

# **Marine Environmental Data and Information Network (MEDIN)**

## **Annual DAC Network Report for 2015-16**



***'Measure once, use many times'***

## Summary highlights

MEDIN has established an operational network of seven linked marine data archive centres (DACs) covering bathymetry, fish and shellfish, fisheries, aquaculture and related samples, historic environment, marine geology and geophysics, marine meteorology, marine species and habitats, and water column oceanography. The DACs continue to archive data from MEDIN partner and third party organisations to agreed individual programmes. The 2015-16 DAC annual reports show that:

- The number of data sets held by the DACs is 9,342, a 10% increase on 2014-15, and over 2.5 times more than in 2011-12
- 1,494 new datasets were archived in the DACs (fewer than in 2014-15 but two times more than in 2011-12)
- 3,210,380 requests for data were received by the DACs (a fourfold increase in the records downloaded from DASSH has led to a large increase overall in the number of requests. BGS, BODC and ADS have also had large increases)
- All the DACs are receiving data from at least 1 MSCC member – the following DACs have multiple MSCC members supplying data: BODC (14), BGS (11), DASSH (8) and UKHO (9)

## 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, and 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](mailto: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](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. During the year the original four DACs (BODC, BGS, DASSH and UKHO) provided re-accreditation information which has now been assessed.

Name	Coverage	Contact Information	Web links	MEDIN Status
BODC	Marine Data	<a href="mailto:enquiries@bodc.ac.uk">enquiries@bodc.ac.uk</a> 0151 795 4884	<a href="http://www.bodc.ac.uk">www.bodc.ac.uk</a>	Re-accredited 2016; operational.
British Geological Survey	Marine geoscientific data	<a href="mailto:offshoredata@bgs.ac.uk">offshoredata@bgs.ac.uk</a>	<a href="http://www.bgs.ac.uk">www.bgs.ac.uk</a>	Re-accredited 2016; operational.
DASSH	Marine Species and Habitats	<a href="mailto:Dassh.enquiries@mba.ac.uk">Dassh.enquiries@mba.ac.uk</a> 01752 633291	<a href="http://www.dassh.ac.uk">www.dassh.ac.uk</a>	Re-accredited 2016; operational.
Met Office	Marine Meteorological Data	<a href="mailto:enquiries@metoffice.gov.uk">enquiries@metoffice.gov.uk</a>	<a href="http://www.metoffice.gov.uk">www.metoffice.gov.uk</a>	Accredited (Dec 2011); operational, re-accreditation due 2016
United Kingdom Hydrographic Office	Bathymetry	<a href="mailto:bathydac@ukho.gov.uk">bathydac@ukho.gov.uk</a>	<a href="http://www.ukho.gov.uk">www.ukho.gov.uk</a> (or for a direct link to the bathy DAC <a href="https://www.ukho.gov.uk/inspire/pages/home.asp">https://www.ukho.gov.uk/inspire/pages/home.asp</a> )	Re-accredited 2016; operational.
FishDAC (CEFAS, Marine Scotland)	Fish and Shellfish, Fisheries, Aquaculture and related samples	CEFAS: <a href="mailto:data.manager@cefas.co.uk">data.manager@cefas.co.uk</a>	<a href="http://www.cefas.defra.gov.uk/publications-and-data/fishdac.aspx">http://www.cefas.defra.gov.uk/publications-and-data/fishdac.aspx</a>	Accredited, operational
		Marine Scotland: <a href="mailto:jens.rasmussen@scotland.gsi.gov.uk">jens.rasmussen@scotland.gsi.gov.uk</a>	<a href="http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/fishdac">http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/fishdac</a>	Accredited; operational
Historic Environment DAC	Marine Historic Environment fieldwork derived datasets	Archaeological Data Service: <a href="mailto:help@archaeologydataservice.ac.uk">help@archaeologydataservice.ac.uk</a>	<a href="http://archaeologydataservice.ac.uk">http://archaeologydataservice.ac.uk</a>	Accredited; operational
		Historical Environment Scotland: <a href="mailto:peter.mckeague@hes.scot">peter.mckeague@hes.scot</a>	<a href="http://www.historicenvironment.scot">http://www.historicenvironment.scot</a>	Accredited May 2014; operational
		Royal Commission on the Ancient and Historical Monuments of Wales <a href="mailto:gareth.edwards@rcahmw.gov.uk">gareth.edwards@rcahmw.gov.uk</a>	<a href="http://rcahmw.gov.uk/">http://rcahmw.gov.uk/</a>	Accredited May 2016, operational

### 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 from 2011-12 through to 2015-16.

Please note that it is difficult to compare 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 over 6 million observations were added to the Met Office's four data sets during 2015-16.

