

ASCOBANS

North Sea Steering Group 12

IMPLEMENTATION REVIEW

- GERMANY -

ASCOBANS NSSG-12; 12.-13.03.2024, ZANDVOORT



Bycatch

Review of current pingers, development of alternative pingers and gear modifications

1. Project: “Stella 2”

- See Presentation Joint Session

2. Project: “PAL-CE”

- See Presentation Joint Session

Research

Surveys & Monitoring Trends in distribution and abundance

National monitoring programme

- ✓ Aerial Surveys:

 - ✓ Report SCANS-IV published: [Gilles et al. 2023](#)

 - ✓ National surveys: spring and summer 2023

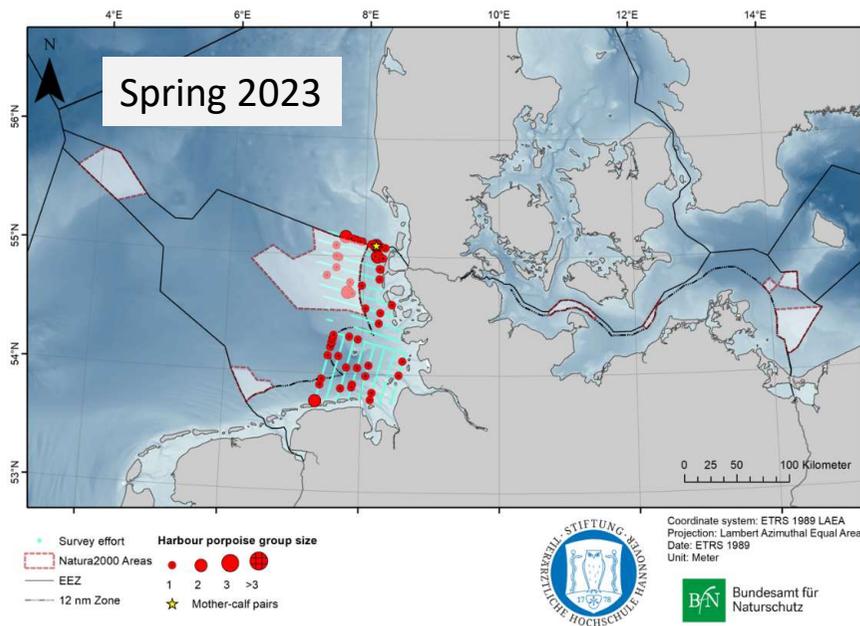
- ✓ Acoustic Monitoring:

 - ✓ Wadden Sea – 5 POD stations all year (2011-2023 cont.)

 - ✓ Dogger Bank (German EEZ) - 2 AMARs and 2 C-PODs (Feb-May/June each year 2023 - 2025), 6 SoundTraps (May)

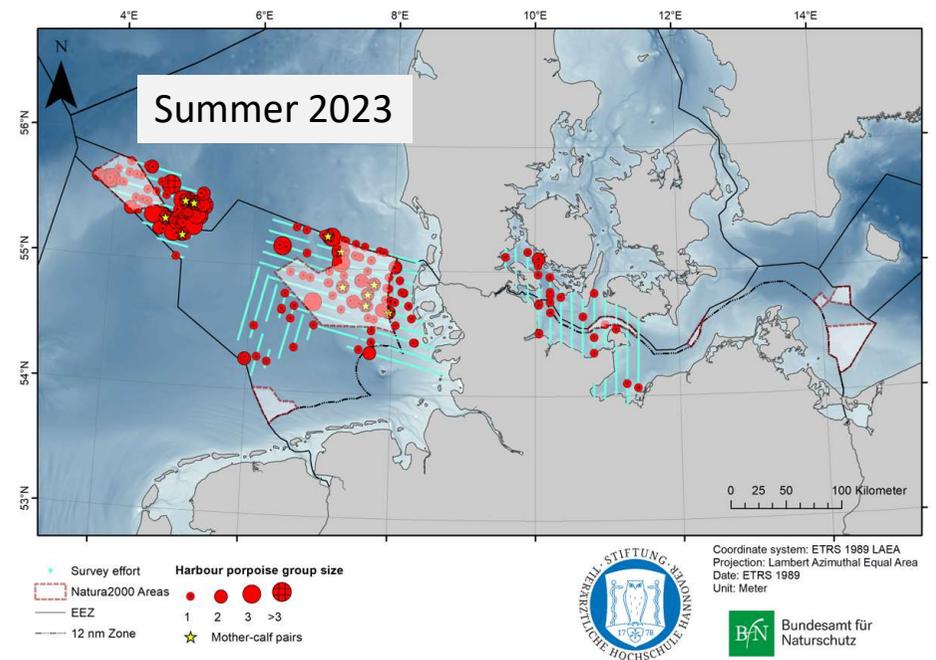
Research

Surveys & Monitoring Trends in distribution and abundance



Spring 2023: abundance in two blocks (D & E):
6,544 harbour porpoises (95% CI: 2,332 - 13,826)

