

# PAL use in German waters - Current efficiency and mode of operation

## **PAL – CE project update 2024**

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# PAL- CE



## Project Partners

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# PAL – CE Background



Bycatch is a prominent threat for harbour porpoises

Porpoise Alerting systems (PAL) help to reduce bycatch

In Schleswig Holstein, as part of a voluntary agreement between two fisher organisations (*Landesfischereiverband* and *Fischereischutzverband*), the federal State of Schleswig Holstein and the Ostsee Info Center (OIC), fishers shorten their net length depending on vessel length since 2013.

An addendum of 2018 allows fishers to maintain the net length if they use PAL.

Around 90 fisheries use up to 2000 PALs on their gill nets (2021)

# PAL – CE Questions and general approach



## Questions to be answered

1. Do PALs continue to work long-time or do they lose efficiency in bycatch mitigation?
2. Does the effect of PALs alert on porpoises change over time?
3. How do PAL affect spatial distribution of porpoises over longer time periods.

Compare echolocation behaviour and approach distances of porpoises in areas where porpoises might be habituated (Schleswig-Holstein) vs. less habituated (northern coast of Denmark and/or Sweden) by experimental set nets and PALs

Evaluate the voluntary agreement in its current form in cooperation and collaboration with fishermen

# PAL – CE work packages



WP1: Effectiveness of PALs in previously exposed and naive harbour porpoises (BACI)

WP2: Comparison of echolocation rates around nets in Schleswig-Holstein and Denmark

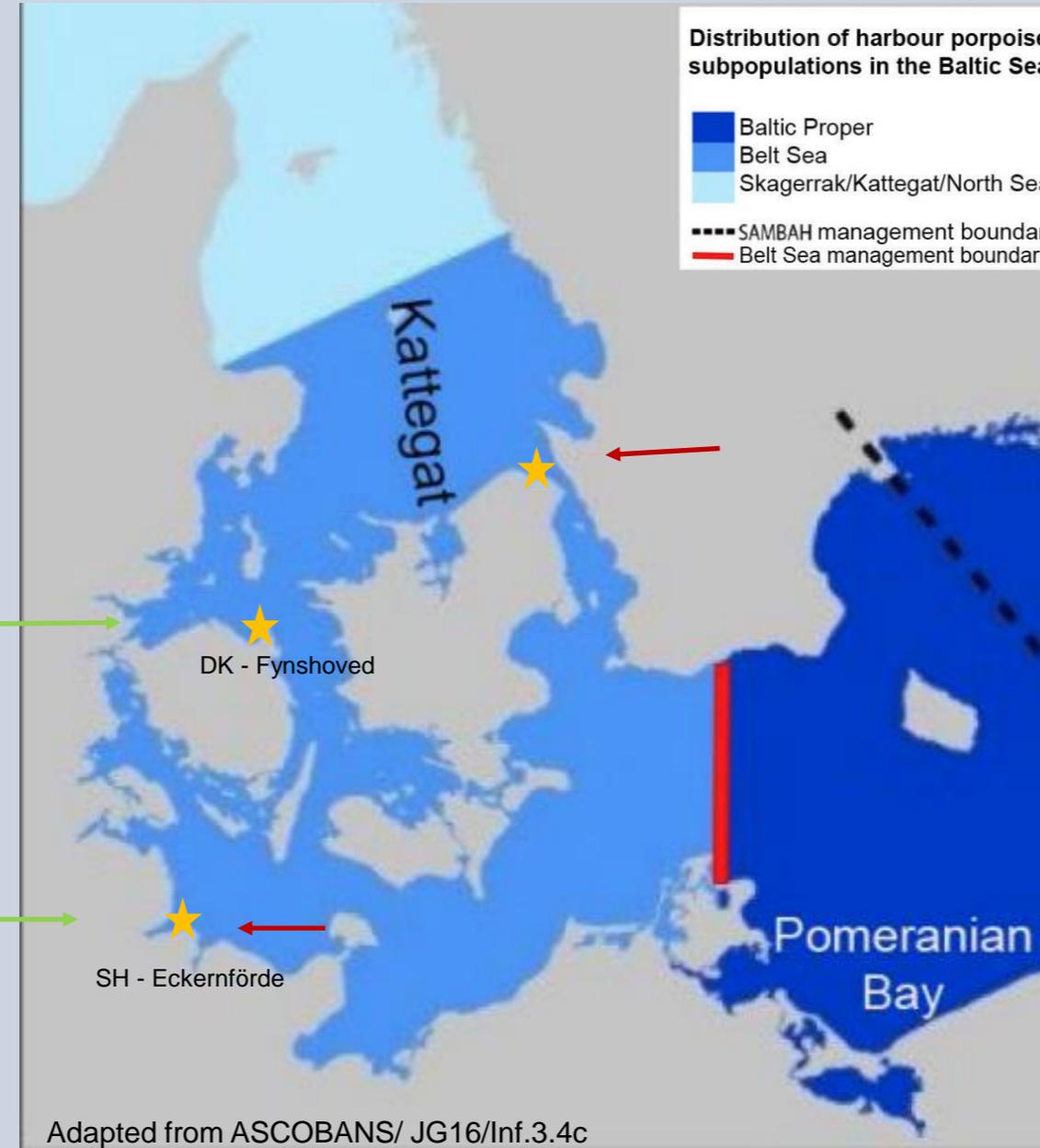
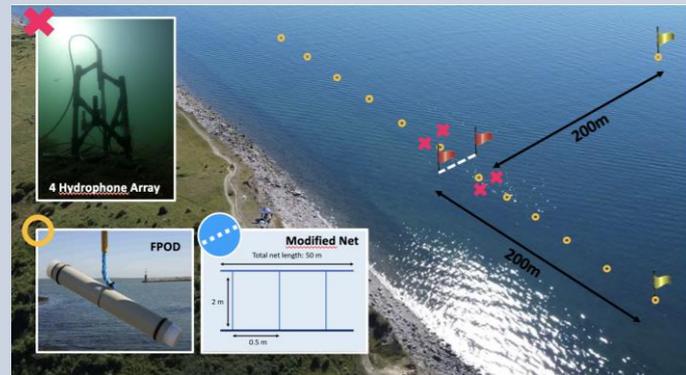
WP3: Echolocation click variations between porpoise populations