#### 3.1 DAC Metrics

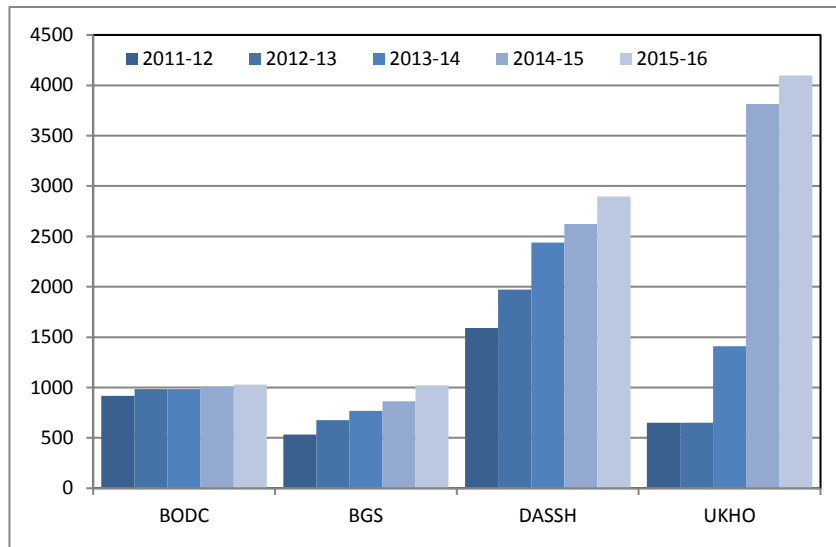
DAC	Oceano- graphy	Marine Geoscience	Species & habitats	Marine Met.	Bathymetry	FishDAC		Historic Environment DAC	
Year	BODC	BGS	DASSH	Met Office	UKHO	Cefas	Marine Scotland	ADS	HES
<b>No of data sets held</b>									
2011-12	916	533	1592	4	650	0	0	0	0
2012-13	983	675	1973	4	650	0	0	112	0
2013-14	983	768	2438	4	1409	46	36	126	1
2014-15	1008	864	2622	4	3815	58	56	139	1
2015-16	1027	1021	2897	4 <sup>1</sup>	4098	63	91	140	1
<b>New data sets archived</b>									
2011-12	237	16	378	0	128	0	0	0	0
2012-13	240	77	20	0	12	0	0	9	0
2013-14	218	75	70	0	63	5	16	3	609
2014-15	254	4182	6	0	91	7	9	0	798
2015-16	287	539	6	0	211	6	10	1	434
<b>No. of Requests for Data</b>									
2011-12	83,594	- ~100	111,490	Not recorded	0	Not recorded	Not recorded	0	Not recorded
2012-13	72,205	- ~100	113,852 <sup>2</sup>	Not recorded	16	Not recorded	Not recorded	17,170	Not recorded
2013-14	115,626	80,000 ~100	272,862	Not recorded	84,000	Not recorded	Not recorded	26,501	Not recorded

<sup>1</sup> Over 6 million observations added to the data sets in 2015-16

<sup>2</sup> Calculated differently from the first year – based on requests for data received through NBN. Statistics are provided for calendar year, 2011-12 values is annual total for 2012, later years are calculated pro-rata across the financial year.

2014-15	85,041	96,000 70	581,212	Not recorded	85,000	Not recorded	Not recorded	31,926	Not recorded
2015-16	129,398 <sup>3</sup>	579,011 <sup>4</sup> 70 <sup>5</sup>	2,355,054 <sup>6</sup>	Not recorded	85,000	Not recorded	Not recorded	61,711	Not recorded
<b>No of MSSC partners with data in DAC</b>									
2011-12	4	8	8	1	3	0	0	0	0
2012-13	14	8	8	1	3	0	0	1	0
2013-14	15	8	8	1	9	1	1	1	0
2014-15	15	11	8	1	9	1	1	1	0
2015-16	14	11	8	1	9	1	1	1	0

Figures 1-3 below provide graphical representations of the changes in each of the DACs and DAC components for several metrics. All DACs showed an increase in data holdings, with the Met Office and BODC adding substantial numbers of observations to existing datasets, and the rest of the DACs reporting an increase in the overall number of datasets held. The number of data sets added to the DACs by year shows a complicated picture, which partly reflects variation in funding available for the DACs to archive new data sets and how the DAC operates (as noted above the Met Office continually adds data to existing databases/data sets; BODC receives data accessions from a variety of projects and programmes which are integrated into existing data sets/databases).



