

Agenda Item 4.2: Abundance survey planning (SCANS II), update

**Investigating the habitat use of harbour porpoises in
German waters using porpoise detectors (PODs)**

Submitted by: Germany



ASCOBANS

NOTE:
**IN THE INTERESTS OF ECONOMY, DELEGATES ARE KINDLY REMINDED TO BRING THEIR
OWN COPIES OF THESE DOCUMENTS TO THE MEETING**

INVESTIGATING THE HABITAT USE OF HARBOUR PORPOISES IN GERMAN WATERS USING PORPOISE DETECTORS (PODS)



Kilian, A. (1), U. Verfuss (1), S. Ludwig (2), Ch. Honnef (1), U. Siebert (2), H. Benke (1)

(1) German Oceanographic Museum, Katharinenberg 14/20, 18349 Stralsund, Germany

(2) FTZ Westkueste, Hafentoern, 25761 Buesum, Germany



Purpose:

The habitat use of harbour porpoises (*Phocoena phocoena*) using PODs, a self-contained submersible computer and hydrophone that recognises and logs echo-location clicks from porpoises, is being investigated. The project is dedicated to:

- assess important areas for harbour porpoises
- implement a new method for long-term monitoring

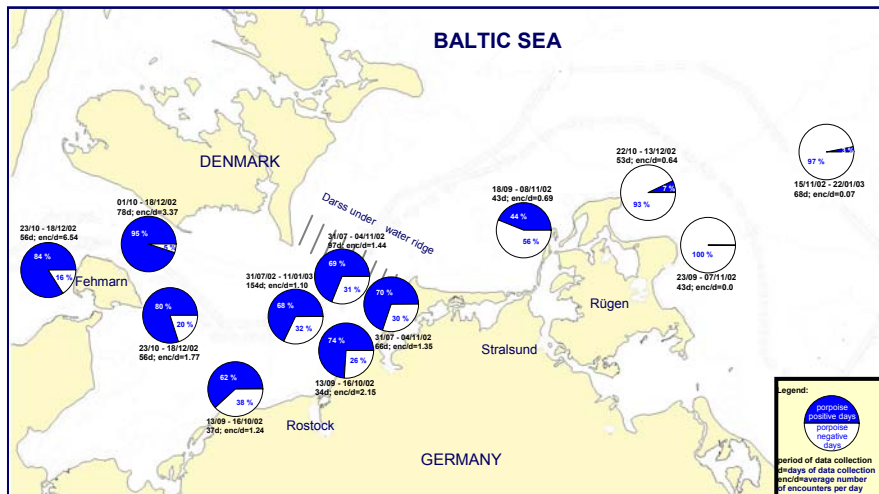
Method:

Since summer 2002, Pods were deployed at several measuring points in the Baltic Sea and in the porpoise sanctuary west of the Island of Sylt in the North Sea. Here, 5 PODs were arranged in an array, and moored in shallow waters of 8 m depth.

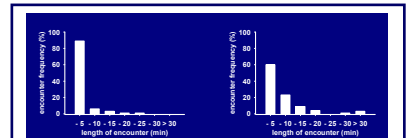
The data were analysed for

- Porpoise encounters:** occurrence of echo-location clicks. A new encounter starts after a silent period (no porpoise clicks) of at least 10 min.
- Encounter length:** time from first to last echo-location click of an encounter
- Porpoise positive days:** days with encounter(s)
- Enc/d:** average number of encounters per day
- Daily rhythm:** diurnal variation in encounter occurrence

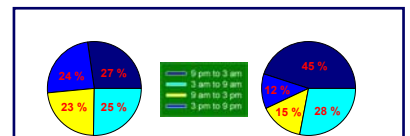
Results and Discussion:



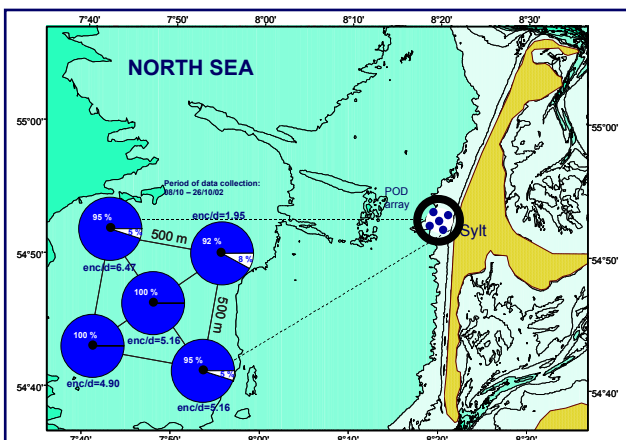
Baltic Sea: The percentage of porpoise positive days as well as the average number of encounters per day show a decline from West to East. Remarkable is the low number of encounters around the Island of Rügen, east of the Darss underwater water ridge, which delineates a borderline for two porpoise populations (Huggenberger et. al 2002).



Encounter length: short encounters prevail throughout all positions. In some areas, the percentage of long encounters is higher than in others, which could point at geographical differences in habitat use.



Daily rhythm: In some areas, encounters were evenly distributed throughout the day, in others, encounters prevailed at night. The latter suggests diurnal differences in habitat use.



North Sea: Porpoise encounters were registered nearly every day. There were no significant differences in regard to tides (U-test). The number of encounters per day in this study area within the whale sanctuary is strikingly close to the numbers registered around the Island of Fehmarn (Baltic Sea). This suggests a similar intensity in habitat use for these two areas.

CONCLUSIONS:

PODs were found to be a very valuable device for investigating habitat use of harbour porpoises, also in the Baltic Sea where porpoise abundance is expected to be low. PODs can be used as a tool to study diurnal, geographical and – with long-term deployment - seasonal differences in habitat use.

References:

Huggenberger, S., H. Benke, C.C. Kinze (2002). Geographical variations in Harbour Porpoise (*Phocoena phocoena*) skulls: Support for a separate non-migratory population in the Baltic proper. *Ophelia* 56 (1): 1-12



Acknowledgement: The project is supported by the German Federal Ministry for the Environment