

U.S./European Partnerships in Coastal Atlases and Coastal/Ocean Informatics



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Abstract

While significant capacity in the last decade has been built in the field of coastal mapping via Web-based GIS, Web atlases, and general coastal/ocean informatics, little has been done to take stock of the implications of these efforts or to compile lessons learned and best practices (including the effective translation of science to coastal decision-making). This presentation will share progress and preliminary results of two recent NSF-funded workshops. The first workshop was held in Cork, Ireland in the summer of 2006, under the theme of "potentials and limitations of coastal web atlases." The second workshop was held in 2007, under the theme "building a common approach to managing and disseminating coastal data, maps, and information." Both workshops brought together key experts from Europe, both coasts of the United States, and Canada to examine state-of-the-art developments in Web-based coastal mapping and informatics, future needs, and initiation of a possible International Coastal Atlas Network.

Definitions

Coastal Atlas - a collection of digital maps and datasets with supplementary tables, illustrations and information that systematically illustrate the coast, oftentimes with cartographic and decision-support tools, and all of which are accessible via the Internet.

Coastal/Ocean Informatics - the general study of the application of computer and statistical techniques to the management of coastal and ocean data and information

Complementary Projects

coastalatlant.net

OREGON COASTAL ATLAS Sunday May 23, 2004

HOME | MAPS | TOOLS | LEARN | SEARCH

Welcome to Oregon's Coastal Atlas

We hope you enjoy your visit to our website! The Oregon Coastal Atlas is a multi-group project that has the ambitious goal of being a useful resource for the various audiences that make up the management constituency of the Oregon Coastal Zone. The project is a depot for traditional and digital information which can be used to inform decision-making relating to the Oregon Coastal Zone. We provide background information for different coastal systems, access to interactive mapping, online geospatial analysis tools, and direct download access to various planning and natural resource data sets relating to coastal zone management.

Guide to Coastal Atlas Resources

<p>Maps For users who want to get familiar with the landscape</p> <p>The Coastal Atlas includes an Internet Map Service which can be used by visitors to view a variety of layered, preformatted and commonly requested base</p>	<p>Tools For users who want to apply what they know</p> <p>Tools help users accomplish common tasks. In the case of Coastal Atlas tools we've assembled links to a variety of tools designed to help different types of coastal users manage</p>	<p>Learn For users who want to know a little more</p> <p>This section contains simple introductory information for a range of coastal geographic settings: Estuaries, Sands, Shores, Rocks, Islands, Ocean, Areas, coastal users.</p>	<p>Search For users who know they want something specific</p> <p>The heart of the Coastal Atlas is an archive of geospatial data compiled over the years by various program partners of the Oregon Coastal Atlas</p>
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mida.ucc.ie

MDA: The Marine Irish Digital Atlas

Home | About | Contact Us


- Coastlines, Shores
- Marine Data
- Management
 - Coastlines
 - Shoreline Sites
 - Special Areas of Conservation
 - Special Protection Areas
- Projects
 - Marine Data Services JIG
 - Marine Data Survey
 - Soft Mappers

Special Protection Areas (SPAs)

A coastal water body located in the Blackwater Estuary is a large water body which is designated as a Special Protection Area (SPA) under the Birds Directive.

This is a designation under the European Commission Directive on the Conservation of Wild Birds, Member States of the European

Oregon Coastal Atlas, www.coastalatlasc.net Data Sharing, Tools, Encyclopedia



Learn

For Users who are curious to know more information about:

- Coastal Settings
- Coastal Topics
- Technical Staff



Oregon Coastal Atlas Hazard Maps - Microsoft Internet Explorer


OREGON COASTAL ATLAS

COASTAL ATLAS HAZARD MAPS

View a Hazard map :

This map menu allows you to browse certain hazard datasets for coastal Oregon. For more information on specific hazards please consult the [learn about hazards](#) section.

Named Layers	Named Overlays	Backgrounds
<input type="checkbox"/> FEMA Special Flood Hazard Areas	<input type="checkbox"/> Landmarks	<input type="radio"/> No Background
<input type="checkbox"/> FEMA Relative Hazard Zones	<input type="checkbox"/> Topography	<input type="radio"/> Shaded Elevation



Maps

For Users who want to explore content:

- Prepared Maps
- Custom Maps
- Detail Information
- Personal Output

Oregon Coastal Atlas Tool in ArcIMS



NOAA Coastal Services Center
CSP Oregon - Coastal Inundation Visualization Tool

Legend Find Results Print Help Info

Zoom to a Location:
Select from the list below to zoom to a specific area.

