

The Marine Species of the British Isles and Adjacent Seas (MSBIAS)

<http://www.marinespecies.org/msbias/index.php>
by Mark Charlesworth

MEDIN have launched 'The Marine Species of the British Isles and Adjacent Seas (MSBIAS)' which is an authoritative taxonomic list of species occurring in the UK marine environment and can be used to promote interoperability.

Many applications require a list of species that are likely to be found in the marine waters around the British Isles and adjacent seas. This list can be used for this purpose and furthermore if used widely will improve the ability to exchange species data between applications. This list is a subset of taxa registered in the World Register of Marine Species (WoRMS) that was identified through data holdings of the applications Marine Recorder and Unicorn and collated under the project 'Pan-European Species directories Infrastructure (PESI)'

The marine area covered by this list is shown below. The boundaries given in the map are recognized not to represent true boundaries of species distributions however does allow operational use of a taxon list.



It is possible to search the application for taxa by species or common name and using fuzzy matching. The search results show the taxon name, whether it is accepted (and the accepted name if it is a synonym), rank, parent taxa, child taxa, literature sources, photographs and links. A user may also browse taxa via a taxonomic tree. To download the full list which can then be used to record data or in a tool then complete a search without any constraints and then download the results.

By using the 'taxon match' facility it is possible for a user to submit a file of species names to the application to check if they exist in the catalogue and also if the species are accepted. The application runs the checks and returns a csv file that shows which species are accepted, (and what the accepted name is for those that are synonyms), the authority, unique ID, citation and taxonomic tree.

If a user wants to add a new species then they are guided towards one of the major managers of marine species data (e.g. NHM, JNCC, DASSH, BODC, UNICO MARINE, NMBAQC) who will propose a new species to be added to the taxonomic editors after checking themselves.

In the next few months MEDIN will be consolidating and formalizing the management of the application within the UK, broadening the range of organisms available and implementing the unique identifiers within some of the commonly used species recording tools such as Marine Recorder. Secretarial support for the maintenance of the application is provided by the Marine Data and Information Network. For further information contact enquiries@oceannet.org

Potential for joined up marine monitoring & data collection between Statutory Nature Conservation Agencies and industry

Overview

Natural England is at the forefront of an ambitious programme of reform in relation to the management and protection of England's marine environment. One of the key current reforms relates to the UK Marine Protected Area (MPA) network which is undergoing an unprecedented phase of expansion. As the UK MPA network expands there will be a proportionate increase in the demand for the monitoring of these protected areas in order to assess the extent to which individual site objectives – and the network objectives - are being met.

To address this, Natural England has investigated opportunities for closer collaboration to reduce both costs and burdens to industry through a project carried out by a consortium (comprising Marine Planning Consultants, ABPmer and Peter Barham Environment) from December 2011 – May 2012. Through a staged process that assessed national overlaps between industry development sites and MPAs, regional case studies, 37 interviews with marine experts in both the public and private sectors, and a workshop, a set of five 'protocols' were developed to address opportunities, barriers and actions to greater aid joint monitoring. The project team and Natural England are grateful for time invested by colleagues during this process. The first three protocols set out below are to enhance within sector monitoring foundations; whilst the fourth and fifth protocols are to establish methods in joint monitoring and data collection.

Also relevant to this work is the Government's review into the Implementation of the Habitats and Wild Birds Directives which concluded and announced its findings in March. There were 3 recommendations which are relevant to joining up marine monitoring and data collection between SNCAs and industry

- Establish by July 2012 a Habitats and Wild Birds Directives **Marine Evidence Group** to address marine data sharing issues, evidence gaps and ways of improving post construction monitoring.
- Consult by November 2012 (to be finalised by March 2013) on **new consistent standards** on the acceptable range and quality of evidence needed to enable statutory bodies to provide their advice.
- Facilitate by December 2012 agreement by all parties on a practical plan to **share environmental data** more widely , while recognising the need to respect commercial sensitivities

The **first protocol is to improve information exchange** on monitoring activity through the availability of a public portal. This addresses the need for a centralised storage of information at the national level for both SNCA and industry monitoring activity plans, which may be implemented through regulators imposing requirements on industry, e.g. through licence consent, and setting up (together with SNCAs) portals to hold this information.

The **second protocol is to improve information exchange on existing data**. This addresses the need for supply of metadata and actual data to central databases, i.e. MEDIN and Data Archive Centres (DACs), again possible through consent conditions for industry. This may require some exploration of those receptors that industry consider less sensitive in terms of data held.

