

Understanding environmental impacts of offshore wind development

**Recommendations from the
European experience**

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Dr Sue O'Brien

- Senior Marine Ornithologist
- JNCC = Joint Nature Conservation Committee
- Funded by UK Government to advise on nature conservation
- Advise on effects of offshore wind development on marine birds
- Also industry-funded strategic research and coordination



Uncertainty around environmental impacts increases consent risk

- Good evidence facilitates offshore wind development
- Increases risk of consent being denied
- Causes projects to be cancelled
- Results in delays and uncertainty over consent decisions
- Increases costs to developers and consumers

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£2bn wind farm faces the axe amid fears over bird deaths

Neart na Gaoithe wind farm could be scrapped unless judicial review brought by RSPB is resolved ahead of March 26 investment deadline



A study suggested the wind farm could kill birds from the gannet colony on Bass Rock.

15 years of offshore wind development

- First offshore wind farm constructed in 2003 in UK
- Now 34 operational OWF
- But....
- ...still uncertainty about impacts
- Recommendations to avoid the same for New York State



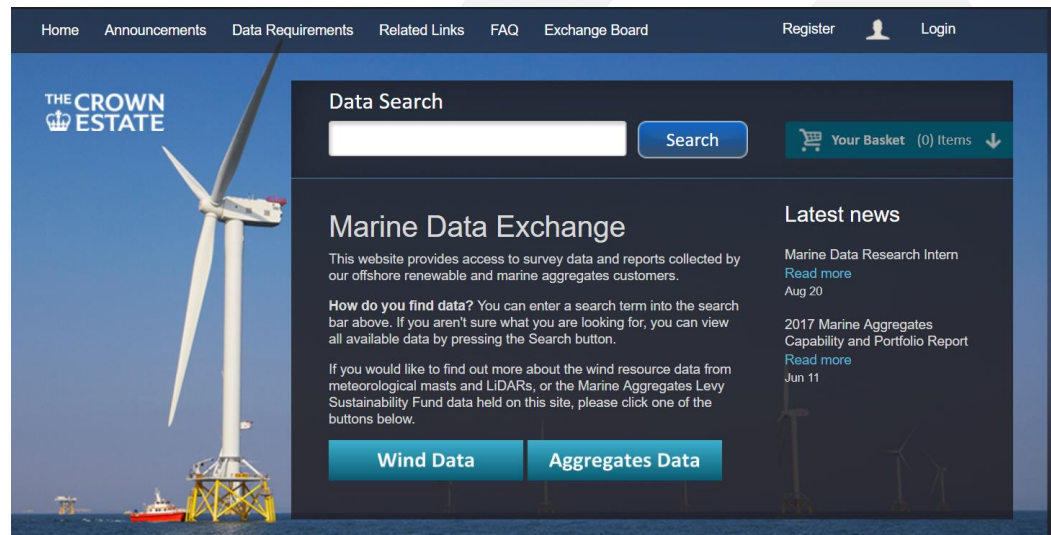
<https://www.thecrownstate.co.uk/en-gb/our-places/asset-map/#tab-2>

Recommendations

- Personal observations, not necessarily the view of others
- Information sharing
- Issues around project-specific vs strategic monitoring/research
- Adequate funding
- Better science
- Collaborative working

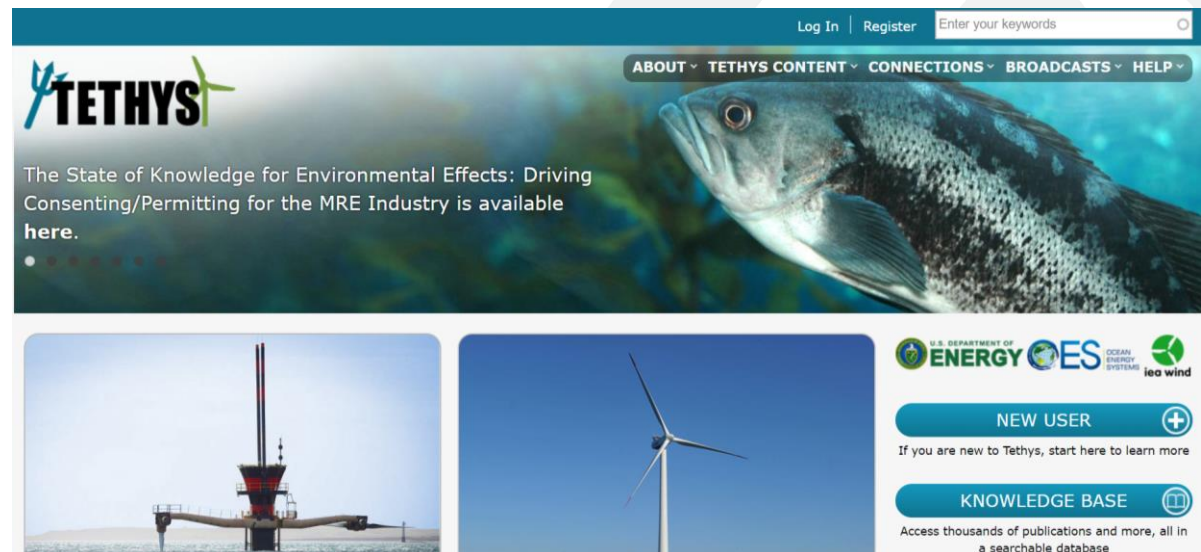
Recommendations: Information Sharing

- Centralise information storage and dissemination
 - Single database holding all data
 - Consistent monitoring standards
 - Hold and disseminate relevant research



Recommendations: Information Sharing

- Improve knowledge exchange
 - Who doing what, where, when and how?
 - Coordination of monitoring and research
 - Facilitate collaborations



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The State of Knowledge for Environmental Effects: Driving Consenting/Permitting for the MRE Industry is available [here](#).

