

Rolling Deck to Repository (R2R) 2016 Update

R.Arko+S.Carbotte -LDEO, C.Chandler -WHOI, S.Smith -FSU, K.Stocks -SIO



Overview

Mission:

Stewardship of routinely-acquired environmental sensor data from U.S. academic research vessels

Support:

NSF +NOAA, ONR, SOI

Services:

- Publish master cruise catalog
- Organize, archive, and disseminate original field data+documents
- Assess data quality
- Create post-field data products
- Support at-sea event logging



Alpha Helix (retired)



Atlantic Explorer



Atlantis



Blue Heron



Cape Hatteras (retired)



Clifford A. Barnes



Corwith Cramer



Endeavor



Eltanin (retired)



F.G. Walton Smith



Falkor



Healy



Hugh R. Sharp



Ka'imikai-O-Kanaloa



Kilo Moana



Knorr (retired)



Laurence M. Gould



Marcus G. Langseth



Maurice Ewing (retired)



Melville (retired)



Nathaniel B. Palmer



Neil Armstrong



New Horizon (retired)



Oceanus



Okeanos Explorer



Pelican



Point Sur



Polar Sea



Robert C. Seamans



Robert D. Conrad (retired)



Robert Gordon Sproul



Roger Revelle



Ronald H. Brown



Sally Ride



Savannah



Sikuliaq



Thomas G. Thompson



Vema (retired)



Thomas Washington (retired)



Wecoma (retired)



Updates

R/Vs recently joined

- *Neil Armstrong*
- *Sally Ride*

+ continue backfill cruises from selected older R/Vs



Sally Ride

R2R Advisory Panel

Semi-annual Meeting
@SIO
April 5-6, 2016



Updates *(cont.)*

Data In

- Coastal+Local R/Vs cont. moving to Dropbox
- Ocean+Global R/Vs continue mix of network transfers and USB portable drives



Data Out

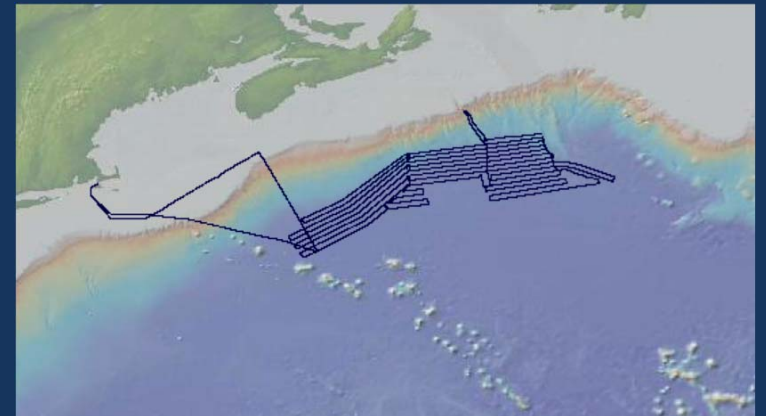
- Cont. deliver data to NCEI (NOAA Data Centers)
- Backup copy of original cruise data in Amazon Glacier



Standard Products

Processed Data

- Shiptrack Navigation
 - Full Resolution
 - 1 Min.
 - Control Points
- Underway METOC
- Underway Geophysics
 - Gravity
 - Magnetics
 - Bathymetry
- CTD Hydrocasts



Cruise AT22 (Scotian Shelf Survey)

Documentation

- Cruise Summary Reports
- Dataset QA Reports
- “Linked Data” Graph



Quality Assessment

- GNSS/INS
- METOC
- Multibeam
- Gravity
- Magnetics
- Subbottom *New!*
- CTD *New!*
- ADCP *(Dev)*
- Flowthru *(Dev)*



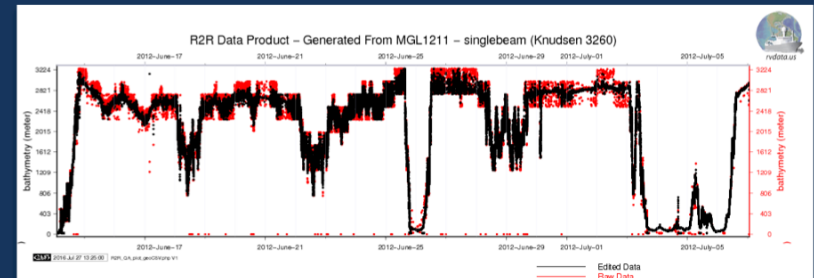
New!

