Marine Environmental Data and Information Network (MEDIN)

Annual DAC Network Report for 2012-13

'Measure once, use many times'

1 Introduction

MEDIN has established an operational network of linked marine data archive centres (DACS) to provide secure long-term storage for marine data. This network provides the capability to upload and retrieve data. Those organisations archiving data at a MEDIN DAC should have free access to their data, DACS will manage third party access to these data according to the data provider's specification.

The required capabilities of DACs within the MEDIN framework are:

- To ensure the secure, long term, curation of key marine data sets, according to best practice and to relevant national and international standards.
- To make available clear, searchable information on their data holdings, by the generation and publication of metadata on the MEDIN portal.
- To provide view and download services for data sets covered by INSPIRE
- To form the first point of call of expertise for the management of marine data.

In addition MEDIN will, on request from the data provider, publish metadata records to data.gov.uk and hence INSPIRE

As a condition of its accreditation, each MEDIN Data Archive Centre is required to provide a short annual report so that Sponsors can assess how well the DAC framework is operating.

The MEDIN Sponsors' Board has emphasised the following requirements:

- Provide a statement on funding and sustainability
- Include Key Performance Indicators, specifically measures of use (numbers of enquiries, numbers of downloads)
- Further information on dissemination – how is access to data currently served up and how do the DACS see their interaction with the portal.

This short document provides a report on the current status of DACS in terms of data sets held and recently uploaded, requests from users for data, and financial outlook. This is a summary of information from the individual DAC reports. These reports are available on request to enquiries@oceannet.org

2 DAC Listing

There are currently seven DACs in the MEDIN DAC network, as listed in the table below. More details are available on each DAC through links on the DAC web page on the MEDIN website at http://www.oceannet.org/data_submission/index.html. These pages include information on what types of data are held, and top level guidelines on how to submit data to, and to access data from, each DAC.

DAC listing

Name	Coverage	Contact Information	Web links	MEDIN Status
BODC	Marine Data	enquiries@bodc.ac.uk	www.bodc.ac.uk	Accredited , operational
British Geological Survey	Marine geoscientific data	offshoredata@bgs.ac.uk	www.bgs.ac.uk	Accredited , operational
DASSH	Marine Species and Habitats	Dassh.enquiries@mba.ac.uk 01752 633291	www.dassh.ac.uk	Accredited , operational
Met Office	Marine Meteorological Data	enquiries@metoffice.gov.uk	www.metoffice.gov.uk	Accredited , operational
United Kingdom Hydrographic Office	Bathymetry	bathydac@ukho.gov.uk	www.ukho.gov.uk	Accredited , operational. Web delivery of data under development
FishDAC (CEFAS, Marine Scotland)	Fish and Shellfish, Fisheries, Aquaculture and related samples	CEFAS: data.manager@cefas.co.uk	http://www.cefas.defra.gov.uk/publications-and-data/fishdac.aspx	Accredited , operational
		Marine Scotland: jens.rasmussen@scotland.gsi.gov.uk	http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/fishdac	Accredited, operational
Historic Environment DAC (Archaeological Data Service)	Marine Historic Environment fieldwork derived datasets	help@archaeologydataservice.ac.uk	http://archaeologydataservice.ac.uk	Accredited, operational
				Other components to be added in time

3 DAC Performance

Each year we ask the DACs to report on their performance based on a standard set of metrics which include the numbers of data sets held, the number of new data sets archived, the number of requests for data and the number of MSCC partners who have data archived in the DAC. The table below gives the figures for 2012 and 2013.

Readers should be wary of comparing absolute values between DACs, as the size of data sets can vary significantly between DACs (and even within DACs). For instance all the data held in the Met Office MEDIN DAC for marine meteorology data are held within 4 data sets, which are augmented each year with that year's new data. Thus the Met Office's four data sets currently hold over 6 million observations. The year on year changes are a more reliable measure of activity. With the exception of the Met Office all the DACs show an increase on the previous year in the number of data sets held.

In terms of requests for data, there was a slight drop at BODC, and a slight increase at DASSH (though the figure was calculated differently from the previous year). No figures are yet available for the Met DAC, the Bathy DAC, or the Fish DAC.

