PORPOISES AT DTU

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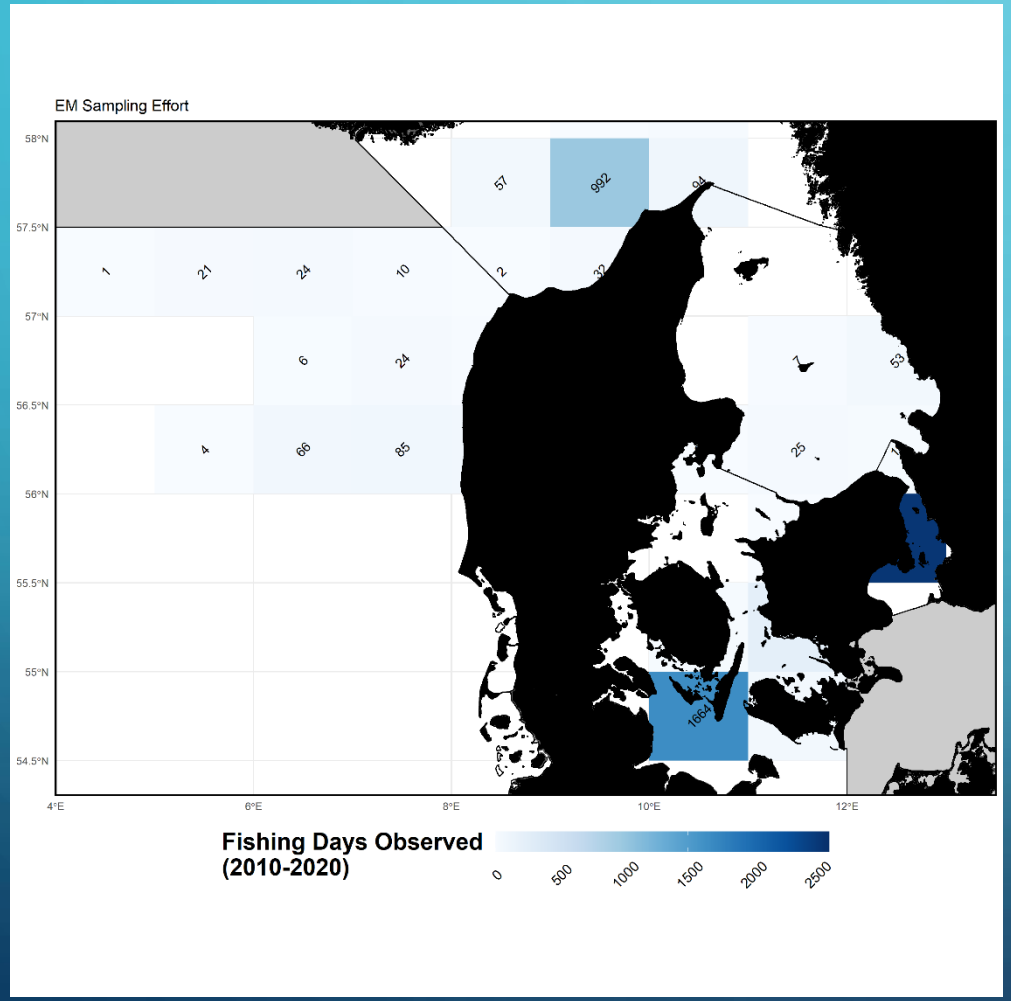
DTU AQUA

