

Investigating spatio-temporal trends in harbour porpoise activity to inform collision risk of tidal turbines

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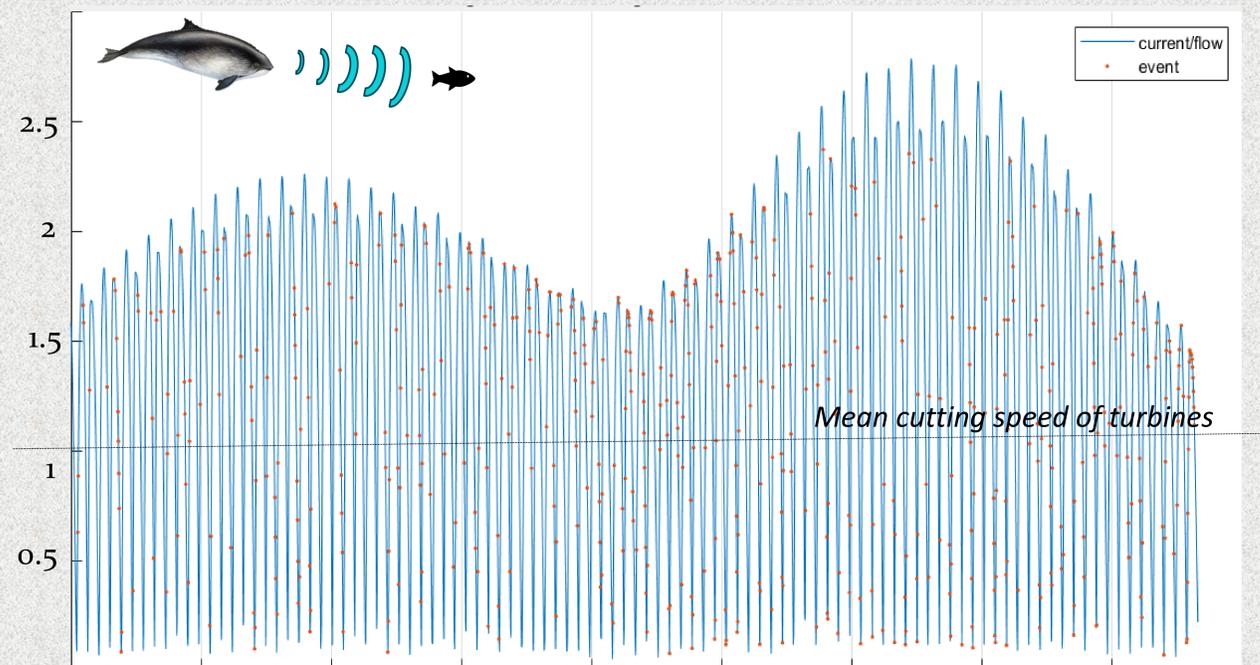
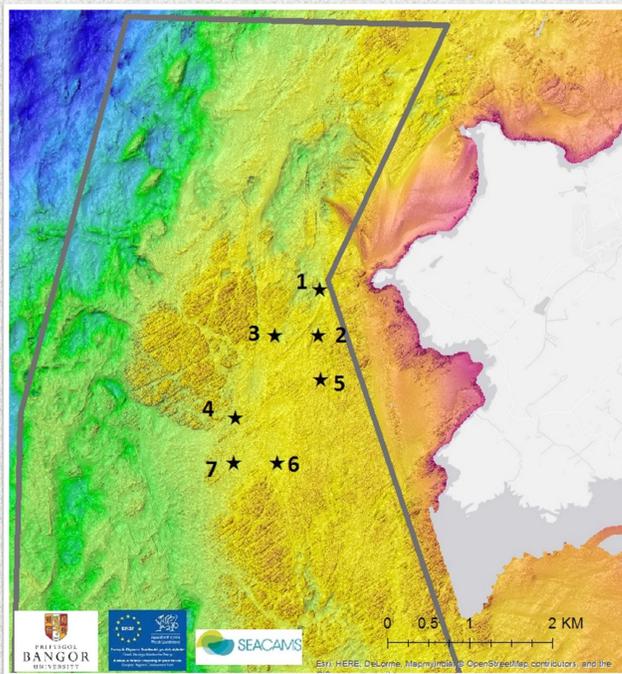


RATIONALE:

Harbour porpoise (*Phocoena phocoena*) show clear preferences and routine in their distribution relative to tidal currents and complex physical dynamic variables. Knowledge of the site-specific trends, which are thought to occur on a fine scale, will inform the tidal occupancy of animals. and the potential degree of overlap with operating tidal turbines, important to assess the risks of collision and displacement.

AIMS:

- Investigate tidal occupancy of harbour porpoise in a tidal-stream demonstration zone.
- Study which environmental drivers may influence scales of distribution so that occupancy might be predicted to wider areas.



METHODS

- An array of seven acoustic recorders (SoundTraps) was deployed in the Morlais demonstration zone in summers 2017 and 2018, to record distinct harbour porpoise echolocation clicks.
- These data are modelled with tidal variables extracted from validated hydrodynamic models and daylight (diel) conditions, to understand which features influence porpoise probability.
- Tidal currents can produce a lot of noise, which may bias the relationships seen between important variables such as current speed and porpoise probability. An investigation of noise and how this influences models reporting relationships between porpoises and tidal variables is being explored.