



Marine Geomorphology as a Determinant for Essential Life Habitat III

marinecoastalgis.net/aag08

10:10 Dawn Wright, Oregon

10:30 Will McClintock, California

10:50 Daniel Sampson, Massachusetts

11:10 Gary Greene, Alaska

11:30 Markus Diesing, English Channel

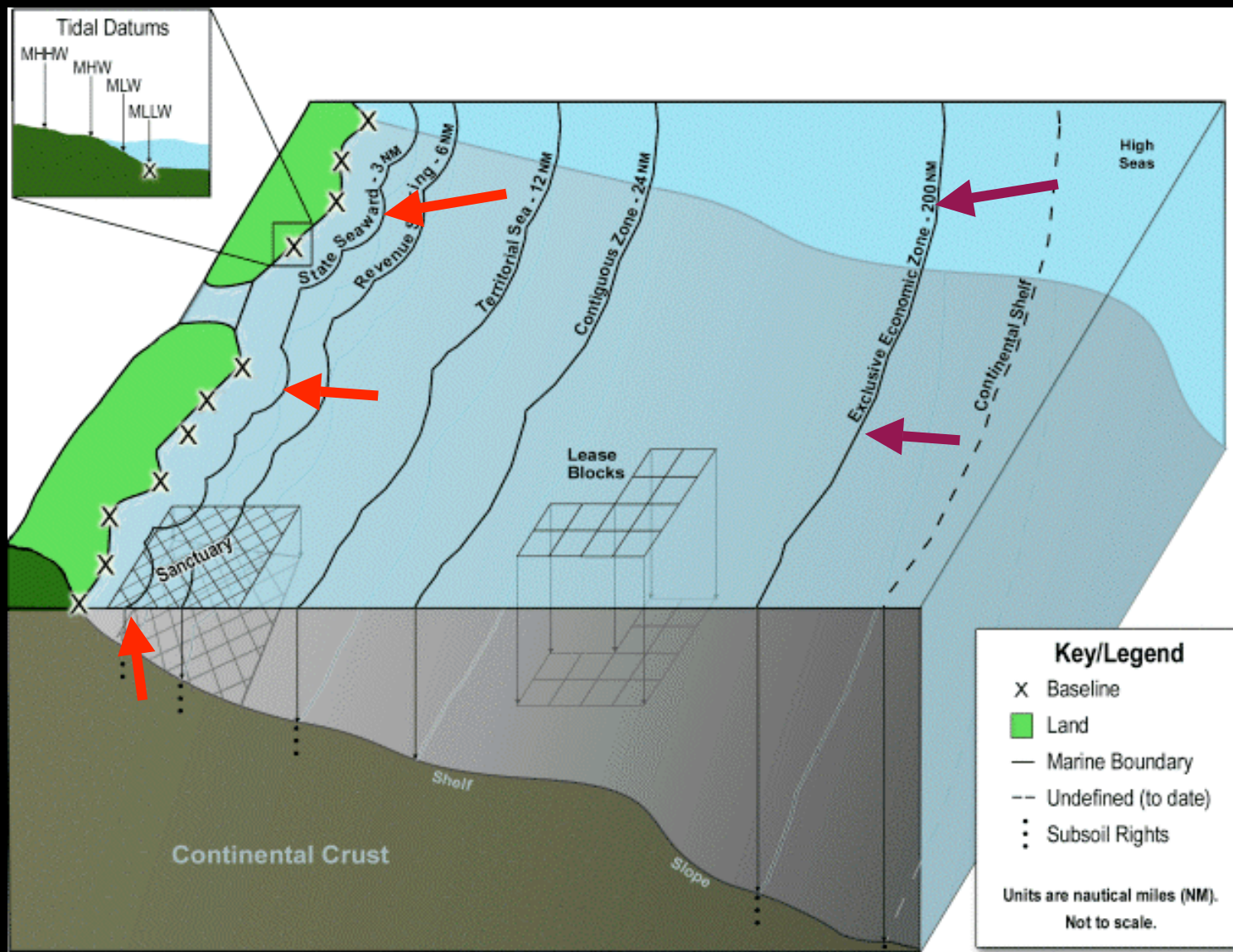


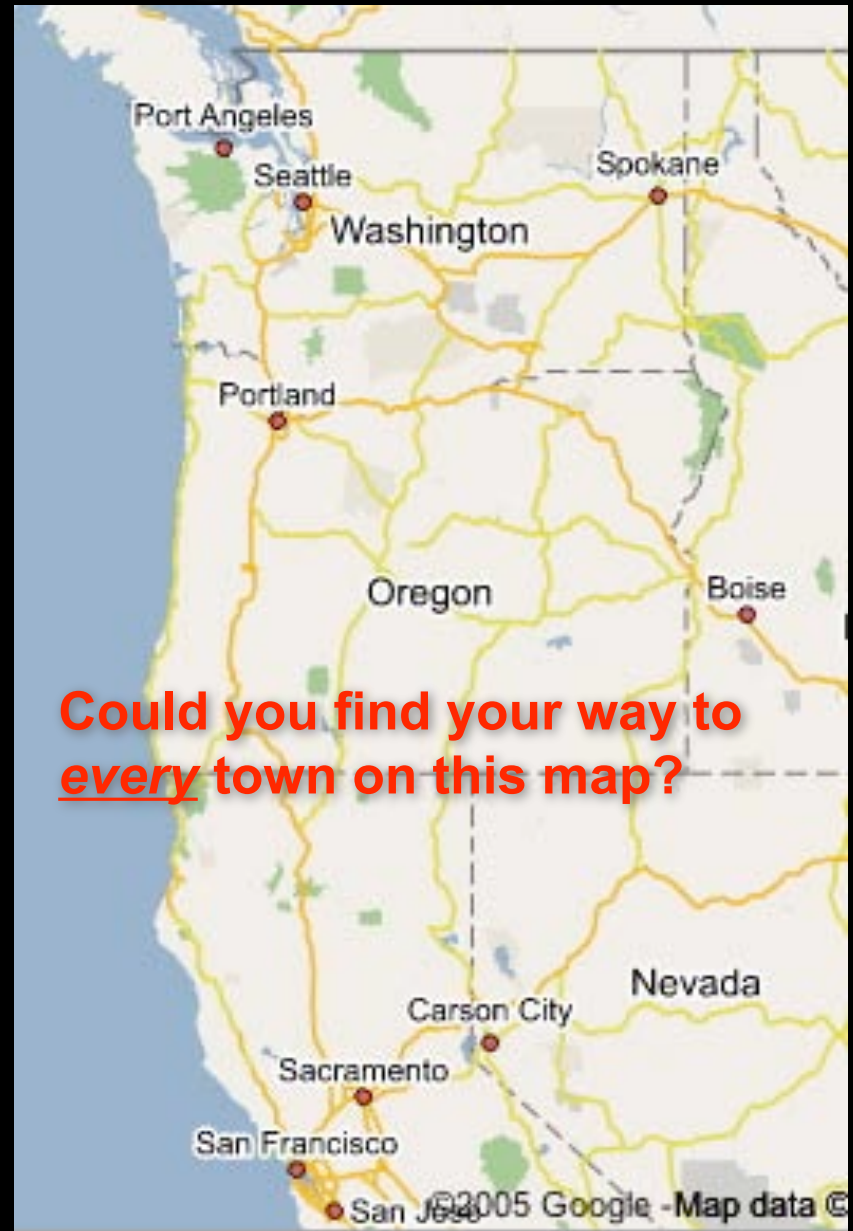
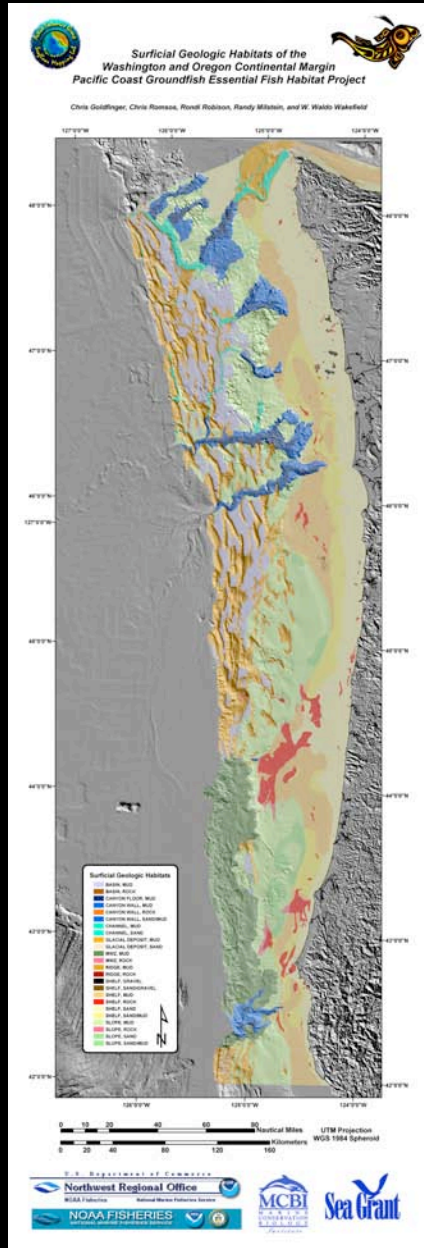
The Quest for a High-resolution Map of the Oregon Territorial Seafloor