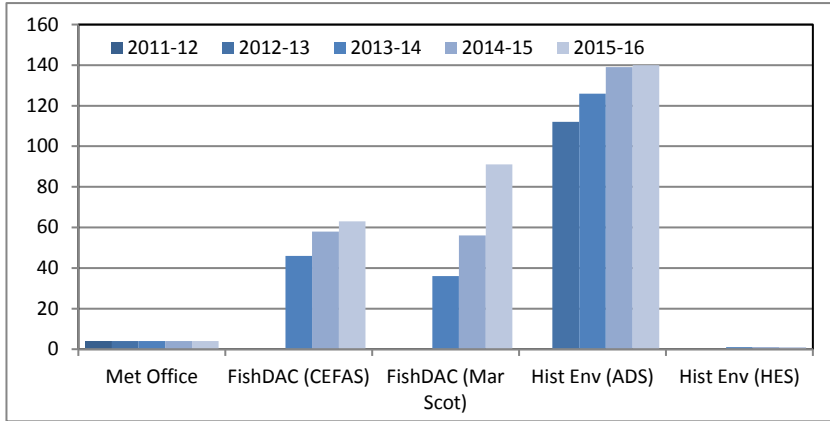
**Figure 1a: No. of data sets held by DAC by year**

<sup>3</sup> Excludes 5,882,583 calls to the NERC Vocabulary Server (NVS2.0)