Nachtsheim et al. 2024

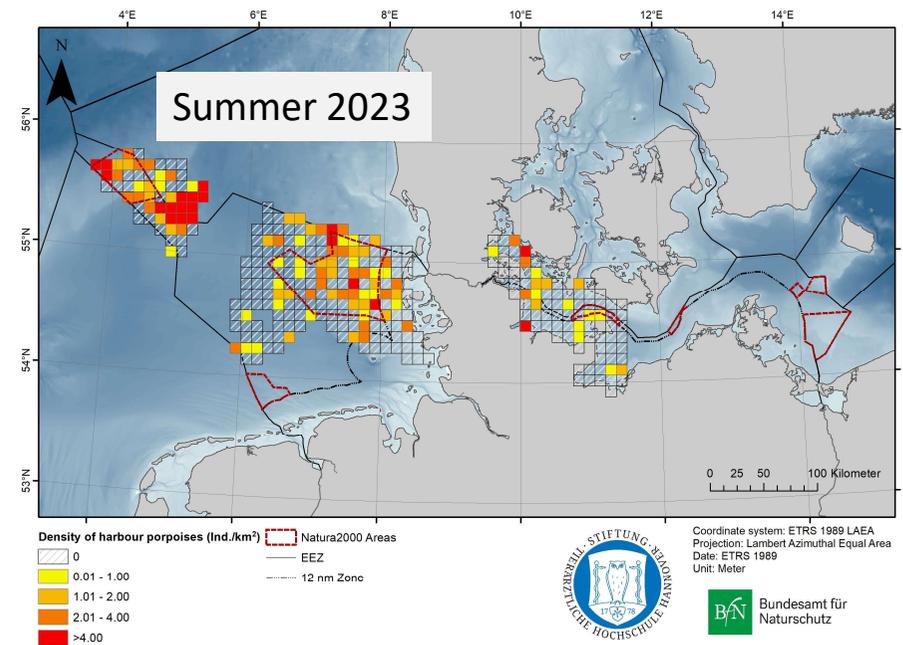
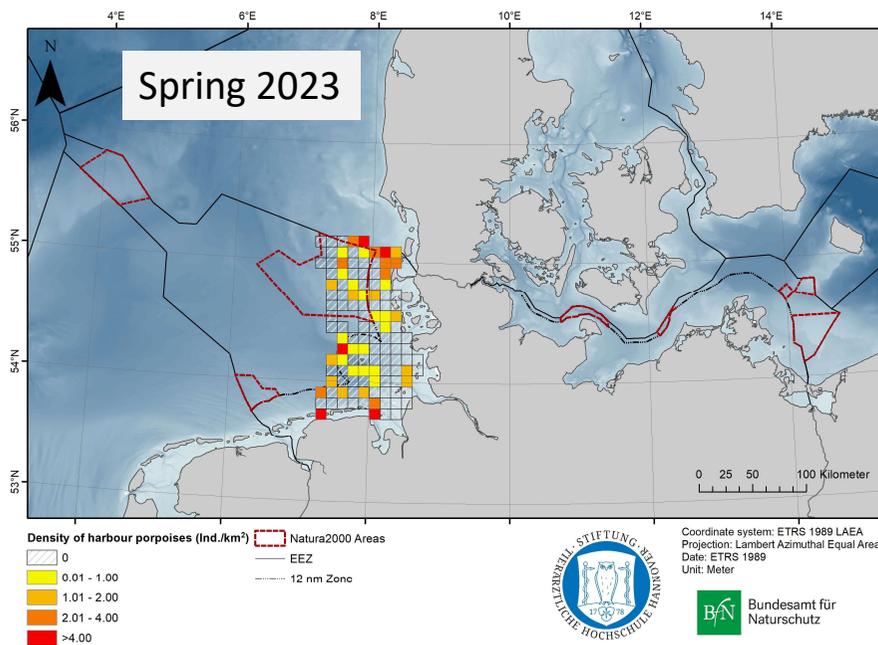


Summer 2023:

i) abundance in four blocks (A, C, D & G) in North Sea:
26,163 harbour porpoises (95% CI: 12,467 - 41,824)

