

## LIST OF WEBSITES FOR ACCESSING PUBLICLY AVAILABLE MARINE DATA AND INFORMATION

The list of websites provided below is a non-exhaustive compilation of marine data and information portals, data compilations and data holders. These websites allow the discovery and access of publicly available scientific and technical data and information that may be relevant to coastal States during the preparation of submissions concerning the outer limits of the continental shelf beyond 200 nautical miles.

| DATA/INFORMATION PORTALS AND COMPILATIONS                    | DATA ACCESS VIA WEB PORTAL | WEB ADDRESS   | NOTES  |
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| General Bathymetric Chart of the Oceans (GEBCO)              | Grids via BODC (see below) | <a href="http://www.gebco.net/data_and_products/gridded_bathymetry_data/">http://www.gebco.net/data_and_products/gridded_bathymetry_data/</a> | <b>GEBCO One Minute Grid</b> - a global one arc-minute grid, released: 2003, updated: 2008 - largely based on the most recent set of bathymetric contours contained within the GEBCO Digital Atlas; <b>GEBCO_08 Grid</b> — a global 30 arc-second grid, released: January 2009 — generated by combining quality-controlled ship depth soundings with interpolation between sounding points guided by satellite-derived gravity data. |
| Lamont Doherty Earth Observatory, Columbia University (LDEO) | Yes                        | <a href="http://www.virtualocean.org/">http://www.virtualocean.org/</a>   | See further information on this portal under Lamont Doherty Earth Observatory, Columbia University (LDEO) below. Virtual Ocean provides access to a comprehensive multi-resolution compilation of satellite altimetry and multibeam bathymetry data.   |
| Margins Program  |                            | <a href="http://www.nsf-margins.org/WWW/RelWeb03.html">http://www.nsf-margins.org/WWW/RelWeb03.html</a>                                       | Margins Program is a National Science Foundation (NSF) funded research program on continental margins. Provides a comprehensive list of databases and web resources related to continental margin research and related activities.   |
| UNEP Shelf Programme, GRID Arendal                           |                            | <a href="http://www.continentalshef.org/onestopdatashop.aspx">http://www.continentalshef.org/onestopdatashop.aspx</a>                         | <b>UNEP SHELF Programme One Stop Data Shop (OSDS)</b> - a global geospatial and metadata inventory of marine geophysical and geological data including: marine multibeam and single-beam bathymetry, marine digital and analogue mutli-channel and single channel seismic profiles (reflection and refraction), borehole locations, sediment samples and   |

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|   |                                   |   | petrological samples. Designed for use by coastal States preparing submissions delineating the outer limits of the continental shelf beyond 200 nautical miles - contains global maritime boundary information and access to many of the databases given below. |
|   | Yes                               | <a href="http://maps.continentalshelf.org/viewer.htm">http://maps.continentalshelf.org/viewer.htm</a>   | <b>UNEP Shelf Programme</b> - Arc/IMS data inventory map for data discovery.  |
| <b>DATA HOLDER</b>  | <b>DATA ACCESS VIA WEB PORTAL</b> | <b>WEB ADDRESS</b>  | <b>NOTES</b>  |
| Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), Hannover (Federal Institute for Geosciences and Natural Resources) |                                   | <a href="http://www.bgr.bund.de/cln_101/nn_335090/EN/Themen/MeerPolar/Meeresforschung/meeresforschung_node_en.html?_nn=true">http://www.bgr.bund.de/cln_101/nn_335090/EN/Themen/MeerPolar/Meeresforschung/meeresforschung_node_en.html?_nn=true</a>   | <b>BGR - general site</b><br>Geological and geophysical project and cruise data acquired by BGR   |
|   |                                   | <a href="http://www.bgr.bund.de/cln_029/nn_466886/EN/Themen/MeerPolar/Meeresforschung/Projekte_und_Beitraege/projekte_node_en.html?_nn=true">http://www.bgr.bund.de/cln_029/nn_466886/EN/Themen/MeerPolar/Meeresforschung/Projekte_und_Beitraege/projekte_node_en.html?_nn=true</a>         | <b>BGR - project site</b><br>Contains information on BGR marine research projects   |
|   | On request basis                  | <a href="http://www.bgr.bund.de/cln_011/nn_323774/EN/Themen/GG_Geophysik/Marine_Geophysik/Seismik/Messgebiete/messgebiete_node_en.html?_nn=true">http://www.bgr.bund.de/cln_011/nn_323774/EN/Themen/GG_Geophysik/Marine_Geophysik/Seismik/Messgebiete/messgebiete_node_en.html?_nn=true</a> | <b>BGR - surveys</b><br>Contains information on BGR marine seismic surveys  |
| Bundesamt für Seeschifffahrt und Hydrographie (BSH), the Hydrographic Office of the Federal Republic of Germany             | On request basis                  | <a href="http://www.bsh.de/en/Marine_data/Hydrographic_surveys_and_wreck_search/Bathymetry/index.jsp">http://www.bsh.de/en/Marine_data/Hydrographic_surveys_and_wreck_search/Bathymetry/index.jsp</a>   | <b>BSH bathymetric data centre, Rostock</b> - it collects and archives German marine research data sets. Information and metadata on the bathymetric surveys is available.  |
| British Oceanographic Data Centre (BODC)  | Some direct and other on request  | <a href="http://www.bodc.ac.uk/data/where_to_find_data/">http://www.bodc.ac.uk/data/where_to_find_data/</a>   | <b>National Oceanographic Database (NODB)</b> - a collection of marine biological, chemical, physical and geophysical data sets originating mainly from UK research establishments. Maintained and developed by BODC.   |

