1. Initial NSDL Collections Track Award

Initiate the collaboration

   Librarians
   Researchers
   Computer Scientists

Build first 3 collections
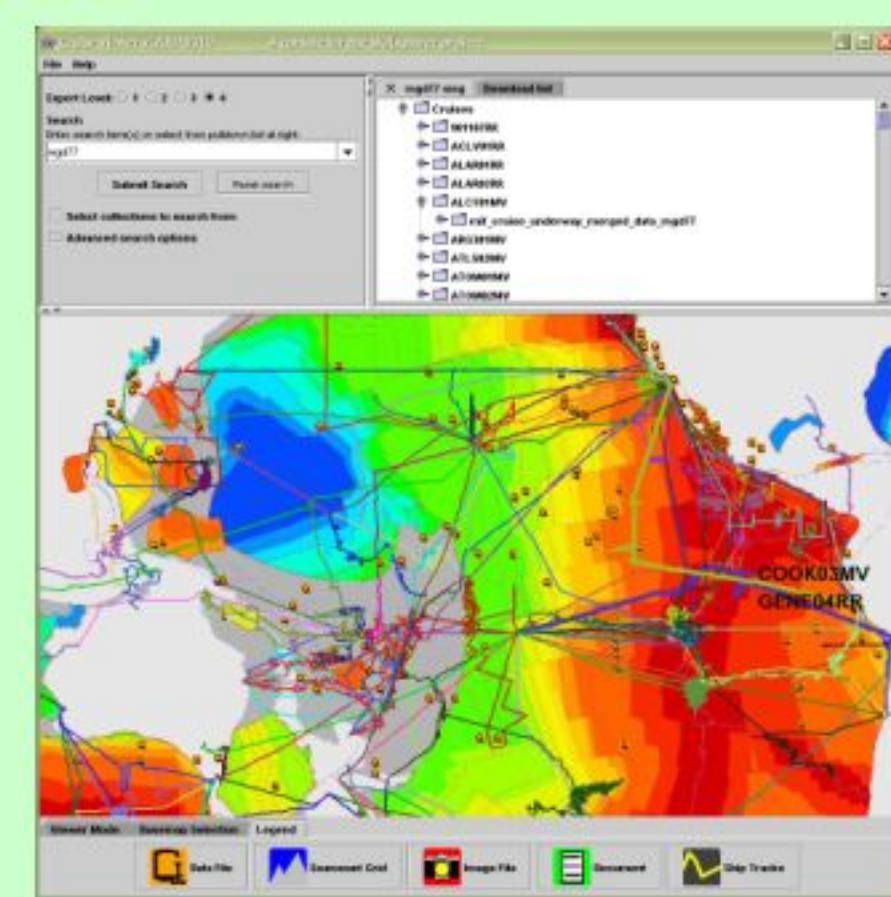
Floating Digital Library Workshop
New Zealand to Samoa, 2002

Scalable digital library architecture
   150,000 objects, 500 GB

NSDL 01-21684 Bridging the Gap
Between Libraries and Data Archives

2. ITR open access to shipboard archives

Auto-harvesting data and metadata

ITR 01-13999 SIOExplorer:
Web Exploration of Seagoing Archives

3. OCE Multibeam Search and Rescue

"No Data Left Behind" policy

Preserve endangered species
at-risk digital meda

OCE 02-20942 Multibeam Database:
Search and Rescue

4. NSDL ERESE Teachers Workshops

Extend the collaboration
   Teachers
   Students

ERESE NSDL

(see companion posters)

NSDL 03-33705 Mobilizing Enduring NSDL Resources in Plate
Tectonics Research for Earth Science Education

Augmentation for Teachers-at-Sea Expedition on R/V Sproul

5. OCE integrate large-scale physical collections

3500 rock dredges
6600 sediment cores

OCE 03-51961 Marine Geological Collections:
Scripps Institution of Oceanography

6. ATM Marine Metadata Interoperability

Community clearinghouse
   Metadata technology
   content
   controlled vocabularies
Lead institution:
Monterey Bay Aquarium
Research Institute (MBARI)
http://marinemetadata.org
ATM 04-47031 Marine Metadata
Interoperability

MBARI

Leverage initial NSDL effort

Related initiatives

Interoperability Design Challenge
Workshops at SDSC and LDEO
CCOMexplorer at UNH
MBARIexplorer
WHOIexplorer
NIWAexplorer
HAWAIIexplorer
CUAHSI http://cuahsi.sdsc.edu/HIS/
Director's Cyberinfrastructure MOU
   SIO/SDSC/LDEO/WHOI
SIO Teachers-at-Sea
Informal Education Outreach through
Birch Aquarium at Scripps (350,000
visitors per year)

