



North Sea Checkpoint Project

Update

1st July 2015

EMODnet Steering Committee

Now completed:

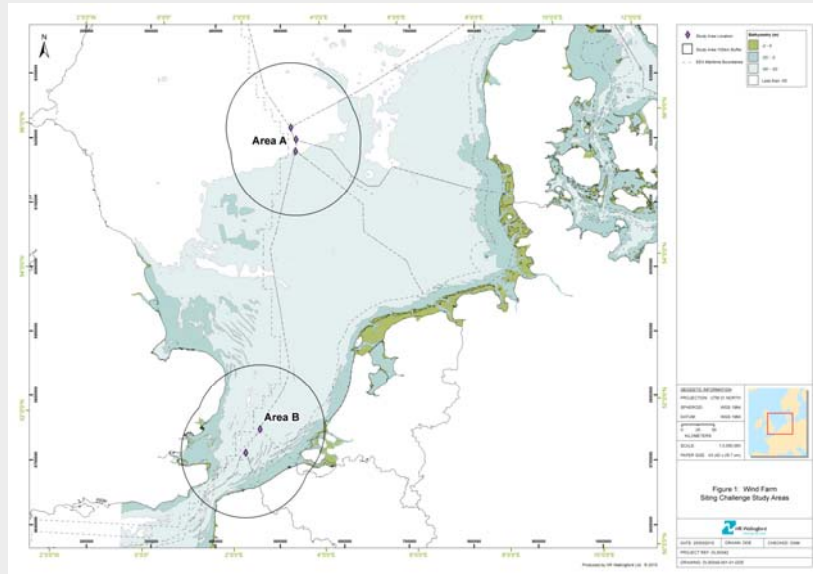
- Literature review
- Data adequacy report synopsis
- Windfarm siting challenge and DAR
- Marine Protected Areas challenge and DAR
- Expert Panel meeting
- Initial website pages prepared but not published
- Data Adviser online, with two challenges information included

Coming soon:

- Climate and coastal challenge and DAR
- Updates to Windfarm siting and MPA DARs following expert panel feedback
- DAR synopsis
- Further updates to Data Adviser
 - the inclusion of EMODnet themes as a filtering option
 - stating in a box on the main interface what the tool offers, what it can be used for and its limitations
 - circulation to panel members for a trial with the incorporation of feedback prior to advertising to the wider community.

The challenge was undertaken from the perspective of a wind farm operator assessing suitable locations for offshore wind sites.

As such it takes into consideration factors that affect generating capacity, construction and maintenance, potential environment impacts, and current sea-use.



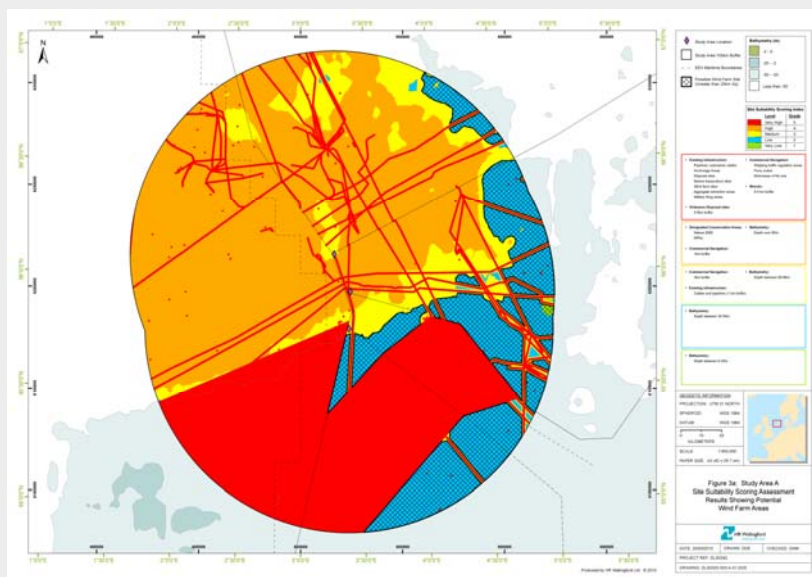
Mapping of current sea-use

- Existing sea-use, including:
 - Administrative/legislative boundaries
 - Cables and pipelines
 - Other wind farms and renewable energy devices
 - Oil and gas installations
 - Marine aggregate dredging grounds
 - Offshore disposal sites
 - Military training and disposal grounds
- Seabed obstructions, e.g. wrecks
- Shipping lanes
- Environmental sensitivities:
 - Marine Protected Areas.