WP4: Current use of PAL in fisheries

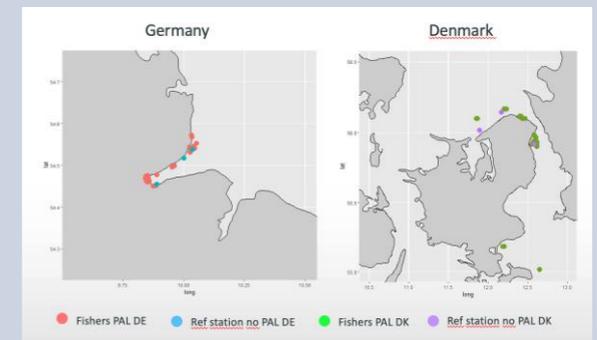
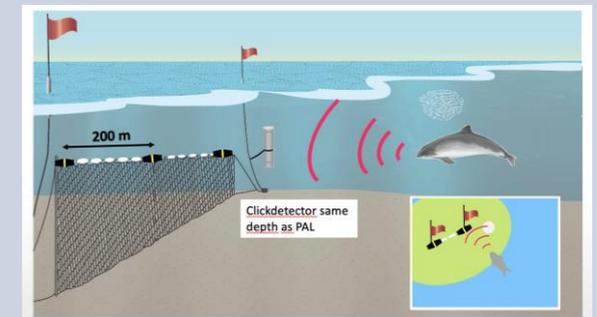
WP5: Stakeholder process, knowledge transfer and public relations

