

Oregon Coastal Atlas

www.coastalatlus.net

Photo: Laurel Hillmann, OPRD

Background

- Coastal Atlas Project launched 2001
- Multi group project involving Oregon State University Geosciences, Ecotrust and Oregon Coastal Management Program
- Funded initially by NOAA CSC, NSF, FGDC
- Initial version was active 2002 to 2006
- Saw considerable growth over that period
- Many significant changes occurred in both the tech and user communities
- Recently revamped to Atlas 2.0
- New techniques and FOSS provided opportunities for improvement

Purpose & Extent

- The Oregon Coastal Atlas is a venue for sharing data, information and analysis tools with decision makers and constituents of the Oregon coastal zone.
- Entire Oregon coastal zone which encompasses the full drainages of the coast range (except the Columbia, Umpqua and Rogue basins) , plus 3nm Territorial Sea & ocean stewardship area

www.coastalatlases.net


Oregon Coastal Atlas

search...

Monday, 23 February 2009 15:05:53

Home Maps Tools Learn Search

Atlas News



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.

Atlas Site Map

- Home
 - About Us
 - Contact US
 - Funding
- Maps
 - Oregon Coastal Zone
 - Estuaries
 - Sandy Shores
 - Rocky Shores
- Tools
 - For the Public
 - For Planners
 - For Researchers
- Learn
 - About Coastal Places
 - About Coastal Topics
- Search

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.

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.

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.

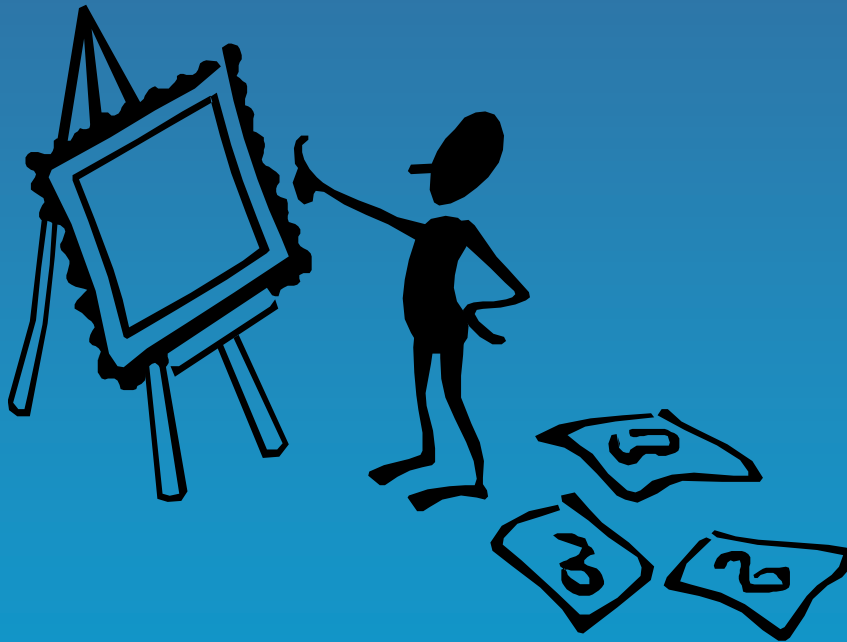
Search



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.

Distinguishing Features

- What do people do with the Atlas?



- Search
- Learn
- Tools
- Map

Search

Oregon Coastal Atlas

Tuesday, 30 September 2008 8:21:43

Home Maps Tools Learn Search

Home > Search

Atlas News

A New look for the New Year!

Please excuse our mess as we move to our new system.
(Some functions will take time to transition, but everything should be back online soon.)

Search News

The "Search" section of our website is one of the areas that will be receiving significant upgrades over the next few months. Improvements are expected in several functions:

- keyword searching
- add to map function
- data visualization options

In addition, several databases that were previously only searchable via certain Atlas tools will soon be searchable here. These databases include:

- Coastal Photo database
- COMCI - Catalog of Marine and Coastal Information

Search Coastal Atlas Archives & Partners

The Coastal Atlas will have links to many different archives which can be searched to help you find the data and information you are looking for. For now, simple searching of the GIS datasets that are documented and downloadable is available below. More data and metadata are being added every day.