Select Area: [Dropdown]

Zoom

Observation Graphs
Select an option below to view the Observation Graph interface:

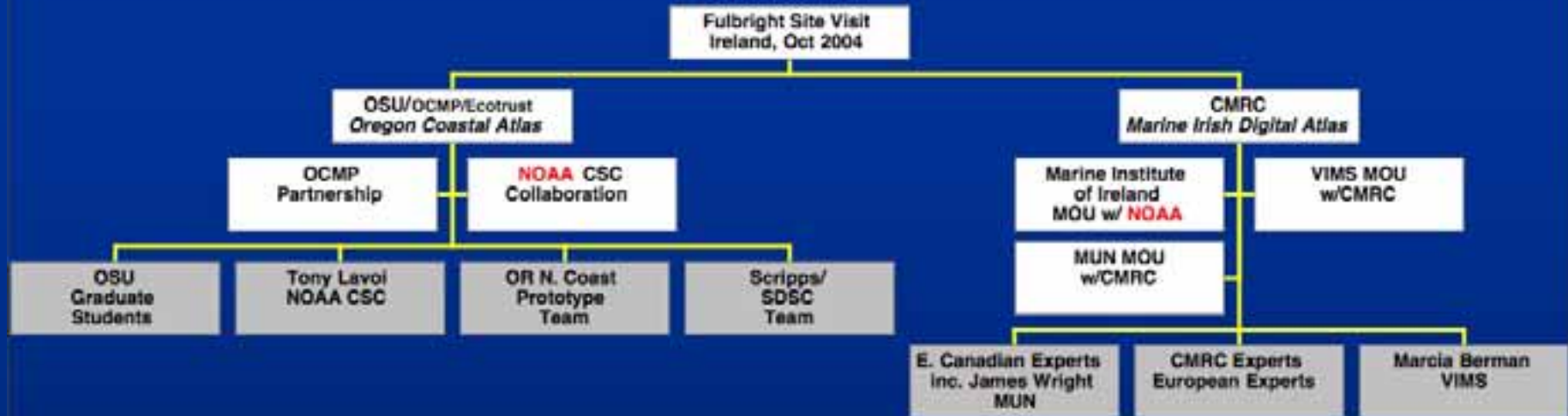
Netarts

Busy and Gage Information
Click on "View Location" to view buoy and gage locations and to view real-time observations.

View Location

Current Weather and Forecasts
Select an option below to view real-time and forecast data.





National Science Foundation Office of International Science and Education

National Science Foundation
 WHERE DISCOVERIES BEGIN

SEARCH
 NSF Web Site

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News
 Press Release 06-018
NSF Awards First Partnership for International Research and Education Grants
 Program aims to fortify international research collaborations and engage U.S. scientists and engineers

Intellectual Merit, Workshop Goals



- Mapping plays a critical role in issues of national sovereignty, resource management, maritime safety, and hazard assessment.
- Significant capacity, varying approaches
- Little done to compile/assess efforts
- Best practices?
- Widespread solutions needed
 - Access to and documentation of data
 - Integration of tools
 - Decision support for coastal mgmt via atlases
 - “Semantic interoperability”
 - Linkage of topography with bathymetry

Workshop 1, July 2006, Cork, Ireland:
Potentials and Limitations of Coastal Web Atlases
workshop1.science.oregonstate.edu

- Present and discuss atlases from Europe and U.S.
- Identify and discuss common issues
 - Design and usability of web sites
 - Access to data and metadata
 - Institutional support and funding
 - Design and integration of tools
 - Decision support
 - More ...
 - Conclusions/prelim recommendations
- Launch MIDA
- Workshop web portal
- Executive report and way forward to Workshop 2



Workshop 2, July 2007, Corvallis, OR: Coastal Atlas Interoperability



- North America (NA) and Europe
- Improve searches between NA and Europe portals
 - Initial, common ontologies and thesauri
 - Semantic interoperability between different data sets
 - Spatialization of text items
- Final recommendations
- Large, collaborative proposals to submit to funding agencies
- International Coastal Atlas Network

navigation

- Home
- Guides
- Vocabularies & Ontologies
- Transport Protocols
- Content Standards & Profiles
- Tools
- Working Examples
- General Information
- Help and Member Support

log in

Name

Password

[Forgot your password?](#)[New user?](#)

Welcome!

