

PAL-CE: CURRENT EFFICIENCY AND MODE OF OPERATION

Harbor porpoise by-catch

By-catch of Harbor porpoises (*Phocoena phocoena*) is an important topic concerning their conservation in the Baltic Sea. Set net fisheries are one of the main reasons for their by-catch in this area. These nets have many advantages as their high selectivity, their low use of fuel and little impact on the seabeds. Nevertheless, they are made of such a thin material that they are nearly invisible for harbor porpoises; thus leading to them drowning when entangled.



What are PAL?

The Porpoise-PAL is a device that was optimised to be used in fisheries to reduce the by-catch of harbor porpoises. The PAL imitates alerting signals of harbor porpoises at their ultrasonic communication frequency of 133 kHz. This sound has proven to alert harbor porpoises in the Western German Baltic Sea and to reduce their by-catch by around 80 % (Chladek et al. 2020; Fish Res).

Current efficiency of PAL

These special warning devices have been used in set nets by fishers in Schleswig-Holstein (Germany) on a voluntary basis since 2017. However, it is unclear whether the effect of the PAL, as demonstrated by the Thünen Institute of Baltic Sea Fisheries, persists over long periods of time, or whether it might diminish as harbor porpoises become accustomed to the warning signals.

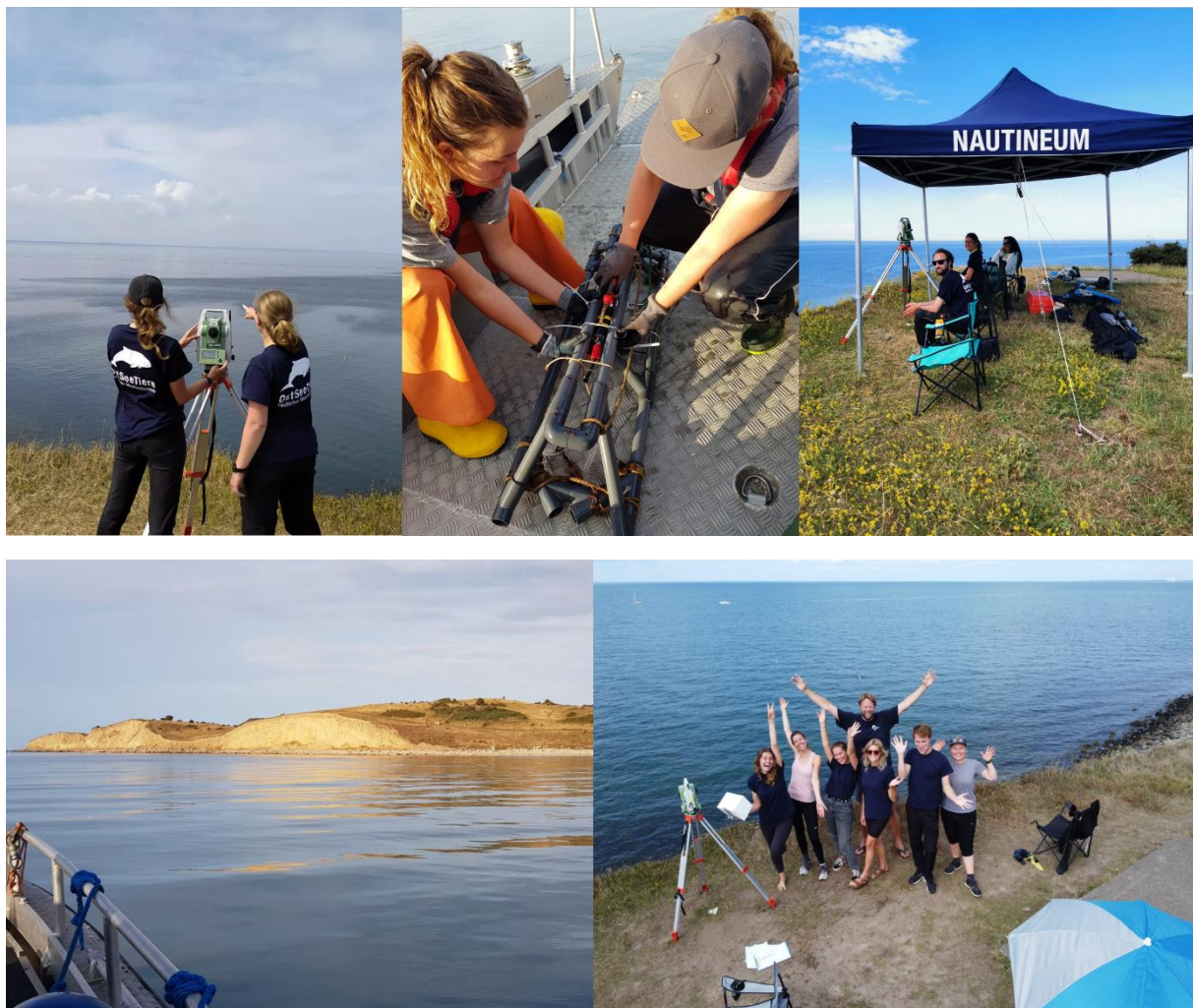
The third-party funded project "PAL use in German waters - Current efficiency and mode of operation" (PAL-CE), led by the Deutsches Meeresmuseum Stralsund and funded by the Federal Agency for Nature Conservation (Bundesamt für Naturschutz), will contribute to clarifying these questions over the next two years. Additional partners to this project are the Thünen Institute of Baltic Sea Fisheries (project leader Dr. C. von Dorrien), the Aarhus University (Denmark), the Naturhistoriska Riksmuseet Stockholm (Sweden) and the Ostsee Info Center Eckernförde (Germany).