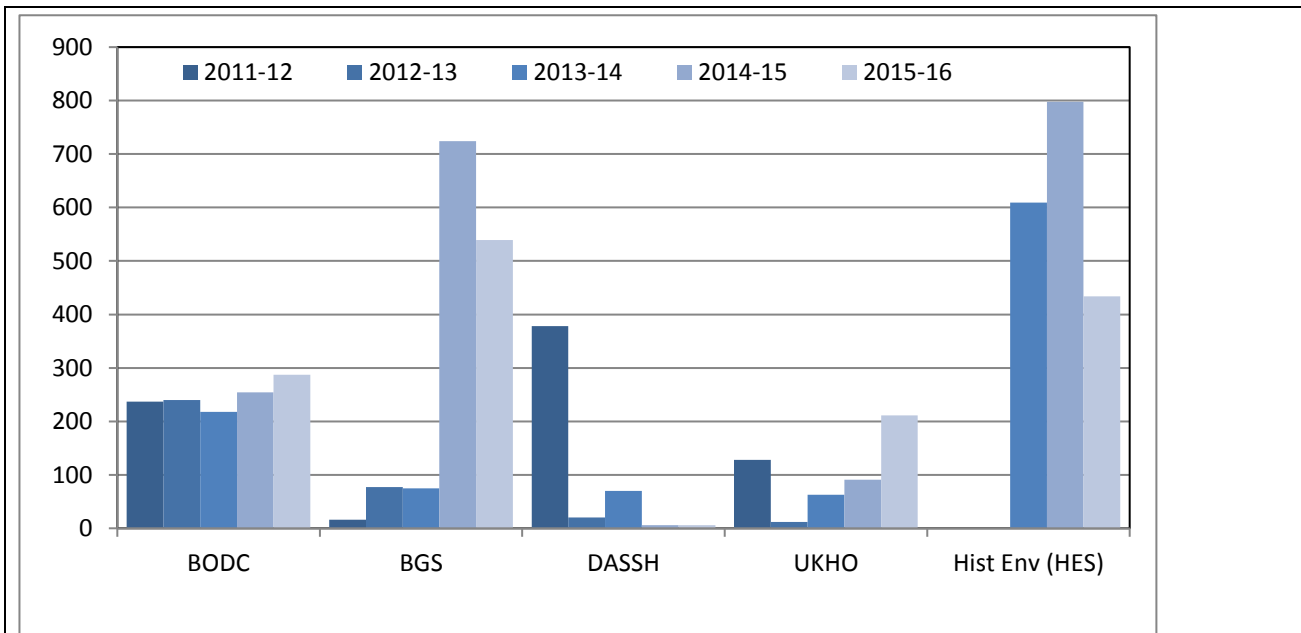
<sup>4</sup> Web map requests

<sup>5</sup> Based on manual email enquiries

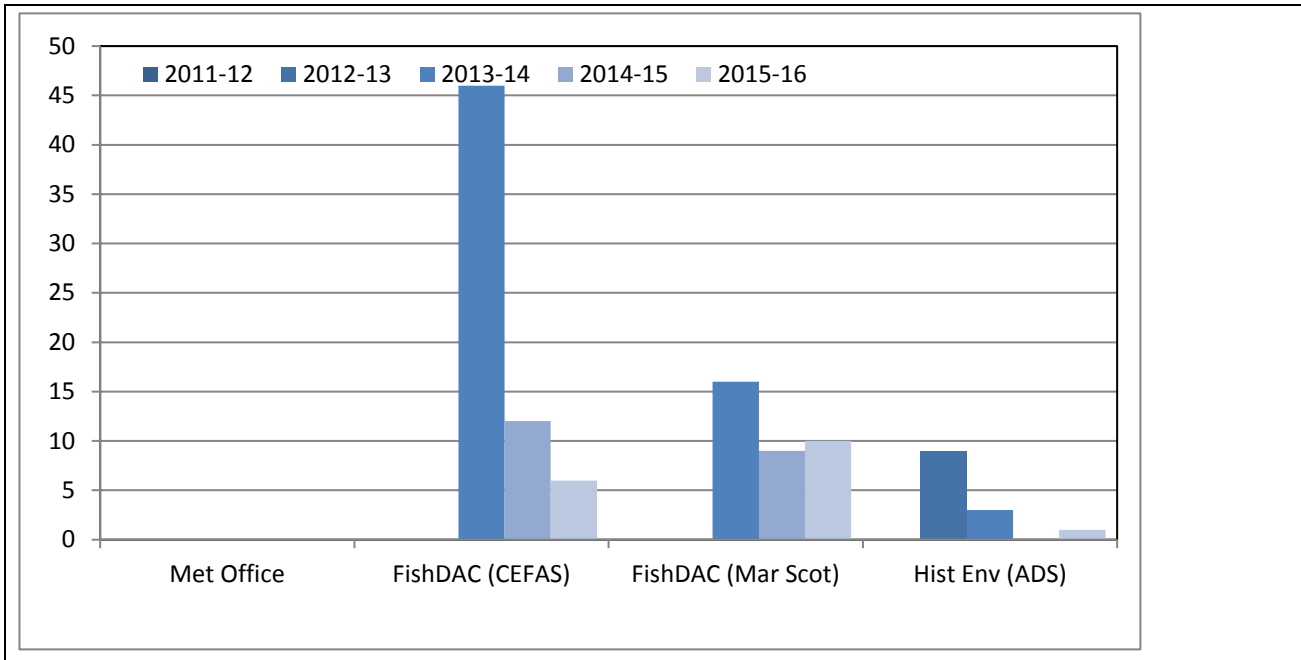
<sup>6</sup> Refers to number of records downloaded (number of downloads is 862)



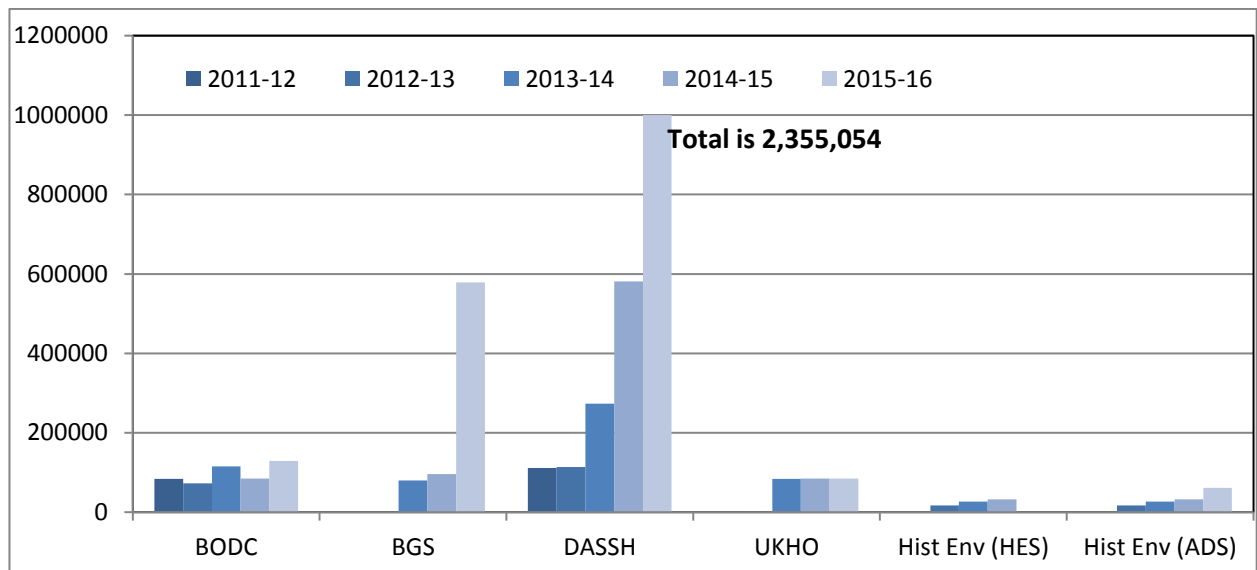
**Figure 1b: No. of data sets held by DAC by year**