Research

Surveys & Monitoring Trends in distribution and abundance



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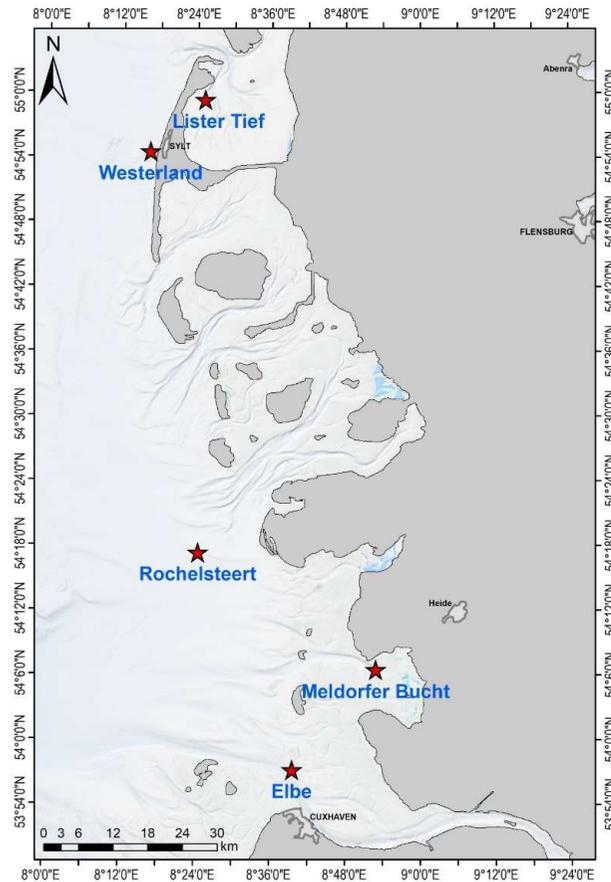
Nachtsheim et al. 2024

Research

Surveys & Monitoring Trends in distribution and abundance

PAM in the Wadden Sea (Schleswig-Holstein) at 5 stations

Baltzer et al. 2023
(monitoring report for LKN.SH)



Forthcoming publication:

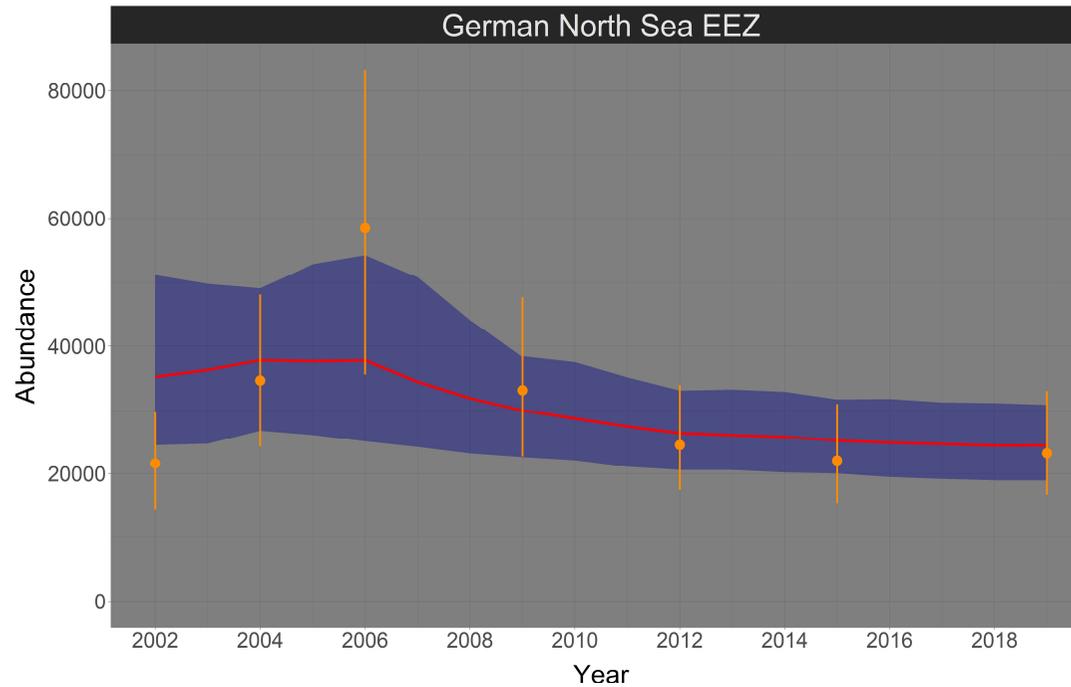
Scheidat, M., Vrooman, J., Teilmann, J., Baltzer, J., Bie Thøstesen, C., Diederichs, B., Dietz, R., Geelhoed, S.C.V., Gilles, A., IJsseldijk, L.L., Keijl, G.O., Nabe-Nielsen, J., Ruser, A., Schnitzler, J., Sveegaard, S., Siebert, U. (2024). **Status of harbour porpoise in the Wadden Sea World Heritage Site and requirements for trilateral monitoring.** *Marine Biodiversity*

Research

Surveys & Monitoring Trends in distribution and abundance

Trends:

<https://geodienste.bfn.de/seevoegeltrends?lang=en>



Trend (2002-2019):