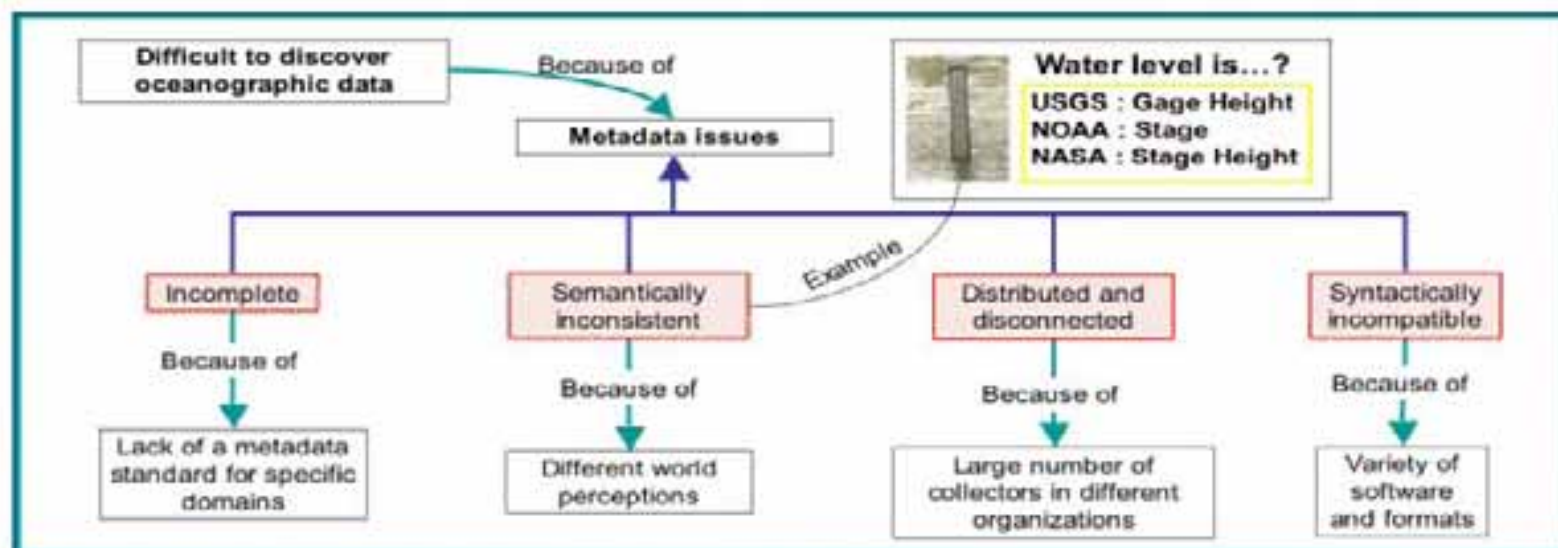
Welcome to the Marine Metadata Interoperability site -- the place to go for marine metadata solutions!

[Scientific Domain Vocabularies](#) [Starting Out](#) [Basic Guidance](#) [Getting Help](#)

