The UK Marine Environmental Data and Information Network – MEDIN

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Why consider the marine sector?

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1. History

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- Grown from previous work that have been in operation since 1996
- In 2004 a Marine SDI was recommended by an independent report.
- 2005 The first UK Integrated Assessment of the marine environment
- 2005 - 1st phase of scoping and demonstration
- 2008 – 2nd phase of implementation of the SDI

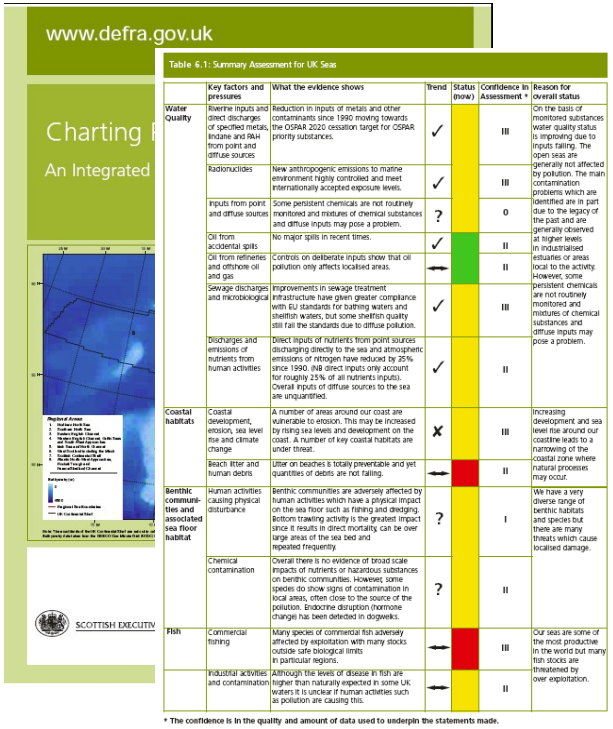

Table 6.1: Summary Assessment for UK Seas

	Key factors and pressures	What the evidence shows	Trend	Status (now)	Confidence in Assessment *	Reason for overall status
Water Quality	Riverine inputs and direct discharges of specified metals, lindane and PAH from point and diffuse sources	Reduction in inputs of metals and other contaminants since 1990 moving towards the OSPAR 2020 cessation target for OSPAR priority substances.	✓		III	On the basis of monitored substances water quality status is improving due to inputs falling. The open seas are generally not affected by pollution. The main contamination problems which are identified are in part due to the legacy of the past and are generally observed at higher levels in industrialised estuaries or areas local to the activity. However, some persistent chemicals are not routinely monitored and mixtures of chemical substances and diffuse inputs may pose a problem.
	Radionuclides	New anthropogenic emissions to marine environment highly controlled and meet internationally accepted exposure levels.	✓		III	
	Inputs from point and diffuse sources	Some persistent chemicals are not routinely monitored and mixtures of chemical substances and diffuse inputs may pose a problem.	?		o	
	Oil from accidental spills	No major spills in recent times.	✓		II	
	Oil from refineries and offshore oil and gas	Controls on deliberate inputs show that oil pollution only affects localised areas.	↔		II	
	Sewage discharges and microbiological	Improvements in sewage treatment infrastructure have given greater compliance with EU standards for bathing waters and shellfish waters, but some shellfish quality still fail the standards due to diffuse pollution.	✓		III	
	Discharges and emissions of nutrients from human activities	Direct inputs of nutrients from point sources discharging directly to the sea and atmospheric emissions of nitrogen have reduced by 25% since 1990. (NB direct inputs only account for roughly 25% of all nutrients inputs). Overall inputs of diffuse sources to the sea are unquantified.	✓		II	
Coastal habitats	Coastal development, erosion, sea level rise and climate change	A number of areas around our coast are vulnerable to erosion. This may be increased by rising sea levels and development on the coast. A number of key coastal habitats are under threat.	✗		III	Increasing development and sea level rise around our coastline leads to a narrowing of the coastal zone where natural processes may occur.
	Beach litter and human debris	Litter on beaches is totally preventable and yet quantities of debris are not falling.	↔		II	
Benthic communities and associated sea floor habitat	Human activities causing physical disturbance	Benthic communities are adversely affected by human activities which have a physical impact on the sea floor such as fishing and dredging. Bottom trawling activity is the greatest impact since it results in direct mortality, can be over large areas of the sea bed and repeated frequently.	?		I	We have a very diverse range of benthic habitats and species but there are many threats which cause localised damage.
	Chemical contamination	Overall there is no evidence of broad scale impacts of nutrients or hazardous substances on benthic communities. However, some species do show signs of contamination in local areas, often close to the source of the pollution. Endocrine disruption (hormone change) has been detected in dogwelks.	?		II	
Fish	Commercial fishing	Many species of commercial fish adversely affected by exploitation with many stocks outside safe biological limits in particular regions.	↔		III	Our seas are some of the most productive in the world but many fish stocks are threatened by over exploitation.
	Industrial activities and contamination	Although the levels of disease in fish are higher than naturally expected in some UK waters it is unclear if human activities such as pollution are causing this.	↔		II	

* The confidence is in the quality and amount of data used to underpin the statements made.