Quality Assessment: Subbottom

Original KEB files are examined

Typical Tests:

- % NonZeroLengthFiles
- % ValidFormatFiles
- % RecordsWithoutErrorCode
- % RecordsWithValidDepth
- % RecordsWithValidTime
- % RecordsWithValidPosition
- % RecordsWithValidPositionFormatFlag
- % RecordsWithoutOutliers
- % FilesWithSoundVelocity
- % FilesWithSubbottom
- HasRequiredMetadata



*Edited bathy profile created where possible.
(Example: MGL1211)*



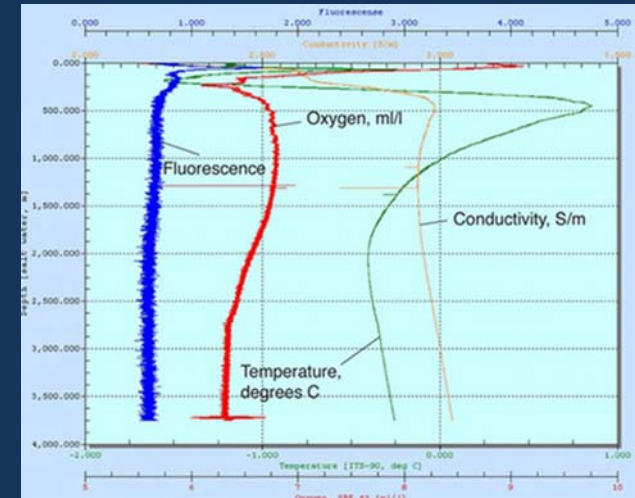
New!

Quality Assessment: CTD

Original HEX/DAT, CON, HDR files are examined

Typical Tests:

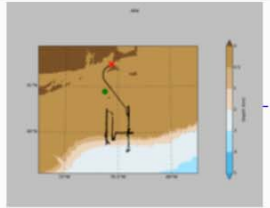
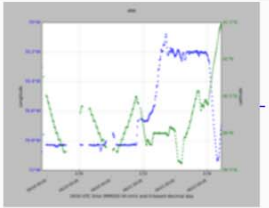
- All Files present for Cast
- Has Lat+Lon
- Min Cast Depth
- Min/Max Sensor Values (per Vendor Spec)
- Gaps
- Spikes
- Constant Values
- Gradients
- Outliers
- Dual Sensor Presence (T+C)
- Dual Sensor Diff (T+C)



(In Dev)

Quality Assessment: ADCP

Use UHDAS/CODAS to generate standard post-cruise summary reports+plots.

CATEGORY	DESCRIPTION	FILE
overview	 	nav_plot_all_topo.png nav_plot_all_txy.png
	<pre>===== start of report for /data/r2r/cruise/AR6/fileset/122309/data/PART_3 ===== -----raw----- raw: cnav 91 files (ar2016_168_72437 - ar2016_174_57602) raw: gyro 91 files (ar2016_168_72437 - ar2016_174_57602) raw: gyro2 36 files (ar2016_168_72437 - ar2016_174_57602) raw: posmv 91 files (ar2016_168_72437 - ar2016_174_57602) adcp: wh300 .raw 2 files (ar2016_168_72437 - ar2016_168_76834) adcp: wh300 .raw.log 2 files (ar2016_168_72437 - ar2016_168_76834) adcp: wh300 .raw.log.bin 2 files (ar2016_168_72437 - ar2016_168_76834) adcp: os150 .raw 74 files (ar2016_168_73521 - ar2016_174_36000) adcp: os150 .raw.log 74 files (ar2016_168_73521 - ar2016_174_36000) adcp: os150 .raw.log.bin 74 files (ar2016_168_73521 - ar2016_174_36000) adcp: os38 .raw 4 files (ar2016_171_73888 - ar2016_171_80010) adcp: os38 .raw.log 4 files (ar2016_171_73888 - ar2016_171_80010) adcp: os38 .raw.log.bin 4 files (ar2016_171_73888 - ar2016_171_80010)</pre>	

<http://adcp.rvdata.us/reports/>



(On Deck)

Quality Assessment: Flow-thru

2017 start developing QA process for

- Real-time sea temperature, salinity, and one additional parameter
- Post-cruise fluorometry



www.rvdata.us/catalog/EN537


Supported by: NSF | NOAA | ONR | SOI

Rolling Deck to Repository (R2R)

Home About R2R Cruise Catalog QA Dashboard News Contact Us Internal

Catalog Status
 (In Service) Vessels: 22
 Cruises: 6045
 Archived Files: 22216407
 April 4, 2016

Home
 Cruise Catalog: EN537



Operator: University of Rhode Island
 Vessel: Endeavor
 Cruise DOI: 10.7284/904058

Cruise ID	Start Date	Start Port	End Date	End Port
EN537	2014-04-01	Narragansett, Rhode Island	2014-04-16	Narragansett, Rhode Island

Details

Project: Eastern North American Margin (ENAM) Community Seismic Experiment (Info)

SCIENCE PARTY

FILE MANIFEST

UNDERWAY DATA SETS (ORIG FIELD DATA)