The **third protocol is to enhance guidance and standardisation on monitoring** and data processing / handling. This addresses a need to update / consolidate existing guidance potentially through a receptor specific approach rather than by sector. The SNCAs role in providing advice on monitoring may also require better coordination across public sector organisations to ensure the best form of joint working; and may be assisted through increased knowledge, e.g. through re-evaluation of existing datasets which would be assisted through further data consolidation. This may be contributed to by industry, e.g. collection of additional data for their own existing surveys for new MPAs.

The **fourth protocol drew on existing examples of site monitoring and data** collection, whether between industry, between SNCAs or SNCA-industry. The examples helped identify a number of mechanisms that could serve as a protocol to further site specific joint monitoring. The steps proposed include support 'props' such as working groups; more involvement at a local level from the regulator and central initiatives on joint monitoring; use of the framework agreement being drawn up between Natural England and contractors; and a new role within Natural England to help facilitate this at a national level, acting as an industry representative. The more procedural site based steps include early planning on the EIA process; avoiding use of formal agreements e.g. MoUs; agreements drawn up for prioritization on surveys; monopolising one contractor for multiple surveys; and to consider liability, health and safety and risk management on a case by case basis.

It was considered that the best opportunities for joint monitoring can be found by targeting small scale sites with low costs (below the contractual threshold for NE) with as few organizations involved as possible to start with. This might target emerging industries initially and potentially focus on receptors with less confidentiality issues. However it would have to be accepted that a trial period is required and show willingness on both sides with more significant benefits emerging in following joint work.

The **fifth protocol focused on strategic monitoring and data collection**, moving away from the site based monitoring previously detailed. This was an area that sourced a great number of excellent examples in joint monitoring. However many these related to strategic baseline/research studies rather than compliance monitoring

studies, the scale of which is driven by industry characteristics, needs and have different objectives. It has been noted that there is currently little integration between these activities and the wider UKMMAS member surveys which may be an opportunity to join-up future activity. There is also potential to build on some of the common lessons in these approaches and consider them as models for longer term evidence and monitoring activity, e.g. a clear incentive for developers, cost sharing, multi agency involvement, consistency in approach and a shared evidence base and understanding to a pre-agreed quality. Further consideration should be given on the extent to which regional/strategic approaches can be optimized in the future (drawing on earlier recommendations such as standards). By targeting areas that could benefit from similar initiatives, e.g. to the REAs, yet still to include MPA sites, these would be the most opportune examples to take forward.

Conclusions

The protocol outlines arrangements and actions that can signpost future site based monitoring and if progress can be made in other areas, this may well lead to more joint survey work happening over time. It is clear that there are many potential benefits of joint marine monitoring. Stakeholders involved in the project welcomed the lead from Natural England in commissioning this work.

Nationally, much of the architecture to facilitate data sharing and exchange is already in place (e.g. MEDIN and DACs) and can be lead by the regulators' roles in licensing. For strategic monitoring, the UK Marine Monitoring and Assessment Strategy (UKMMAS) provides environment to facilitate this working through the Healthy and Biologically Diverse Seas Evidence Group (HBDSEG) and the Marine Environment Monitoring Group (MEMG)/JNCC. At the local level, other mechanisms exist such as Relevant Authority Groups for European Marine Sites.

Lastly, these recommendations are made in recognition of a number of factors including the recent review into the Implementation of the Habitats and Wild Birds Directives; ongoing plans by the regulators to update their own procedures and systems; the need to be taken forward on a UK basis; and for future consideration of new Marine Conservation Zones (and other MPAs).

For more information on the project and its findings please contact the project manager Caroline Chambers caroline@seasurvey.co.uk (MPC) or James Bussell James.Bussell2@naturalengland.org.uk (Natural England). The final report will be complete end of May 2012.

MEDIN Publishes Data Guidelines for Geophysical Seabed Surveys

by Mark Charlesworth

MEDIN are working towards creating a consistent framework of standards for the acquisition and management of UK-commissioned marine environmental data. MEDIN have derived and published Data Guidelines. These set out the structure and information that must be recorded when data of a certain type is being collected: for example 'Benthic invertebrate sediment sampling by grab or core'.

