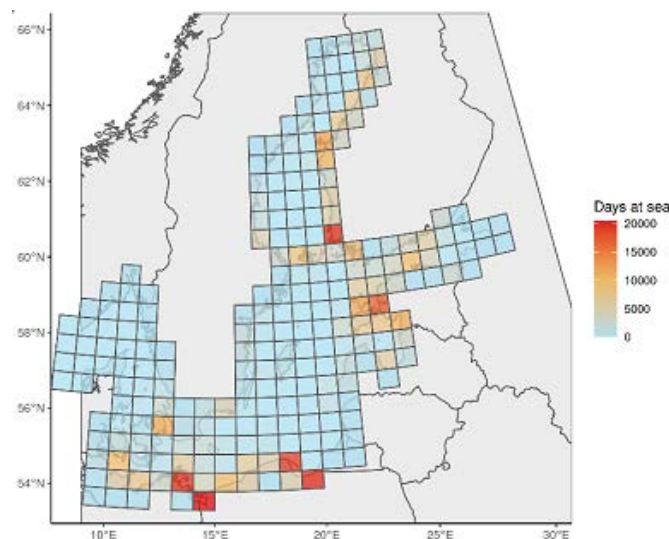
Aim: Further development of risk area mapping (follow-up of HELCOM ACTION project)

- Relative bycatch risk as the product of mammal/bird abundance and fishing effort