Confidence in assessments and ability to detect trends limited

By lack of data

By unreliable data

'Working to Deliver Improved Access to and Stewardship of UK Marine Data and Information'

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2. The MEDIN Approach

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- Provide a central (discovery) metadata search capability to improve the discovery and reuse of datasets

- Data Archive Centres (4 at present) – building on existing organisations (BODC, DASSH, BGS, UKHO). Seen as the long term home of the data

- An agreed set of common standards for metadata, data format and other requirements

- Guidelines, contractual clauses and software tools to support these standards and best practice data acquisition and management.

…. Core components of a marine Spatial Data Infrastructure

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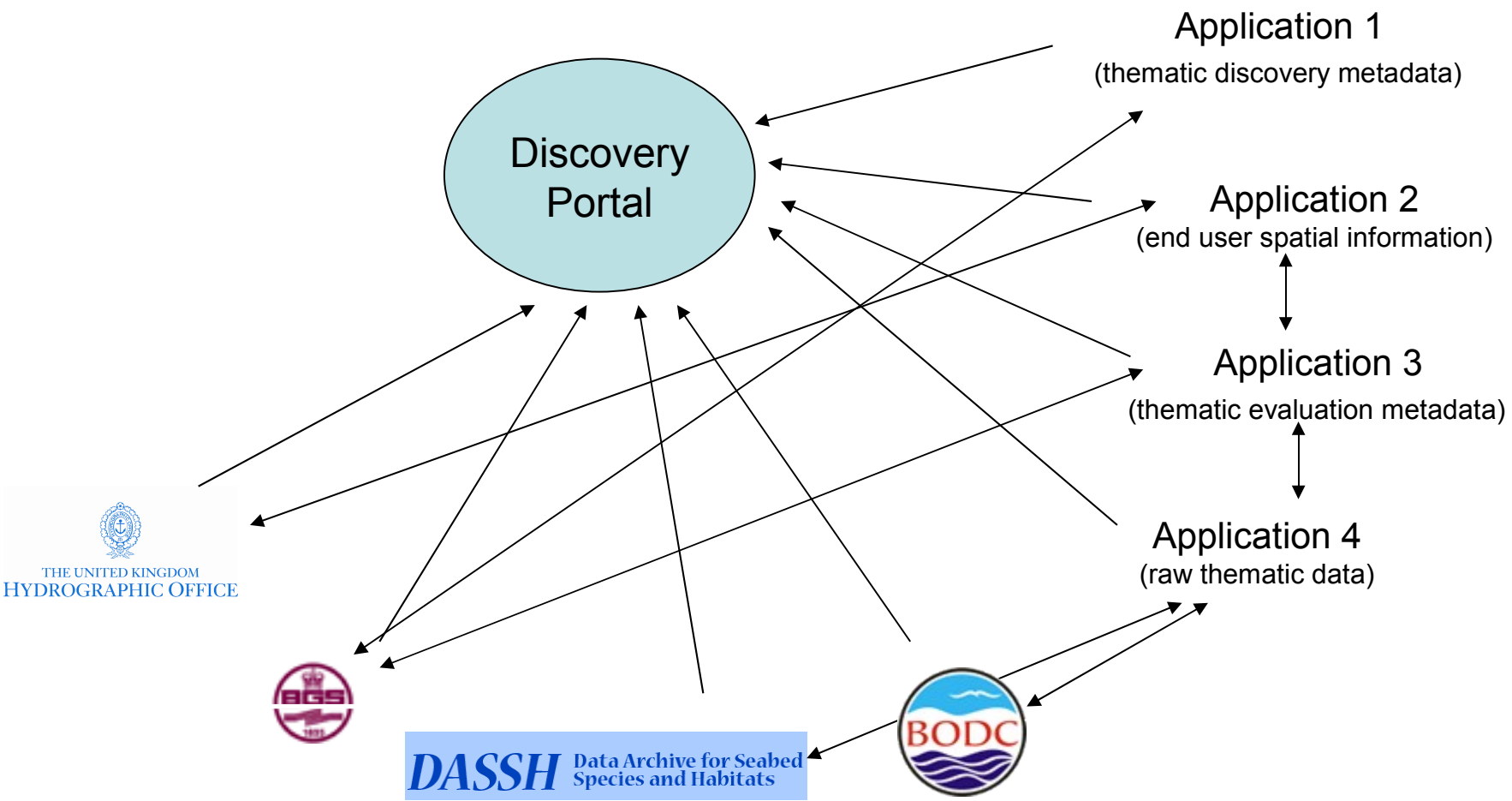

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3. Standards

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To establish and promote standards for metadata and data products - to allow users to locate and access the data sets they need, and also to provide guidelines and tools for the generation and preparation of metadata and data products.