7? (OCE pending) Support for continued data acquisition

20 new cruises per year
Revise holdings with updated verrsions
   Community input
Add new federated collections:
   Seismic
   Physical Oceanography

OCE 04-52068 Integrating new data, updating distributed
archives and supporting community activities

8? (DIGARCH pending) Multi-Institution Digital Preservation

Extend SIOExplorer approach to WHOI
   30 years of cruise data
   Alvin dives
   Jason ROV surveys (200 DVD per cruise)
Combination will:
   Archive results of 60 new NSF awards per year
   Preserve results of 1600 NSF, NOAA and ONR awards

CISE DIGARCH 04-55998
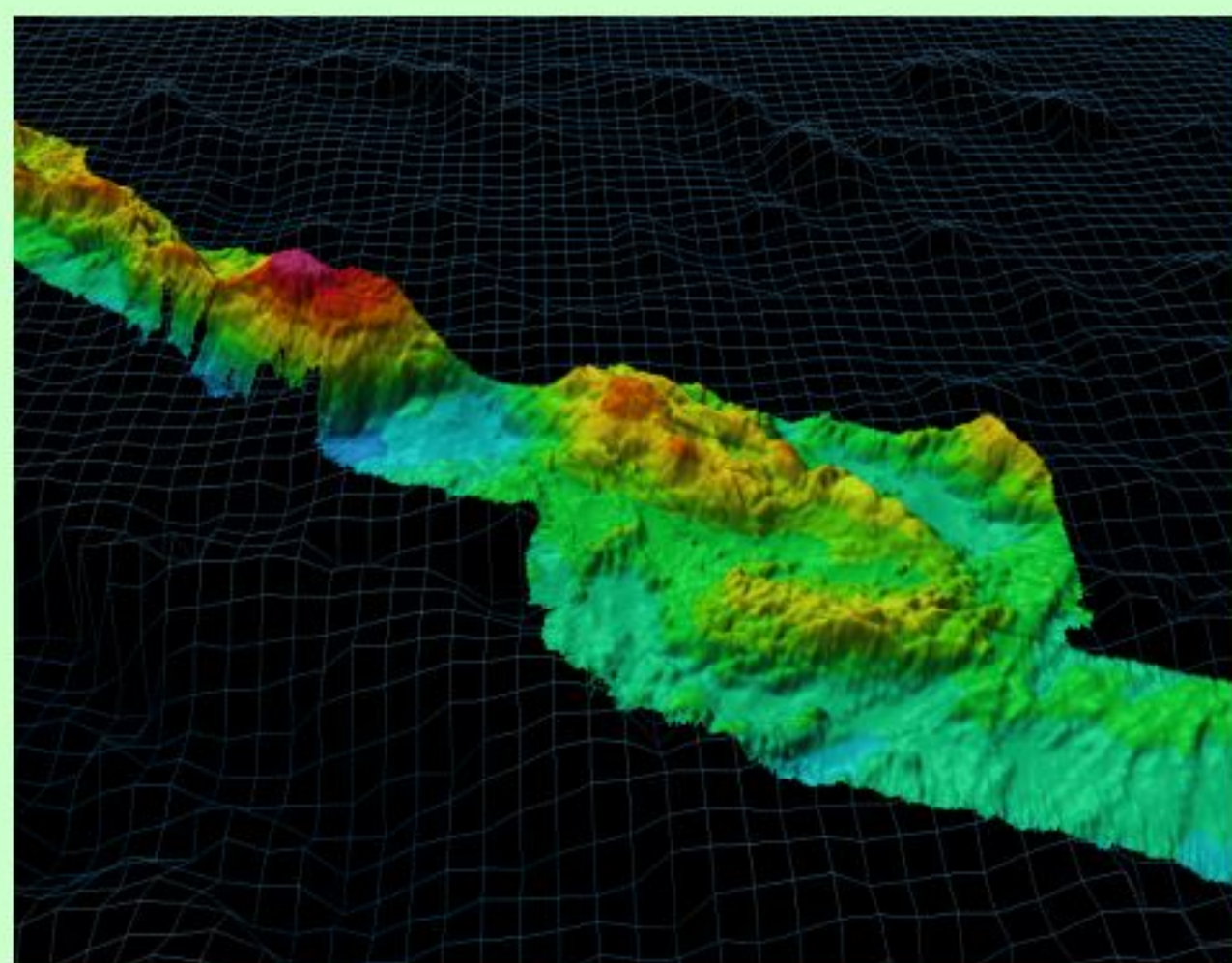Multi-institution Testbed for Scalable Digital Archiving