...in the Context of Current West Coast Marine Reserve Initiatives

**Dawn Wright, Chris Goldfinger, OSU
and the
Oregon Territorial Sea Task Force**

Territorial Sea, *not* the EEZ

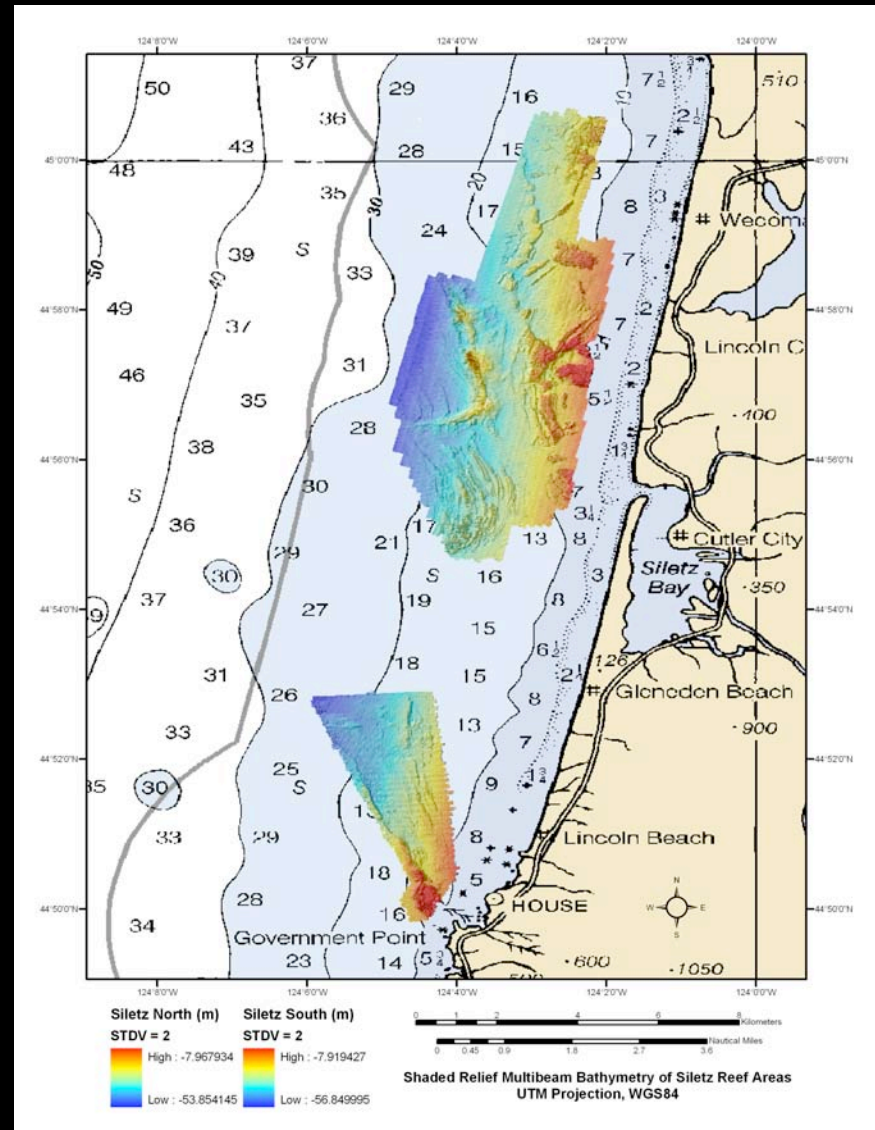




Example of Required High-Resolution Bathymetry: Siletz

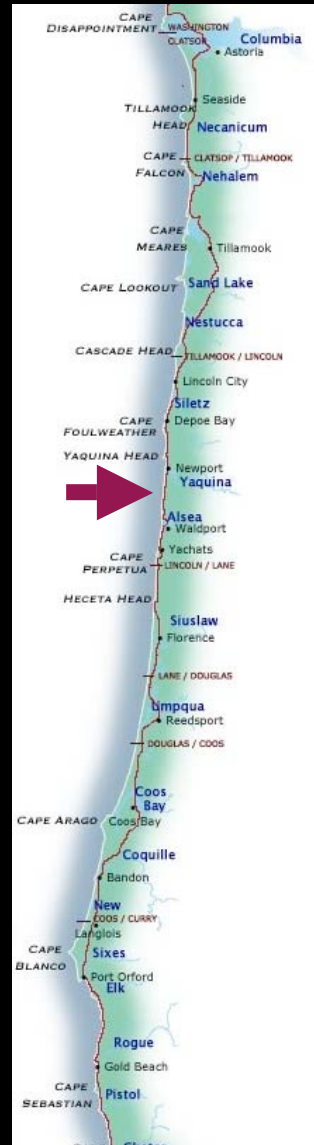


Oregon Shores Conservation Coalition

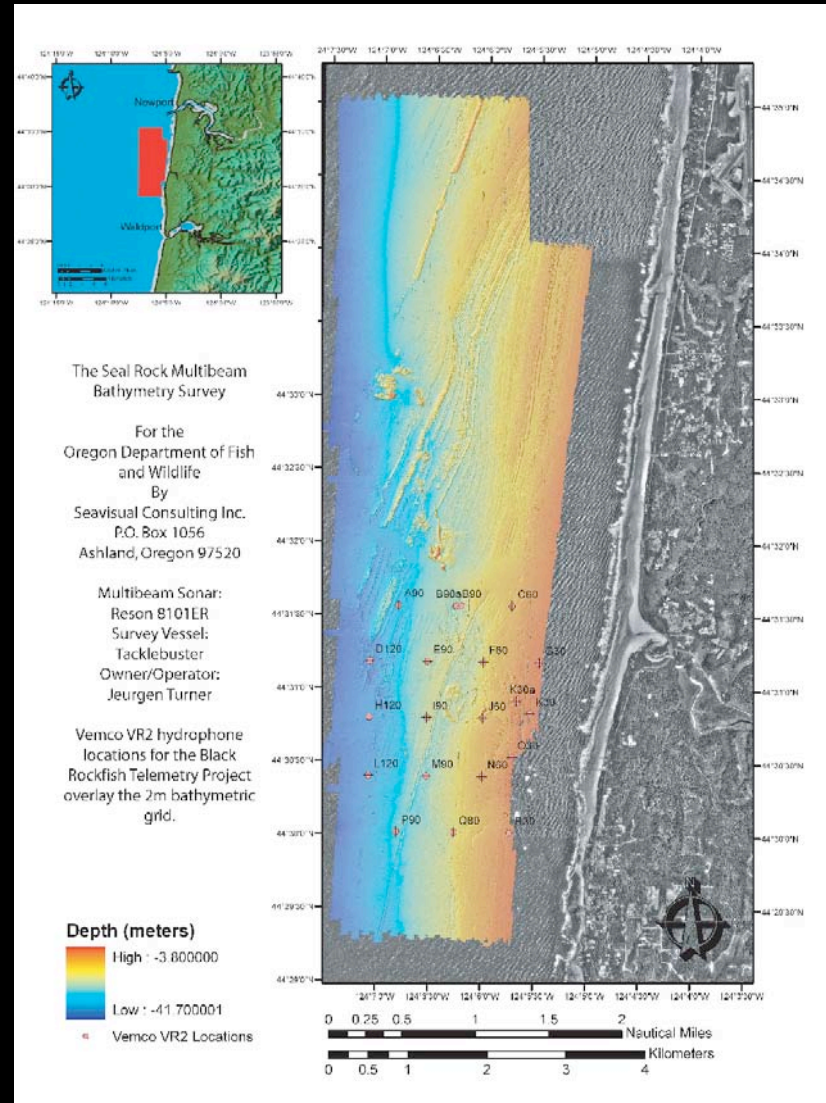


Oregon Department of Fish & Wildlife
Goldfinger et al., OSU Active Tectonics & Seafloor Mapping Lab

Example of Required High-Resolution Bathymetry: Seal Rock



Oregon Shores Conservation Coalition



Oregon Department of Fish & Wildlife
Goldfinger et al., OSU Active Tectonics & Seafloor Mapping Lab

Scientific Consensus Statement

Scientific Consensus Statement for Mapping the Oregon Territorial Seafloor

For Oregon, as for most coastal states, the sea represents both a valuable resource and a potential threat. The sea provides many Oregonians with a livelihood, food, and recreation, and it attracts visitors to our coastal communities. The sea also represents a significant threat in the form of an inevitable earthquake-generated tsunami, akin to the recent one in Indonesia.