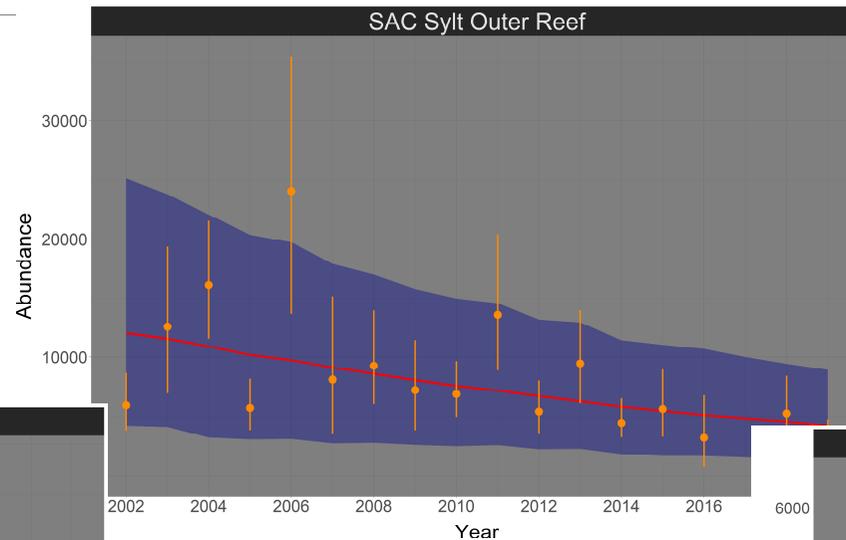


Nachtsheim, D.A., Viquerat, S., Ramirez-Martinez, N.C., Unger, B., Siebert, U., Gilles, A. (2021). Small cetaceans in a human high-use area: Trends in harbour porpoise abundance in the North Sea over two decades. *Frontiers in Marine Science* 7:606609. doi: 10.3389/fmars.2020.606609)

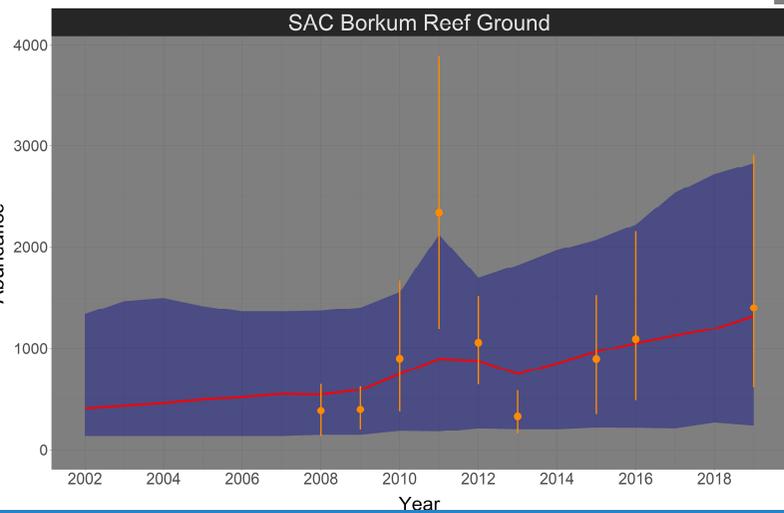
Research

Surveys & Monitoring Trends in distribution and abundance

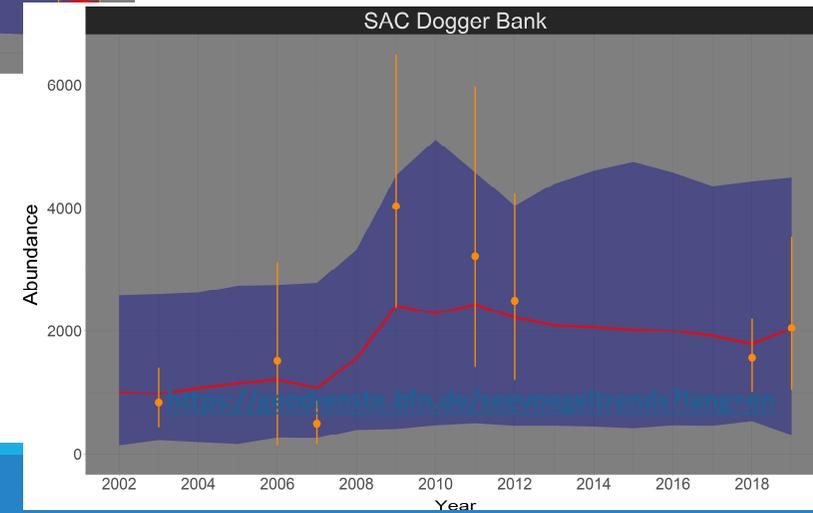
Trend (2002-2019):



Trend (2002-2019):



Trend (2002-2019):



RESEARCH

SURVEYS & MONITORING TRENDS IN DISTRIBUTION AND ABUNDANCE

- **HABITATWal** – Habitat choice and population dynamics of harbour porpoises in the ecosystem in the German North and Baltic Sea (2022 - 2026; ITAW, funding BfN)
 - Habitat selection of harbour porpoises in the North Sea and Baltic Sea, with focus on possible causes of decline
 - Influence of anthropogenic disturbance factors on the population dynamics of harbour porpoises
 - Visual surveys of marine mammals in the German North Sea and Baltic Sea
 - Concept for further development of marine mammal monitoring