Device Type	Make-Model [Location]	Files	Archive Status
adcp	Hawaii UHDAS	List	R2R Download
ctd	Sea-Bird SBE-911plus	List	R2R Download
fluorometer	Turner 10-AU	List	R2R Download
gnss	Furuno GP-90D	List	R2R Download
gnss	Northstar 952	List	R2R Download
gnss	Trimble NT-300D	List	R2R Download
gyrocompass	Sperry MK-37 [2]	List	R2R Download
gyrocompass	Sperry MK-37 [1]	List	R2R Download
speedlog	EDO MRQ-4015D	List	R2R Download
tsg	Sea-Bird SBE-21	List	R2R Download

R2R PRODUCTS (POST-FIELD PROCESSED)

RELATED CRUISES

EN546
MGL1408

FUNDING AWARDS

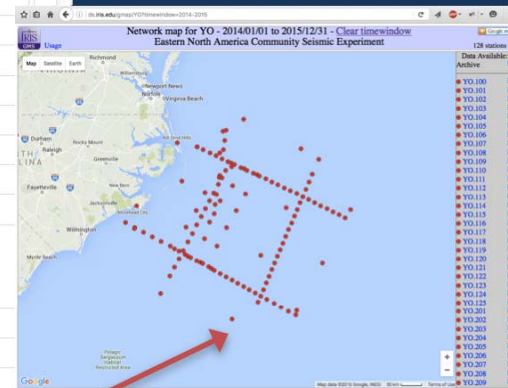
RELATED DATA

IRIS Data Management Center (Info)

Data (OBS)

Cruise Catalog

- Vessel, Cruise ID+Title
- Trackmap
- Program, Campaign *New!*
- Dates+Ports
- Science Party
- File Manifest
- Instruments and Datasets
- Standard Products
- Related Cruises *New!*
- Funding
- Related Data+Links



Cruise Search

- Vessel
- Cruise ID
- Dates
- Program
- Campaign
- WESN
- Institution
- Person

Cruise Search

Vessel: (ANY)

Cruise: (quick select of recent cruises in the last ~three years) (ANY)

Dates: 1950 01 01 From 2020 12 31 To

Program: (broad community initiative, typically decadal-scale) **Cascadia**

Campaign: (series of closely-related cruises for a single project) (ANY)

Location: (pan and zoom to adjust bounding box)

N: 88
W: -180 E: 180
S: -76

Person: (science party and/or vessel technicians) (ANY)

Institution: (ANY)

Search Reset

Search Result

Search Again

Query = Cascadia Initiative (Cascadia)
Number of Cruises = 25

Cruise ID	DOI	Vessel	Depart Date	Port	Arrive Date	Port
TN331	10.7284/906264	Thompson	2015-10-01	Newport	2015-10-15	Newport
OC1508B	10.7284/906267	Oceanus	2015-08-26	Port Hueneme	2015-09-02	Newport
OC1409A	10.7284/900721	Oceanus	2014-09-07	Newport	2014-09-26	Newport
OC1408A	10.7284/900719	Oceanus	2014-08-09	Newport	2014-08-13	Newport
OC1407B	10.7284/900718	Oceanus	2014-07-24	Newport	2014-08-06	Newport
OC1407A	10.7284/900717	Oceanus	2014-07-10	Newport	2014-07-19	Newport
TN312	10.7284/900991	Thompson	2014-06-22	Newport	2014-07-06	Seattle
OC1405B	10.7284/900714	Oceanus	2014-05-28	Newport	2014-06-02	Newport
OC1405A	10.7284/900713	Oceanus	2014-05-13	Newport	2014-05-23	Newport
OC1308B	10.7284/900694	Oceanus	2013-08-29	Newport	2013-09-06	Newport
OC1308A	10.7284/900693	Oceanus	2013-08-18	Newport	2013-08-22	Newport
OC1307C	10.7284/901918	Oceanus	2013-08-01	Newport	2013-08-10	Newport
AT26-02	10.7284/900486	Atlantis	2013-06-25	Astoria	2013-07-09	Astoria
OC1306A	10.7284/901805	Oceanus	2013-06-17	Newport	2013-06-22	Newport
OC1305C	10.7284/901804	Oceanus	2013-06-03	Newport	2013-06-14	Newport
OC1209A	10.7284/900969	Oceanus	2012-09-10	Newport	2012-09-20	Newport
OC1208B	10.7284/900683	Oceanus	2012-08-31	Newport	2012-09-07	Newport
OC1208A	10.7284/902582	Oceanus	2012-08-23	Newport	2012-08-30	Newport

<http://www.rvdata.us/search>



NavManager Tool

Open-source software package:

- Convert original GNSS/INS data to a common format
- Perform quality assessment
- Produce suite of down-sampled quality-controlled files

<http://github.com/rvdata/NavManager>

Questions: cjolson@ucsd.edu




Vessel Profiler

Web-based tool to view+edit instrument list and data directory mapping

Linked to
UNOLS
Inventory

Vessel Device List



[Sikuliag](#)
Status: Active
R2R code: SKQ
Operator id: edu.uaf
Call sign: WDG7520