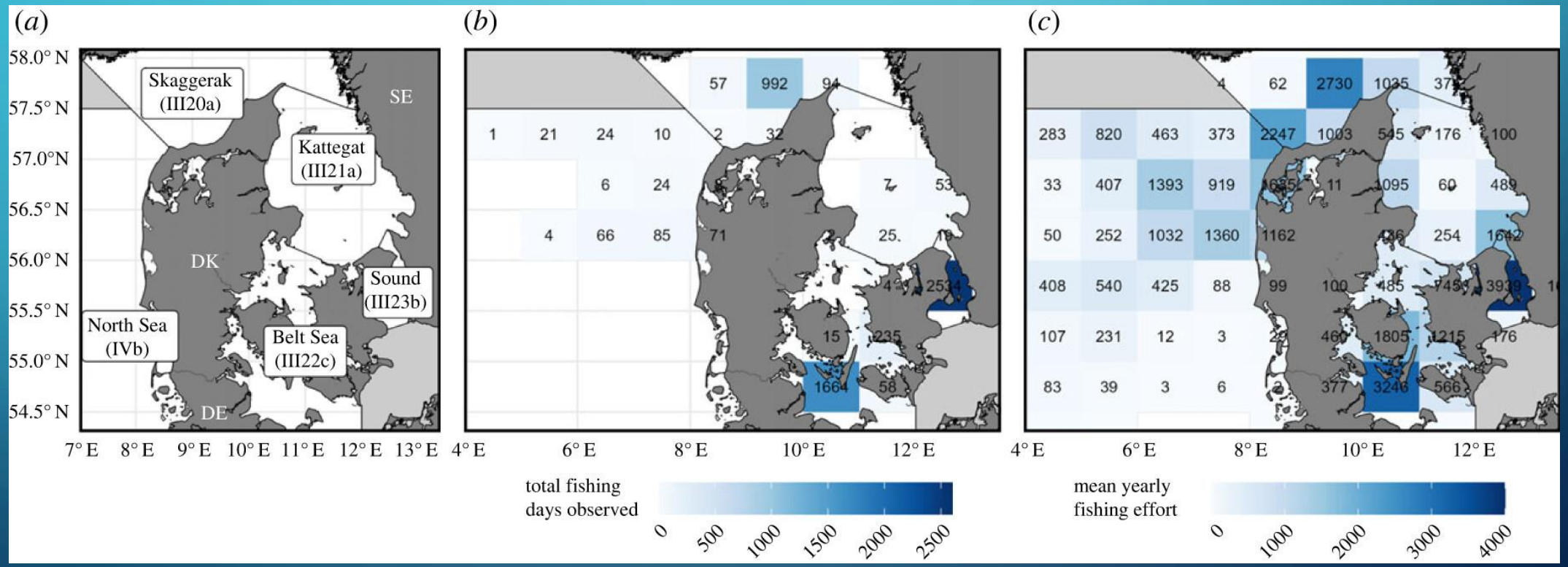
ASCOBANS/JASTARNIA MEETING MAR 2024

VIDEO-BASED ELECTRONIC MONITORING



In Denmark:

- First trials in 2008
- Bycatch monitoring since 2010
- Focus on SSF GN
- 18 vessels since 2010 (9 currently)


(a)
(b)
(c)
58.0° N
57.5° N
57.0°N
56.5° N
56.0° N
55.5° N
55.0° N
54.5° N
Skaggerak (III20a)
Kattegat (III21a)
SE
DK
Sound (III23b)
North Sea (IVb)
Belt Sea (III22c)
DE
7° E 8° E 9° E 10° E 11° E 12° E 13° E
4° E 6° E 8° E 10° E 12° E
total fishing days observed
0 500 1000 1500 2000 2500
mean yearly fishing effort
0 1000 2000 3000 4000

Generalised linear mixed model (GLMM)

Response variable		
Porpoise bycatch	Number of porpoises captured in nets per fishing day per ICES statistical square	
Fixed effect		
Mesh size	Stretched diagonal mesh size (in mm) in the conducted fishery, based on fisher declarations or deducted from landings composition. Only one mesh size was reported for each fishing day, based on the weight of the main target species	Discrete (3 levels): "<120 mm", "120-200", ">200 mm"
Vessel length	Total length (in m) of the fishing vessel	Discrete (5 levels): "<8 m", "8-10 m", "10-12 m", "12-15 m", ">15 m"
Population	Dummy variable indicating the porpoise (sub)population, based on the fishing location	Discrete (2 levels): "North Sea Population", "Western Baltic Sea Population"
Net length	Total (log) length of the net fleets (in m) for each fishing day)	Continuous
Soak time	Mean (log) soak time of the net fleets (in hours) for each fishing day	Continuous
Depth	Mean (log) depth of the ICES statistical rectangle in which the fishing operation(s) occurred	Continuous
Quarter	Quarter during which fishing occurred	Discrete (4 levels)
Year	Year during which fishing occurred	Discrete (11 levels)