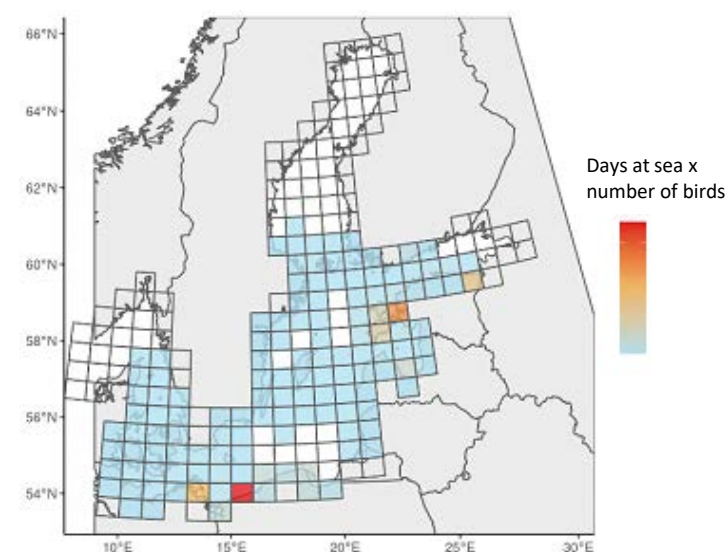
Bird abundance

X



Fishing effort

=



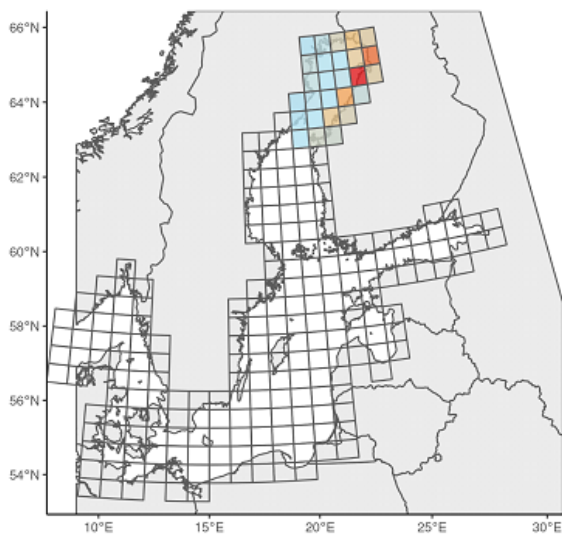
Relative bycatch risk





Results A2.1.1

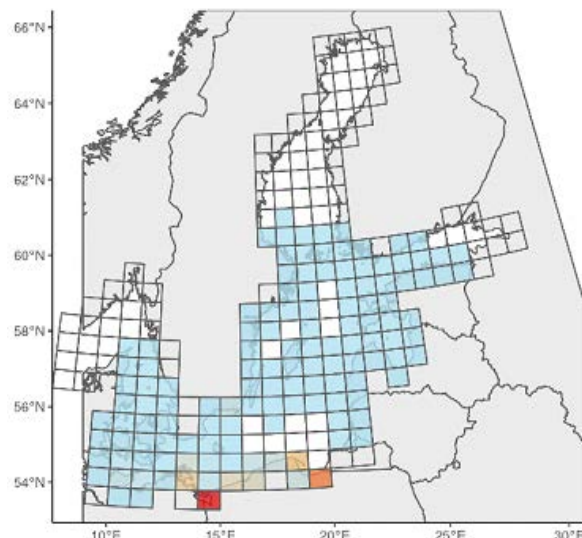
Risk maps for numerous combinations of species and gear types



Ringed seal / static nets



www.arcticnature.org



Red-throated diver / static nets



Ben Dean

Harbour seal
Grey seal
Ringed Seal
Greater scaup
Common eider
Steller's eider
Long-tailed duck
Common scoter
Velvet scoter
Red-breasted merganser
Red-necked grebe
Slavonian grebe
Red-throated diver
Black-throated diver

Static nets
(GNS, GTR)

Trawl
(PTB, PTM, OTB, OTM)

Longlines
(LHP, LLD, LLS)

Pots, traps, fyke nets
(FYK, FPO, FPN)





Results A2.1.2

Aim: Evaluating bycatch assessment approach developed in OSPAR-HELCOM bycatch workshop

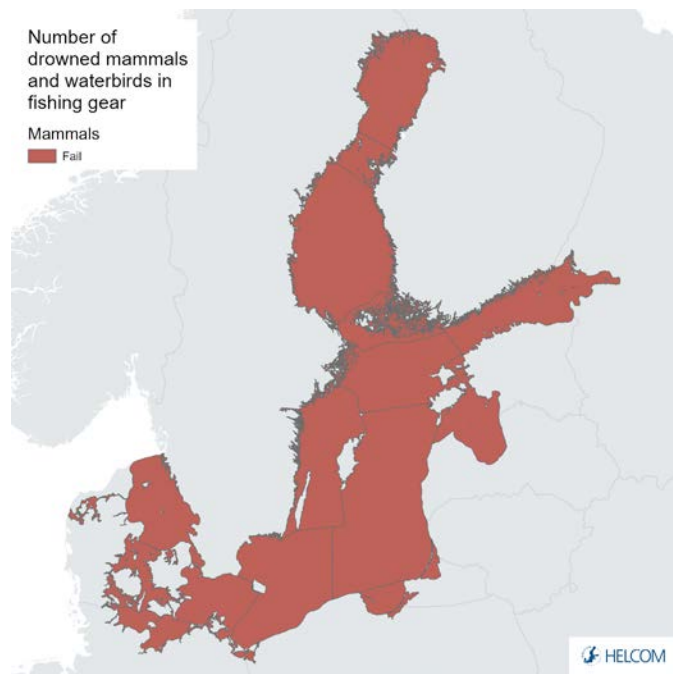
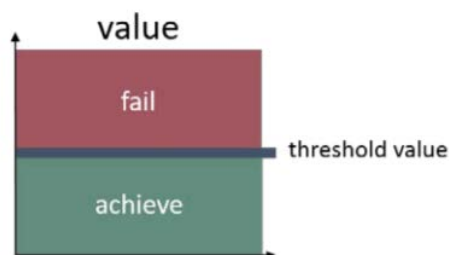
- Application of the developed indicator concepts by the help of the available data.
- Data needed: Fishing effort, bycatch rates (by-catch per unit fishing effort), any quantitative or qualitative information about bycatch.
- Marine mammal threshold values:
 - PBR = Potential Biological Removal: loss of individuals from bycatch and hunting allowing to maintain a population size reflecting 80% of carrying capacity after 100 years.
 - Zero bycatch in critically endangered or vulnerable populations
- Waterbird threshold values:
 - Population viability not threatened (PVA = Population viability analysis), not applied due to lack of data
 - Bycatch number equals 1% of annual adult mortality (red-listed species only)
 - Bycatch occurring (red-listed species)