**Figure 2a: No. of new data sets archived (by year)**



**Figure 2b: No. of new data sets archived (by year)**



**Figure 3: No. of requests for data (by year) from those DACs that record this information**

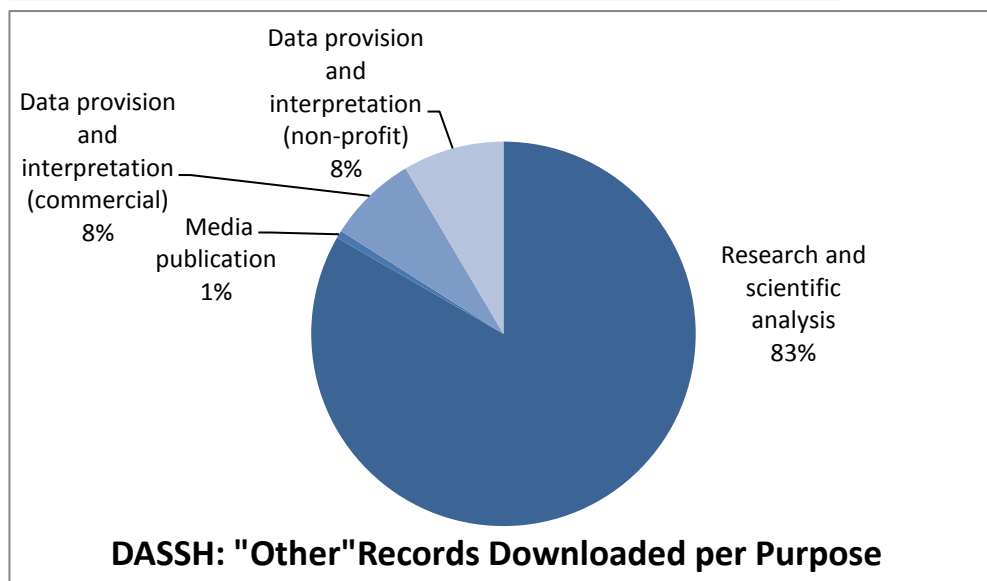
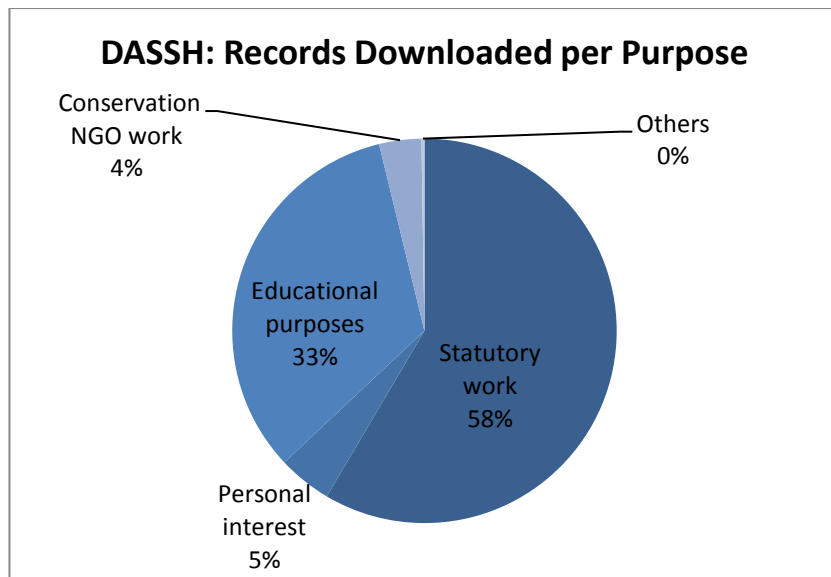


Figure 4: Charts showing distribution of purpose for records downloaded from DASSH

### 3.2 New datasets:

The past year has been very busy for the DACs in terms of major new datasets being archived. Table 1 summarises new datasets archived by each DAC during FY 2015/16.

BODC	Met Office
<p>During 2015/2016, BODC received 283 accessions of data from 60 organisations in 13 countries as follows:</p> <p>134 accessions from NERC laboratories (including collaborative centres &amp; NOC)</p>	<ul style="list-style-type: none"> <li>The Met Office is currently awaiting the provision of a 'Service licence' for the ship-borne automatic weather station (AMOS) network. Once this process has been finalised, a new metadata record for this network will be created.</li> <li>Summary of data sets archived (in the last year) –</li> </ul>