DAC Metrics

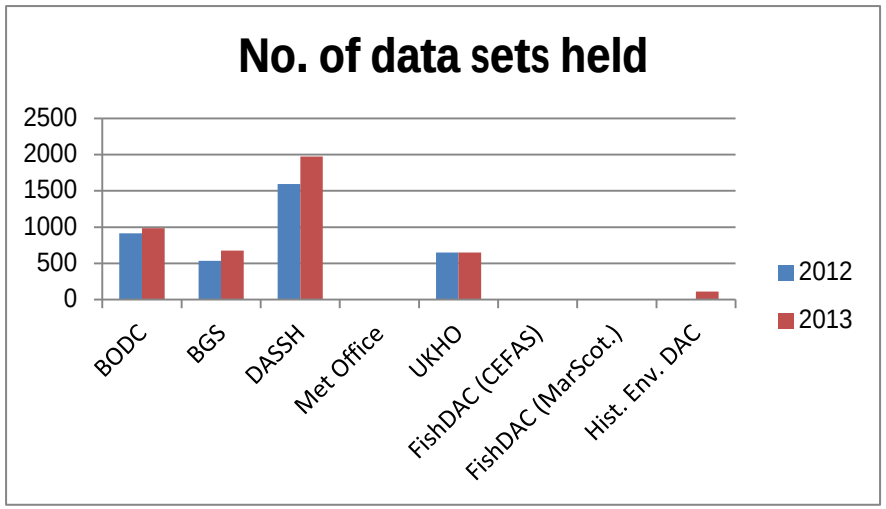
Name	No of data sets held (2012) 2013	New data sets archived in (11-12) 12-13	No. of Requests for Data in (11-12) 12-13	No of MSSC partners with data in DAC (2012) 2013
BODC	(916) 983	(237) 240	(83,594) 72,205	(4) 14
British Geological Survey	(533) 675	(16) 77	~100	(14) 14
DASSH	(1592) 1973	20 (378)	(111,490) 113,852[1]	8 (8)
Met Office	4 (4) [2]	0 (0)[3]	Not recorded	1(1)
United Kingdom Hydrographic Office	(650) 650	(128) 12	(0) 16	(3) 3
FishDAC (CEFAS)	(0)	(0)	(0)	(0)
FishDAC (Marine Scotland)	(0)	(0)	(0)	(0)
Historical Environment DAC	(0) 112	(0) 9	(0) 17,170	(0) 1

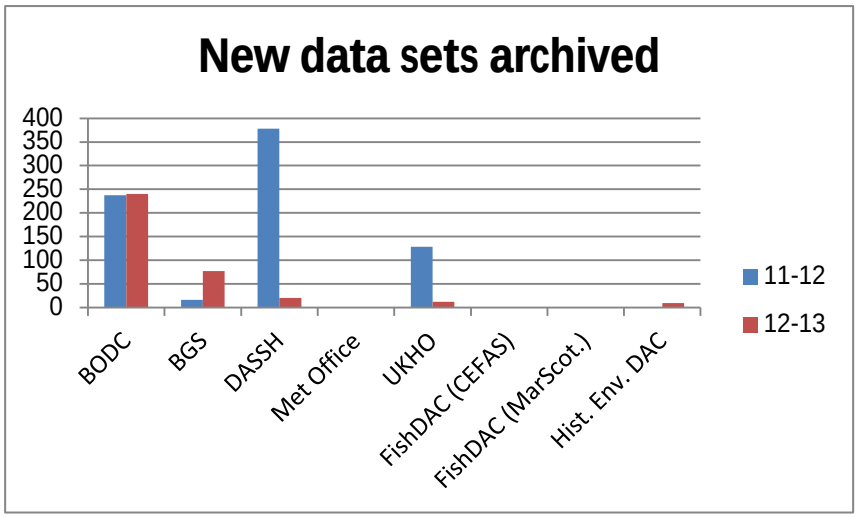
[1] Calculated differently from previous year – based on requests for data received through NBN. Stats are provided for calendar year, 2011-12 values is annual total for 2012, 2012-13 is calculated pro-rata from 2012 and 2013 (to date) values.