Understanding the nature of Oregon's Territorial Sea is critical to sustaining sport and commercial fisheries, coastal tourism, and a broad range of other ocean derived ecosystem services valued by Oregonians, in addition to addressing the threat posed by a major tsunami.

Presently, we have detailed bottom mapping of only about 5% of the area of the Oregon Territorial Sea, which extends 3 nautical miles from the coast and comprises approximately 950 square nautical miles. Effective decisions concerning the management and conservation of ocean resources and the modeling of shoreline inundation and erosion from storm waves or a tsunami all depend upon better knowledge of the nearshore waters.

This consensus statement expresses the belief that completing seafloor mapping of Oregon's coastal nearshore ocean is of the highest priority. We, the undersigned academic and government agency scientists, urge State and Federal officials to support and expedite ocean floor mapping of Oregon's territorial sea within the next two years. Oregon Statewide Planning Goal 19 (12/1/2000) calls for stewardship and conservation of ocean resources in Oregon's Territorial Sea. This consensus statement is consistent with and inspired by Goal 19.

Seafloor mapping of the Oregon continental margin is presently underway through a variety of efforts. However, the nearshore area is commonly left out due to the difficulty of mapping in shallow waters and insufficient resource allocations. As a

result, we urge an initiative to map the seafloor of our coastal territorial sea. The costs are not excessive (under \$6 million), and the benefits are inestimable. Presently, there is no State or Federal agency charged with this responsibility. Over the last several years, new sonar technologies, and the associated data management infrastructure, have moved what was once prohibitively expensive within our reach. Nevertheless, current efforts to accomplish this important work are insufficient. Without a coordinated effort, it will take 50 years or more at the present rate of progress. This pace is much too slow to meet the needs of coastal erosion studies, tsunami planning and resource management decision-making.

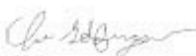
Specifically, we recommend mapping of the seafloor of the Oregon Territorial Sea for the following reasons:

- Oregon, along with Northern California, Washington, and Vancouver Island, faces a 20% probability of experiencing a magnitude-9 subduction earthquake and tsunami in the next 50 years, much like the 2004 disaster in Indonesia. We are just now beginning to understand what this disaster will mean for the Oregon coast. For the many towns along the coast, we presently cannot say how far the waters will rise, because the modeling of tsunami waves depends on detailed knowledge of coastal water depths that presently does not exist. Managing the hazards posed by this inevitable geological event requires this knowledge.
- We now understand that many Oregon nearshore fisheries and other marine life are dependent upon spatially explicit, yet limited, habitat features. Describing and classifying nearshore habitats are essential components of effectively assessing and managing Oregon's marine resources, including nearshore fish populations for both the Federal Essential Fish Habitat and State

Scientific Consensus Statement

• Governor Kulongoski has tasked the Oregon Ocean Policy Advisory Council (OPAC) with further developing and advising him on two challenging spatial management topics. First, is the continuation of the 2002 OPAC recommendation for a limited system of marine reserves within Oregon State waters to evaluate their efficacy in meeting nearshore conservation and management goals. Second, in December 2005, the Governor proposed the establishment of a National Marine Sanctuary off the Oregon coast, and has tasked OPAC with identifying and evaluating information and issues to guide this proposal. A detailed seafloor map depicting geologic and habitat features is essential as a scientific support tool for discussion and informed decision-making

We, the undersigned, urge the implementation of an Oregon state waters seafloor mapping plan to support the resolution of these issues at the earliest possible time. This consensus group has already outlined a working plan to utilize idled fishing vessels staffed by university, State and Federal agency scientists. Efforts supported by NOAA to augment those already made by ODFW will begin in Summer, 2006.



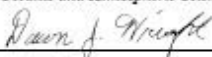
Chris Goldfinger
College of Oceanic and Atmospheric Sciences, Oregon State University



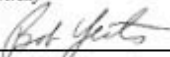
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College of Oceanic and Atmospheric Sciences, Oregon State University



Andy Lanier



Dawn Wright
Department of Geosciences, Oregon State University



Bob Yeats



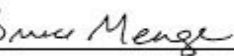
Michele Dailey



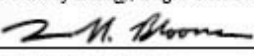
Mark Hixon
Department of Zoology, Oregon State University



Jane Lubchenco



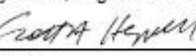
Bruce Menge



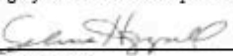
Sherman Bloomer, Dean
College of Science, Oregon State University




Mark Abbott, Dean
College of Oceanic and Atmospheric Sciences, Oregon State University



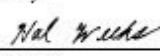
Scott Heppell
Department of Fisheries & Wildlife, Oregon State University



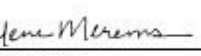
Selena Heppell



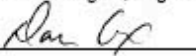
Dave Fox
Marine Resources Program, Oregon Department of Fish & Wildlife




Hal Weeks



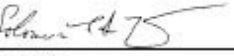
Arlene Merems



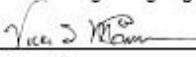
Dan Cox
Coastal and Ocean Engineering Program, O.H. Hinsdale Wave Research Laboratory, Oregon State University



Harry Yeh



Solomon Yim



Vicki McConnell
State Geologist and Director, Oregon Department of Geology and Mineral Industries

What the Statement IS ...