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|  | Yes -grids                | <a href="http://www.bodc.ac.uk/data/online_delivery/gebco/">http://www.bodc.ac.uk/data/online_delivery/gebco/</a> | <p><b>GEBCO grid downloads: GEBCO One Minute grid</b> - a global one arc-minute grid, released in 2003 and updated in 2008 - largely based on the most recent set of bathymetric contours contained within the GEBCO Digital Atlas;</p> <p><b>GEBCO_08 grid</b> - a global 30 arc-second grid, released in January 2009 - generated by combining quality-controlled ship depth soundings with interpolation between sounding points guided by satellite-derived gravity data.</p>  |
| EU-SeaSED - combination of EUROCORE, EUMARSIN, EUROSEISMIC | On request basis          | <a href="http://www.eu-seased.net/frameset_nonflash.asp">http://www.eu-seased.net/frameset_nonflash.asp</a>       | <p>Integration of three databases – EUROCORE, EUMARSIN and EUROSEISMIC. Searches of following databases will only list metadata - access to samples and data by request through relevant repository.</p> <p><b>EU-Seased database</b> - searchable catalogue of over 300.000 seafloor samples from the ocean basins and continental shelves, held at European institutions.</p> <p><b>EUROSEISMIC database</b> - searchable catalogue of over 2.5 million line kilometres of marine seismic and sonar survey data held at European institutions.</p> |
| Hawaii Mapping Research Group (HMRG)                       | Yes (grids and some data) | <a href="http://imina.soest.hawaii.edu/HMRG/index.php">http://imina.soest.hawaii.edu/HMRG/index.php</a>           | <p>HMRG is part of the Hawaii'i Institute of Geophysics and Planetology (HIGP), School of Ocean and Earth Science and Technology (SOEST), University of Hawai'i. The site provides access to a range of bathymetry (multibeam) and other data acquired by various HMRG systems.</p> <p><b>Main Hawaiian Islands Multibeam Synthesis</b> - synthesis of all of the available multibeam data for the Main Hawaiian Islands.</p> <p><b>HAWAII MR1 Data Archive</b> - digital global archive for the HAWAII MR1 system.</p>                              |

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| IFREMER/Systèmes d'Informations Scientifiques pour la Mer (SISMER, Brest, France) | Yes for some, other on request | <a href="http://www.ifremer.fr/sismer/index_UK.htm">http://www.ifremer.fr/sismer/index_UK.htm</a>   | Geological and geophysical project and cruise data acquired by various French marine research laboratories.<br><b>DATABASES directory</b> - inventory of French marine data sets or international databases collected by French research agencies.<br><b>OCEANOGRAPHIC CRUISES directory</b> - contains more than 6700 cruise summary reports from cruises conducted mainly by French research vessels.<br><b>SISMER data bank</b> – search for and access a range of geophysical and oceanographic data |
| Integrated Ocean Drilling Program (IODP)  |                                | <a href="http://www.iodp.org/">http://www.iodp.org/</a>   | General information related to scientific ocean drilling   |
|   | Yes for some, other on request | <a href="http://www.iodp.org/weblinks/Tasks-Scientists/Request-Access-to-Samples/">http://www.iodp.org/weblinks/Tasks-Scientists/Request-Access-to-Samples/</a> | Access data and samples from DSDP, ODP and IODP drilling legs  |
| Japan Agency for Marine-Earth Science and Technology (JAMSTEC)                    | Yes for some, other on request | <a href="http://www.jamstec.go.jp/e/database/index.html">http://www.jamstec.go.jp/e/database/index.html</a>   | Search JAMSTEC's research activities or data/samples acquired on Japanese research vessels, plus link to the data publication pages via JAMSTEC database listing. A range of databases are accessible such as video, images, core samples, geophysical survey data etc.  |
|   |                                | <a href="http://www.jamstec.go.jp/dataportal/viewer.htm">http://www.jamstec.go.jp/dataportal/viewer.htm</a>   | <b>JAMSEC data search portal</b> – search cruise data via a map interface  |
| Japanese Oceanographic Data Center (JODC)   | Yes for some, other on request | <a href="http://www.jodc.go.jp/service.htm">http://www.jodc.go.jp/service.htm</a>   | <b>JODC Data On-line Service System (J-DOSS):</b> search for and access a range of physical-chemical oceanographic data acquired by Japan Coast Guard, Meteorological Agency, Fisheries Agency and other organizations.  |
| Lamont Doherty Earth Observatory (LDEO), Columbia University                      | Yes                            | <a href="http://www.marine-geo.org/">http://www.marine-geo.org/</a>   | <b>Marine Geoscience Data System (MGDS)</b> provides access to USA (NSF) supported data portals for Ridge 2000 and MARGINS programs, the Antarctic and Southern Ocean Data Synthesis, the Global Multi-Resolution Topography Synthesis, and Seismic Reflection Field Data Portal.  |