Admin Set a Vessel Date:
20160923

R2R ID	Device Type	Make/Model	Fileset count	Tools
100580	acqsys	Hawaii UHDAS	23	Edit Unols
100581	adcp <small>parent device:100580</small>	- RDI OS-150	.	Edit Unols
100582	adcp <small>parent device:100580</small>	- RDI OS-75	.	Edit Unols
100605	anemometer	Gill WindObserver 75	44	Edit Unols
100586	ctd	Sea-Bird SBE-911plus	14	Edit Unols
100578	expendableprobe	Sippican MK21	7	Edit Unols
100592	flowmeter	Optiflux 5000	22	Edit Unols
100593	flowmeter	Omega FP-2541	20	Edit Unols
100594	fluorometer	Turner Cyclops-7	20	Edit Unols
100595	gnss	C&C C-Nav 3050	25	Edit Unols
100579	gravimeter	Bell BGM-3	25	Edit Unols
100596	gyrocompass	Sperry NAVIGAT 2100 (primary)	25	Edit Unols
100597	gyrocompass	Sperry NAVIGAT 2100 (secondary)	25	Edit Unols
100591	ins <small>Primary Navigation</small>	Kongsberg Seapath 320+	25	Edit Unols
100598	metstation	Vaisala WXT520	25	Edit Unols
100584	multibeam	Kongsberg EM710	18	Edit Unols
100583	multibeam	Kongsberg EM302	23	Edit Unols
100600	radiometer	Biospherical QSR-2150	24	Edit Unols
100599	radiometer	RMR Co. PRP	24	Edit Unols
100588	raingauge	OSI ORG-815 (across)	11	Edit Unols
100587	raingauge	RM Young 50202	21	Edit Unols
100590	raingauge	OSI ORG-815 (forward)	15	Edit Unols
100603	sensor:soundspeed	AML SVXchange	13	Edit Unols
100602	singlebeam	ELAC Nautik LAZ 5100	23	Edit Unols
100585	singlebeam	Knudsen 3260	3	Edit Unols
100601	singlebeam	Kongsberg TOPAS PS-18	24	Edit Unols
100606	tempprobe_water	Heitronics CT15.10	24	Edit Unols
100589	transmissometer	WET Labs C-Star	1	Edit Unols
100604	tsg	Sea-Bird SBE-45	22	Edit Unols

<http://tech.rvdata.us/>



Event Logger

Recent deployments
Jun. 2015-May 2016:



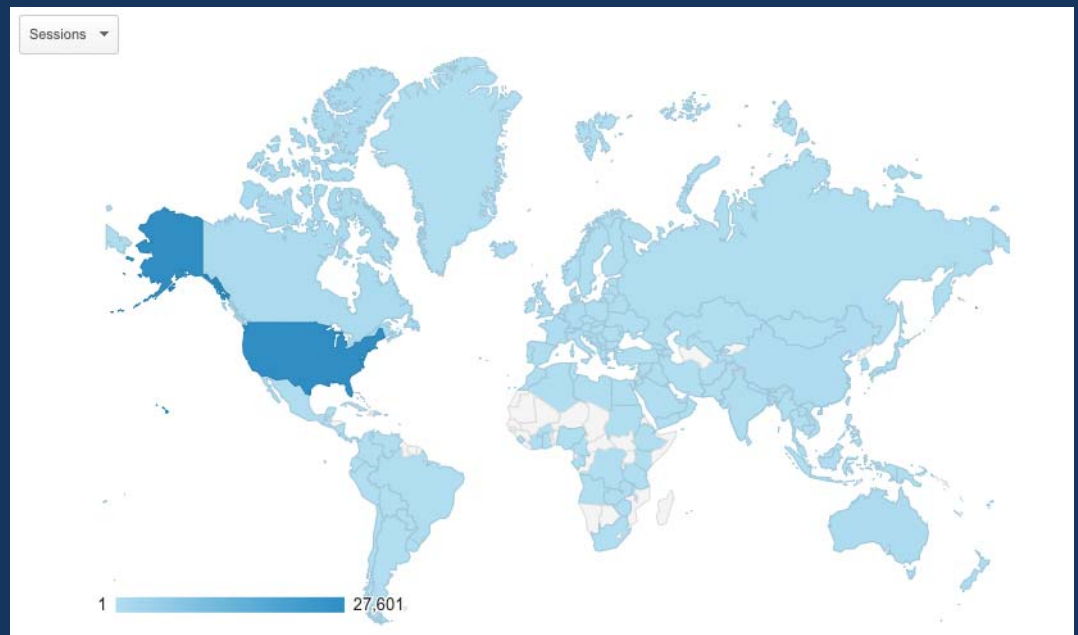
(DreamPlug™)