An expression of need...
to fill a critical gap in data

Apolitical ...
coalition of academic and agency *scientists*

An information tool to consider and use when
making decisions for and with the governor

Part of governor's public position on ocean
stewardship

A suggested process ...
(communal funding, communal availability)

WEST COAST GOVERNORS' AGREEMENT on OCEAN HEALTH

CALIFORNIA OREGON WASHINGTON

westcoastoceans.gov



Home

Actions

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Lead Agencies

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Welcome



"Just as our western states have started to work together to fight global warming and protect our air, we now join forces to make sure we are doing everything in our power to maintain clean water and beaches along our coast."

- Governor Schwarzenegger

"Our oceans provide critical economic, environmental and social benefits to the Pacific Coast states. Today's historic agreement will mean clean water, healthy oceans and a better future for our children."

- Governor Kulongoski

"Our oceans are home to a great diversity of marine life and clean beaches and oceans are vital to West Coast fishing communities, recreation and tourism. We know that isolated local efforts cannot adequately address the breadth of degradation to our oceans. By cooperating, our three states will combine our resources and influence to make a real difference in the fight to clean and protect the oceans."

- Governor Gregoire

WCGA Update - Sign me up!

Please send me updates about the West Coast Governors' Agreement on Ocean Health.

Enter your Email address:

Sign up

Note: subscribers to the State of California's [oceanpublic](#) listserv automatically receive all WCGA Updates.

West Coast Governors' Agreement on Ocean Health

On September 18, 2006 the Governors of California, Oregon and Washington announced the [West Coast Governors' Agreement on Ocean Health](#). The Agreement launched a new, proactive regional collaboration to protect and manage the ocean and coastal resources along the entire West Coast, as called for in the recommendations of the U.S. Commission on Ocean Policy and the Pew Oceans Commission.

The Agreement seeks to advance the goals of:

- Clean coastal waters and beaches;
- Healthy ocean and coastal habitats;
- Effective ecosystem-based management;
- Reduced impacts of offshore development;
- Increased ocean awareness and literacy among the region's citizens; and
- Expanded ocean and coastal scientific information, research, and monitoring;
- Sustainable economic development of coastal communities.

The Agreement also underscores the importance of managing activities that affect our oceans on an ecosystem basis. That is, managing human activities and their impact on ocean resources in a way that accounts for the relationships among all ecosystem components, including people and other species and the environment in which we all live.

The Agreement directs staff of the three Governors to take certain [immediate actions](#), and to develop a more extensive action plan within one year. The three states prepared a [discussion paper](#) to guide public input on actions for consideration during development of the action plan and sponsored a series of [meetings](#) to obtain public and stakeholder input on the Agreement. The public comment period on the draft Action Plan is now closed. Thank you for your input. Release of the final plan is anticipated in early 2008.

NEWS!

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6/6/07 Governors receive State Ocean Leadership Award from the Consortium for Oceanographic Research and Education. Read the [CORE press release](#).



Olympic Coast, Washington



What the Statement is *NOT*

A direct request for funding
(though we are trying to leverage that in any we can).

A request for underwater photography.

**An attempt to direct activities or direction of the
Oregon Policy Advisory Council (OPAC) Science
& Technical Advisory Committee (STAC)**



Oregon Marine Reserves Public Gateway to Information

Home

Oregon's Path to Marine Reserves

Oregon has begun a [public process](#) for establishing marine reserves along the coast. Governor Ted Kulongoski has asked the [Ocean Policy Advisory Council](#) (OPAC) to provide him with recommendations for sites to be included in a system of marine reserves. To make sure that **Oregonians** can help with that recommendation, the Governor will invite the public to nominate areas for consideration which will then be reviewed by the OPAC.



This website will provide links to information about marine reserves and Oregon's marine environment and will guide you through the nomination process.

What is a Marine Reserve?

In general, a marine reserve is an area of the [marine environment](#) that is protected from harmful uses, principally uses that remove or [disturb](#)



marine life and environment. Around the world, marine reserves have been designated for different purposes, some for research, some to protect unique [habitat](#), some to promote rebuilding of fish stocks, and some for sight-seeing and recreation.

