

ENVIRONMENTAL INVESTIGATIONS

Thor Offshore Windfarm

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ENVIRONMENTAL ASSESSMENT OF POTENTIAL IMPACTS

- OWFs are subject to undertake environmental assessment of the potential significant impacts
- The Danish Energy Agency is currently in the process of determining the permitting process prior to the submission of the Tender for THOR (as presented)
- In the Scoping phase for the Env. Assessment the extent of the investigation and necessary data will be agreed with the Authority (DEA)
- Surveys will be tendered to suitable consultants/survey companies



ENVIRONMENTAL INVESTIGATIONS AND ASSESSMENTS

Offshore environmental parameters

- Geophysical and geotechnical surveys (as presented)
- Bird (migrating, foraging and collision risk)
- Marine mammals (seals and cetaceans)
- Fish and fisheries
- Benthic investigations, Nature habitats and protected species (Natura 2000, appendix IV-species etc.)
- Marine archaeology
- Visibility assessment
- Noise impact - underwater noise



BIRD SURVEY

- Danish Energy Agency kicked off assignment for assessment and survey in Q4 2018
- Modeling of existing data for birds to assess the suitability of the site for an offshore wind farm
Visual bird observations have been conducted in 2018 / 2019, and are reported in June.
- Possible additional bird observations in 2019 / 2020.



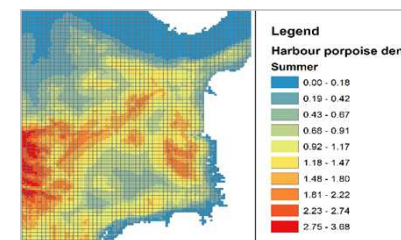
MARINE MAMMALS AND FISH

Marine Mammals:

- Existing data from the North Sea and DK coastal area
- Possible additional data
- Visual observation from plane

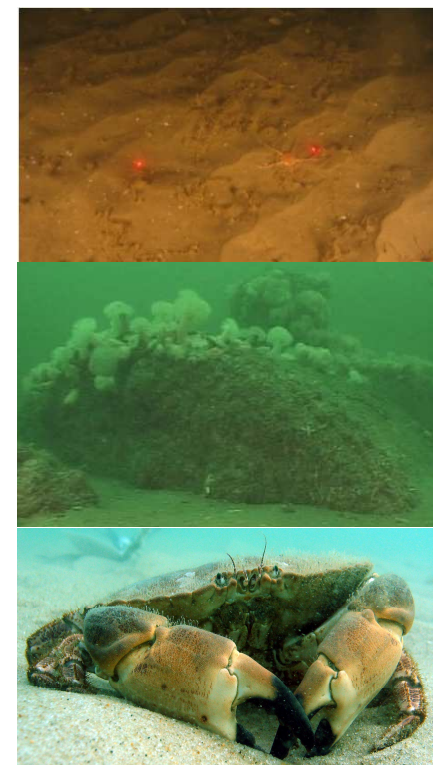
Fish and fisheries:

- Existing data for fish and commercial fisheries (e.g. ICES)
- Fish as feeding ground for birds and marine mammals
- Possible trial catches to verify existing data if necessary



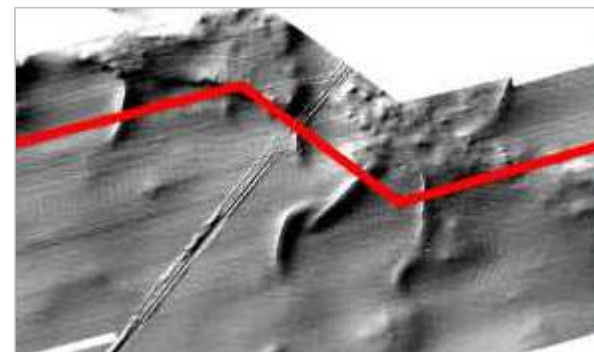
BENTHIC AND HABITAT INVESTIGATIONS

- Benthic investigation programme will be based on the geophysical surveys from summer 2019 and existing data or knowledge of the area
- Benthic seabed grab samples in a specified number of stations
- Analysis of benthic samples.
- Seabed inspection, with underwater photography.
- Seabed inspection, with drop-down video camera.
- Depth, CTD-profiling and oxygen measurement at each station before sampling.
- Laboratory analyses including benthic tests.