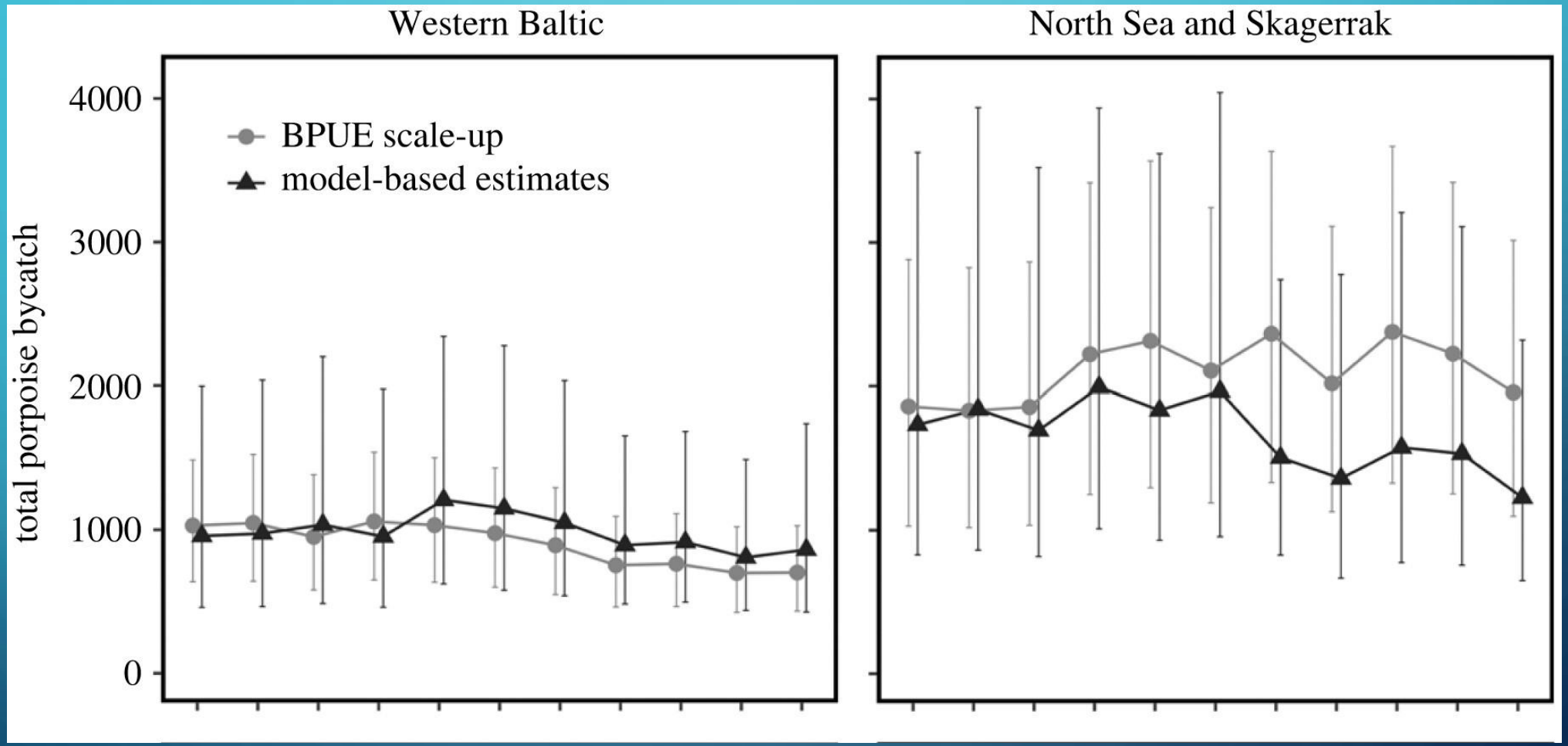
BYCATCH ESTIMATES IN DANISH GILLNETS

Danish logbook data are (often) incomplete

- Number of nets soaked
- Length of net fleets
- Height of the fishing fleets
- Soaking duration
- Mesh size
- Fishing location

Swedish data is better

Expert opinions were made!