---

Investigators and Initial Award

PI: Brian Schottlaender, University Librarian, UCSD
Co-PI's: Stephen Miller, Hubert Staudigel, Catherine Johnson, Scripps Institution of Oceanography (SIO)
John Helly, San Diego Supercomputer Center (SDSC)

NSDL Collections Track 01-21684 Bridging the Gap Between Libraries and Data Archives

Major Activity SIOExplorer Digital Library launched as NSDL Collections Track project three years ago, opening access to 700 cruises. Initial investment in NSDL technology augmented by NSF ITR, OCE and ATM awards. Access ~50,000 hits and 6 GB downloads each month.

Overall growth managed by federating new collections in disciplines as needed, allowing each organization to maintain their own data practices and publishing authority.

Project Approach Collaboration includes researchers at SIO, computer scientists from SDSC, and archivists and librarians from UCSD Libraries.

Metadata template file (mtf) approach allows Dublin Core and various domain-specific metadata blocks to be combined. As a controlled document, mtf enforces tight coupling between "arbitrary digital objects" and metadata. Collection building and metadata tools all work through mtf, allowing the scope of project to evolve without rewriting code.

Java "CruiseViewer" provides graphical user interface overlaid on global maps, geographic and keyword searches, object and metadata display, and download.

Results Four operational collections: SIO Cruises, SIO Photo Archives, the Seamount Catalog, and Educators' Collection.

Under construction: Rocks and Cores (10,100 samples), Seismic (27 years reflection data), Physical Oceanography (50 cruises deep acoustic current profiling).

Benefits to NSDL:

1. Broad and deep collection of marine science data,

2. IT architecture for scalable collection building,

3. Suite of re-usable tools for collection building, metadata management, graphical search and display.

Next steps and opportunities for collaboration Digital library technology exported to dozen other institutions in the USA and New Zealand. Proposal pending to extend to Woods Hole Oceanographic Institution for cruise data as well as submersible and ROV digital video and mapping data.