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|   | Yes              | <a href="http://www.virtualocean.org/">http://www.virtualocean.org/</a>                                       | <b>Global Multi-Resolution Topography (GMRT) synthesis</b> developed by the Marine Geoscience Data System (MGDS) is the primary base map for Virtual Ocean, providing access to a comprehensive multi-resolution compilation of satellite altimetry and multibeam bathymetry data. The GMRT synthesis is a continuously-updated compilation of seafloor topography derived from multibeam bathymetry data. It is maintained as a multi-resolution gridded digital elevation model of seafloor bathymetry. In the oceans, multibeam data are merged with lower-resolution compilations including satellite predicted bathymetry (Smith & Sandwell), the International Bathymetric Chart of the Arctic Ocean (IBCAO), and the SCAR Subglacial Topographic Model of the Antarctic (BEDMAP). |
| L'Institut de Physique du Globe de Strasbourg (IPGS)                | On request basis | <a href="http://cats.u-strasbg.fr/en_GB/cats.html">http://cats.u-strasbg.fr/en_GB/cats.html</a>               | <b>CATS Seismic Processing and Archiving Centre</b> is in charge of archiving and distributing ECORS seismic reflection and marine geosciences data acquired by a number of French research agencies. Access to marine geoscience survey data is provided through the site below.  |
|   | On request basis | <a href="http://cats.u-strasbg.fr/geomarines.html">http://cats.u-strasbg.fr/geomarines.html</a>               | <b>Marine Geoscience Data</b> – search for data acquired by the laboratoire de Géophysique Marine (EOST) and other French marine geoscience research agencies. Data sets available include SPOT pictures, digital earth models, marine seismics, sonar images, magnetic and aeromagnetic logs etc.   |
| National Geophysical Data Center (NGDC), Boulder, Colorado - GEODAS | Yes              | <a href="http://www.ngdc.noaa.gov/mgg/geodas/geodas.html">http://www.ngdc.noaa.gov/mgg/geodas/geodas.html</a> | <b>Marine Geophysical Data Access site</b> - general site. <b>GEODAS</b> manages several types of data including marine trackline geophysical data (worldwide bathymetry, magnetics, gravity and seismic navigation data collected during marine cruises from 1953 to the present. by US and foreign oceanographic institutions and government agencies), hydrographic survey data, aeromagnetic survey data, multibeam data and gridded bathymetry/topography. The site also provides access to a range of other data and information including the ETOPO2 and ETOPO1 topographic/bathymetric grids.  |