Search GIS Data by Coastal Setting

(Coastal Places are listed in North to South Order)

Select a Setting and a Site Name

Search GIS Data by Keyword, Source or Scale

Fill in only the fields you would like to limit in your search

Keyword: or Originator or Scale

The GIS datasets in this archive are viewable using freeware programs such as QuantumGIS or ArcExplorer. [Click here to download ESRI's ArcExplorer.](#)

To send us comments on this website [please contact us here.](#)

Learn

Oregon Coastal Atlas

search... Tuesday, 30 September 2008 8:21:00


[Home](#) [Maps](#) [Tools](#) [Learn](#) [Search](#)

[Home](#) > [Learn](#)

Learn from the Coastal Atlas

This section contains simple introductory information for a range of coastal geographic settings (Estuaries, Sandy Shores, Rocky Shores, Ocean Areas), coastal topics (Access, Water Quality, Hazards, 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.


Estuaries



Oregon's 22 "major" estuaries play a vital role in the ecological and economic health of the coast and the entire state. For example, they are ecologically important to many fish and wildlife species, providing migration routes and habitat for reproduction, rearing, resting, and foraging. Healthy estuaries provide important habitats for many species we value such as salmon, herring, flounder, crabs, oysters, clams, wading birds, ducks, geese, shorebirds, and harbor seals.

[Read more...](#)

Sandy Shores



Headlands divide the Oregon coast into sandy shore compartments, or littoral cells. Within each littoral cell, features such as inlets, jetties, and rocky outcrops define the boundaries of even smaller compartments, or subcells. As many as 21 littoral cells have been identified along the Oregon coast ranging from less than 10 km to over 100 km in length. The sandy dune backed shoreline within these cells comprise about 262 of Oregon's 362 mile coastline, the remainder being headlands, bluff-backed or inlets.

[Read more...](#)

Rocky Shores



More than 1400 rocks and islands are sprinkled along nearshore zone of the Oregon coast, usually in association with cliffs and other resistant rocky features of the shoreline. These rocky remnants are dramatic and picturesque, but they are also valuable habitat that supports a diverse coastal ocean ecosystem. Most of these rocks and islands are in the Oregon Islands National Wildlife Refuge and are home to major colonies of seabirds, such as the common murre and marine mammals, including the threatened Steller sea lion.

[Read more...](#)

Ocean Areas



Oregon ocean areas stretch approximately 360 miles from the mouth of the Columbia River to the California border and extend some 14 to 40 miles into the ocean.

The state's ocean jurisdiction [the Territorial Sea] extends three nautical miles from shore [Mean Low Water], although offshore rocks and islands can extend this area seaward, such as at Orford Reef near Cape Blanco.

[Read more...](#)

Coastal Access



There are two major pieces of public policy that provide and protect the public's public access rights; [the famous Oregon Beach Bill of 1967](#) and the [State Planning Goal 17 for Shorelands](#). First, the Beach Bill established a permanent public easement for access and recreation along the ocean shore seaward of the existing line of vegetation, regardless of ownership.

Beach Water Quality



The Oregon Beach Monitoring Program (OBMP) monitors selected Oregon coastal recreation waters for the presence of fecal bacteria, and reports elevated levels to the public. The OBMP is funded by a grant from the Environmental Protection Agency, is administered by the Department of Human Services and collaborates with Oregon Department of Environmental Quality, and the Oregon Parks and

Learn

Oregon Coastal Atlas

Home | Search | About | Contact | Help | Feedback | Privacy Policy

Shoreline Protective Structures

While storms in the Pacific Northwest generate huge waves along the Oregon Coast, making cliffs and dunes a common sight. But some waves are just waves, other large waves are combined with higher than normal seas, storm surge, or higher water levels associated with El Niño. Storm surges can inundate buildings and cause resulting erosion. The National Oceanic and Atmospheric Administration (NOAA) has been successful in demonstrating how to protect the beach from a public resource and scenic and historic area. While some types of shoreline protective structures include seawalls, bulkheads, or dunes, others are more subtle, such as a low dune structure.