- Discovery metadata: “What data are available, and who has them?”

- Data thematic guidelines: For provision to DACS, and thematic interoperability

- Guidelines and Tools: To help with generation of metadata and data products

Following INSPIRE standards where applicable.

4. Portals

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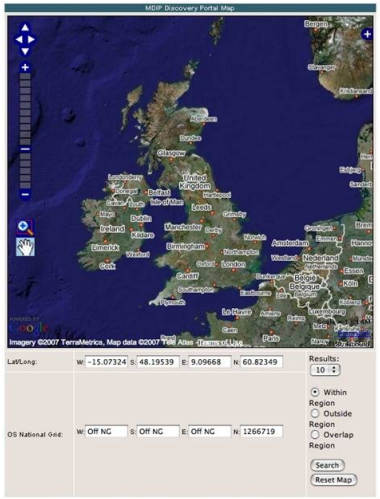
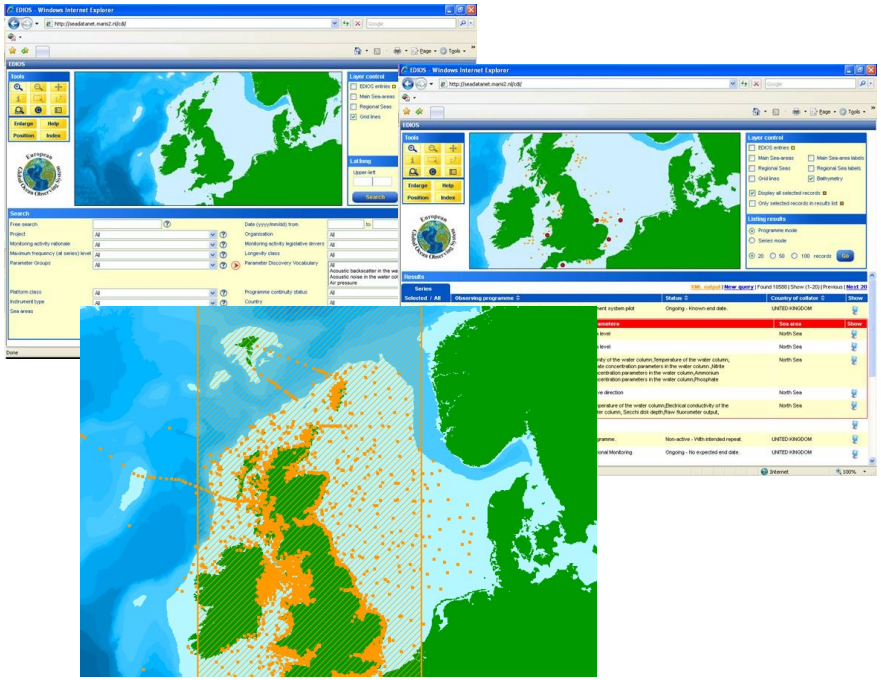
MEDIN Discovery Portal - Search capability to allow users to identify and locate *all data* held within the MEDIN DAC framework. ***www.oceannet.org***



Evaluation Metadata Application – UK Directory of *Marine Observing Systems* – Developed to help coordinate and plan marine monitoring in the UK

www.ukdmos.org



5. Who is involved?

- 14 Sponsors including all devolved administrations who approve the work programme
- A collaborative and open partnership >30 partners
- ~3 fte.

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6. MEDIN Partner Commitments

The only way to establish a SDI which is sustainable over the long term is to have all partners adopt common standards and procedures ***as part of their normal working practice***

- Commit a number of staff days per year to participate actively in MEDIN.

- All marine data of long-term interest will be lodged with DACs recognised by MEDIN. DACs to ensure data are always freely available to supplier.
- Generate metadata records for all marine data in MEDIN format and make these metadata freely available to MEDIN.
- Establish a clear policy with regard to data ownership, licencing and access as they adhere to individual data sets.
- Conformance with various data policies as they relate to individual data sets.

7. Data Clause in Government contracts

MEDIN is developing a "Data Clause", with supporting guidance notes, in cooperation with UK Government Departments.

Should provide clear guidance on :

- Application and documentation of recognised standards during data collection and processing
- Metadata must be provided with each data set – format recommended by MEDIN
- Make arrangements for archival of data – to MEDIN recommended standards
- Clearly establish ownership, IPR and terms for further (3rd party) use of data.

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3. Data Archive Centres

- The existing marine Data Archive Centres (DACs) have in general been established independently to serve specific user groups.
- MEDIN aims to build a coordinated and harmonised network of marine DACs, to cover all key marine data types
- The requirements on this DAC framework are:
  - To ensure the secure long-term curation of key marine data sets according to best practice and accepted international standards.
  - Make available clear searchable information on the DAC data holdings, by the generation and publication of metadata on the MEDIN portal.
  - Form the first port of call for expertise on the management of marine data.