<i>Armstrong</i>	AR1-01	Shakedown
	AR1-03	Trials
	AR1-06	Corbett
	AR1-07	Lin
	AR3	Shank
	AR4B,C	Plueddemann
<i>Atlantis</i>	AT31	Plueddemann
	AT31B,C	Plueddemann
	AT32	Behrenfeld
	AT33-02	Equip. Test
	AT33-03	Kurz
	AT34	Behrenfeld
<i>Revelle</i>	RR1508	Harris
	RR1601	Appelgate
	RR1603	McDonald
	RR1604	Barbero
<i>Sikuliaq</i>	SKQ201512S	Thompson
<i>Thompson</i>	TN326	Kelley
	TN342	Fram

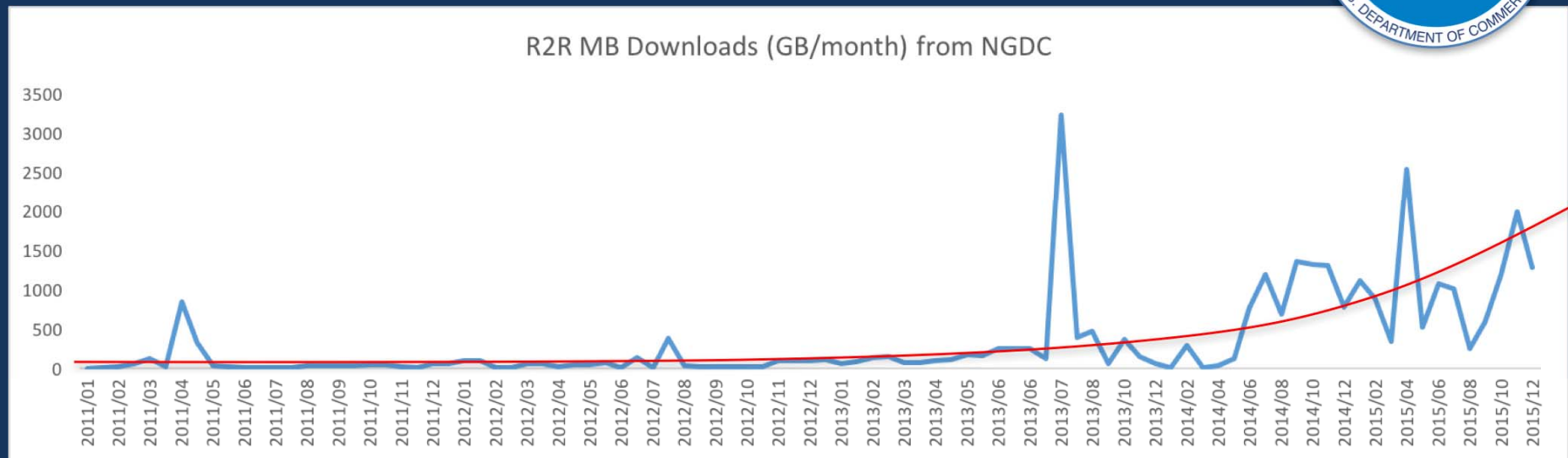


Web Traffic

- Trending upward since R2R site launch
- Averaging ~1,000 sessions/month
- 40% of visitors return at least once
- Visitors from 157 countries; 68% US



Data Downloads



- Currently averaging ~1.5 TB/month of multibeam file downloads from R2R-contributed cruises.
(Note, filtered for crawlers/robots.)





SAMOS Data Assembly Center

History

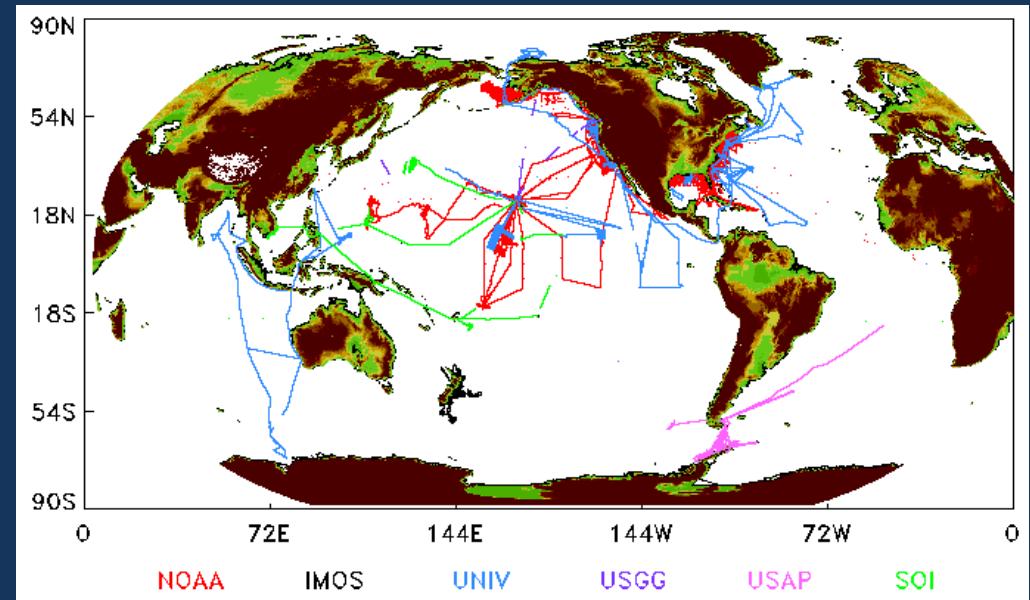
- Providing high-quality underway METOC data to scientists since 2005