Marine Metadata Interoperability -- Adding Science Value

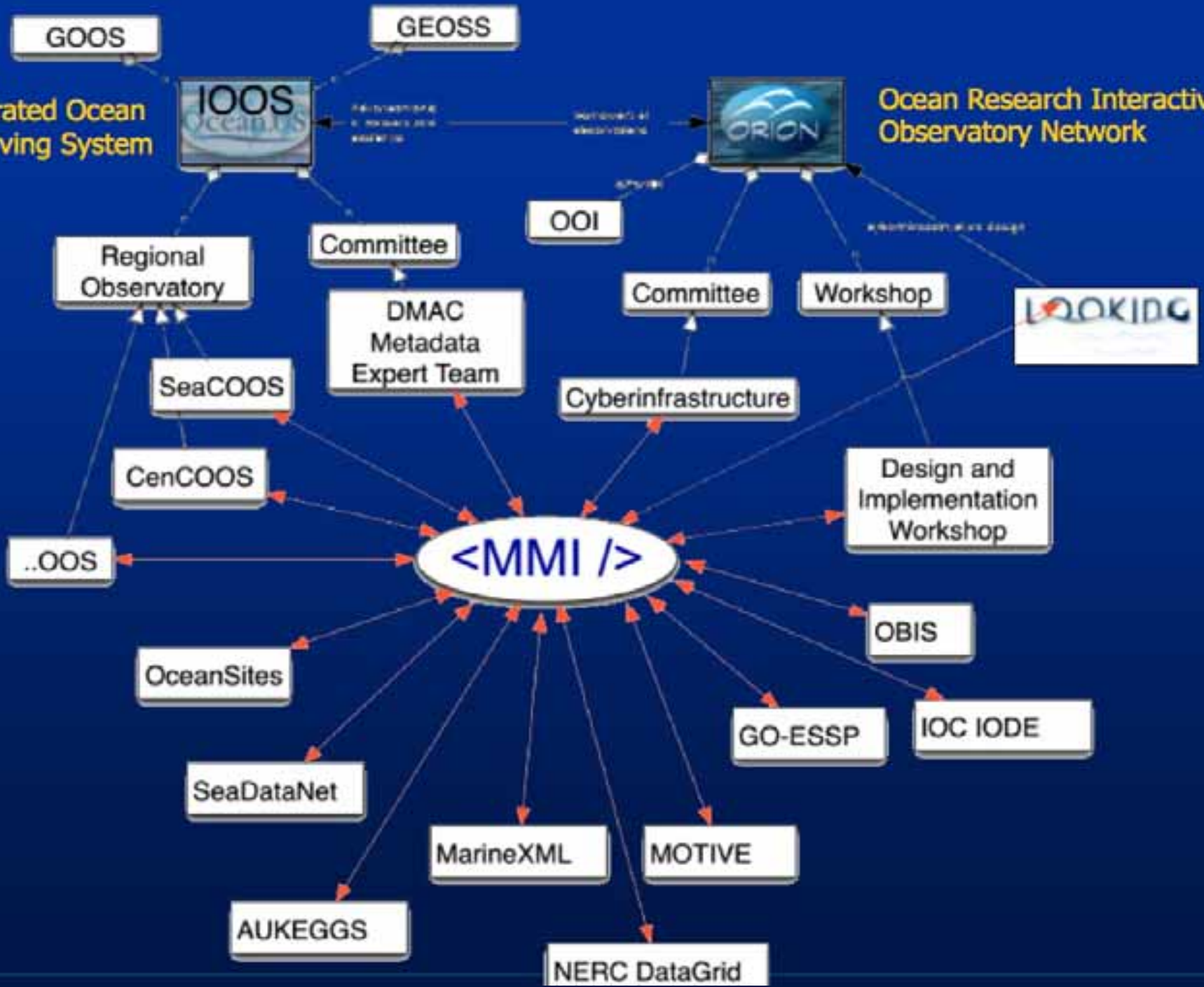
The Marine Metadata Interoperability project wants to make it easier to work with marine science data. The project's work -- including this site -- is for scientists and their data management staff who want the best advice and materials for doing data management right.

The MMI site identifies best practices to make your science data easy to distribute, advertise, reuse, and combine with other data sets. And, it's making those other data sets easier for you to find, access, and use. By simplifying the incredibly complex world of metadata into specific, simple guidance, MMI allows scientists and data managers at all levels to apply good metadata practices from the start of a project.