<p>56 accessions from UK universities          6 accessions from UK Government funded laboratories          15 from commercial organisations          27 from charitable organisations          45 accessions from overseas laboratories</p> <p>The data comprise physical, chemical, biological and geophysical observations in a variety of forms including profiles, time series and discrete samples.</p> <p>All data sets are prepared using MEDIN guidelines and are banked in either the BODC Series or BODC Samples database after re-formatting, usage metadata compilation, quality control (automatic tests and visual inspection), documentation and audit.</p> <p>Additionally, 28 datasets were added to the Published Data Library and received a DOI.</p>	<p>All 4 existing Met Office datasets have been added to over the past year, adding in excess of 6 million observations.</p> <ul style="list-style-type: none"> <li>• Pro forma submitted to the Crown Estate regarding the archival of 5 wave datasets from the Atlantic and Argyll arrays, although this is currently on hold pending a decision from the Crown Estate</li> </ul>
	<p><b>DASSH</b></p> <ul style="list-style-type: none"> <li>• Non-Native Species MSFD datasets</li> <li>• Lundy Intertidal Species Assessment</li> <li>• Cefas MCZ Data</li> <li>• 1990 - 2015 The Environment Agency (EA) Tamar and Lynher Estuaries Shad surveys</li> <li>• 2015 The Marine Biological Association of the UK (MBA) Salcombe Bioblitz Survey</li> </ul>
<p><b>ADS (Historic Environment DAC)</b></p>	<p><b>CEFAS (FishDAC)</b></p>
<p>Rapid Coastal Zone Assessment Dorset:  <a href="http://dx.doi.org/10.5284/1032954">http://dx.doi.org/10.5284/1032954</a></p> <p>A phase 1 assessment study covering the area from the Dorset/Hampshire county border to the Dorset/Devon county border, and including an assessment of surviving remains along the open coast and its tidal estuaries, including the intertidal zone out to Lowest Astronomical Tide with a 1km 'hinterland' to the landward side of Mean High Water and extending up estuaries to 1km beyond the tidal extent. The current project has created more than 980 new sites and updated another 143 records for sites already recorded. Threats to the coastal historic environment are identified, research priorities and themes are presented in the context of the regional themes and research aims set out in the South West Archaeological Research Framework (SWARF) and specific sites and areas which would benefit from further research or work are also identified.</p>	<ul style="list-style-type: none"> <li>• Sea Angling 2012</li> <li>• Historic fishing effort 1913-1980</li> <li>• Benthic faunal biomass with environmental data, Celtic Seas</li> <li>• North-East Irish Sea Razor Clam Survey - Fisheries Science Partnership</li> <li>• Phenological changes in growth in cod as an indicator of climate change</li> <li>• Triennial Mackerel Egg Surveys at the Shelf Edge</li> </ul>
<p><b>UKHO</b></p>	<p><b>Marine Scotland Science (FishDAC)</b></p>
<ul style="list-style-type: none"> <li>• A total of 211 new datasets were archived.</li> <li>• 53 x CHP, 5 x RN, 31 x datasets received under the Government Data Sharing MoU, 122 x 3<sup>rd</sup> Party</li> </ul>	<ul style="list-style-type: none"> <li>• North Sea IBTS Q1 + Q3</li> <li>• West Coast IBTS Q1 + Q4</li> <li>• Herring Acoustic Survey</li> <li>• Mackerel Acoustic survey</li> <li>• Monkfish survey + 2 charters</li> <li>• Nephrops and Scallop Surveys</li> </ul>