# PAL – CE Field work areas WP 1 and 2

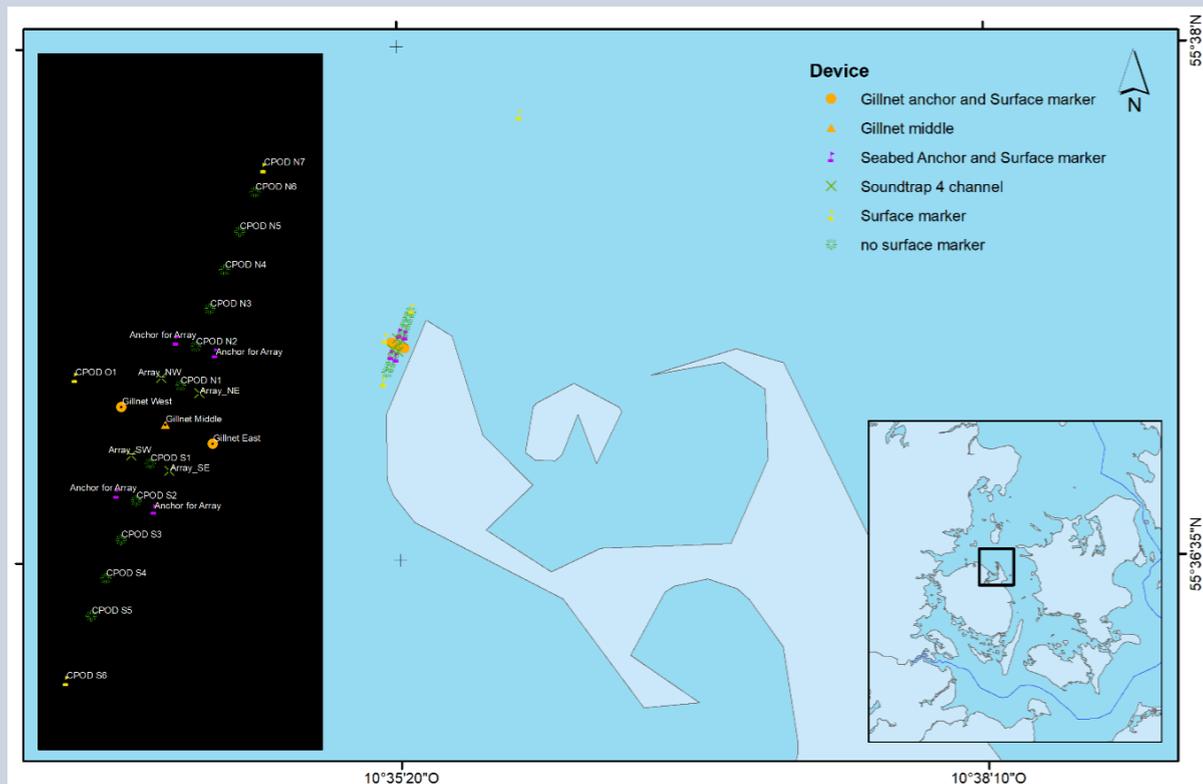
**WP1:** Effectiveness of PALs in previously exposed and naive harbour porpoises (BACI)