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|  | Yes                            | <a href="http://map.ngdc.noaa.gov/website/mgg/trackline/viewer.htm">http://map.ngdc.noaa.gov/website/mgg/trackline/viewer.htm</a> | Search and download track line data using a map-based interface. Data available includes bathymetry, magnetics, gravity, seismic navigation, seismic refraction, side scan sonar and single channel seismics. Coverage is worldwide. Searches by geographic area, year of cruise, institution, platform, cruise, date or parameter are available. Downloads can be customized to area, parameter and format. Digital data files are in the MGD77 exchange format, and contain a documentation header record and a series of data records.<br>NGDC also archives analog geophysical data including seismic reflection and refraction, side-scan sonar, and other data types which are searchable through the GEODAS. |
|  | Yes                            | <a href="http://www.ngdc.noaa.gov/mgg/bathymetry/multibeam.html">http://www.ngdc.noaa.gov/mgg/bathymetry/multibeam.html</a>       | <b>Multibeam bathymetric data at NGDC:</b> can be accessed via an interactive map (ArcIMS) Web interface. NGDC is the US national archive for multibeam bathymetric data and presently holds over 15.7 million nautical miles of ship tracklines (1187 surveys) received from sources worldwide. The multibeam database also includes hydrographic multibeam survey data from the National Ocean Service (NOS). The interactive map for these data displays the geographic locations of multibeam bathymetric data by institutional source or by instrument.  |
| National Oceanography Centre, Southampton (NOCS) | Yes for some, other on request | <a href="http://www.noc.soton.ac.uk/data/index.php">http://www.noc.soton.ac.uk/data/index.php</a>                                 | NOCS is linked to BODC. It is home to the <b>British Ocean Sediment Core Research Facility (BOSCORF)</b> and maintains part of the <b>Discovery Collections</b> , as well as ocean model data, some marine geophysics data and raw datasets.  |
|  | On request basis               | <a href="http://www.noc.soton.ac.uk/gg/facilities/seadog.php">http://www.noc.soton.ac.uk/gg/facilities/seadog.php</a>             | <b>SeaDOG</b> - metadata database that holds information on Deep Ocean Geophysical data. The actual data is stored offline in a large archive facility and copies can be requested by the UK academic community. Many types of geophysical data are included in the metadata database, such as bathymetry, sidescan, seismic, photographic, magnetics and gravity. Links to online searching of the SeaDOG database.  |

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| Scripps Institution of Oceanography (SIO)           | Yes              | <a href="http://gdc.ucsd.edu/">http://gdc.ucsd.edu/</a>   | <b>Geological Data Center, SIO</b> – access data, documents and images from expeditions by SIO since 1903 and include: underway geophysical data (including time, position, bathymetry, sidescan, magnetics, gravity, seismics), supporting data (including sea state, XBT, CDT, sea surface temperature and salinity) and station information for dredging, coring, trawling, and other over-the-side operations.    |
| United States Geological Survey (USGS)              | Yes              | <a href="http://walrus.wr.usgs.gov/infobank/">http://walrus.wr.usgs.gov/infobank/</a>                                   | <b>USGS CMG InfoBank</b> - information storage scheme of databases and software providing access to USGS coastal and marine data and metadata.  |
| University of Texas, Institute of Geophysics (UTIG) | Yes              | <a href="http://www.ig.utexas.edu/sdc/">http://www.ig.utexas.edu/sdc/</a>   | <b>Marine Seismic Data Centre:</b> NSF-sponsored seismic reflection/refraction data providing access to metadata, SEG-Y files, navigation files, seismic profile images, processing histories etc. Contains a geographic search engine, a metadata search engine, and metadata pages for the cruises. Access field and processed seismic data from over 180 cruises by the University of Hawaii, USGS, LDEO and UTIG. |
| Woods Hole Oceanographic Institution (WHOI)         |                  | <a href="http://www.whoi.edu/page.do?pid=7140">http://www.whoi.edu/page.do?pid=7140</a>                                 | <b>Data Centre, WHOI</b> - Lists and accesses a range of digital data repositories operated by WHOI. Some of these are further highlighted below.   |
|   | On request basis | <a href="http://mbdata.whoi.edu/mbdata.html">http://mbdata.whoi.edu/mbdata.html</a>                                     | <b>Multibeam Archive:</b> Contains data collected on research vessels using multibeam sonar systems operated by the Woods Hole Oceanographic Institution. Contains data from 72 R/V Knorr cruises and 69 R/V Atlantis cruises. The database is approximately 220 gigabytes in size, and contains approximately 1.6 billion individual bathymetry data points.   |
|   | Yes              | <a href="http://4dgeo.whoi.edu/shipdata/index.html">http://4dgeo.whoi.edu/shipdata/index.html</a>                       | <b>WHOI Ship Data-Grabber System:</b> provides the oceanographic community on-line access to underway ship data collected on the R/V Atlantis, Knorr, Oceanus, and Tioga.   |
|   | Yes              | <a href="http://www.marine.whoi.edu/CrusData.nsf?OpenDatabase">http://www.marine.whoi.edu/CrusData.nsf?OpenDatabase</a> | <b>Archival cruise data:</b> Archive of underway ship data collected on vessels operated by WHOI such as the R/V Atlantis, Knorr, Oceanus etc.  |

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|  | On request basis | <a href="http://gis1server.who.edu/website/SC2k/viewer.htm">http://gis1server.who.edu/website/SC2k/viewer.htm</a> | <b>SEDCORE 2000, Seafloor Sediments Data Collection:</b> browse collection and analyses of WHOI's Seafloor Sediments Laboratory. A collection of more than 14,000 archived marine geological samples recovered from the seafloor. The inventory includes long, stratified sediment cores, as well as rock dredges, surface grabs, and samples collected by the submersible Alvin. |
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