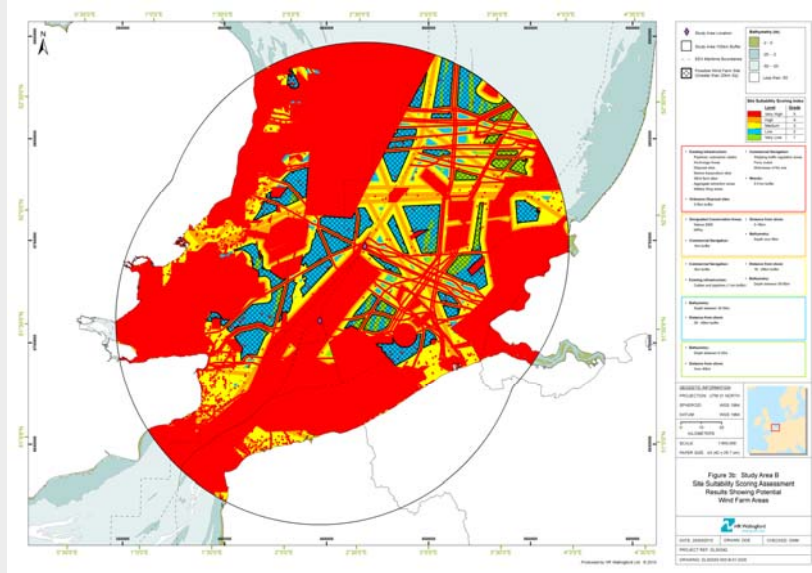
Mapping of Environmental parameters

- Bathymetry
- Seafloor geology
- Wind strength, including:
 - Maxima
 - Averages
 - Gusting
 - Long-term data
 - Direction where available
- Distance from grid/supply chain
- Tidal data
- Topography.
- Environmental sensitivities:
 - Bird migration routes
- Commercial fishing grounds
- Distance from shore (visibility).

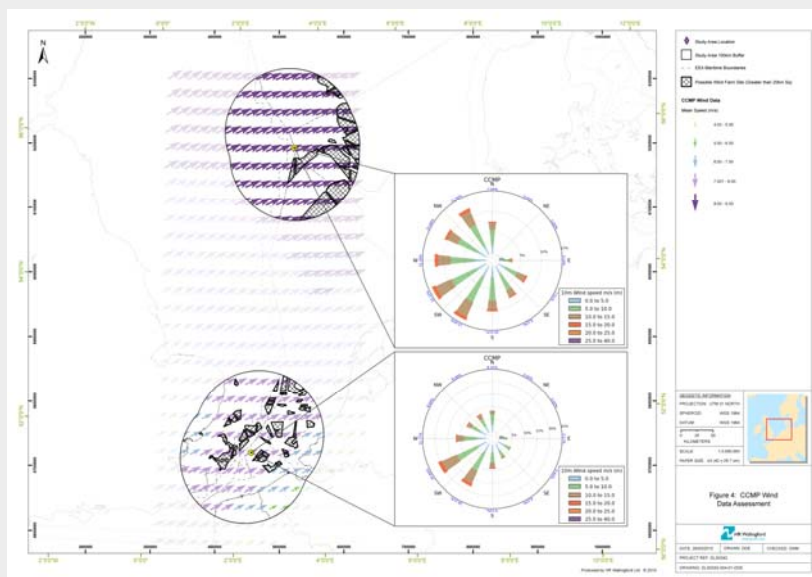
Area A Site Suitability Scoring Assessment