How You can get Involved

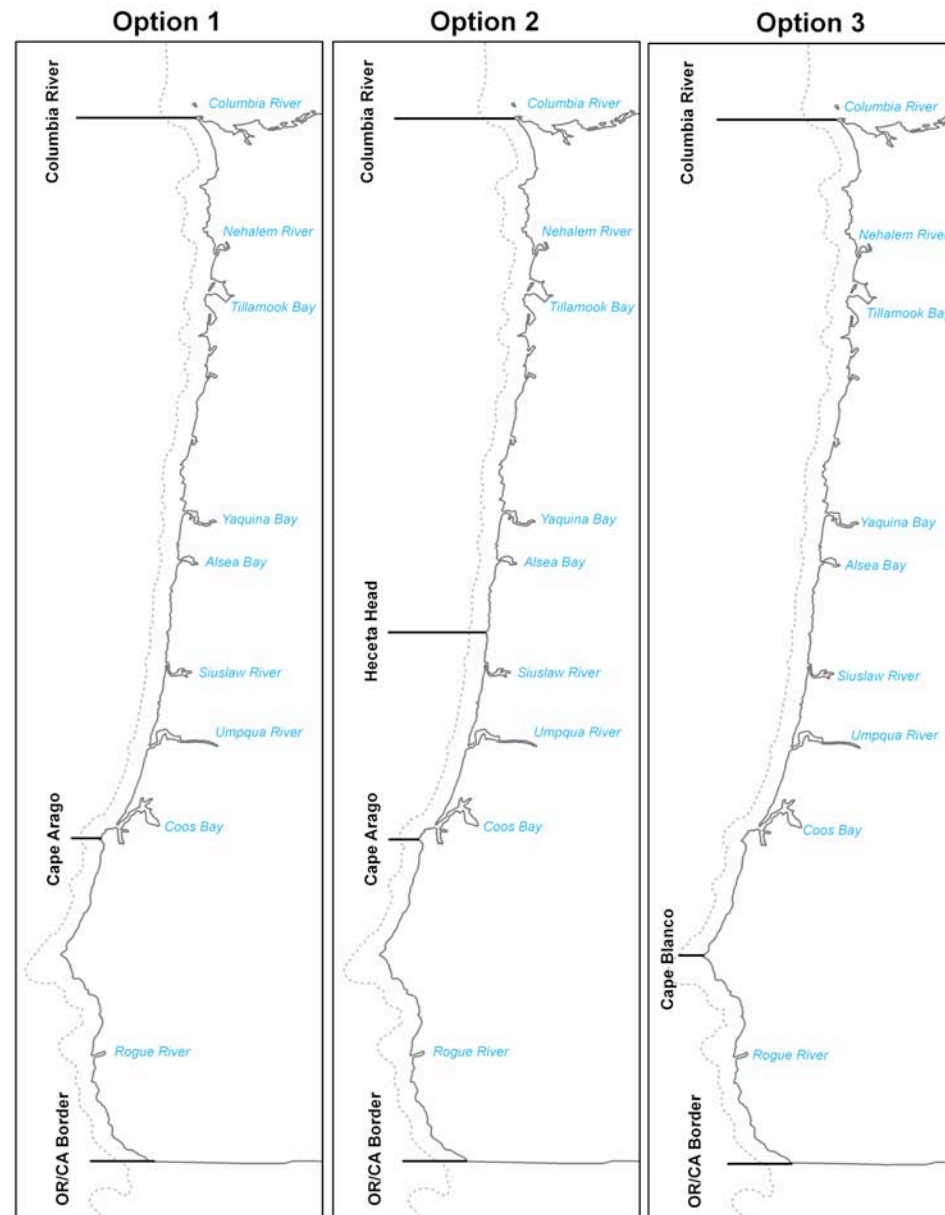


The first phase in the current process to designate marine reserves is being conducted by Oregon Sea Grant. They will be convening [community](#)

[conversations](#) to listen and learn from coastal communities about what will and will not work regarding the establishment of marine reserves. Sea Grant will take what they hear in these conversations and report back to [OPAC](#). You can see the schedule of upcoming community events by viewing ["upcoming events"](#) below, or by visiting the [Sea Grant](#)



Public Nomination Process



OPAC Marine Reserve Working Group
<http://www.oregon.gov/LCD/OPAC/workinggroups.shtml>



West Coast Habitat Server

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[Datasets](#)

[OGC Map Services](#)

[OPeNDAP](#)

[ESRI](#)

Map Viewer



[Launch](#)

[Info](#)

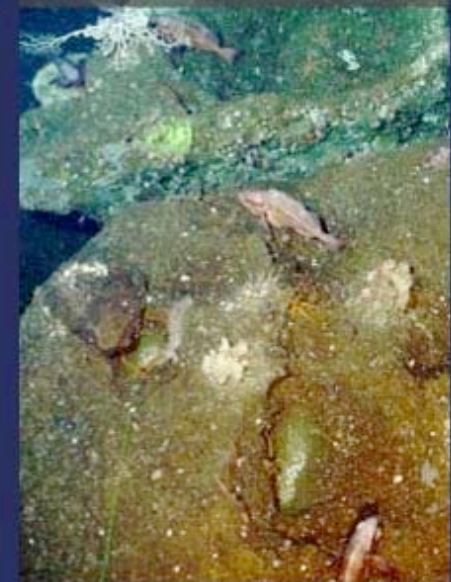
Data Portal



[Launch](#)