Users

- Satellite algorithm developers
- Researchers investigating air-sea exchange processes
- Ocean and atmosphere modelers
- Operational forecasters @IMOS

Status

- 31 research vessels participating in FY2016
- ~30-40K 1-minute observations per month per vessel



(SAMOS data coverage: Oct 1, 2015 - Sep 30, 2016)



Partnerships



EarthCube

SeaView project: Create thematic data collections , organized+formatted.

Collaborators

CCHDO

BCO-DMO

R2R

OOI

OBIS

K.Stocks @SIO

Lead

SeaView Thematic Data Collections

This is an early prototype page for the SeaView EarthCube Project

SeaView Thematic Data Collections

Pioneer Data Collection

The Ocean Observatory Initiative has deployed the Pioneer array of sensors on the shelf and slope of the US East Coast. To serve scientists developing research projects around the OOI assets, SeaView is providing links to data from the Pioneer Array region in its 5 partner repositories, using two standard formats: ODV and netCDF. Data collected from OOI sensors is available through the OOI data portal; below we provide co-located data from the SeaView repositories.

[Access Pioneer data](#)

About SeaView

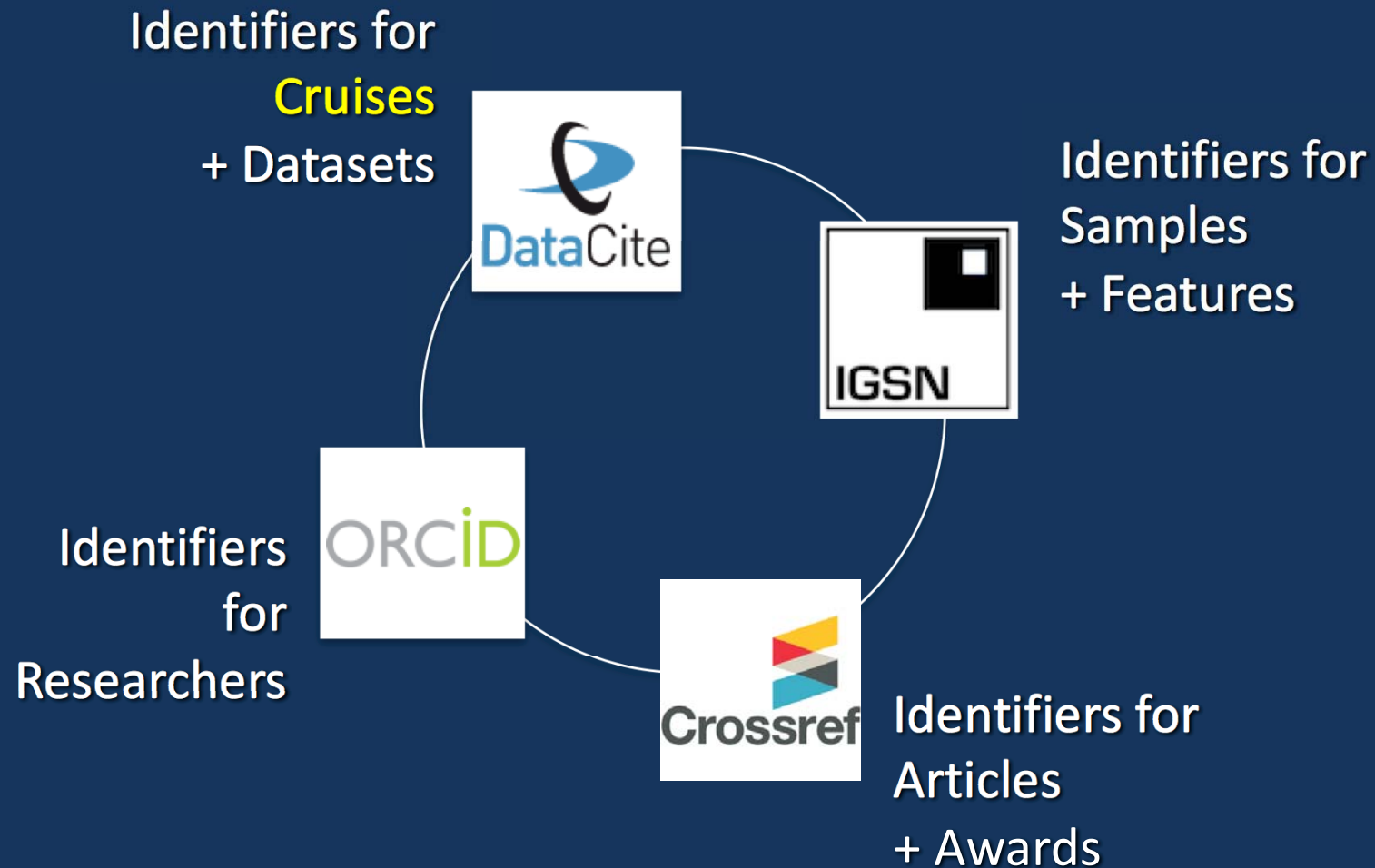
The SeaView project is working with existing data repositories to make oceanographic data more Findable, Accessible, and Interoperable. The premise is simple and has two components. First, reformatting data for scientist's tool of choice can be a barrier and a time sink...