Integrated Ocean Observing System

Ocean Research Interactive Observatory Network



Cable System for Interactive Seafloor Observatory

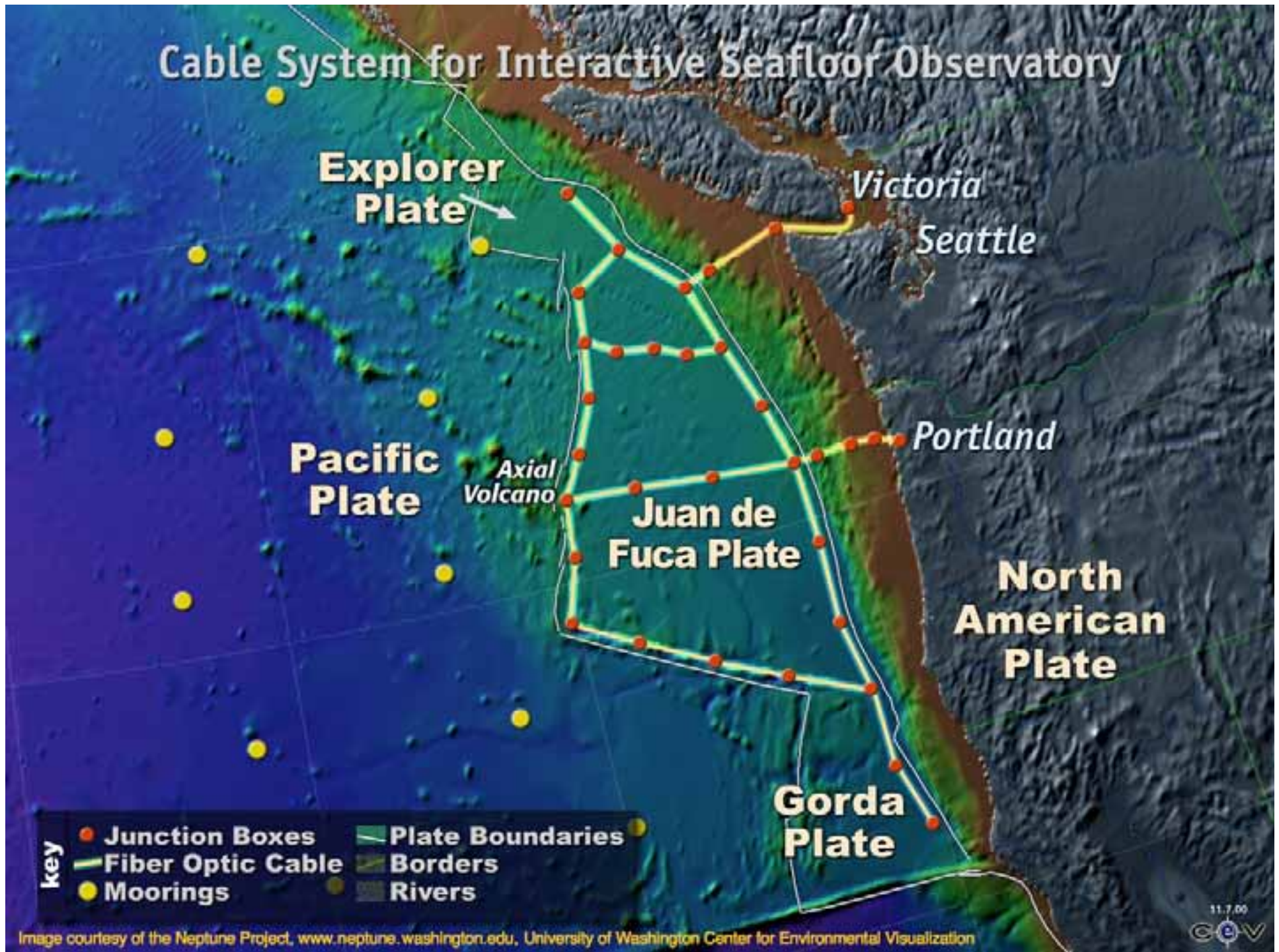
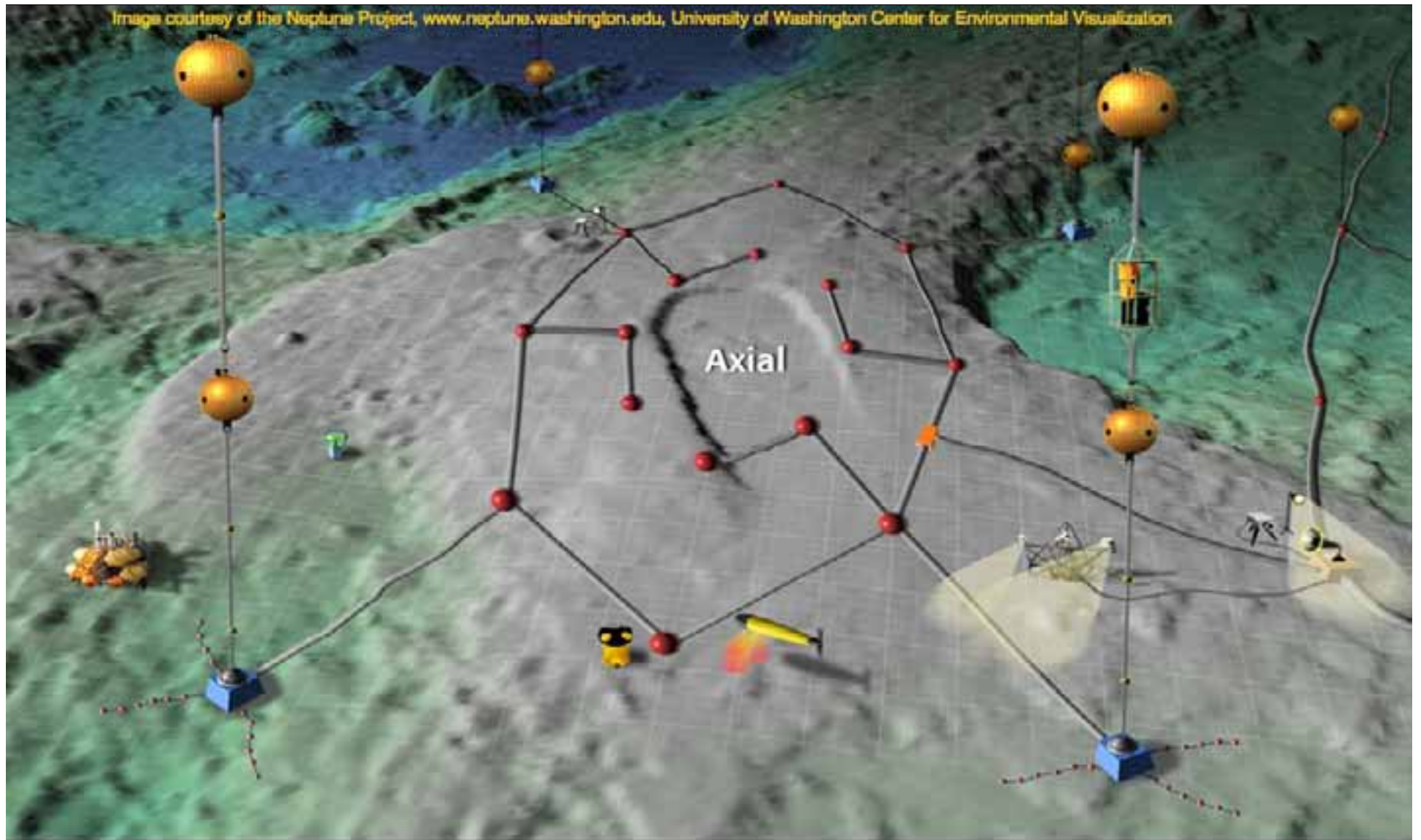