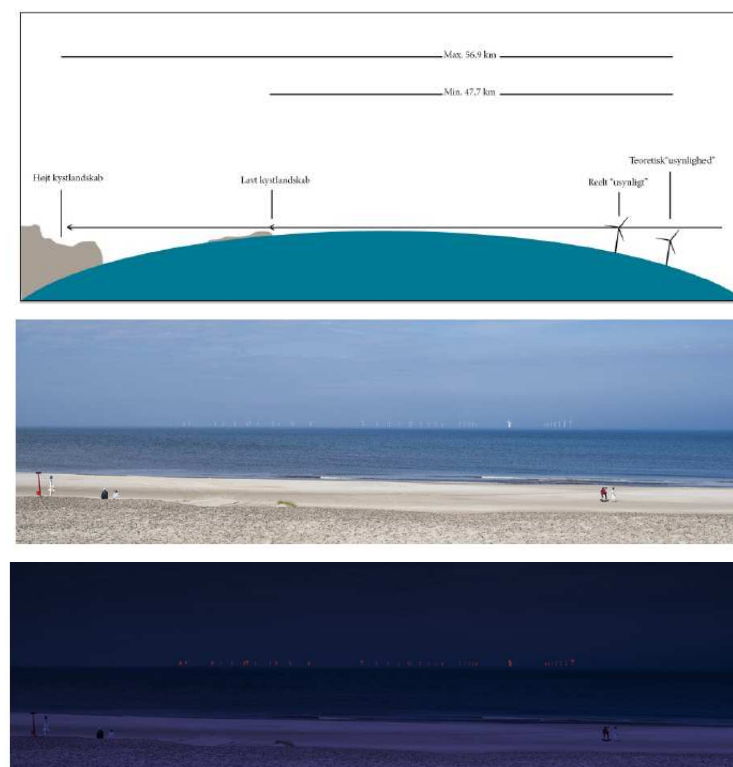
MARINE ARCHAEOLOGY

- Within the Danish 24 nautical mile zone the project must avoid or investigate anomalies potentially being cultural heritage
- The Danish maritime museums carry out this assessment based on the geophysical survey data
- Identified anomalies are to be avoided or to be investigated by the concessionaire after the tender process.



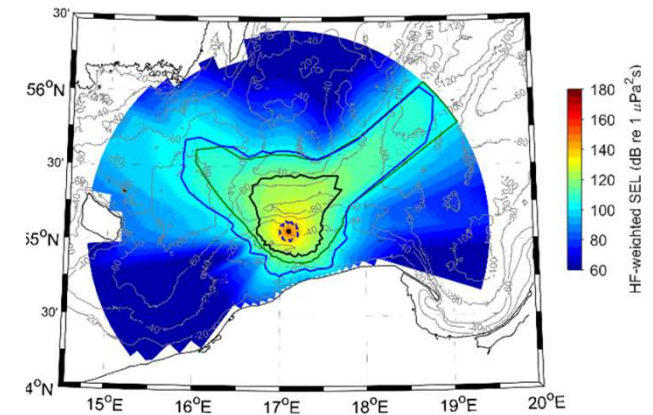
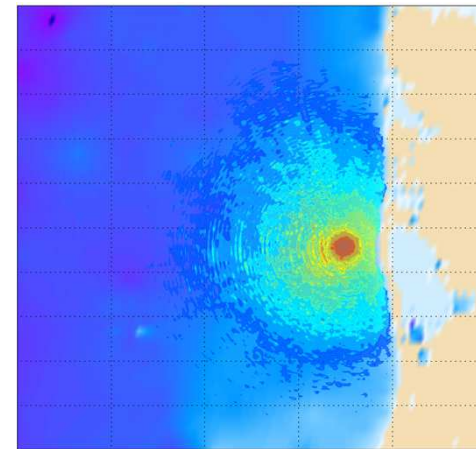
COASTAL LANDSCAPE AND VISUAL IMPACT

- Assessment of the visibility of the area – the coastal area
- Photo shoots from shore
- Visualisations from different spots from shore
- Defined project basis for assessment or visibility assessment



UNDERWATER NOISE

- Calculation of underwater noise and impact on marine life
- Assessment of commonly known installations methods
- DEA's guideline for noise limits for marine mammals to be followed by concessionaire



DELIVERABLES AND REPORTS

- Data and reports will be made available in 2021
- Technical reports of offshore environmental investigations in English
- Additional technical data reports to be available in 2021 also – content to be agreed with DEA



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Error Analysis | CDB 1 | CDB 2 | Raw Data | Data Structures
  
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TIME SCHEDULE - OVERVIEW