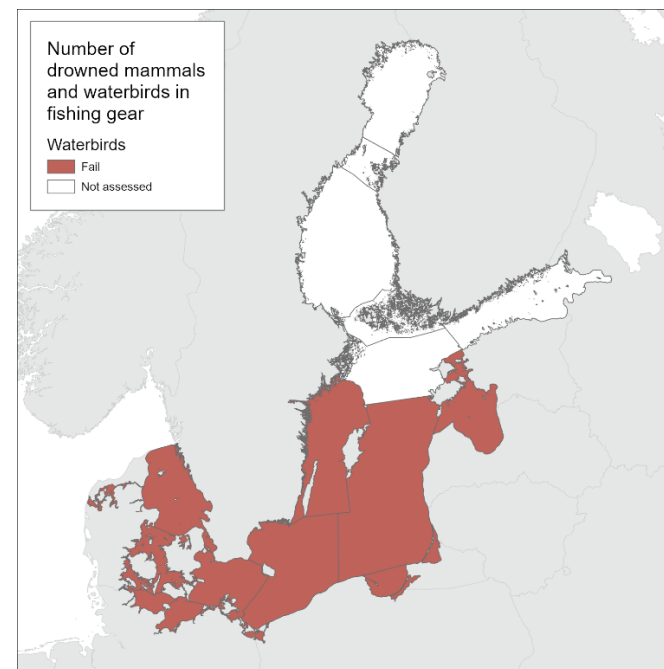
Results A2.1.2

Indicator results feeding into HOLAS 3



Assessments for marine mammals:

- harbour porpoise (2 populations)
- grey seal (1 population)
- harbour seal (1 population)
- ringed seal (2 populations)



Assessments for waterbirds:

11 species (greater scaup, common eider, long-tailed duck, velvet scoter, common scoter, red-breasted merganser, Slavonian grebe, black guillemot, red-throated diver, black-throated diver)

All assessments indicated that Good Environmental Status is not achieved !





Results summary - bycatch

Task 2.1 Bycatch	Deliverables	Results
Subtask 2.1.1.	Further development of risk area mapping	Application of risk mapping method to 3 seal species and 11 waterbird species, allowing to identify some (species-specific) areas of high bycatch risk
Subtask 2.1.2.	Evaluating bycatch assessment approach developed in OSPAR-HELCOM bycatch workshop	Indicator assessments for 6 marine mammal populations and 11 waterbird species, all showing that Good Environmental Status is not achieved





Key messages

- Key messages for **science**







- 1) Where applicable, bycatch assessments indicated negative impact on marine mammal and waterbird populations.
- 2) More precise data of fishing effort and mammal/bird bycatch are needed to quantify the impact of bycatch on the population level.
- 3) High-resolution bycatch assessments are required for development of targeted measures.

- Key messages for **policy makers**

- 1) Bycatch in fishing gear threatens the viability of marine mammal and waterbird populations in many parts of the Baltic Sea.
- 2) Bycatch monitoring needs to be implemented to allow identification of high risk areas and population effects as a basis for targeted management measures.
- 3) Measures against bycatch must be taken to prevent deterioration of marine ecosystems.



Use of results so far and in future

- HELCOM  Development and update of core indicator (used in HELCOM HOLAS 3 Thematic Assessment of Biodiversity)
- BSAP Goal  “Baltic Sea ecosystem is healthy and resilient”
- BSAP Management Objective  “Human induced mortality, including hunting, fishing, and incidental bycatch, does not threaten the viability of marine life”
- BSAP  action B8 and B33
- MSFD  Article 8 status reporting on D1C1 (with possible links to D4)
- Other relevant processes  EU processes, EU Action Plan, ASCOBANS, AEWA





Data for bycatch A2.1

This work was possible due to support from

- ICES Regional Database (fishing effort data)
- JWGBIRD (bird data compiled from national monitoring schemes)
- Aarhus University, LUKE, Swedish Seal Monitoring (seal data)
- Dominik Marchowski (waterbird bycatch assessment Poland)
- DDA/BfN (waterbird bycatch assessment Germany)
- HELCOM BLUES Activity 5 (data products)
- Literature (case studies, project reports)
- Markus Ahola, Mathieu Authier, Julia Carlström, Anita Gilles, David Lusseau, Kylie Owen (development and testing of threshold setting methods and evaluation scenarios)





Outputs

- Project Report
Bycatch risk maps of marine mammals and waterbirds in the Baltic Sea
- Core Indicator Report
Number of drowned mammals and waterbirds in fishing gear





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Thank you!



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GAVIA



Meereszoologie



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