[Read more](#)

<http://seaviewdata.ucsd.edu/>



Data Citation



Data Citation (cont.)

ORCID

Cruise @R2R

Award @NSF

Paper

Report
Aerobic Microbial Respiration in 86-Million-Year-Old Deep-Sea Red Clay
Hans Ray^{1,*}, Jens Kallmeyer², Rishi Ram Adhikari², Robert Pockalny³, Bo Barker Jørgensen¹, Steven D'Hondt³
*To whom correspondence should be addressed. E-mail: hans.ray@biology.yale.edu
Science 18 May 2012:
Vol. 336, Issue 6083, pp. 922-925
DOI: 10.1126/science.1219424
Article
Figures & Data

ORCID
331680 ORCID iD and counting. See more...
Jens Kallmeyer
ORCID ID
orcid.org/0000-0002-6440-1140
Other IDs
Loop profile: 30680
ResearcherID: I-3554-2012
Education (4)
II Sort
Max-Planck-Institute for Marine Microbiology, Bremen, Bremen, Germany
2000-01 to 2003-09-30 (Biogeochemistry)

Rolling Deck to Repository (R2R)
Supported by: NSF | NOAA | ONR | DOI
Home About R2R Cruise Catalog QA Dashboard News Contact Us Internal
g Status
(In Service) Vessels: 2/3
Cruises: 01/17
Used Files: 22917251
June 23, 2018
Cruise Catalog: KN195-03
Operator: Woods Hole Oceanographic Institution
Vessel (retired): Knorr
Cruise DOI: 10.7284/...

National Science Foundation
WHERE DISCOVERIES BEGIN
FUNDING AWARDS DISCOVERIES NEWS PUBLICATIONS STATISTICS ABOUT NSF FASTLANE
Awards
Award Abstract #0752336
Oceanographic control and global distributions of subsurface microbial life and activity
NSF Org: OCE Division Of Ocean Sciences
Initial Amendment Date: March 21, 2008
Latest Amendment Date: March 21, 2008
Award Number: 0752336
Award Instrument: Standard Grant
Program Manager: David L. Garrison OCE Division Of Ocean Sciences GEO Directorate For Geosciences
Start Date: September 1, 2008
End Date: August 31, 2013 (Estimated)

EarthChem
HOME ABOUT CONTRIBUTE DATA RESOURCES ACCESS DATA HELP CONTACT US
Library Menu
Library Home
Browse
Search
Submit
Data Templates
My EarthChem Library
Dataset Information
Basic Information
Dataset Title: Dissolved inorganic carbon measurements of marine sediment from Long Core Expedition KN195-03
Author(s): Savage, Justice; D'Hondt, Steven; Pockalny, Robert
Dataset DOI: doi:10.1594/IEDA/100642
Date Released/Published: 10/15/2015
Abstract or Description: The KN195-03 research cruise on board the R/V Knorr (Chief Scientist Steven D'Hondt) took place in January-February 2009 and had as primary objective to test and refine quantitative models for the magnitude and geographic distribution of subsurface biomass and organic-fueled subsurface respiration. Sediment cores were taken at thirteen sites across the equatorial Pacific and the North Pacific Gyre. Knowledge of the chemical composition of the porewater throughout the collected cores is fundamental to answer the driving research questions of this scientific expedition. The shipboard geochemistry laboratory generated interstitial waters by squeezing 597 individual samples, and by extracting an additional 153 solutions by Ritten sampling. Due to the time needed to analyze this very high number of samples, not all were analyzed for each dissolved constituent. We present here the shipboard porewater dissolved inorganic carbon concentration dataset, measured by Marianda AIRC₂ infrared systems.
Citation: Savage, Justice; D'Hondt, Steven; Pockalny, Robert (2015): Dissolved inorganic carbon measurements of marine sediment from Long Core Expedition KN195-03. EarthChem Library. <http://dx.doi.org/10.1594/IEDA/100642>

SESAR
Back to SESAR Home My Home My Samples My Groups Sample Registration Transfer Ownership Search
My Account Logout
Sample Search
Samples Found: 795
Page 1 of 52
Table with columns: ID#, Sample Name, Object Type, Material Classification, Latitude, Longitude, Location