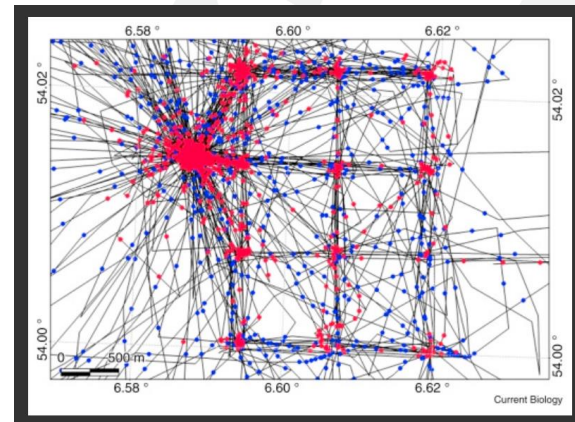
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Recommendations: Project-specific vs strategic research

- Project-specific funding: does this OWF have an impact?
- Strategic R&D funding: what will reduce consent risk?
- Industry scarce R&D funds



Russell et al. 2014

Recommendations: Adequate funding

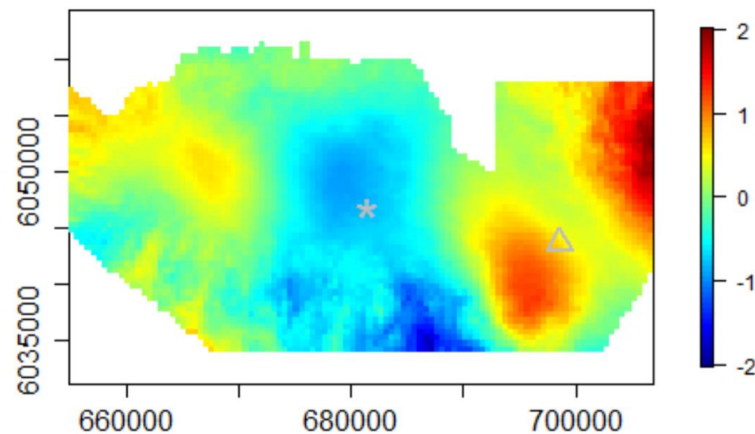
- Relying on project-specific funding to address strategic evidence needs doesn't work
- Obligatory levy/strategic fund (Dutch approach)
- State/Government role in funding strategic research?

Recommendations: Better science

- Quality of monitoring:
 - Assess power to detect an effect
 - Monitor at adequate spatial and temporal scales (loons)
 - Pragmatism
- Scientifically-robust survey design
 - BAG (before-after-gradient) not BACI (before-after-control-impact)
- Use statistics for assessing impact

MRSea tool

<https://www2.gov.scot/Topics/marine/Publications/publicationslatest/Science/MSSR/2014/0414>



Recommendations: Better science

- Prioritise strategic knowledge gaps by consent risk
- Improve baseline data
- Adaptive management approach
- Publish findings in peer-reviewed literature

Journal of Applied Ecology



Journal of Applied Ecology 2015

doi: 10.1111/1365-2664.12529

Three-dimensional tracking of a wide-ranging marine predator: flight heights and vulnerability to offshore wind farms

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Abstract

1. A large increase in offshore wind turbine capacity is anticipated within the next decade, raising concerns about possible adverse impacts on birds as a result of collision risk. Birds' flight heights greatly influence this risk, yet height estimates are currently available only using methods such as radar- or ship-based observations over limited areas.
2. Bird-borne data-loggers have the potential to provide improved estimates of collision risk

Recommendations: Collaborative working

- Collaborative working is essential
 - Everyone benefits
 - Necessary for cumulative impact assessment
 - UK: moves towards collaboration on strategic research
 - Challenging!
- Examples of collaborative working
 - ORJIP (Offshore Renewables Joint Industry Programme)
 - European CEAF (Cumulative Effects Assessment Framework)



ORJIP Offshore Wind

- Research to understand effects of offshore wind on the environment
- Set up by UK and Scottish governments, The Crown Estate and 11 developers
- E.g. Bird Collision Avoidance study



European Cumulative Effects Framework

- Cumulative impacts: biggest challenge for OWF development in Europe
- Mobile species: collaboration across political boundaries
- CEAF: tool for cumulative impacts at European scale
- To inform marine spatial planning
- Governmental collaboration
- Data limitations

Red-throated loon tracking: www.divertracking.com

<http://northseaportal.eu/project-information/objectives-and-goals/> ¹⁴

Obtaining a good understanding of environmental impacts
of offshore wind is challenging!

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