Image courtesy of the Neptune Project, www.neptune.washington.edu, University of Washington Center for Environmental Visualization



Autonomous Underwater Vehicle



Current Meter



Rover



Camera & Lights



Acoustic Doppler



Nutrient Monitor



Wave Sensor

SIO Explorer Digital Library

Not just

- File archive
- Web site
- Database

Cyberinfrastructure

Store, search, retrieve

Integrate

- Database for metadata
 - PostgreSQL or Oracle
- Storage Resource Broker
 - SRB middleware for files

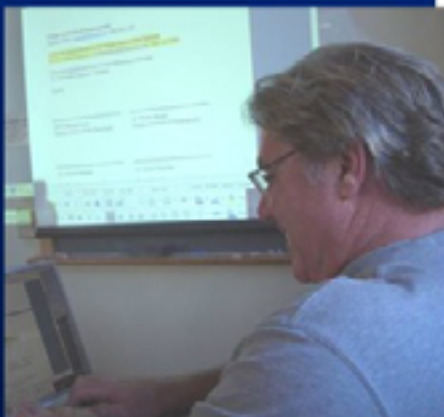


SIO Explorer Design to Overcome Project Barriers

Build scalable digital library

Federate independent authorities

5 Operational collections



4 Operational Collections

SIO Cruises
Online access to 700 cruises

Authority – Geological Data Center

SIO Archives
Thousands of historic photographs

Authority – UCSD Libraries

Seamounts
Hundreds of seamount maps and geological studies

Authority – EarthInfo.org

Educators
Inquiry learning resources in plate tectonics and expedition planning

Authority – ERSE

Federate 7 Independent Publishing Authorities


CrossViewer: Java portal into all SIO Explorer collections

Collection Builder's Toolkit
Technology is maturing, ready for other projects


Investigators and Initial Award
PI: Brian E. C. Schottlander, University Libraries, UCSD
Co-PIs: Stephen Miller, Catherine Johnson, Hubert Staudigel, Scripps Institution of Oceanography; John Helly, San Diego Supercomputer Center
NSDL Collections Track 01-21684, Bridging the Gap between Libraries and Data Archives, with additional support from IITG, OGI, ATM and UCSD funds.
Website: <http://SIOExplorer.ucsd.edu>

Work-in-Progress: 3 Collections

Rocks and Cores
Physical samples from 10000 dredges and cores

Authority – SIO Geological Collections

Seismic
27 years of seismic reflection

Authority – SIO Seismic Reflection Archive

Physical Oceanography
50 Hydrographic Doppler Current Profiler cruises

Authority – Marine Physical Laboratory

Courtesy of Steve Miller, Scripps GDC and John Helly, SDSC



Major Advance

Distributed search
Across collections

SIO
WHOI
Oregon State

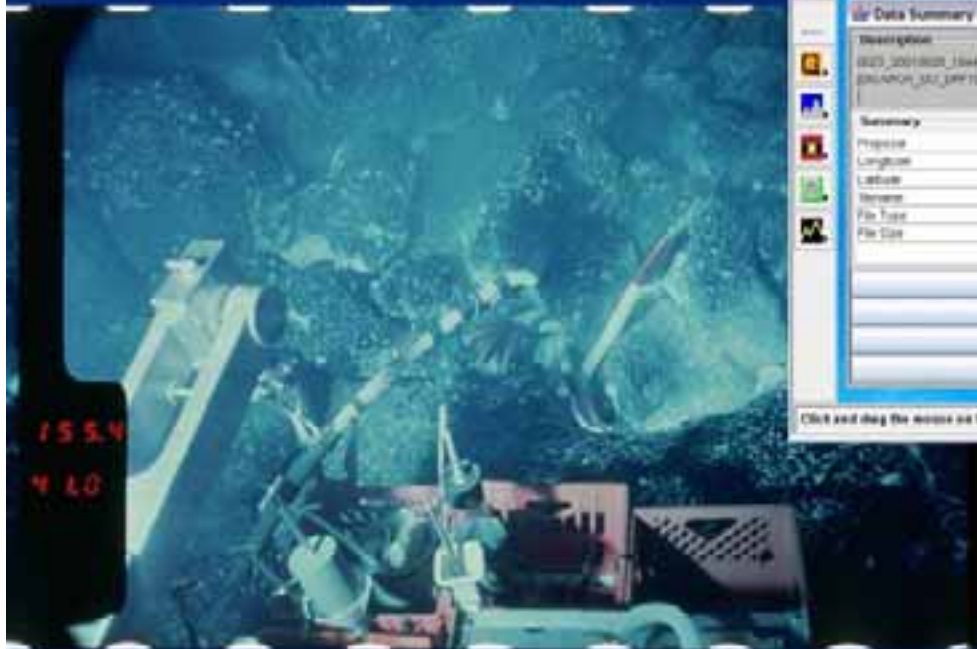
Search Results

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Open File
Open Metadata
Add to Download List
Close



Courtesy of Steve Miller, Scripps GDC

Coastal Atlas Interoperability Workshop

July 16-21, 2007, Corvallis, OR

workshop1.science.oregonstate.edu



Three Sisters

- North America (NA) and Europe
- Improve searches between NA and Europe portals
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 - Spatialization of text items
- Final recommendations
- Large, collaborative proposals to submit to funding agencies
- International Coastal Atlas Network

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Related web site: <http://workshop1.science.oregonstate.edu/home>



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