Simplified methodology

To understand if the behavior of harbor porpoises that are used to PAL has changed over time we will compare it to the behavior of a naive population in Denmark. Through an experimental set up we will study the acoustic and visual behavior of harbor porpoises around an experimental net with and without PAL. This data will then be compared to the behavior of harbor porpoises in Schleswig-Holstein (Germany).

Volunteers

You will be a fundamental part of the project by contributing to the collection of visual harbor porpoise behavior data from a cliff that is over the study area as well as working with acoustic equipment on the water. Tasks include flying drones to obtain footage of the animals, tracing the animals with a theodolite, filling in protocols, conduct activities on the water such as checking equipment and retrieving acoustic devices, organize data and chatting to tourists. It will be a unique educational experience and you will have the chance to contribute to important scientific data collection.



Where and when

We are looking for motivated people that have some experience observing cetaceans and ideally flying drones (not mandatory). We will be working in Fyns Hoved (Denmark) from the 7th of July until the 27th of August.

Minimum period to stay are two weeks. Preference will be given to volunteers that can stay longer.

Food and accommodation will be covered by the project, but volunteers will have to cover their own transportation and insurance.

Courses

One of your main activities in the field will be to operate a drone. To do this you need an up to date **drone certificate**. Each country has a different webpage and most are for free so check your country in the following link: <https://www.easa.europa.eu/en/domains/civil-drones/naa>

First aid course: to work on the boat you will need a first aid certificate not older than two years. If you do not have one, please consider taking a course. Preference will be given to volunteers that have it.

Further Information

Deutsches Meeresmuseum: <https://www.meeresmuseum.de/>

To learn more about the Project: <https://www.thuenen.de/en/of/projects/fisheries-environment-baltic-sea/does-the-efficiency-of-pal-to-reduce-harbor-porpoise-bycatch-persist/>

To learn more about PAL: <https://www.f3mt.net/kommunikation.html>

Fyns Hoved (TripAdvisor): https://www.tripadvisor.de/Attraction_Review-g2549120-d7081073-Reviews-Fyns_Hoved-Martofte_Kerteminde_Funen_and_Islands.html#/media-atf/7081073/289395377:p/?albumid=-160&type=0&category=-160

Interesting paper

Chladek, J., Culik, B., Kindt-Larsen, L., Albertsen, C. M., & von Dorrien, C. (2020). Synthetic harbour porpoise (*Phocoena phocoena*) communication signals emitted by acoustic alerting device (Porpoise ALert, PAL) significantly reduce their bycatch in western Baltic gillnet fisheries. *Fisheries Research*, 232, 105732.

Contact Information

If you are interested, please write us an email introducing yourself and stating why you want to join the project together with your CV to: thaya.dinkel@thuenen.de and Ole.Meyer-Klaeden@meeresmuseum.de

We look forward to meeting you!