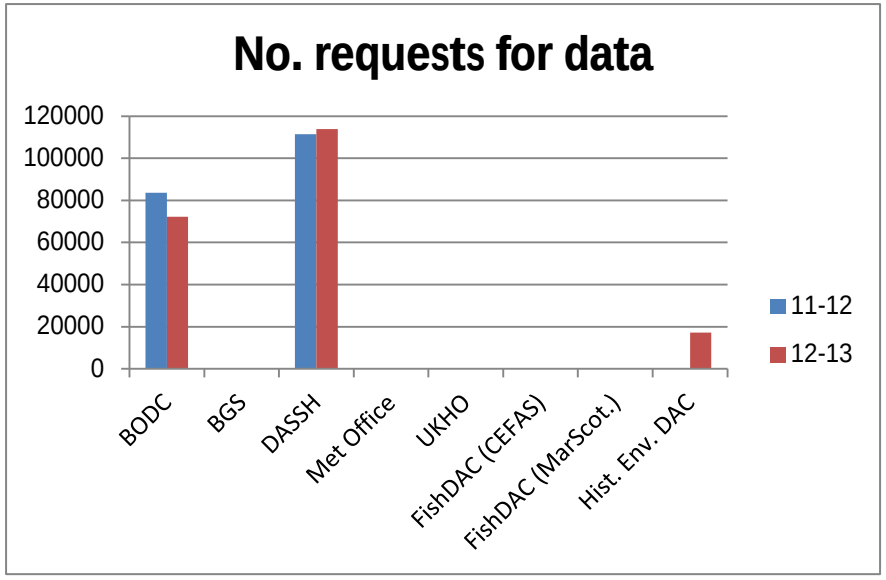
[2] Includes 6.3 million observations

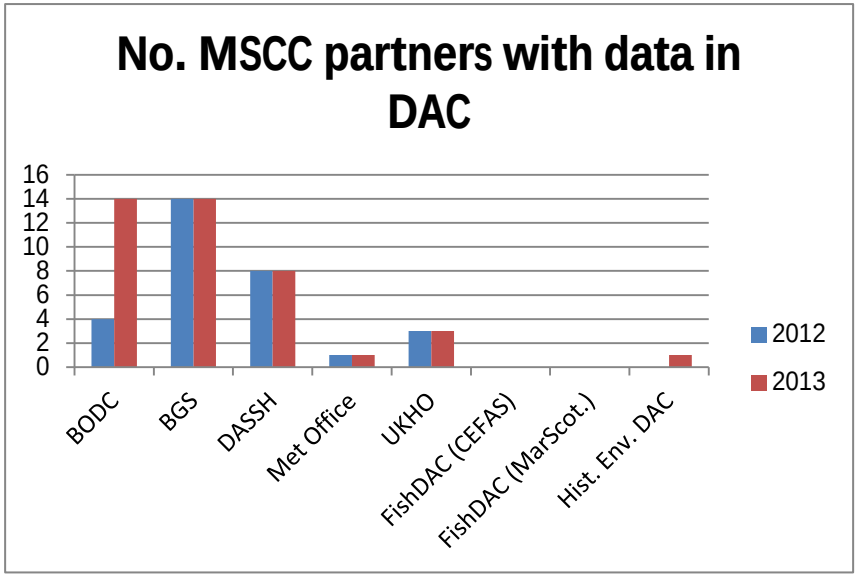
[3] Existing data sets were added to, with over 6 million new observations

The figures on this page provide a graphical representation of those on the previous page









4 DAC Sustainability and Funding

An important aspect of the DAC network is the assurance of long-term sustainability and continuity of service provision. The MEDIN DAC network achieves this by requiring that the core capability of each DAC is underwritten by an organisation or group of organisations (usually the host organisation) that itself has a business requirement to manage data of a particular theme. This approach forms the backbone of the funding / cost model for the MEDIN DACs that is described below

Cost Model

The DAC cost model proposed and adopted in November 2010 identifies four aspects of the DAC function: Core Capability, MEDIN Coordination, Additional Archiving, and Data retrieval / distribution, as described below

- **Core DAC Capability**

  "Core" DAC capability includes infrastructure costs and some routine data archiving. It is expected that core DAC funding is provided by organisations with a strategic interest in a national DAC capability for specific data types. MEDIN acts to provide an overview and to consider whether funding of this core capability is secure or at risk.
  Funded by the organisation hosting the DAC, or in the case of DASSH by a consortium organisations.