Shoreline protective structures have been used for decades, but only recently have they been used to protect the public beach. There are many different types of shoreline protective structures. The most common form in Oregon is the rock structure, which consists of large boulders placed in the surf or near shore to dissipate wave energy. Other less common types of shoreline protective structures include seawalls, bulkheads, or dunes, or a combination of these structures.

Shoreline protective structures are very expensive to build, and can have adverse effects on a public beach such as dune narrowing, dune degradation, and dune erosion. In some cases, they may also have other negative impacts, such as the loss of dune vegetation, loss of nesting sites for birds, and loss of habitat for plants and animals.

Protecting the Beach

The 1972 Beach Erosion Control Act (BECA) requires local governments to develop and implement a beach erosion control plan. The act also requires local governments to develop and implement a beach erosion control plan. The act also requires local governments to develop and implement a beach erosion control plan. The act also requires local governments to develop and implement a beach erosion control plan.

There is an assessment process for shoreline protective structures that is required under state development code as of January 1, 2007. Local governments must identify areas where shoreline protective structures are located and assess their condition. The assessment process is required for shoreline protective structures that are located in areas that are subject to development. The assessment process is required for shoreline protective structures that are located in areas that are subject to development. The assessment process is required for shoreline protective structures that are located in areas that are subject to development.

1. Assess the structure and its condition.
2. Determine if the structure is necessary.
3. Assess the impact on the public beach.
4. Determine if the structure is necessary for the public beach.

This means that, generally, shoreline protective structures may be removed if they are not necessary for the public beach. This is the case for shoreline protective structures that are located in areas that are subject to development. This is the case for shoreline protective structures that are located in areas that are subject to development. This is the case for shoreline protective structures that are located in areas that are subject to development.

This report was prepared by the Oregon Coastal Management Program

1/20/2010 10:10:10 AM

Oregon Coastal Atlas

Home | Search | About | Contact | Help | Feedback | Privacy Policy

Netarts Bay Estuary

Home | Search | About | Contact | Help | Feedback | Privacy Policy



Home | Search | About | Contact | Help | Feedback | Privacy Policy

About the Netarts Bay Estuary

The Netarts Bay estuary is located on the Oregon coast at Netarts, Oregon. The estuary is approximately 210 acres in size and has a median depth of approximately 10 to 15 feet.

The Netarts Bay estuary is also protected as a Green National Estuary under the Oregon Estuary Classification system. The former program of the National Oceanic and Atmospheric Administration (NOAA) was established in 1992 to protect and restore coastal ecosystems. The program was established to protect and restore coastal ecosystems. The program was established to protect and restore coastal ecosystems.

The Netarts Bay estuary is located in Thomas County, Oregon. The estuary is approximately 210 acres in size and has a median depth of approximately 10 to 15 feet. The estuary is also protected as a Green National Estuary under the Oregon Estuary Classification system. The former program of the National Oceanic and Atmospheric Administration (NOAA) was established in 1992 to protect and restore coastal ecosystems. The program was established to protect and restore coastal ecosystems. The program was established to protect and restore coastal ecosystems.

Data for the Netarts Bay Estuary

Estuary Name	Year	Area (Acres)	Depth (Feet)
Netarts Bay	2010	210	10-15
Netarts Bay	2000	210	10-15
Netarts Bay	1990	210	10-15
Netarts Bay	1980	210	10-15
Netarts Bay	1970	210	10-15

Tools

Oregon Coastal Atlas

Tuesday, 30 September 2008 8:20:31


Home Maps Tools Learn Search

Home > Tools

Tools for Coastal Management

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.


Beach Water Quality



Want to know the latest water quality test results for your favorite beach? This tool is built to allow the public to get access to the latest Beach Water Quality test results for their beach of interest. These data are collected by The Oregon Beach Monitoring Program (OBMP) which monitors selected Oregon coastal recreation waters for the presence of fecal bacteria, and reports elevated levels to the public.

[Read more...](#)


Beach Public Access



The Oregon coastal access inventory is a detailed and accurate description of all public beach access points in Coastal Oregon. Under state mandate the public must have access to its beaches and the local counties (where appropriate) are obligated to provide and maintain such access. The purpose of this tool is to have a detailed, highly accurate account of all public beach access locations along the Oregon coast.