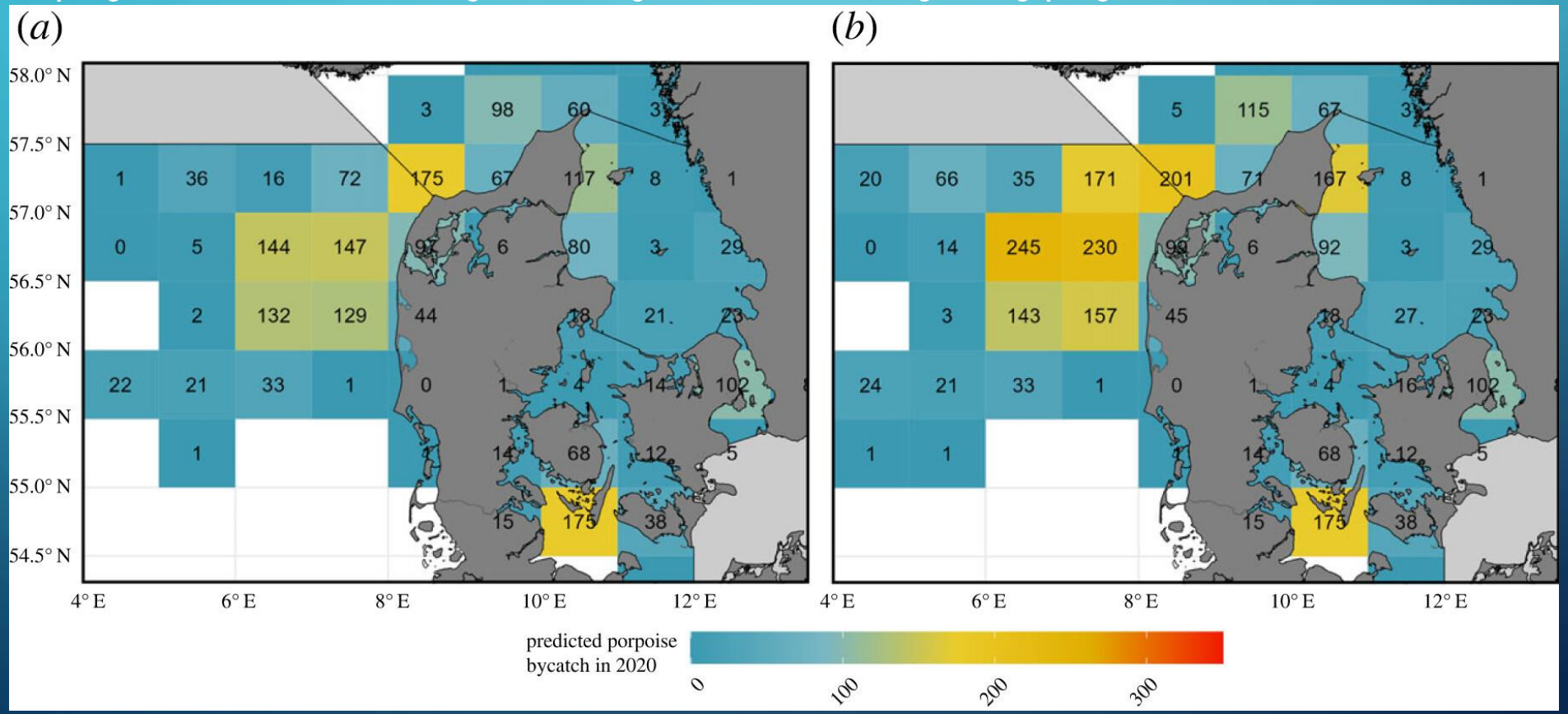
(Kindt-Larsen et al. 2023)