- **MEDIN coordination**

  MEDIN acts to ensure common standards and service provision across the MEDIN DAC network. The cost of MEDIN coordination activities is shared between MEDIN Sponsorship funds and the DACs themselves.
  Funded by MEDIN Sponsor funds and DACs through in-kind effort

- **Additional Archive Costs**

  In the general case the costs of archiving newly collected data should be funded by the data providers, in the form of one-off fees to the DACs in return for the services provided. This data archiving cost is not currently included in the overall budget of many monitoring and research programmes.
  Funded by Data suppliers

- **Data retrieval / distribution**

  MEDIN DACs will provide data access the original data provider at no cost, and will manage third party access to data sets according to terms agreed with the data provider. If no constraints are required by the owner, data will be made available to third parties at no cost, beyond any necessary to cover costs of retrieval / provision.
  No cost

Discussion

The core capability (the first category identified above) for six of the seven current MEDIN DACS: Historic Environment (ADS), BODC, BGS, the FishDAC (CEFAS, and Marine Scotland), the Met Office and UKHO, is supported through internal funding where an organisation has itself recognised the value of maintaining a data collection to its own business.

DASSH is the exception to this as it was established with Research and Development funding from DEFRA after a national requirement for a Marine Biodiversity DAC had been identified. Core

funding for DASSH is currently provided by Defra and the Scottish Government, agreed up until 2014 (with annual reviews)

Thus the major contributors to the **visible** costs of data archiving for Marine Data include:

a) The Natural Environment Research Council which pays through its core funding of BODC and BGS, and the top-slicing of research projects to support data-archiving costs.
b) UKHO, which is underwriting the costs of operating the UKHO Bathymetry DAC
c) DEFRA and the Scottish Government which provide core funding for the Marine Biodiversity DAC at DASSH.
d) MEDIN sponsors who are supporting the costs of establishing common standards across DACS.
e) CEFAS (Defra) and Marine Scotland who provide core funding to the two initial Fisheries DAC components
f) The Arts and Humanities Research Council, NERC, the British Academy, the Council for British Archaeology, English Heritage and the Society of Antiquaries, who provide core funding to ADS, the initial component of the Marine Historic Environment DAC.

It is expected that in the future these visible costs will be sustained at a similar level, but that the results of improved coordination will be significant reductions in less visible, but substantial indirect costs, related to improved efficiency in retrieving and re-using data, and to improved coordination in marine monitoring activity

Outlook

We asked each DAC to provide a forward look on their anticipated income over the next years. The table below lists their responses together with information on the current sources of their funding. It can be seen that there is ongoing pressure on funding.

DAC	Funding model	Comments and proportional funding	Outlook
BODC	Established 1989 as NERC (Natural Environment Research Council) marine data archive. Funded through NERC normative budgets and programmatic support.	1) Core funding support to infrastructure and management - covers the basic IT (databases, web, ingestion and checking software), management and enquires.. 2) May provide an active data management service to cruises etc. 3) Data management agreements within projects and extra-budgetary resources from national and international data programmes.	We can expect ~5% reduction for the next two years in the core funded element (presently 55% of our income) of our programme. Clearly, this provides challenges and may lead to some reduction in subsequent years to MEDIN. Beyond that is dependent on the outcome of the next Comprehensive expenditure Review. Nevertheless, NERC remains committed to Data Management for the medium and long-term. Looking forward, money in the public sector will be increasingly tight and will squeeze DAC core funding and presumably the funding of those collecting data.
DASSH	DASSH is core-funded through Defra and Scottish Government until 2014 (with	*Defra core funding covers up to 30 datasets a year.*	Short-term "project" funding has been secured in 2012/13 from JNCC and NE. Long-term core