[Read more...](#)


Oregon Explorer



The Oregon Explorer uses the power of today's cutting edge information technology to create a state-of-the-art web-accessible natural resources digital library by accessing and integrating data from state and federal agencies, local governments, university scientists and citizens to support informed decisions and actions by people concerned with Oregon's natural resources and environment. The Oregon Explorer is a project of the OUS Institute for Natural Resources and Oregon State University Library.

[Read more...](#)

Historical Maps & Charts



The NOAA Office of Coast Survey's Historical Map & Chart Collection contains over 20,000 maps and charts from the late 1700s to present day. The Collection includes some of the nation's earliest nautical charts, hydrographic surveys, topographic surveys, geodetic surveys, city plans and Civil War battle maps. The Collection is a rich primary historical archive and a testament to the artistry of copper plate engraving technology of the nineteenth and twentieth centuries.

[Read more...](#)


NOS Data Explorer



The NOS Data Explorer serves as a portal to obtain NOS spatial data including bathymetry, coastal maps, environmental sensitivity index maps, aerial photographs, and more. This site allows users to search NOS data holdings, view metadata, and link to and/or download specific data sets. Data Explorer offers interactive mapping tools that allow users to locate NOS products in any area in the United States and its territories through a metadata catalog.

[Read more...](#)

Coastal Inundation Visualization



Coastal Oregon is impacted by coastal storms that have caused erosion, flooding, and other impacts to communities. To improve forecasting and observation capabilities, and to assist in preparation for and awareness of coastal storms, the Oregon Coastal Inundation Visualization Tool was developed. This tool uses real-time data to project potential wave inundation along the ocean shore near Tillamook, Oregon.

[Read more...](#)

Tools

OREGON COASTAL ATLAS

Home Maps Tools Learn Search

Home Tools For the Public Beach Water Quality Explorer Latest Beach Summary

Find Public Beach Access Location Information

The Oregon Coastal Access Inventory is a detailed and accurate description of all public beach access points in Coastal Oregon. Under its umbrella, the public must have access to all beaches and the local residents (where appropriate) are obligated to provide and maintain such access. The Inventory is essentially an update of a previously released Inventory provided for CDD by The Berkeley Association of Coastal Access (BACA) which was then revised using advanced technology (GPS) and supplemented with observed and resident observations information.

Search for an Access Site:

- 1 Search for Access points in
- 2 An aerial view of the beach area you are searching for

Facilities	Activities
<input type="checkbox"/> Restrooms	<input type="checkbox"/> Swimming
<input type="checkbox"/> Picnic and tables	<input type="checkbox"/> Surfing
<input type="checkbox"/> Surfing board	<input type="checkbox"/> Fishing
<input type="checkbox"/> Lifeguard	<input type="checkbox"/> Kayaking
<input type="checkbox"/> Parking	<input type="checkbox"/> Horseback riding
<input type="checkbox"/> Wheelchair access	<input type="checkbox"/> Bird watching
<input type="checkbox"/> Boat ramp	<input type="checkbox"/> Shell collecting

www.oregon.gov

Information provided by the Oregon Coastal Management Program

OREGON COASTAL ATLAS

Home Maps Tools Learn Search

Home Tools For the Public Beach Water Quality Explorer Latest Beach Summary

Water Quality at CANNON BEACH

Next Beach North Next Beach South

Latest Summary for CANNON BEACH

Station Color Key

■ Non-Detectable	■ 1-50 orgs/100ml	■ 51-157 orgs/100ml	■ >158 orgs/100ml (Water Contact Discouraged)
--	--	---	---

[Click on the Station Name below to see a full history for that station.]