TOTAL BYCATCH ESTIMATES

Total bycatch estimates per ICES square

When pingers are used according to the regulation

Ignoring pingers

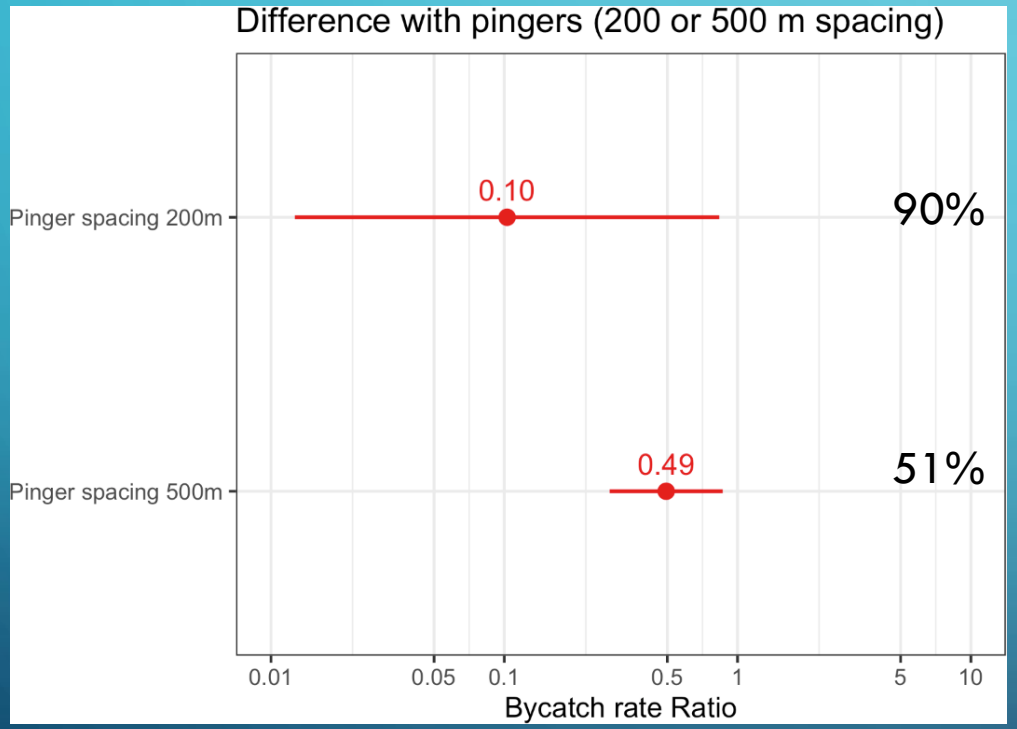


(Kindt-Larsen et al. 2023)

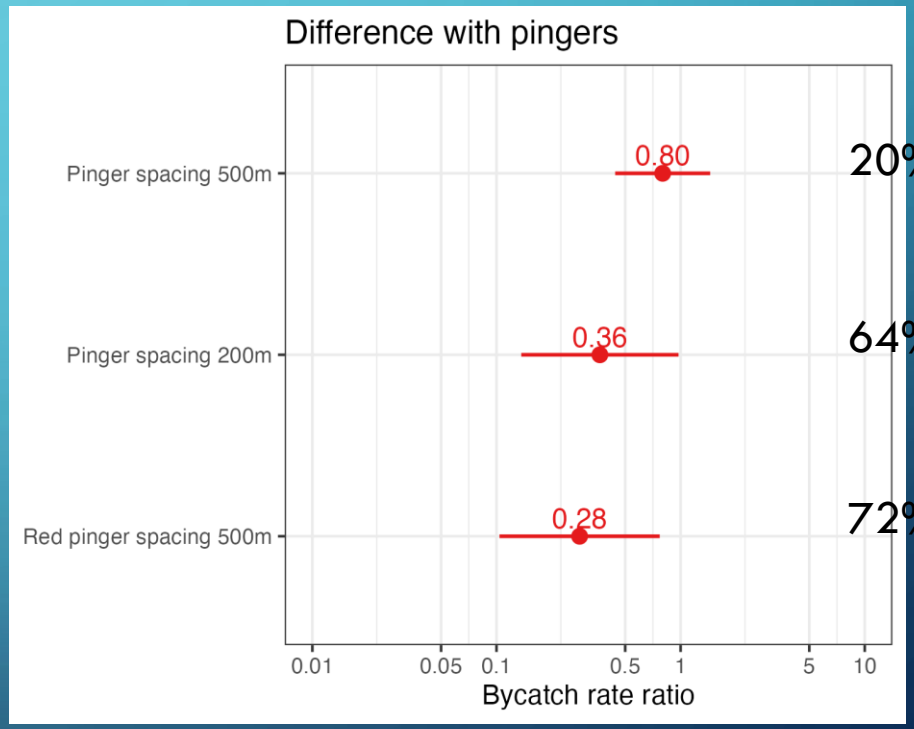
PINGER TESTS IN THE NORTH SEA

- BANANA (50kHz – 120kHz with harmonics, 145dB +/- 3dB @ 1m)
- 200M standard banana
- 500M standard banana
- 500M red banana
- Control