	annual reviews). In addition DASSH is working with European partners and initiatives to seek additional core funding to support metadata and data services to support the Marine Strategy Framework and INSPIRE Directives.	*Additional project based funding has supported upload of further data sets .* *The remainder is an in-kind contribution from MBA staff*	funding is currently provided by Scottish Government and Defra and expires in March 2014. Work is currently underway to ensure the next tranche of core funding.
BGS	*NERC normative budget and programmatic support via multiple funding routes.* *Multiple models exist in BGS and it is difficult to separate out the marine sector (e.g. what proportion of cost for a core store is the marine contribution)* *All income (from all sources) goes into the centre, and BGS data management is funded centrally from this budget.*	*Core Costs include archiving data collected by internal BGS projects,* *Costs have been supported from data sales and value added products.*	BGS MEDIN DAC funding appears secure in the medium term, if limited by the general spending cuts across the public sector. In the short term, the main limiting factor on archiving new data is costs and resources to fund this work. NERC/BGS funding constraints mean that we cannot generally receive data for archiving without an associated cost being paid. Note the the planned move of BGS to Heriot Watt, possibly in 2015. This has the potential to disrupt BGS MEDIN DAC work and services.
UKHO	DAC activities are being funded as business as usual from within UKHO, with a nominal charge applied for the supply of full density data. .	The DAC functionality and remit have been specified so that almost all cost falls under core operations. It is anticipated that charges for archival may be made in the case of particularly large or complex data sets. Charges may be levied for data where media supply costs will be incurred	The UKHO has an ongoing business as usual requirement to quality assure, archive and, wherever relevant, make available, all bathymetric surveys as part of our safety of life at sea (SOLAS) task. Therefore funding of the bathy DAC is assured in the medium to long term.
The Met Office			There has been an overall reduction in Public Service funding but this has had little impact on the Met Office and, in fact, the areas of data management have been growing in recent years. The Met Office will provide DAC funding and this has been incorporated into the operational long term plan.
FishDAC: CEFAS	Cefas has specifically allocated a team to support FishDAC, totaling 0.36 FTE, The current funding source for attending MEDIN meetings is the Data Management in Cefas project	When FishDAC is fully operationalised this funding will be through the Cefas Fisheries Division which has Service Level Agreements with Defra covering fisheries related work IT support is provided by Cefas IT services and communications support in the form of web pages and download services.	

FishDAC: Marine Scotland	Marine Scotland Science, where fisheries survey data are generated and held, are core funded as part of the Marine Scotland Directorate, with approximately 10% external income.	The core fisheries survey components form part of a statutory obligation, and will continue to form part of core operations for the foreseeable future Marine Scotland Science employed a full time data manager in 2010. While there was a general need for this post to improve the existing data management culture, the post was also created with the view of the interactions with MEDIN and other external partnerships. IT infrastructure is supported as part of a central service for Marine Scotland.	
Historic Environment DAC: ADS	The ADS is hosted by the University of York, Department of Archaeology. The ADS's long term business plan is under constant review and is monitored by the ADS Management Committee.	Through its charging policy ADS has also developed a preservation endowment fund. Should it become necessary to transfer ADS holdings to another repository then the endowment fund should cover the costs of data transfer and migration to another technical infrastructure. This agreement is reviewed by the management board on which sits representation at Pro Vice Chancellor level from the University of York and the ADS direct holds quarterly meetings with the ADS/University management accountant. Specific roles in the ADS (primarily Deputy Directors) undertake visits, give presentations and attend meetings and conferences that are not directly funded via specific projects. Attendance at MEDIN meetings is included in this commitment.	Current funding forecasts show reasonable levels of predicted income for the next 3-5 years i.e enabling current levels of staffing to be maintained (and increased) over this period. The ADS finances and budget forecasts are reviewed by the management board every six months which should the ADS receive MEDIN DAC accreditation, a MEDIN representative would be invite to join and attend meetings.