Maps

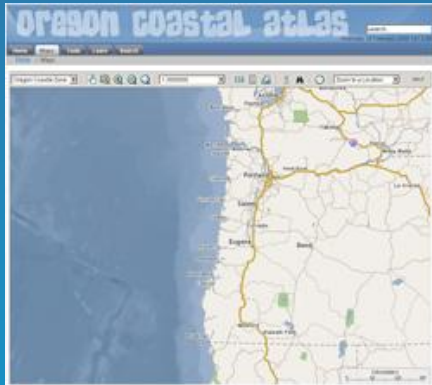
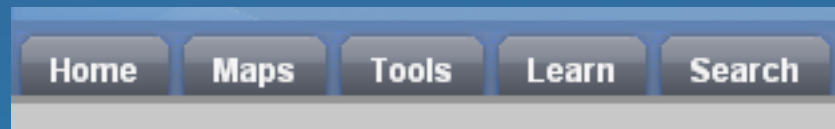
The screenshot displays the Oregon Coastal Atlas website interface. At the top, the title "OREGON COASTAL ATLAS" is prominently displayed in a stylized, light blue font. To the right of the title is a search bar with the placeholder text "search...". Below the title, a navigation menu includes buttons for "Home", "Maps", "Tools", "Learn", and "Search". The date "Tuesday, 30 September 2008 8:19:38" is shown in the top right corner.

The main content area features a map of Oregon with a yellow line tracing the coast. Major cities labeled include Tacoma, Olympia, Aberdeen, Warrenton, Astoria, Seaside, Tillamook, Lincoln City, Salem, Toledo, Corvallis, Eugene, Florence, Reedsport, North Bend, Coquille, Medford, Klamath Falls, Bend, Hood River, Yakima, Resco, Walla Walla, and La Grande. The map includes a scale bar at the bottom right showing 0, 50, 100, and 150 kilometers. The interface also includes a toolbar with various map controls like pan, zoom, and a "Zoom to a Location" dropdown menu.

At the bottom of the page, there is a small text link: "To send us comments on this website [please contact us here](#)."

Technology Used

Joomla! CMS: PHP, MySQL



MapServer
KaMap
OpenLayers



MySQL
MapServer
PostGIS
OpenLayers
ArcIMS
etc.



PHP
MySQL
MapServer



PHP
MySQL
Protégé
GeoNetwork

Joomla! CMS

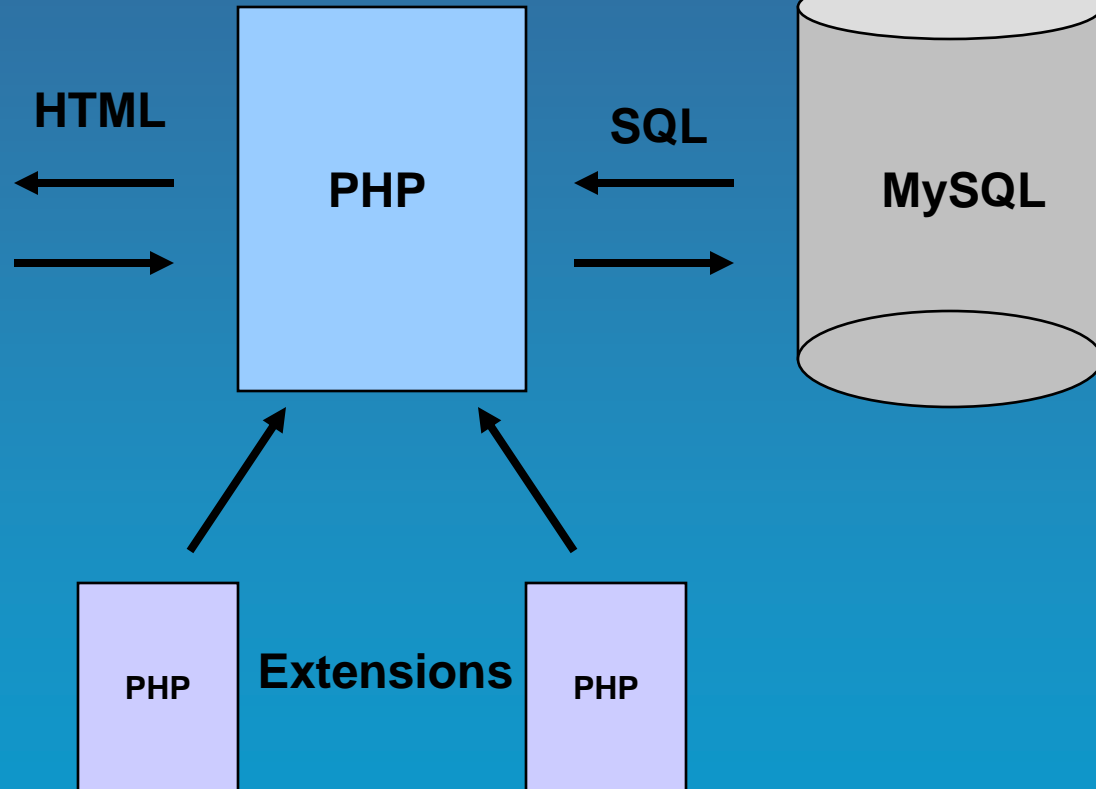
- One of many PHP + MySQL based CMS
- See <http://www.opensourcecms.com>
- Active user community
- Lots of user contributed extensions
- Simple management of User permissions
- Easy to use administrative backend
- One click content Publish or un-publish
- Extensible easy to manage templates