BCO-DMO
Biological & Chemical Oceanography Data Management Office
DATABASE
Programs: 36
Projects: 687
Deployments: 2357
Datasets: 8062
Instruments: 408
Parameters: 1372
People: 2093
Affiliations: 485
Funding: 83
Awards: 1363
Dataset: Subseafloor Microbial Cell Counts
Deployment: KN195-03
Microbial cell counts in sediment cores collected during KN195-03.
Get Data Map It
Principal Investigator: Dr Steven L. D'Hondt (University of Rhode Island, URI-GSO)
Co-Principal Investigator: Dr Robert Pockalny (University of Rhode Island, URI-GSO)
Dr David C. Smith (University of Rhode Island, URI-GSO)
Dr Arthur J. Spivack (University of Rhode Island, URI-GSO)
Contact: Dr Jens Kallmeyer (Helmholtz Centre Potsdam, GFZ)
BCO-DMO Data Manager: Shannon Rauch (Woods Hole Oceanographic Institution, WHOI BCO-DMO)
Project: Oceanographic control and global distributions of subsurface microbial life and activity (Subseafloor Microbial Life)

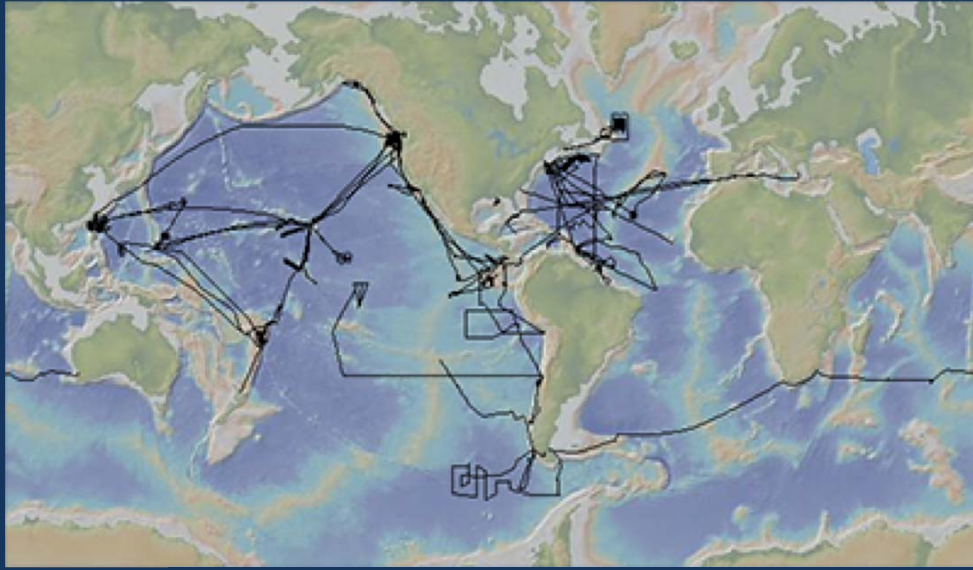
Dataset @ECL

Samples @SESAR

Dataset @BCO-DMO



Data Syntheses

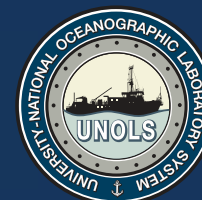
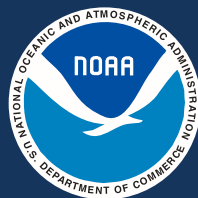
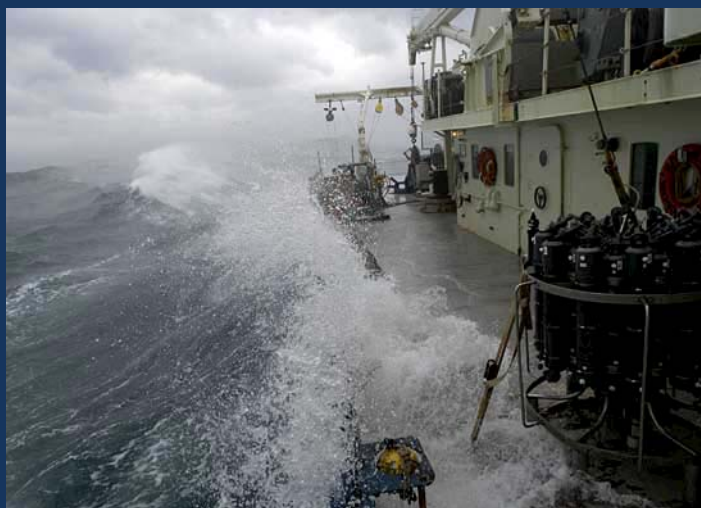


(Multibeam shiptracks from R2R in GMRT Synthesis)

R2R contributes:

- Multibeam sonar data to Global Multi-Resolution Topography Synthesis (**GMRT**)
- METOC data via SAMOS to Int'l Comprehensive Ocean-Atmosphere Data Set (**ICOADS**)
- CTD hydrocasts to World Ocean Database (**WOD**)





info@rvdata.us