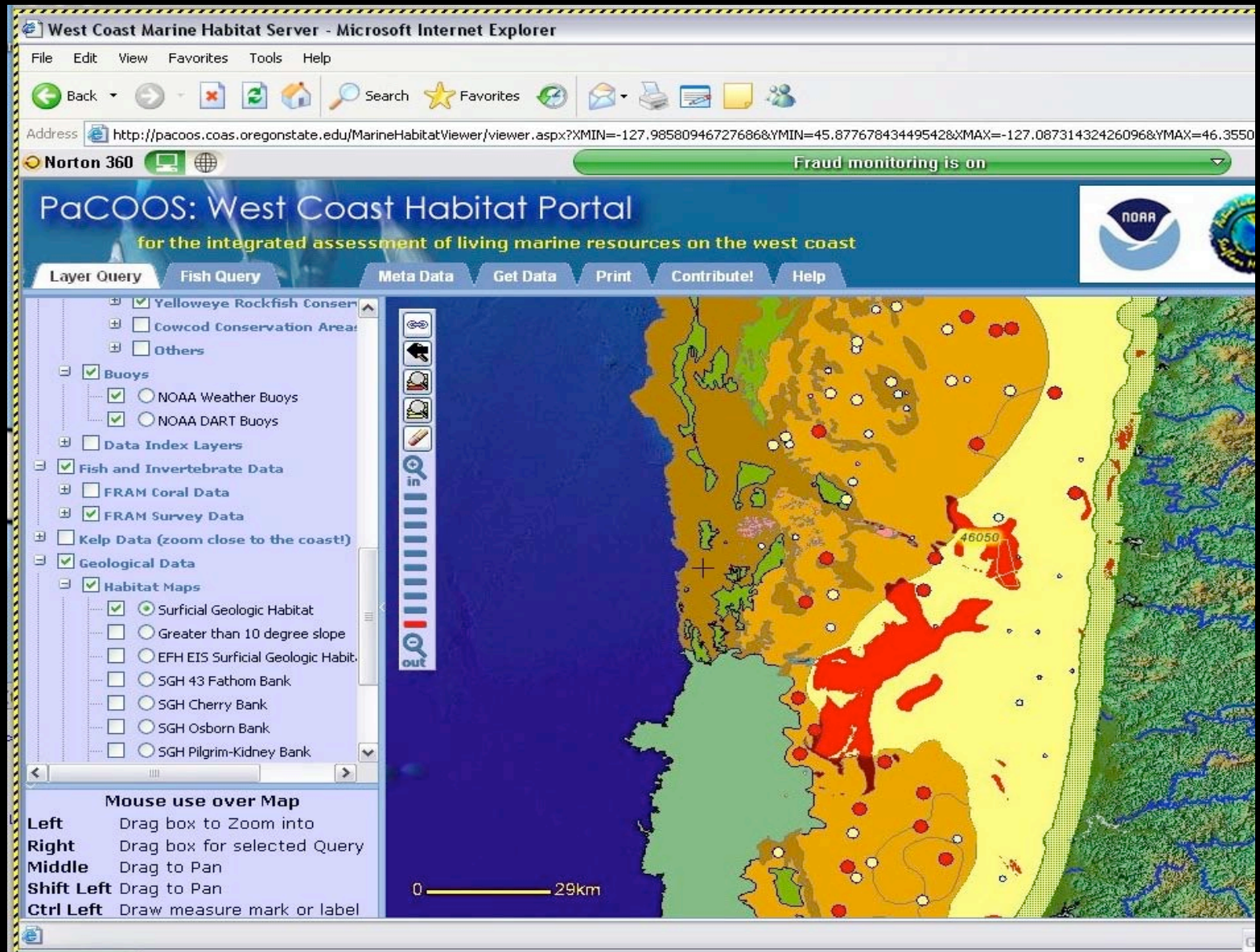
[Info](#)

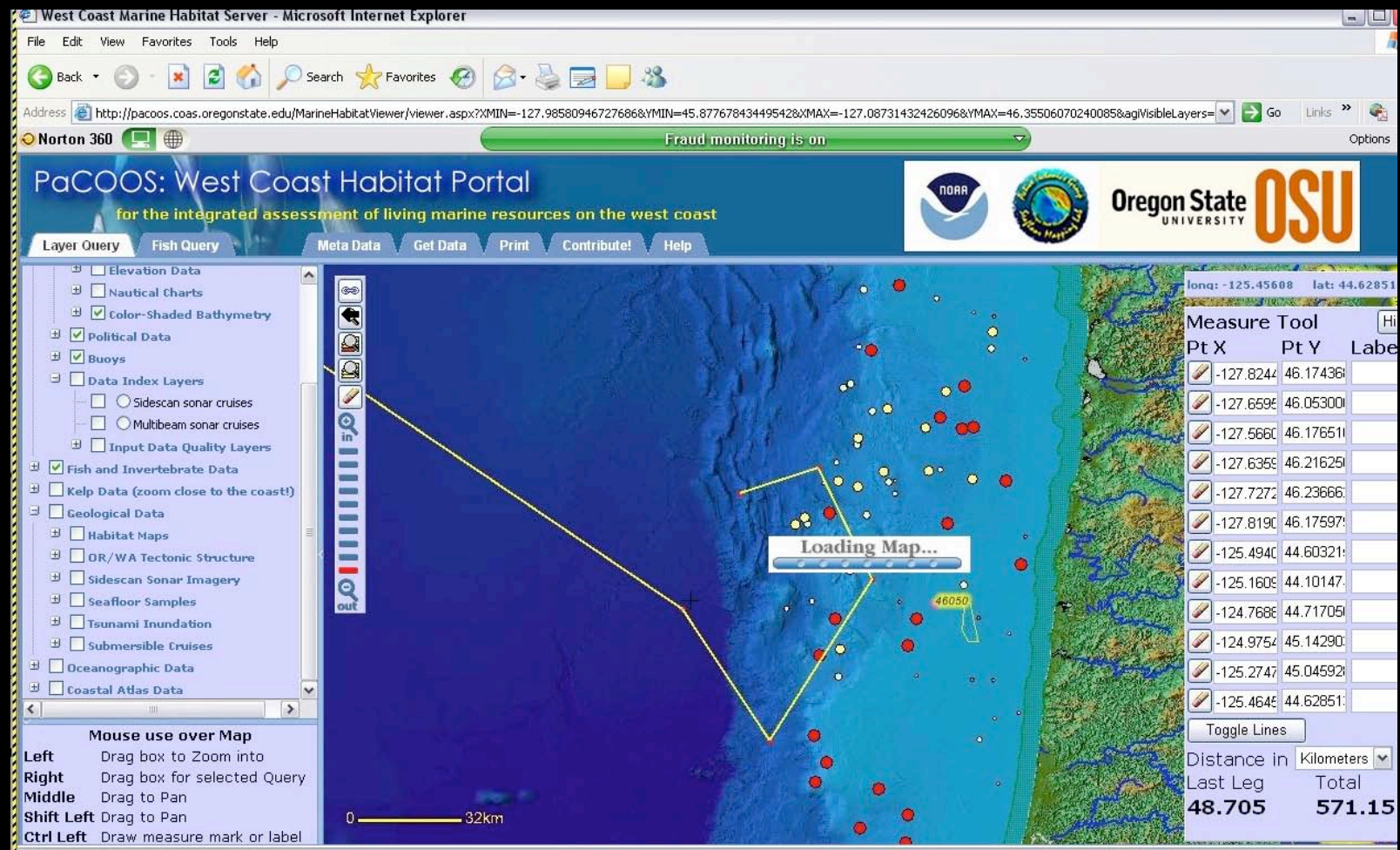
Fish Viewer



[Launch](#)

[Info](#)







Why now?