- **“Anthrotop”** Anthropogenic Use of the North Sea: Impacts on marine Top Predators
Mai 2022 – April 2025 - CAU-Kiel und AWI Sylt (funding BfN)
 - analyses on the distribution and abundance of target species and on effects of anthropogenic activities
 - Modelling of the distribution and abundance of marine mammal species (+fishes) in relation to current and future anthropogenic activities.
 - Potential effects on food web structures (Doggerbank)

RESEARCH

SURVEYS & MONITORING TRENDS IN DISTRIBUTION AND ABUNDANCE

CoastalFutures:

Scenarios to promote sustainable futures of contested marine areas / Marine Mammals (Dec. 2021 – Nov. 2024) (ITAW + Consortium) *2nd phase planned*;

objectives are to integrate the density and distribution of marine mammals in the novel cross-scale end-to-end (E2E) ecosystem model: thereby creating a virtual environment to study the effects of climate change and anthropogenic uses on ecosystems and key species and to test different management measures that have not yet been evaluated in the context of the protection and conservation of marine mammal populations. Scenarios will include the expansion of offshore wind farms in particular.

<https://www.sustainmare.de/104232/index.php.en>

Research

Review of the stock structure of harbour porpoises in the region

Ongoing:

BALTICSNPS: Development and application of a genetic SNP rapid test for population assignment of harbour porpoises from the Baltic Sea (Uni of Potsdam, funded by BfN) (Prof. R. Tiedemann, E. Celemín (2022 - 2024)

➤ see presentation

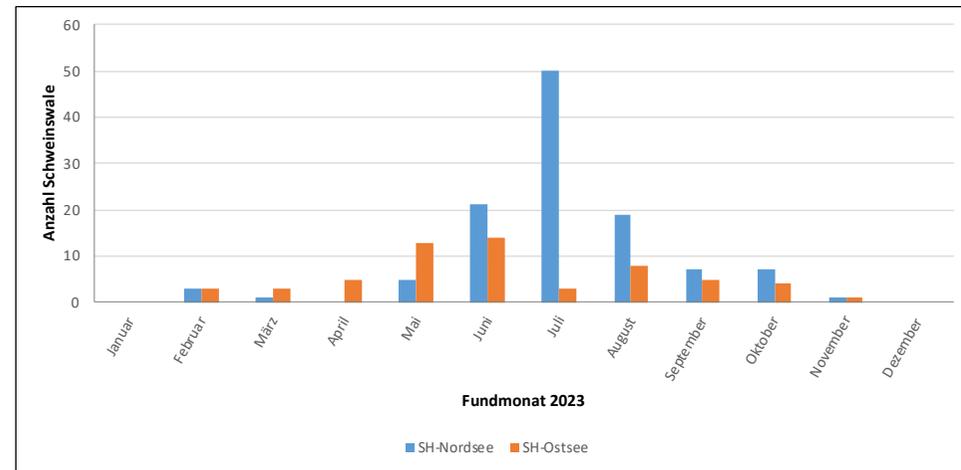
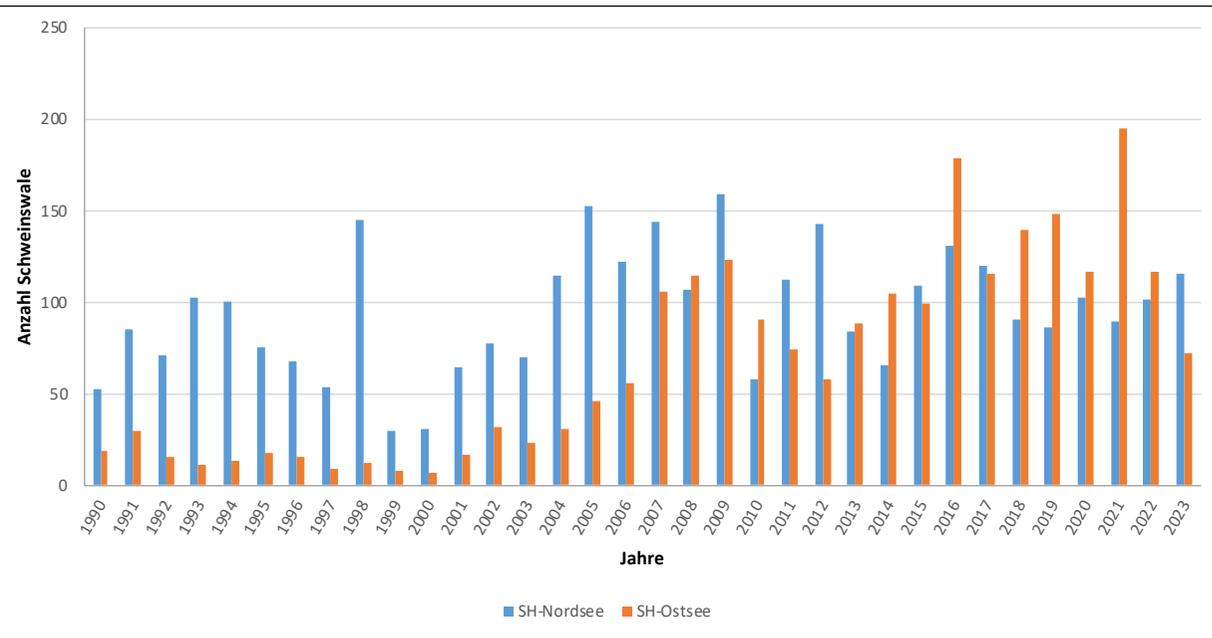
Publications:

Celemín E, et al. (2023): **Evolutionary history and seascape genomics of Harbour porpoises (*Phocoena phocoena*) across environmental gradients in the North Atlantic and adjacent waters.** Molecular Ecology Resources, in press. DOI: <https://doi.org/10.1111/1755-0998.13860>

Autenrieth M, et al. (2023): **Genome-wide analysis of the harbour porpoise (*Phocoena phocoena*) indicates isolation-by-distance across the North Atlantic and potential local adaptation in adjacent waters.** Conservation Genetics, in press. DOI: <https://doi.org/10.1007/s10592-023-01589-0>

Research

Collection of incidental porpoise catch data through stranding network



<https://www.schleswig-holstein.de/DE/fachinhalte/A/artenschutz/meeressaeger.html>

Source: ITAW Totfundmonitoring Bericht 2023 in prep, Schick et al. 2024

Research

Investigation of health, nutritional status and diet of harbour porpoises

Ongoing Projects:

- Investigation of the health, nutritional status and diet of harbour porpoises in the framework of the stranding network
- BioWeb: Response of biodiversity change in North Sea food webs mediated by environmental drivers and human activities / Importance of marine mammals in the North Sea food web (Nov 2020 – Feb. 2024) (ITAW + Consortium) <https://www.senckenberg.de/de/bioweb/>
- Development of a monitoring and assessment concept for the pollution load of marine mammals of the North Sea and Baltic Sea for the implementation of the MSFD (Oct 2021 – March 2024) (ITAW, UFZ)
- CREATE: Development of indicator pathogens in marine mammals to advance assessment of anthropogenic impacts (Dec. 2021 – Nov. 2024) (ITAW + Consortium) *2nd phase planned*
<https://www.sustainmare.de/104230/index.php.en>

Research

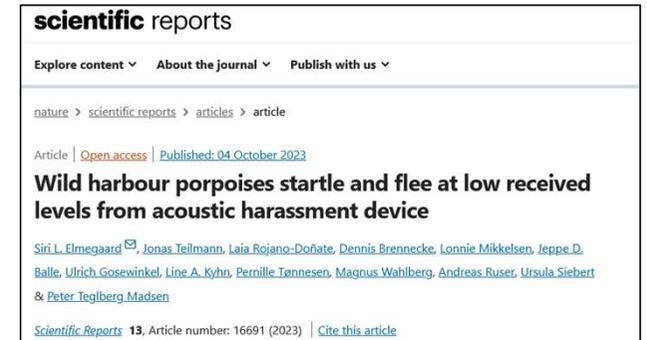
Investigation of the effects of anthropogenic sounds on harbour porpoises

Ongoing Project:

- **Underwater noise effects-2 (UWE-2)** (Sept. 2021 – Aug. 2024)
ITAW / Aarhus University funded by BfN

Publication:

Elmegaard, S. L., Teilmann, J., Rojano-Doñate, L., Brennecke, D., Mikkelsen, L., Balle, J. D., Gosewinkel, U., Kyhn, L. A., Tønnesen, P., Wahlberg, M., Ruser, A., Siebert, U., & Madsen, P. T. (2023). **Wild harbour porpoises startle and flee at low received levels from acoustic harassment device**. *Scientific Reports*, 13. <https://doi.org/10.1038/s41598-023-43453-8>



Research

Investigation of the effects of anthropogenic sounds on harbour porpoises

- **NAVESS:** (Naturverträgliche Sprengungen auf See) Environmentally compatible blastings at sea (2023 – 2024) (ITAP/Bioconsult SH funded by BfN)
 - scientific data basis to assess impact of unavoidable blast noise from a nature conservation perspective (analyze of national and international data)
 - measurements to evaluate the mitigation effect of different bubble curtain configurations and the efficiency of deterrence and mitigation measures.
 - Takes place during two blasting campaigns of the German Armed Forces.