YEAR 1



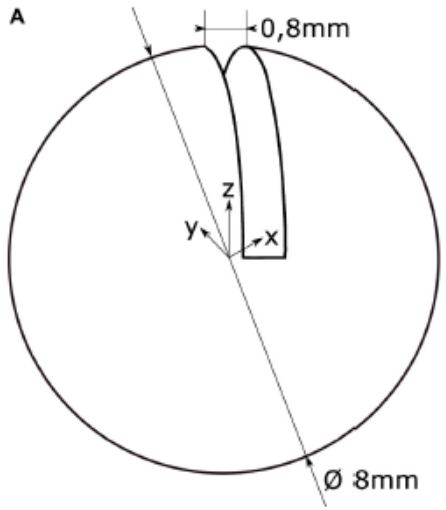
YEAR 3

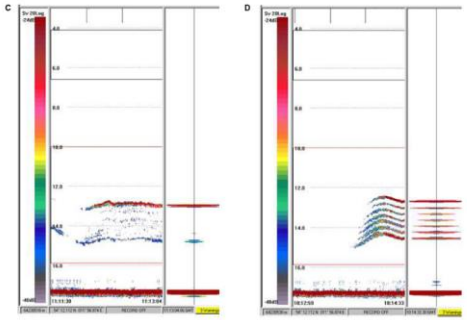


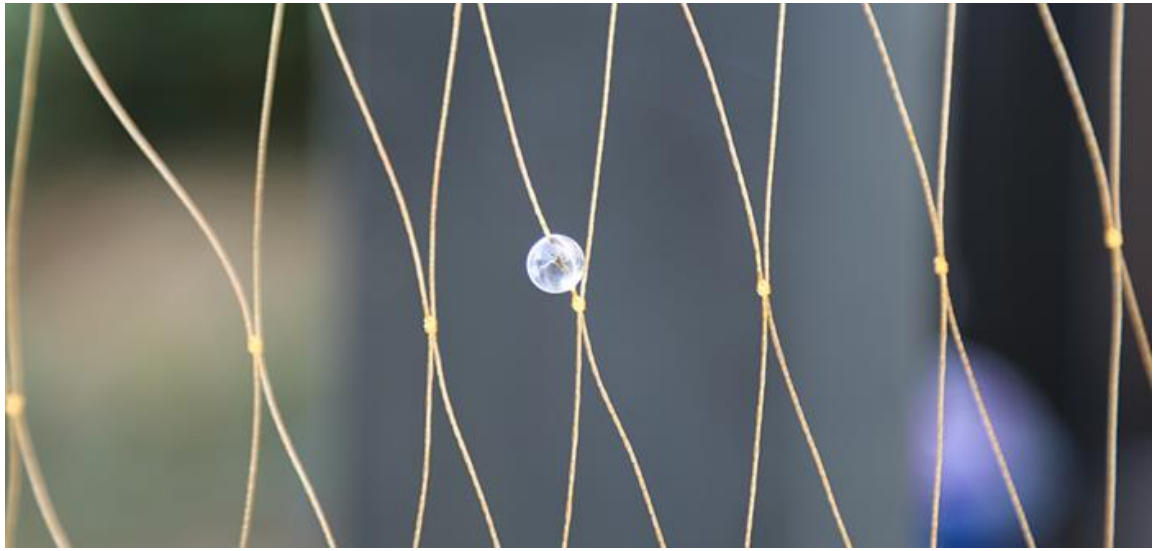
(Kindt-Larsen et al. in press)

PEARLS

- Kratzer et al., 202, 2021, 2022
- Tests in the Danish fishery
- CIBBRiNA
- ICELAND- APRIL 2024







MITIBYC (EMFAF, 2024)

- West Baltic: bring DE, DK, SE effort together
- Develop models for pinnipeds and birds
- Assess fisheries characteristics associated with bycatch probability
- Gear modification trials

THANKS…

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