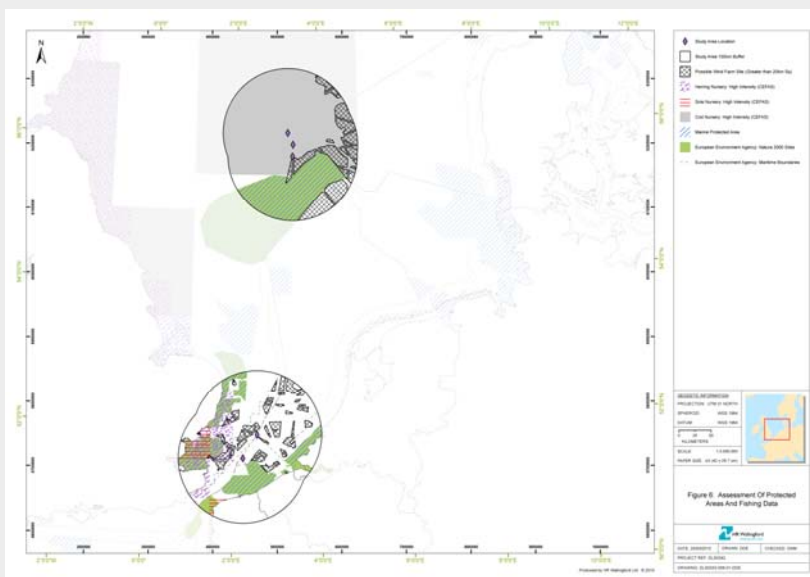
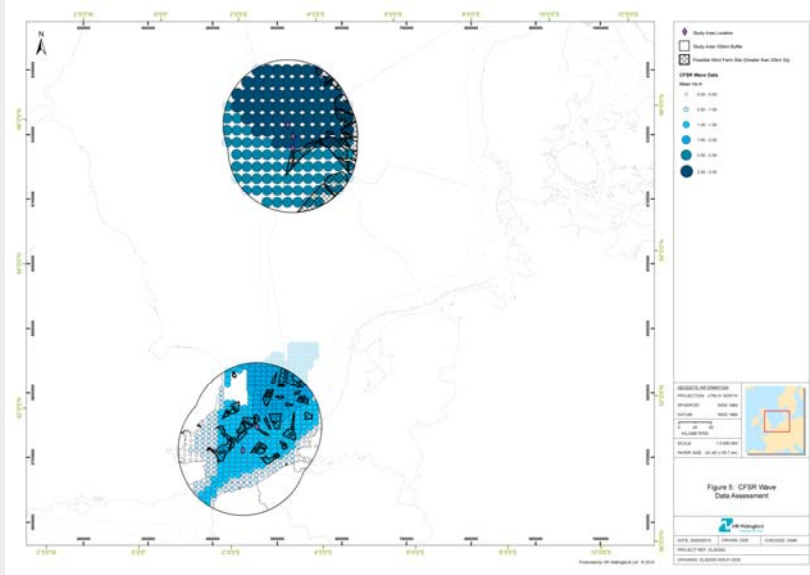


Area B Site Suitability Scoring Assessment



Wind assessment





Contribution

- Superficially, a large amount of data available to potentially provide a contribution.
- The range of data considered, downloaded and reviewed was much broader than the data used.
- Data providers sourced their data from different locations.
- Fishing data difficult to source.
- Data on migration routes of birds and cetaceans not found.



Location

Large proportion accessible through EU-funded sites.

Contrasts in the coverage of data provided from different sources.

Not all national data providers have forwarded their information to EMODnet thematic portals.



Commercial

- Enough information held in the free products to make an initial assessment of the characteristics on a potential site.
- The purchase of chargeable data would be necessary and expected in the context of a real marine licence application.
- Some chargeable data not used in the challenge is known to exist and would have provided higher resolution.
- Time spent discovering and then evaluating the data is also a commercial 'cost'.



Attributes

- Considerable overlaps between data providers and types of data, often offering data from different sources.
- Same data from more than one source had to be appraised to discover which was most up-to-date.
- Some data was too coarse, usually as a result of being compiled into a single dataset alongside data from multiple sources provided at different resolutions.



Delivery

- The majority of data reviewed for the challenge were easily accessible.
- Ease of access varies with nature of data.



Usability

- Some source paths to access datasets were broken.
- Some resources were only available as a pdf, kml or as a static image.



- Spatial datasets for:
 - migration routes,
 - marine cetaceans,
 - ecology,
 - and fishing activity.
- Loss of data resolution in favour of providing a data product
- Ability to search metadata from portals
- Integration between marine data resources



The data available for the study areas was suitable in meeting the requirements of the challenge though the quality of data differed.