BGS	HES (Historic Environment DAC)																																																			
<ul style="list-style-type: none"> <li>Work continued towards obtaining a full set of UKHO-held Marine and Coastguard Agency (MCA) bathymetry data from CHP (Civil Hydrography Programme) HI surveys (Hydrographic Instruction) including multibeam products (for BGS use) and raw data along with other associated data and reports of survey. We also hold processed backscatter where available (for DAC and BGS use). BGS also created processed backscatter for some surveys from raw data and will also make raw data available for other organisations who wish to do this.</li> <li>Data for MCA CHP Surveys have been received from the UKHO Bathymetry DAC. Of those received:               <ul style="list-style-type: none"> <li>156 MCA CHP surveys with something received.</li> <li>98 surveys with raw data complete (92.3 TB).</li> <li>87 surveys archived to tape (89.9 TB).</li> <li>31 surveys still to receive some raw data.</li> <li>Remainder to receive products only as the UKHO Bathymetry DAC are now going to maintain a RAW data archive.</li> </ul> </li> <li>BGS have carried out 7 surveys during the year (both BGS surveys and where BGS was the contractor).</li> <li>Work continues on sorting data from BGS legacy surveys.</li> <li>The legacy BGS paper geophysical records that were held at BGS Edinburgh have been transferred to BGS Keyworth for storage and are now available online as Open Data.</li> <li>MCZ (Marine Conservation Zone) data were received from Cefas (50 surveys). Work on this will continue next FY. Data were received on hard drive and passed to Species DAC at DASSH who then passed this back to Cefas.</li> </ul>	<p>434 items, relating to 150 maritime records were catalogued. Several of the items archived are database tables or project reports linked to more than one site record in Canmore.</p> <table border="1"> <thead> <tr> <th>PREFIX</th> <th>Count Of PREFIX</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>551</td> <td>7</td> <td>Fonds level record</td> </tr> <tr> <td>B</td> <td>1</td> <td>Newscutting (catalogued)</td> </tr> <tr> <td>DP</td> <td>110</td> <td>Digital Image</td> </tr> <tr> <td>DT</td> <td>63</td> <td>Database</td> </tr> <tr> <td>J</td> <td>1</td> <td>Newscutting (catalogued)</td> </tr> <tr> <td>MS</td> <td>15</td> <td>Manuscripts</td> </tr> <tr> <td>MV</td> <td>193</td> <td>Digital tape</td> </tr> <tr> <td>WP</td> <td>44</td> <td>Word processed Documents / Pdfs</td> </tr> </tbody> </table> <p>The seven collections catalogued were:</p> <table border="1"> <thead> <tr> <th>Collection URL</th> <th>No of items</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><a href="#">1496923</a></td> <td>14</td> <td>Wreck of B98, Bay of Lopness, Sanday</td> </tr> <tr> <td><a href="#">1520397</a></td> <td>4</td> <td>Images of the Teeswood steamship, Skerry Sound, Scapa Flow, Orkney</td> </tr> <tr> <td><a href="#">1520438</a></td> <td>26</td> <td>Video footage from Scapa Flow 2013 Marine Archaeological Survey</td> </tr> <tr> <td><a href="#">1520404</a></td> <td>31</td> <td>Images of the Thames steamship, Skerry Sound, Scapa Flow, Orkney</td> </tr> <tr> <td><a href="#">1518665</a></td> <td>8</td> <td>Concrete Collier (ship), North Harbour, Creteere: Scalpay</td> </tr> <tr> <td><a href="#">1517986</a></td> <td>1</td> <td>Photograph in Accession no 2005/208</td> </tr> <tr> <td><a href="#">1520384</a></td> <td>8</td> <td>Images of Spitfire, Aircraft, Barrel of Butter, Scapa Flow, Orkney</td> </tr> </tbody> </table>	PREFIX	Count Of PREFIX	Description	551	7	Fonds level record	B	1	Newscutting (catalogued)	DP	110	Digital Image	DT	63	Database	J	1	Newscutting (catalogued)	MS	15	Manuscripts	MV	193	Digital tape	WP	44	Word processed Documents / Pdfs	Collection URL	No of items	Description	<a href="#">1496923</a>	14	Wreck of B98, Bay of Lopness, Sanday	<a href="#">1520397</a>	4	Images of the Teeswood steamship, Skerry Sound, Scapa Flow, Orkney	<a href="#">1520438</a>	26	Video footage from Scapa Flow 2013 Marine Archaeological Survey	<a href="#">1520404</a>	31	Images of the Thames steamship, Skerry Sound, Scapa Flow, Orkney	<a href="#">1518665</a>	8	Concrete Collier (ship), North Harbour, Creteere: Scalpay	<a href="#">1517986</a>	1	Photograph in Accession no 2005/208	<a href="#">1520384</a>	8	Images of Spitfire, Aircraft, Barrel of Butter, Scapa Flow, Orkney
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## 4 Highlights

In addition to providing metrics, the DAC reports also detail highlights from the previous year, which together show levels of activity, examples of usefulness of the DAC network, and indicates how nationally and internationally integrated the DAC system is.

## 4.1 Partnerships:

The MEDIN DACs have established a wide range of national and international partnerships, with BODC increasingly making data available for searching from the SeaDataNet portal ([www.seadatanet.org](http://www.seadatanet.org)), and DASSH working closely with the National Biodiversity Network (NBN, [data.nbn.org.uk](http://data.nbn.org.uk)) providing data to the NBN Gateway and onward to the Global Biodiversity Information Facility (GBIF) and the Ocean Biogeographic Information System (OBIS, <http://www.iobis.org/>). BGS data are available for download via the Geo-Seas portal ([www.geo-seas.eu/](http://www.geo-seas.eu/)), and CEFAS and Marine Scotland Science use the ICES DATRAS portal (<http://www.ices.dk/marine-data/data-portals/Pages/DATRAS.aspx>) for a number of key surveys. In addition, a number of the DACs are partners in the EMODnet thematic portal projects. BGS are leading the Geology theme; BODC is a partner in the Physics, Chemistry and Bathymetry themes and DASSH/MBA is a partner in the Biology portal. In addition, bathymetry data from the UKHO is included in the Bathymetry theme, near-real time data from the Met Office is included in the Physics theme and data from MERMAN is included in the Chemistry theme (see the EMODnet web site for further details of the data available and links to the thematic portals at: [www.edmodnet.eu](http://www.edmodnet.eu)).

## 4.2 Data Access and Sharing:

Increasingly data from the MEDIN DACs are being made available under the Open Government Licence (OGL) for data. Data from NERC (e.g. BGS and BODC), UKHO, Met Office, and the bulk of data from CEFAS are now made available under this licence. Additionally, access to data held by Marine Scotland and ADS is free, open and online, and where possible data held by DASSH are made freely available.