Difficult to realistically set up a *network* of MPAs that addresses *all* habitat protection issues without further mapping ...

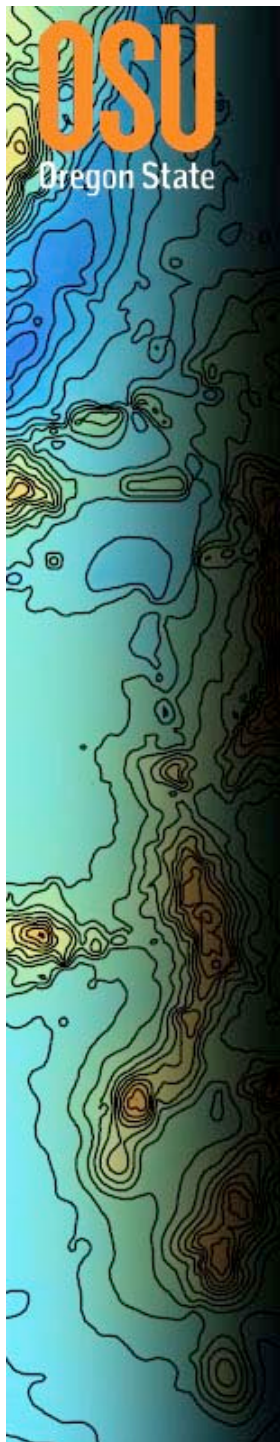
Take advantage of current momentum ...

Vessels of opportunity, personnel

Consider cost of not doing this ...

E.g., tsunami damage in \$billions

Lack of stewardship?



Applications

**Tsunami Runup Models -
Evacuation Planning**

Marine Reserve Design

Shoreline Change Analysis

**Analyzing Storm Impacts -
Coastal Erosion**

**Fisheries Management
Commercial Fishing**

Habitat Restoration

**Emergency Response,
Impact Assessment**

Port Security

Maps and Visualizations

**Navigation Products,
Services**

Wave Energy

Oil Spill Response, Tracking

Coastal tourism, recreation

MANY others

**Oregon Marine
Coastal Mapping Group
Newsletter**

Published by
Active Tectonics & Seafloor Mapping Lab
Oregon State University

**January 2008
Volume 1
Number 1**

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- Upcoming mapping cruises** [Page 6](#)
- DOGAMI/OSU Tsunami Inundation Study** [Page 6](#)
- Shoreline Change Mapping** [Page 6](#)

Oregon Marine Mapping Workshop

March 18th & 19th

Related Projects

coastalatlasc.net

mida.ucc.ie

Oregon coastal atlas

Home Maps Tools Learn Search

Atlas News

A New look for the New Year!
These pages are new as we move to our new system. Some functions will take time to transition, but everything should be back online soon!

Atlas Site Map

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 - For Contributors
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 - About Technical Stuff
- 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.

Maps & Tools

Maps

The Coastal Atlas includes an Internet Map Server which can be used by visitors to view a variety of standard, preformatted and commonly requested base and overlay data served in the Atlas archives. Those who do not have access to a desktop GIS may use this tool to create simple personalized maps using data relevant to the coast. Maps can be given personalized titles and output to PDF format for use in printed reports, email, etc.

Tools

Tools help users accomplish common tasks. In the case of the Coastal Atlas tools list we've assembled links to a variety of tools created by NOAA, FEMA and others designed to help different types of coastal users answer questions that are common in coastal areas. In addition, we make available a series of Oregon topic-specific coastal tools constructed by Atlas partners through various grant opportunities.

Learn & Search

Learn

This section contains simple introductory information for a range of coastal geographic settings (Estuaries, Sandy Shores, Rocky Shores, Ocean Areas), coastal topics (Access, Hazards, History, Processes) and Atlas related technologies (hardware descriptions, software listings, and metadata). Any inquiry into coastal settings or topics will provide both broad background materials as well as summaries and links to more specific data.

Search

The heart of the Coastal Atlas is an archive of geospatial data collected over the years by various program partners of the Oregon Ocean-Coastal Management Program. Rather than allow such data to gather dust on shelves and in storage boxes, we've made a concerted effort to look in our attic for digital data that can be brought into the future via the new Atlas Archive. The intent was to create a one-stop shop for finding the fruits of past data collection efforts.

MIDA - Marine Irish Digital Atlas - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://mida.ucc.ie/pages/atlas/atlas.php?theme=Protected+Areas&theme=&cb=

MIDA HOME

Management

- Coastline
- Biosphere Reserves
- Marine Nature Reserves
- National Parks
- Nature Reserves
- Areas of Outstanding Natural Beauty (AONBs)
- Areas of Special Scientific Interest (ASSIs)
- Natural Heritage Areas (Rep. Ireland)

Information **zoom to** **links** **search**

Navigational Beacons

Unlighted beacon in Baltimore Co. Cork, overlooking the narrow channel between the mainland and Sherkin island

Beacons are structures that are permanently fixed to the seabed or land. They range from structures such as lighthouses, to single-pile poles. Most beacons have lateral or non-lateral aids attached to them. Lighted and unlighted beacons can be found around the coastline.

International Coastal Atlas Network (ICAN)

workshop1.science.oregonstate.edu/join

**Globally integrate and interoperate
among locally-maintained atlases ...**

**Inform regional decision- and policy-
making across several themes**

Climate change - coastal vulnerability

Coastal governance (boundaries, protected areas,
etc.)

Coastal hazards

Population pressures

Marine spatial planning

Resource availability and
exploitation





For more information...

dusk.geo.orst.edu/research.html#3mile

activetectonics.coas.oregonstate.edu