Contact
Stephen Miller, spmiller@ucsd.edu
Website http://SIOExplorer.ucsd.edu

NSDL THE NATIONAL SCIENCE DIGITAL LIBRARY   SDSC   UCSD   SCRIPPS INSTITUTION OF OCEANOGRAPHY

4 Operational Collections

SIO Cruises

Online access to 700 cruises

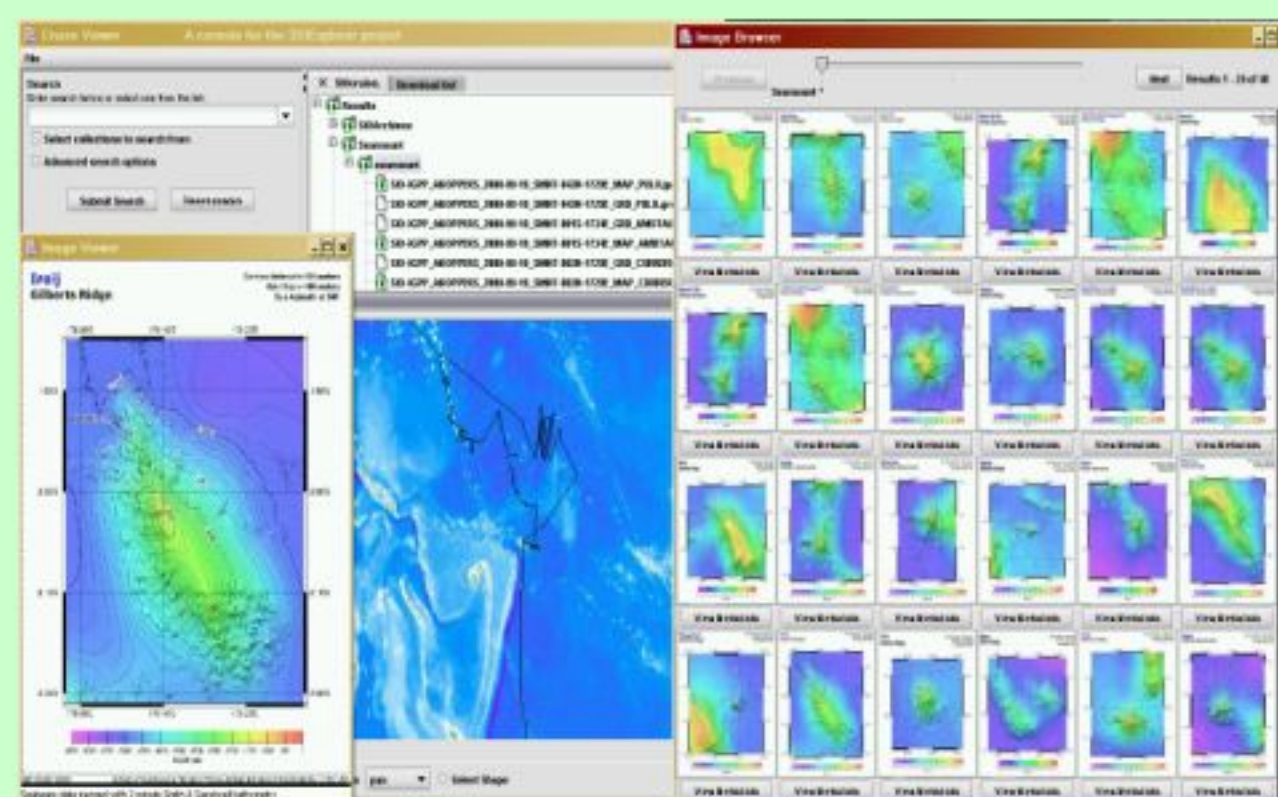**Authority – Geological Data Center**

SIO Archives

Thousands of historic photographs

Authority – UCSD Libraries

Seamounts

Detailed maps and studies of 49 seamounts

Authority – EarthRef.org

Educators

Inquiry learning resources in plate tectonics and expedition planning

ERESE
NSDL

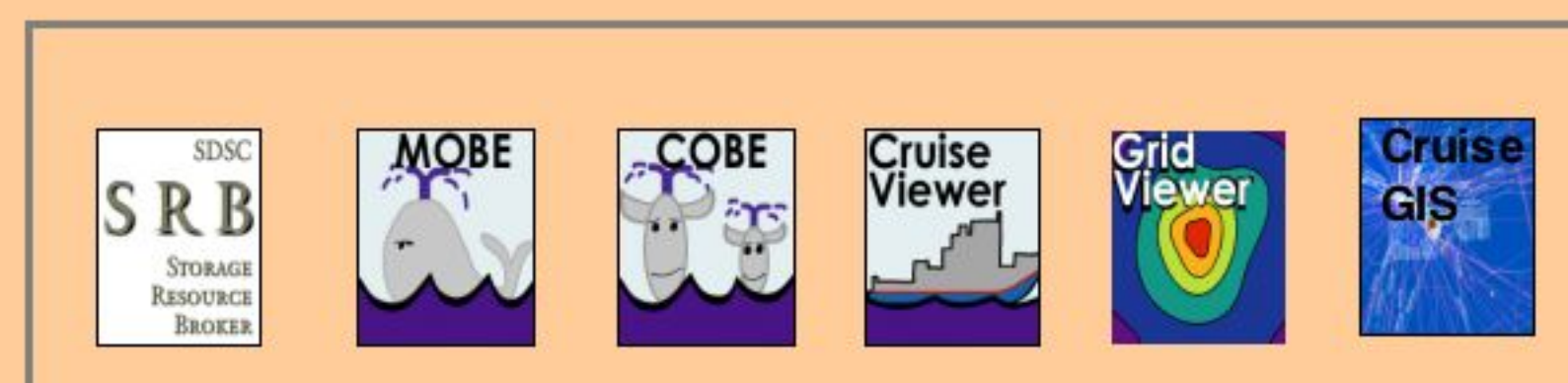**Authority – ERESE**

Federate 7 Independent Publishing Authorities

150,000 objects
500 GB

CruiseViewer Java portal into all SIOExplorer collections

Collection Builder's Toolkit

Technology is maturing, ready for other projects

SRB — SDSC Storage Resource Broker — MOBE — COBE — Cruise Viewer — Grid Viewer — Cruise GIS