- **Guidelines** for the legal and technical nature conservation requirements for the clearance of explosive ordnance in the German North Sea and Baltic Sea (in process)

- **Workshop:** BfN Expert Workshop Management of underwater radiated noise in relation to nature conservation (2-5 May 2023)

Research

Investigation of the effects of anthropogenic sounds on harbour porpoises

Ongoing Projects:

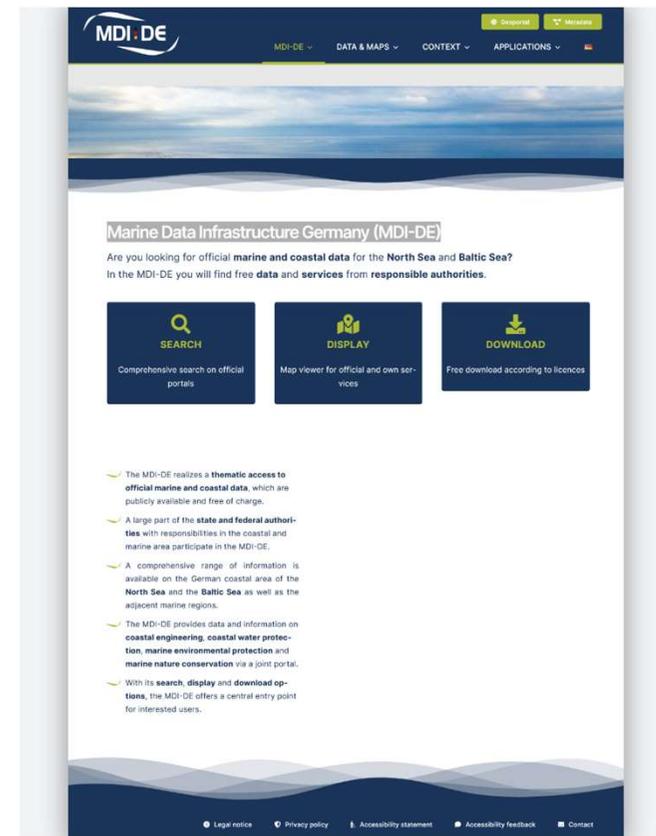
- **SATURN (Developing Solutions AT Underwater Radiated Noise)**, ITAW + Consortium funded by EU. The biological working group in this consortium investigates the influence of underwater noise on the behaviour, health and energy balance of aquatic organisms, including harbour porpoises
- **DIAPHONIA (Diagnostic framework for assessing and prediction of the effects of underwater noise on marine species)** (ITAW + Consortium, JPI Oceans funded). One objective is to develop a possible diagnostic fingerprinting composed of several tissue markers incorporating molecular and microscopic techniques to identify functional and morphological changes in the acoustic pathways of marine mammals such as harbour porpoises
- **PURE WIND (Impact of sound on marine ecosystems from offshore wind energy generation)** (ITAW + Consortium, JPI Oceans funded). One of the objectives is to identify spatial and qualitative use of operating offshore wind farms by top predators, including harbour porpoises
- **Post-mortem monitoring of small cetaceans**, ITAW funded by MEKUN. Analysis of the ears of fresh stranded harbour porpoises to evaluate if there are cases of hearing impairment, and if they are compatible with noise-induced hearing loss. (e.g. [Morrell et al. 2023](#))

Research

Collection and archiving of data on anthropogenic activities and development of a GIS

Marine Data Infrastructure Germany (MDI-DE):

<https://projekt.mdi-de.org/en/mdi-de-en/>



Research

Collection and archiving of data on anthropogenic activities and development of a GIS