INSPIRE compliance is a key component of MEDIN, and a core responsibility of the DACs. Work to ensure compliance continues at the DACs. The current status is as follows:

- UKHO has INSPIRE compliant view and download services
- BGS has INSPIRE view (e.g. Offshore Geindex, Offshore Map products) services; download is available but not INSPIRE compliant.
- Met Office has download for 1 data set for the last 24 hours data
- The Cefas FishDAC has INSPIRE view and download under development
- The Marine Scotland FishDAC have 5 data sets with INSPIRE compliant View through the National Marine Plan Interactive and 7 have download *via* Marine Data Portal.
- View and download services exist at DASSH, but are not INSPIRE compliant. Future plans include development of this.
- BODC has INSPIRE compliant view services for two data sets. Download capability exists, but it is not INSPIRE compliant. Further development of INSPIRE compliant services is underway.
- The HES has an INSPIRE compliant view service but not download
- The ADS now has 126 collections available as INSPIRE view services, and 60 collections available as download services.

## 4.3 Highlights from the DAC network

In addition to providing the metrics summarised in section 3 above, the DAC reports also detail highlights from the previous year, which together show levels of activity and innovation and

provide examples of how the DACs are working together to improve data access. Selected highlights from each of the seven MEDIN DACs are given below:

#### **Bathymetry DAC (UK Hydrographic Office)**

- MEDIN-funded project to 'fast-track' processing of MoU shared data resulted in six-fold increase in MoU data made available. (5 in 2014/15; 31 in 2015/16).
- Software upgrades in early 2016 have resulted in greater reliability and ease of use for those accessing the UKHO portal.

#### **Fisheries DAC (Cefas and Marine Scotland Science (MSS))**

- Cefas Data Hub launched 06 November 2015
- Under the data management in Cefas (DMIC) contract significant progress has been made in archiving data in a central repository. A view and download facility is being developed (estimated to be published in 2016)
- MSS fisheries data information available via [marinedata.scotland.gov.uk](http://marinedata.scotland.gov.uk) along with a wide range of additional information.
- MSS are working on bringing in older surveys stored in previous systems (or no systems at all). There are around 453 surveys collated, which require additional work to migrate to data archive.

#### **Historic Environment DAC (ADS and HES)**

- HES: The key development of 2015-16 has been the installation of Preservica software which when testing is complete will help fulfil the long-term archiving of digital material and help HES achieve status as a Trusted Digital Repository.
- HES: In May 2015 the Canmore website was re-launched with improved search facilities for the Collections material.
- Rapid Coastal Zone Assessment Dorset: The current project has created more than 980 new sites and updated another 143 records for sites already recorded.
- A DOI to the web page of the dataset is included in our OAI-PMH information accessible to the MEDIN portal. Presently the system contains 79 collections.

#### **Marine Geology and Geophysics DAC (BGS)**

- The BGS Offshore Geoindex has been upgraded this year to include online viewing for 18,700 seismic record scans, delivered to web browsers as JPEG2000 files via an image server.
- MCZ (Marine Conservation Zone) data were received from Cefas (50 surveys). Work on this will continue next FY. Data were received on hard drive and passed to Species DAC at DASSH who then passed this back to Cefas.
- A view/download service is provided by BGS for the Strategic Environment Assessment (SEA) data (<http://www.bgs.ac.uk/sea/>).

#### **Marine Meteorology DAC (Met Office)**

- The Met Office climate database (MIDAS) contains over 158 million marine meteorological observations from ships, moored buoys, light vessels, coastal systems and rigs/platforms dating back to 1854 up to the current day. Data received over the WMO Global Telecommunications System (GTS) are ingested daily, adding up to around 18,000 observations per day.
- The Met Office are awaiting operational acceptance of the AMOS network – automatic weather stations designed for ships. Once this has been achieved, a new metadata record will be created.

#### **Marine Species and Habitats DAC (DASSH)**

- Development of DOI tool, with MEDIN funding, automating linkage of metadata to data
- Big increase in number of records downloaded this FY; 58% records for use in statutory work.

#### **Water Column Oceanography DAC (BODC)**

- As a result of making discrete samples data available, there was a 28% increase (>23,000 series) in the number of series available online from last year.

- There was a 40% increase in the number of described 'data collection' aggregation records in the MEDIN Discovery Metadata portal. The BODC tally now sits at 151 data collection aggregations and 876 cruise collection aggregations.
- An additional 22,000 Common Data Index metadata records were included in the SeaDataNet Data Portal which amounts to a 27% increase.
- BODC received 5,882,583 requests through the NERC vocabulary server (NVS2.0)

## 5 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 to 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*