Ridge 2000 Database Report

A primary goal of the Ridge 2000 (R2K) Data Management Office is to facilitate the exchange and integration of the diverse data sets collected as part of the R2K program through the continued development of the R2K data repository and visualization tools. We encourage the contribution of R2K or R2K-related data sets relevant to all aspects of the mantle to microbe scope of the program.

Each repository data set is organized into one of two categories: (1) those associated with field expeditions, and (2) data compilations usually representing a derived data assemblage presented in a publication.

A static URL exists for each cruise or compilation (e.g. the website for Atlantis cruise AT11-07 is www.marine-geo.org/link/entry.php?id=AT11-07). The webpage displays an inventory of all sample and sensor data collected during the cruise along with field (raw) and derived (processed) data sets. A list of published references for the cruise is also provided, and individual data sets will soon be linked to the relevant publications. In the case of a data compilation, all related data files are provided as well as source publication information. Data quality information is included where information is available on the level of processing.

The quality number displayed for each data set distinguishes raw data (quality=0) from processed and derived data (quality >1). Unless otherwise directed by the PI, we intend to maintain derived data under proprietary restriction or password protection until it has been published.

NEW DEVELOPMENTS

Google Earth™ files for each ISS are now available (www.marine-geo.org/link/entry.php?id=R2K_GoogleEarth) and include bathymetry data, stations and samples and National Deep Submergence Facility (NDSF) dive navigation tracks with links to images held at WHOI/NDSF. Additional R2K data sets will be made available through Google Earth™ in the coming year.

The MGDS Global Multi-Resolution Topography (GMRT) digital elevation model, which serves as the basemap for GeoMapApp, is available through a Web Map Service and can be also accessed through Google Earth™. The Create Maps and Grids bathymetry interface now uses Google Maps™ functionality to enable users to create a grid or image of their area of interest from our GMRT digital elevation model (Figure 1).

Over the past year, improvements have been made to GeoMapApp—our map-based data exploration and visualization application—including the ability to import and save grids in GMT v3 and v4 NETCDF formats, create bathymetric profiles from user-imported and contributed high-resolution grids and save images as high-resolution bitmaps (suitable for publication). Graphing and color palette tools have been improved. Imported data tables can now be exported as Google Earth™ (*kmz) files (Figure 2). A searchable menu tool and an upgraded interface for accessing data through Web Feature Services (WFS) have been added to GeoMapApp. Instrument stations and sample locations from all R2K field programs can be accessed by selecting the MGDS web service [select Connect to WFS under File menu] and the ISS of interest. In the next six months we will release a Virtual Globe version of GeoMapApp built using NASA World Wind.

Continued collaboration with the NDSF at WHOI has resulted in the creation of a new digital event logger which is designed to improve usability at sea and simplify the extraction of metadata required by the database. Feedback was provided based on a prototype tested on several cruises in 2007. We anticipate the new event logger will be available for routine use on Jason 2 by the end of 2008.

The Media Bank (formerly Vent Image Bank) was launched in May 2008 as an online repository for high-quality images, video clips, photomosaics, illustrations and animations. Contributions are sought from all facets of the R2K program suitable for education/public outreach (EPO) and/or use within the research community. Media Bank content is accessible online and can be browsed or searched. Copyright and use restrictions are honored. Options are provided to make content fully accessible or available with restricted access. Visit media.marine-geo.org to browse the gallery.

Members of the R2K Data Portal team co-convened the International Data Exchange Workshop in Kiel, Germany last...
May—an event attended by 70 participants from around the world. The workshop focused on developing improved international data sharing partnerships and strategies for mid-ocean ridge and continental margin studies, and was sponsored by R2K, InterMargins, InterRidge and MARGINS. For more information, including the the workshop report, visit: www.nsf-margins.org/Datawkshp07.

NEW DATA

The R2K database group (www.marine-geo.org/ridge2000) would like to thank the many investigators who have contributed cruise information and new data sets since the last R2K newsletter report. We thank the following investigators for their recent data contributions:

**East Pacific Rise**

ISEA probe fluid chemistry data from AT11-10, AT11-26, and AT15-06 were contributed by George Luther.

Photo mosaics from AT11-10 at the EPR were submitted by Tim Shank.

General cruise, sampling, Jason 2 launch information and data from cruise AT15-17 in April-May 2007 (Chief Scientist: Klein) are available. Cruise operations primarily focused on the 9°03’N Overlapping Spreading Center but also included sonar surveys of the EPR ISS bull’s eye region.

Preliminary 1-m SM2000 bathymetric grids from EPR benchmark surveys generated from the EPR ISS Infrastructure Dive (J2-268; AT15-17) in spring 2007 are now available.

Basic cruise data for fall 2007 cruise AT15-27 (Chief Scientist: Von Damm) are now available. Information on cruise AT15-13 (November-December 2006, Chief Scientist: Von Damm) rock, bio and fluid samples, transponder operations, TowCam lines information, and details of deployments of temperature and resistivity probes, colonization substrates and markers are all now available.