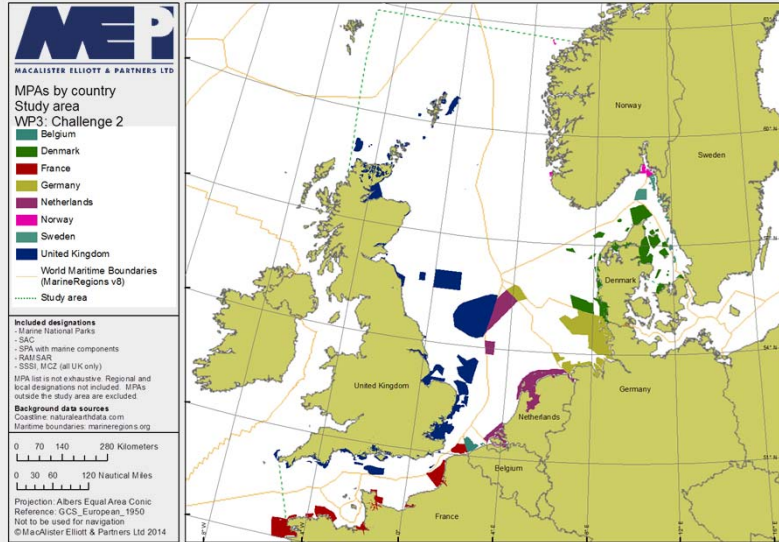
The quality assessment of data was an ongoing process, based on assessing accessibility of data, costs, relevance, usability and usefulness via the data gathering and mapping stages of the challenge. All of these criteria varied a great deal between datasets.

Identifying definitive data for all of the national waters was time consuming, often leading to the investigation of resources which later turned out not to be relevant or which proved too complex to use for planning purposes.

To assess whether the data currently available from the 8 focus countries are appropriate to determine whether the North Sea MPA network constitutes a representative and coherent network

- Outputs: Interactive MPA map tool, GIS maps & GIS database, ecological statistics & data assessment
- **Gathering:** MPA list & data categories
- **Analysis:**
 - 1) Ecological coherency tests:
 - Features & representivity
 - Resilience
 - Connectivity
 - Management
 - 2) Mapping: features, management combined with spatial
- **Data assessment**

Interactive webmap: <http://dgm.marinemapping.com/>
Geodatabases: <http://data.marinemapping.com/dgm/>



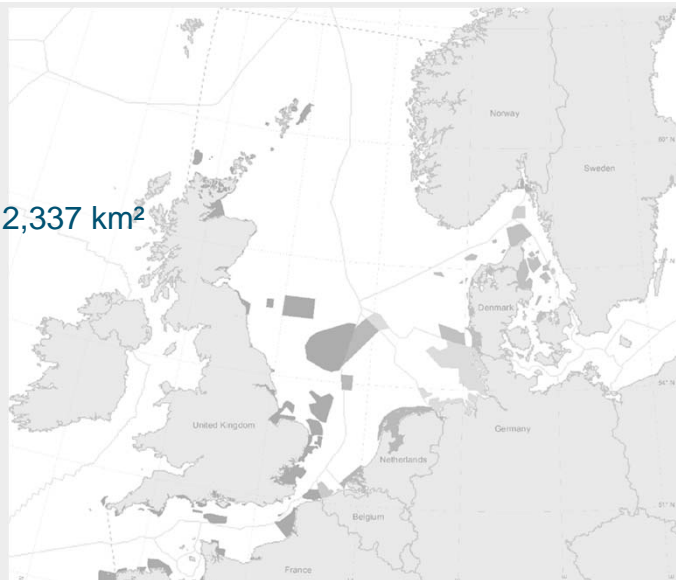
Resilience:

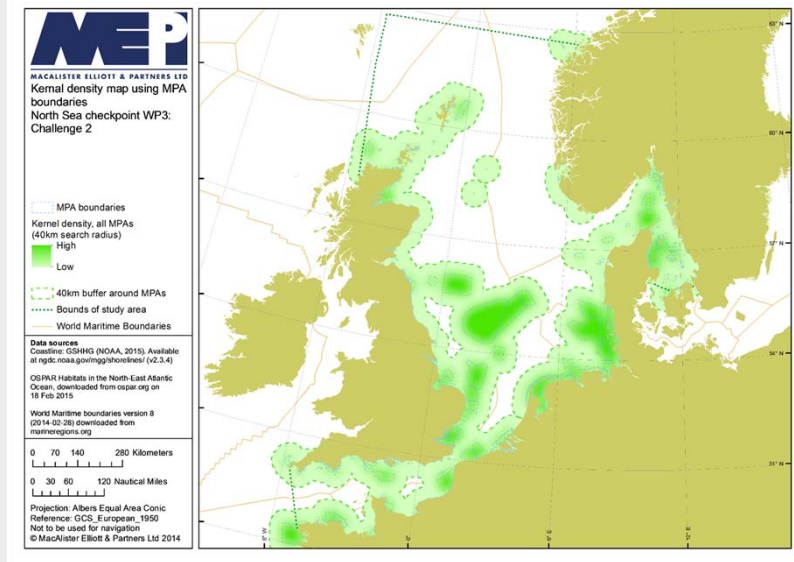
444 MPAs

Cover 10.9%

Size range = 0.007 km² -12,337 km²

Majority small <1km²





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Features & Representivity:

- OSPAR & EUSeaMap habitats data
- Majority well-represented (>40% inside MPAs)
- Best = intertidal mudflats (92%)
- Worst = Sea-pen and burrowing megafauna communities (10%)
- More detailed datasets out there (e.g. seagrass)

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Management:

- Essential to an MPA network
- Paper parks
- Looked for specific information: i.e. spatial restrictions
- Many EU designated
- Most information basic – why?
- Most detailed & implemented for National Parks
- Not a coherent management structure

Data Adequacy: Contribution

- Most datasets needed testing, many at correct resolution
- What wasn't useful?
 - Many online species databases
 - Non-marine specific data
 - Web maps no downloads
- Most useful?
 - OSPAR – correct resolution, marine specific
 - Spatial data easily editable
 - Management: EU Natura 2000

Spatial resolution:

- Most at correct resolution/easily editable
- Species and habitat point data available from MPA pages
- Spatial habitat data is coarse but covers area

Temporal resolution:

- Often temporal data not provided
- International databases out-of-date
- BUT easily updateable - **need regular checks!**

- All free
- Only cost is if user needs to install particular GIS programmes

- Considerable overlap between data suppliers
- Most datasets had correct attributes
- Larval data too sparse
- Species data only point
- Management data not in MPA databases

- Most immediately downloadable
- Some sites not easily searchable for data (management)
- Most files easily readable in GIS – just need specialist knowledge to manipulate
- Other file formats (i.e. databases) easily usable
- Language issue – information missed

- Management information
- Basin-wide species spatial data
- Basin-wide larval data
- No single national MPA source
- The available data **are not sufficient** to fully predict the ecological coherence of the North Sea MPA network
- BUT:
 - Good spatial data allow some aspects of ecological coherency to be calculated
 - Good spatial data allows good quality mapping

Lag of data – national bodies tend to publish first, which leads to a duplication which needs resolution.

Harmonisation of data to products – going to lowest ‘resolution’ to provide the widest geographic coverage has advantages, but not always in the usability.

Some confusion with downloading – not always obvious how to do so; new users experienced difficulty with non-intuitive interfacing. More confusing since individual thematic portals have different layouts.

Considerable time resources in downloading data and then having to appraise usefulness. Maybe the Data Adviser approach has some merit in addressing this – we welcome feedback!

Harmonisation with OSPAR for NE Atlantic, as they have moved forward with considering MSFD requirements, assembling data and proposing indicators

Filtering of Data Adviser on EMODnet terms – currently included INSPIRE themes, would it be easier to map EMODnet to INSPIRE themes than add the functionality?

Human activities portal is in early stages, but is very much needed – much of the data on activities was difficult to source (e.g. fishing effort) for all challenges.

Movements for biology also needed – much information is ‘static’, when the species are not. Engagement with NGOs?

Consistent feedback contact information on each thematic portal, so that users can immediately provide their experience with the portal.