

New approaches to predictive habitat & biodiversity modelling

National Oceanography Centre

BIIGLE

Lisa Skein (<u>lisa.skein@noc.ac.uk</u>) Veerle Huvenne (<u>vaih@noc.ac.uk</u>)

Predictive habitat mapping rationale

Ensuring habitats are well-represented

- How will changes in bed stress affect seabed communities, and the Ecosystem Services they represent?
- How do we incorporate fine-scale environmental changes in predictive modelling and translate it regional scales?

Data collection

- Legacy datasets (20 years)
- 2 x Fieldwork campaigns (2023, 2024)
- > 19 000 seafloor images!
- Characterize seabed communities across the Eastern Irish
 Sea

What taxa characterize the benthos in the Eastern Irish Sea? Percentage contribution to community similarity (SIMPER)

- Substrate types
- Characteristic fauna





Natural Environment

Research Council

Wave orbital velocity

Bottom temperature

- ...and more
- Bottom salinity

Random Forest model:

- Distribution of biotopes under different scenarios
- Biotope : Environment

THE CROWN

ESTATE

relationships

Offshore Wind Evidence + Change Programme



Upcoming outputs:

- Predictive biotope maps for modelled future climate scenarios (estimated delivery: early 2025)
- Ecosystem services associated with modelled biotopes, fed into Asset Service Matrices to produce lists of Natural Capital Assets (JNCC)