Basic cruise data for Fall 2007 cruise AT15-26 (Chief Scientist: Mullineaux) including Atlantis navigation, raw and processed ADCP and swath bathymetry files, as well as processed Alvin navigation and sonar data are now available.

Original Argo camera survey data of the EPR site collected during the VNTR03WT cruise (November 1989, Chief Scientist: Haymon) are now available. Deeply towed Argo camera images and CTD data can be downloaded; dredge stations and rock sample information are available.

**Lau Basin**

Fluid chemistry data derived from ship-based CTD casts and IGT and Major fluid samples collected with Jason during TUIM05MV (Chief Scientist: Tivey) were contributed by Mike Mottl.

Final processed ABE SM2000 bathymetry maps, grids and data points from KM0417 (Chief Scientist: Langmuir) were contributed by Dana Yoerg.

Final ultra-high resolution bathymetric data and grids for six vent fields at the Lau site were contributed by Vicki Ferrini (TUIM05MV, Chief Scientist: Tivey).

Renavigated positions were added for instruments deployed at the Lau site during MGLN07MV (Chief Scientist: Fisher).

CTD and MAPR data have been made available by Baker/Resing for Lau Basin cruise KM0410 (Chief Scientist: Martinez).

Jason II photo mosaics from cruise MGLN07MV (Chief Scientist: Fisher) have been contributed.

EM120 sidescan grid from cruise KM0410 (April-May 2004, Chief Scientist: Martinez) is now available.

**Juan de Fuca**

Field and processed CTD data from AT11-14 (Chief Scientist: McDuff), AT11-31 (Chief Scientist: Lilley), AT15-09 (Chief Scientist: Kelley) were contributed by Jonathan Kellogg.

Navigation files for ROV Tiburon dives conducted at Axial Volcano during WF2983 (Sep 2004, Chief Scientists Gill and Stakes) are now available.

ABE vehicle data (eH, temperature, optical backscatter, magnetics and navigation) are now available from AT11-14 (Chief Scientist: McDuff).

TowCam MAPR data, and towed and lowered raw/processed CTD data and documentation were added for time-critical studies cruise
TN177B (March 2005, Chief Scientists: Cowen and Baker). Field and processed EM300 multibeam data are also available.


Other Ridge Areas

Bathymetry and gravity grids and images for the Mid-Atlantic Ridge ~30°N were contributed by Donna Blackman (MAR:30N_Blackman).

Revised photo mosaics from Lucky Strike (KN145-19) were submitted by Javier Escartin. Basic cruise metadata and bathymetric grids have also been added for this cruise.

Basic cruise information for KN189-04 (June-July 2007, Chief Scientist: Hey) to the Reykjanes Ridge now available.

For the Gakkel Ridge AMORE cruise, HLY-01-02, on USCG Healy (2001, Chief Scientist: Michael) bathymetry grids, images and information on CTD, dredge and rock core stations now available.

DSL120 bathymetry data (20 m resolution) and magnetics grids (~100 m resolution) from TAG (KN142-05) were contributed by Maurice Tivey, and 2 m DSL120 bathymetry grids of the TAG mound (KN142-05) were contributed by Sheri White.

Contributed by Milene Cormier, composite grids and images of bathymetry, gravity, crustal age and magnetization were added for areas along the EPR at the 17°S MELT area, between 18°-22°S and 15°-21°N.

Basic cruise information and bathymetry data for the 1999 EPR STOWA expedition between 17°-19°S (AT03-31, Chief Scientist: Sinton) are available.

Javier Escartin provided metadata and images of deployed instruments at Lucky Strike.

New Contributions

We welcome all contributions of data from R2K-funded and other related programs as well as data from any mid-ocean ridge areas. In particular, we are soliciting contributions of data from slow, ultra-slow, and hotspot-influenced portions of the mid-ocean ridge system. Broader access to data from all mid-ocean ridge areas will help foster new comparative studies and ensure the preservation of the legacy of mid-ocean ridge research across our community.

Ridge 2000 Media Bank

The R2K Media Bank is an online repository of high-quality images, videos, illustrations and animations suitable for use within the R2K community and for education and public outreach (EPO). An alpha site was launched in May 2008, and can be accessed at media.marine-geo.org.

Images and video in the gallery can be browsed as thumbnails or as preview images (Figure 1). A full suite of metadata is provided for each image, enabling links to relevant cruises and database entries (Figure 2). Images are tagged with metadata to provide keyword search functionality, and are sorted into categories (e.g. Geology, Biology). Keys can also be included in the URL to enable direct links to images. For example, media.marine-geo.org/search/node/EPR will assemble all images from the East Pacific Rise.

We encourage the contribution of high-quality media for inclusion in the Media Bank, and can accommodate restricted downloads of full-resolution images. For more information on how to submit media, contact Vicki Ferrini (ferrini@ldeo.columbia.edu).