**WP2:** Comparison of echolocation rates around nets in Schleswig-Holstein and Denmark



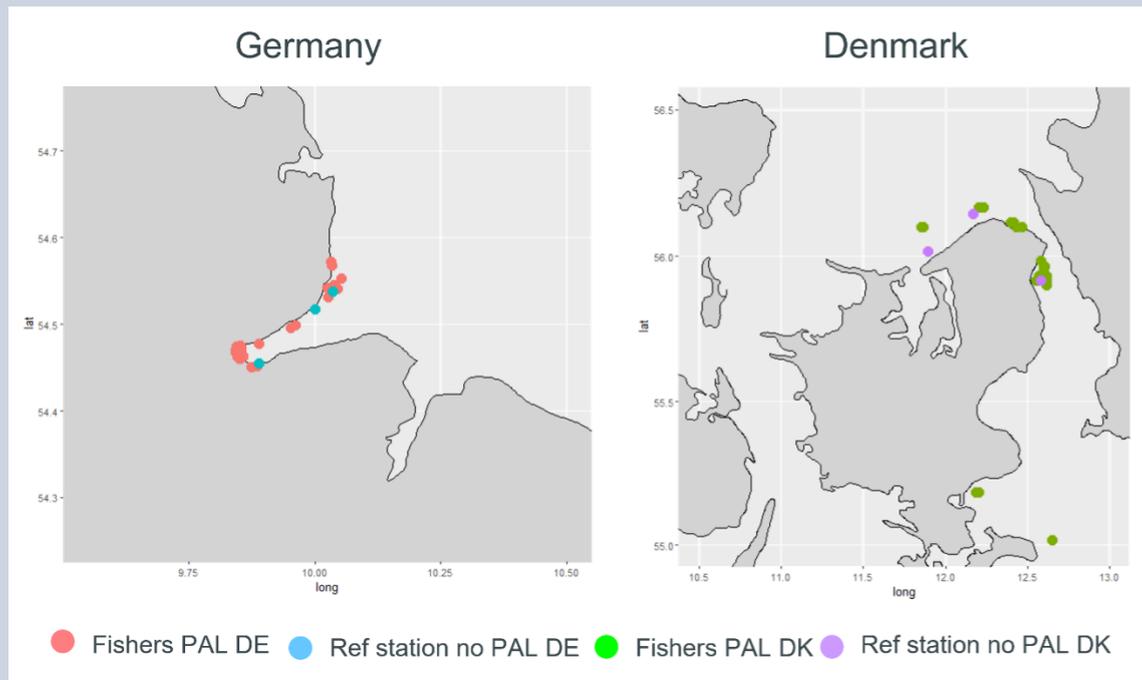
# PAL - CE WP1: Effectiveness of PALs in previously exposed and naive harbour porpoises (BACI)



**Figure 2.** Experimental set-up for trials in Fyns Hoved (Denmark) during the summers of 2022 and 2023. Acoustic recorders were deployed under a 20 meters cliff that allowed land-based observations over the set up.

	Denmark Fyns Hoved		Germany S- H	
	2022	2023	2023	2024
Fieldwork	10 weeks	8 weeks	9 weeks	
Net no Pal days	10.5	24	18	
Net + PAL days	9.5	17	24	
Net + remote PAL days	14	-	-	
Control days	10	20	12	
Harbour porpoise sighting days	42	34		

# PAL - CE WP2: Comparison of echolocation rates around nets in Schleswig-Holstein and Denmark



**Figure 9.** Location of reference stations and FPODs deployed by fishers during the first field campaign in Spring 2023 by German and Danish fishers.

**Table 2.** Summary of the data collected during the field trials in WP2.

	Spring 2023	Autumn 2023	Spring 2024
<b>Fishers involved Denmark (DK)</b>	4	3	3
<b>Fishers involved Germany (DE)</b>	3	4	4
<b>Hours of FPOD recording with PAL DK</b>	3003:59	ongoing	ongoing
<b>Hours of FPOD recordings with PAL DE</b>	1625:42	1103:48	ongoing
<b>Hours of FPOD recordings reference station DK</b>	3 months	ongoing	ongoing
<b>NBHF Click trains detected ref. stat. DK</b>	151207		
<b>Hours of FPOD recordings reference station DE</b>	3 months	ongoing	ongoing
<b>NBHF Click trains detected ref. stat. DE</b>	147027		
<b>Mofi App users</b>	2	2	2-3

# PAL – CE 2024 plans



WP3: Echolocation click variations between porpoise populations  
search for staff

WP4: Current use of PAL in fisheries  
to be analysed with OIC

WP5: Stakeholder process, knowledge transfer and public relations  
Workshop information

Thank you very much for your  
attention and comments!

Financed by



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