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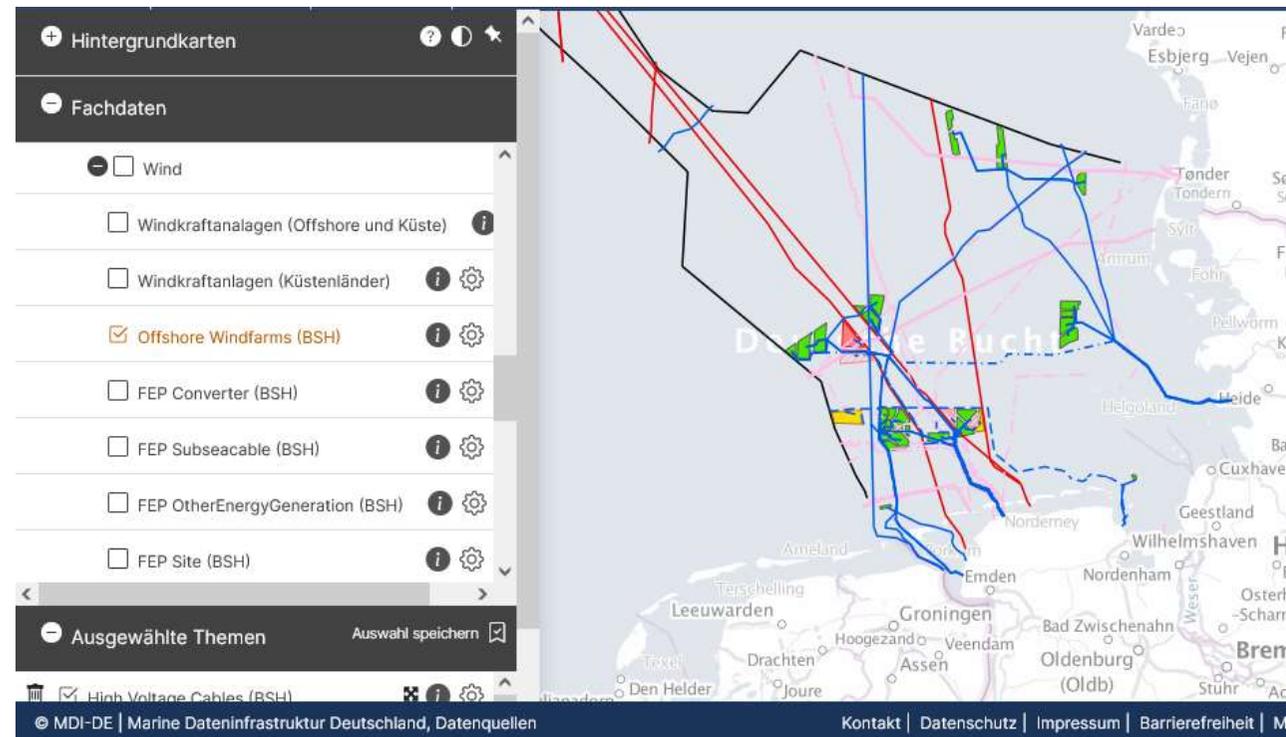
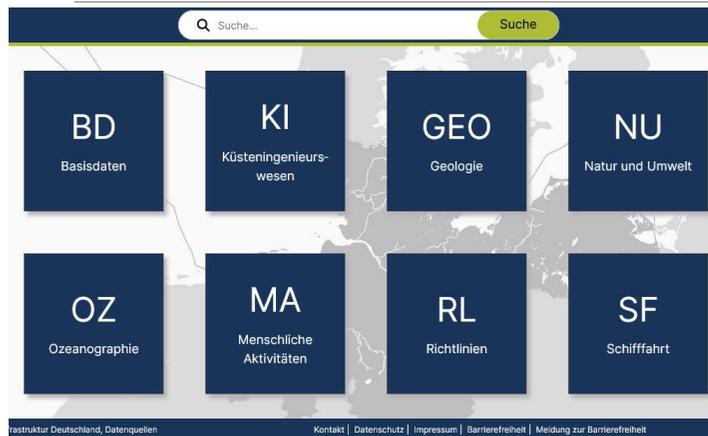
The screenshot displays the MDI-DE website's 'Entdecken' (Discover) section. It features a search bar at the top and a navigation menu. The main content is organized into four columns: Themen, Inspire, Anbieter, and Art der Ressource. The 'Menschliche Aktivitäten' category under 'Themen' is highlighted with a red circle. The footer contains copyright information and contact details.

Themen	Inspire	Anbieter	Art der Ressource
Natur und Umwelt: 702	Ozeanografisch-geografische Kennwerte: 775	BSH: 1674	Datensatz: 2947
Menschliche Aktivitäten: 173	Höhe: 441	NLPV: 420	Serie: 218
Ozeanographie: 123	Umweltüberwachung: 291	LKN: 420	Darstellungsdienst: 160
Geologie: 66	Geologie: 65	NLWKN: 407	Downloaddienst: 115
Basisdaten: 43	Orthofotografie: 40	BAW: 156	Anwendung: 11
Schifffahrt: 35	Lebensräume und Biotope: 33	LUNG: 137	
Küsteningenieurwesen: 4	Schutzgebiete: 25	LfU: 108	
Richtlinien: 2	Bodennutzung: 22	BfN: 97	

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Research

Collection and archiving of data on anthropogenic activities and development of a GIS



Bycatch: Implementation of existing regulations on bycatch of cetaceans Natura 2000 Sites – Fishery management

DELEGATED REGULATION (EU) .../... of 8.12.2022 amending Delegated Regulation (EU) 2017/118 as regards conservation measures in Sylter Aussenriff, Borkum-Riffgrund, Doggerbank and Östliche Deutsche Bucht, and in Klaverbank, Friese Front and Centrale Oestergronden

Measures to protect harbour porpoises in N2K sites of German EEZ:

- prohibition of fishing activities with gillnets and entangling nets (in certain areas in two Natura 2000 sites (eastern part of Sylter Aussenriff and Östliche Deutsche Bucht),
- seasonal closure of fishing activities with gillnets and entangling nets (GN, GNS, GND, GNC, GTR and GTN) in the western part of the Natura 2000 site Sylter Aussenriff from 1 March to 31 October
- limitation of fishing activities with gillnets and entangling nets to the average level in the last six years before the entry into force of this Delegated Regulation in two Natura 2000 sites (Borkum-Riffgrund and Doggerbank),

Publications

Celemín E, et. al. (2023) Evolutionary history and seascape genomics of Harbour porpoises (*Phocoena phocoena*) across environmental gradients in the North Atlantic and adjacent waters. *Molecular Ecology Resources*, in press. DOI: <https://doi.org/10.1111/1755-0998.13860>

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