SeaTech, under contract to MEDIN, have just published a range of Data and Product Guidelines that cover a range of geophysical and hydrographic techniques for seabed surveys. The guidelines build upon existing work already completed by the Oil and Gas Producers Seabed Survey Data Model and the BGS Marine Survey Data Management Handbook. The guidelines are detailed below. Download them from http://www.oceannet.org/marine_data_standards/medin_data_guide.html

Data Guidelines

- Seabed survey ancillary observations
- Seabed survey control
- Geophysical gravity
- Geophysical magnetic
- Geophysical multi channel seismic
- Geophysical single channel seismic
- Hydrographic sidescan sonar
- Hydrographic multibeam echo
- Hydrographic singlebeam echo
- Acoustic doppler current profile
- Tidal reduction
- Sediment and rock characteristics

Product Guidelines

- Seabed survey contour
- Seabed survey profile

- Seabed survey acoustic feature
- Seabed survey geological feature
- Seabed survey sediment distribution
- Seabed survey 3D seismic surfaces
- Seabed survey feature interpretations
- Seabed survey slope and aspect
- Seabed survey extents
- Seabed survey line plans

The principle benefits of these standards are to:

- Instill good practice amongst users
- Allow contracting organisations to specify a format that data should be returned in that can be readily used and includes all relevant attributes
- Provide a consistent format for contractors to work to (rather than a different format for each contract)
- Allow easy ingestion of data to Data Archiving Centres
- Improve interoperability between organisations by providing a format that can be used to import and export data

Rescue of Historical UK Sea Level Data

Project goes ahead after MEDIN-funded pilot by Paul McGarrigle, BODC

The British Oceanographic Data Centre (**BODC**) is currently taking part in a project, funded by JISC, to rescue historical UK sea level data by scanning and digitising analogue sea level records from its archive. These records, which include tide gauge ledgers stretching back to 1853, form a unique and irreplaceable resource for understanding sea level change. The project builds on an earlier project funded by MEDIN.

One of the areas where BODC has a lot of expertise is in sea level data. BODC holds over 8000 site years of digital sea level data from 671 locations worldwide and has acted as the sea level data centre for several major sea level observing programmes. As well as digital data, BODC holds a large archive of analogue sea level readings, in the form of paper charts, notebooks and microform negatives. These records contain observations from around the world.

Long-term sea level records are used in many areas, including

- Oceanography (ocean currents, tides, surges)
- Geodesy (datum measurements)
- Geophysics and geology (coastal land movement)
- Climate studies (sea level rise)

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) is currently underway. The science of climate prediction requires reliable long-term data from which to extrapolate. This is one of the reasons why recovering unique and irreplaceable long-term climate records is crucial. As some records held at BODC go back over 100 years (in one case, as far back as 1832), it's very important that it can provide long-term care for our long-term records.

MEDIN-funded work

In 2009, MEDIN awarded BODC a grant to undertake a pilot study. BODC would

- Digitise some charts from the BODC archive
- Create a webpage to distribute these data
- Identify those records still in need of rescuing

We had tide gauge charts from five ports (Holyhead, Lerwick, St. Marys, Sheerness and Stornoway) digitised. This filled gaps in the digital data BODC hold and for the first time, extended records back chronologically. These are important historic documents and digitising the data made them available to a much wider audience. Previously the charts could only be viewed on the premises by one person at a time.

The scanned images of tide gauge ledgers came from eight sites around the UK. The ledgers for Sheerness contain some of the earliest records of sea level data in the UK. Other ledgers came from the Mersey Docks and Harbour Company and include several sites around Liverpool.

The MEDIN-funded project was a success and demonstrated that digitising our sea level records was worthwhile. As part of the pilot project's final report, we identified further records in need of rescue. The criteria for rescuing included

- Sites where long digital records were already available, with small gaps that the analogue data could fill
- Records that could be extended backwards or forwards chronologically
- Sites that were of scientific importance, e.g. records along the Thames that could aid in future Thames Barrier studies or tidal power generation studies

We chose records meeting these criteria to digitise in the JISC eContent project we're currently participating in. For more information and updates on BODC's rescue of historical UK sea level data, please visit the project blog at <http://historicsealevel.wordpress.com/>

Met Office becomes the 5th MEDIN DAC

The Met Office has been accredited to act as the MEDIN Data Archive Centre for Marine Meteorology. The Met Office now becomes the 5th MEDIN DAC, joining the British Geological Survey (sea floor Geophysics and Geology), the British Oceanographic Data Centre (watercolumn oceanographic data), DASSH (marine species and habitats) and the UK Hydrographic Office (bathymetry). It is planned to further expand coverage of the network in 2012 to include fisheries survey data and marine historic environment data.

For more details see the [MEDIN website](#)

Marine Socio-Economic Data management review

The Marine Management Organisation, Marine Scotland and MEDIN have commissioned EMU Ltd to carry out a review into the management of [Marine Socio-Economic Data](#).

We expect the final report to be available shortly. Keep an eye on the MEDIN website!

Mark Charlesworth

As some of you may already know, Mark Charlesworth is leaving us in May after 7 years here in Liverpool. We're all sad to see him go but, at the same time, we'd like to thank him for all the work he's done for MEDIN and wish him all the best for the future. Cheers Mark.

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