Work-in-Progress: 3 Collections
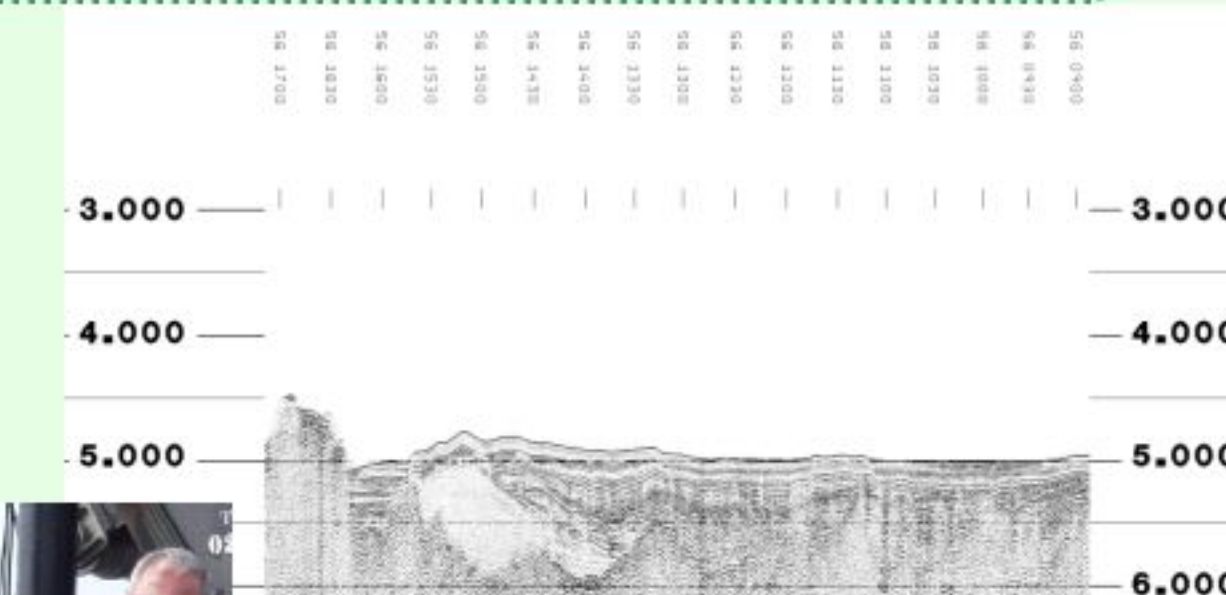
Rocks and Cores

Physical samples from 10000 dredges and cores

Authority – SIO Geological Collections

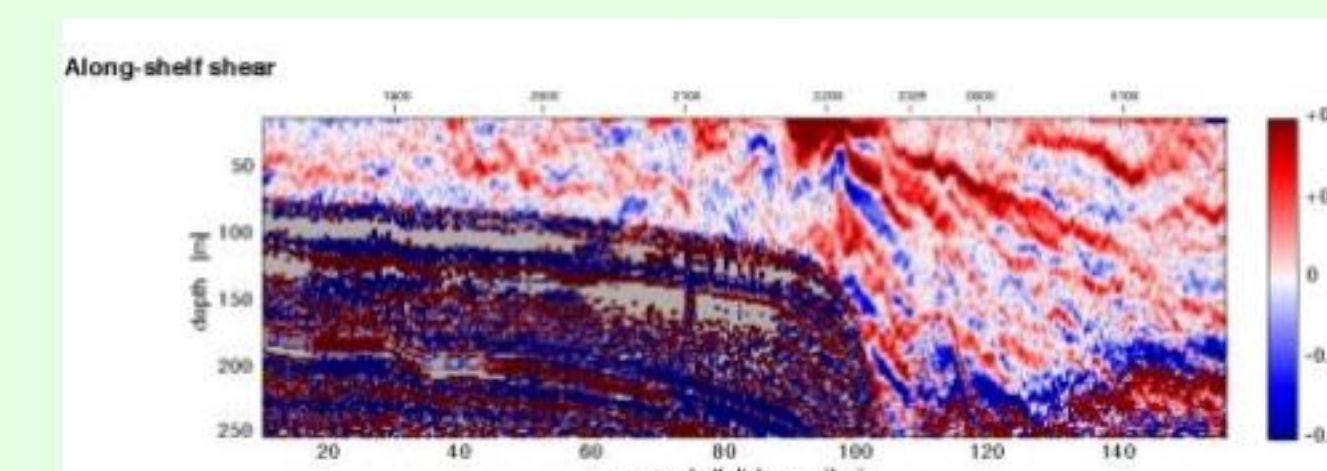### Seismic

27 years of seismic re...

Authority – SIO Seismic Reflection Archive

Physical Oceanography

50 Hydrographic Doppler Current Profiler cruises

Authority – Marine Physical Laboratory