Joomla! CMS

<http://www.joomla.org>



Template



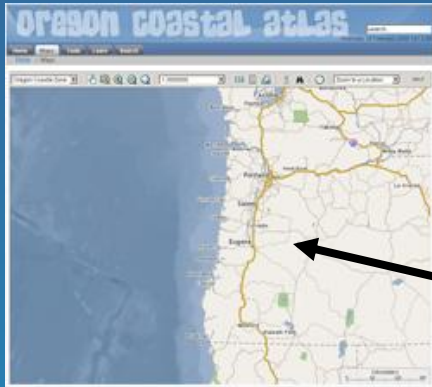
Lots of good features in the basic package, and you can always add more

Web Content vs. Geospatial Data

- Coastal Web Atlases contain both geospatial data and also web content that is spatially relevant but which would never be managed in a GIS
- Being able to manage & serve both kinds of content in a similar way can be handy
- The web is suited to a “database + scripting language” approach
- MySQL and PostgreSQL plus Php

MapServer

<http://www.mapserver.org>



Necanicum River Estuary

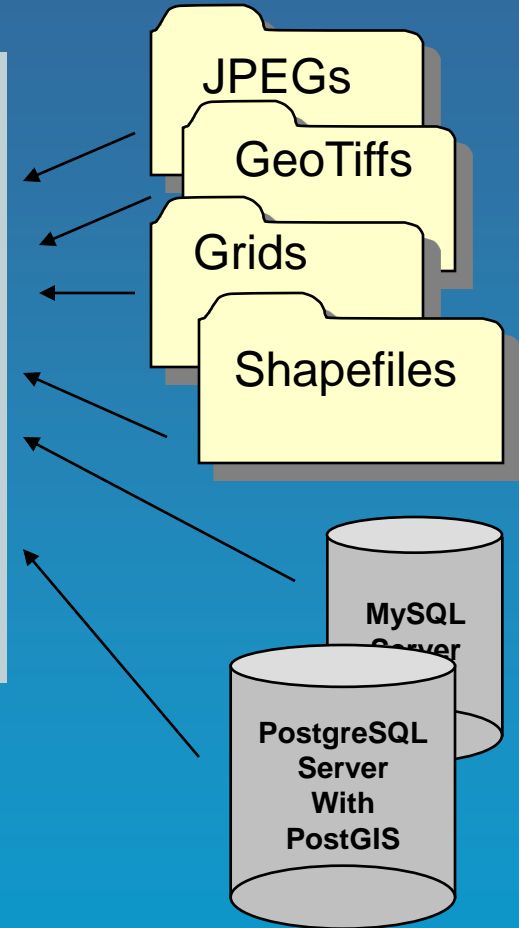
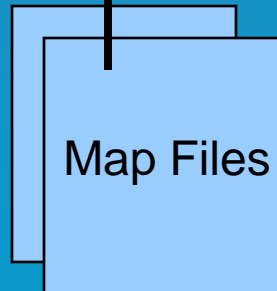
About the Necanicum River Estuary

The Necanicum River estuary is located on the Oregon coast at Seaside. The estuary is approximately 600 acres and has a watershed of approximately 60 square miles.

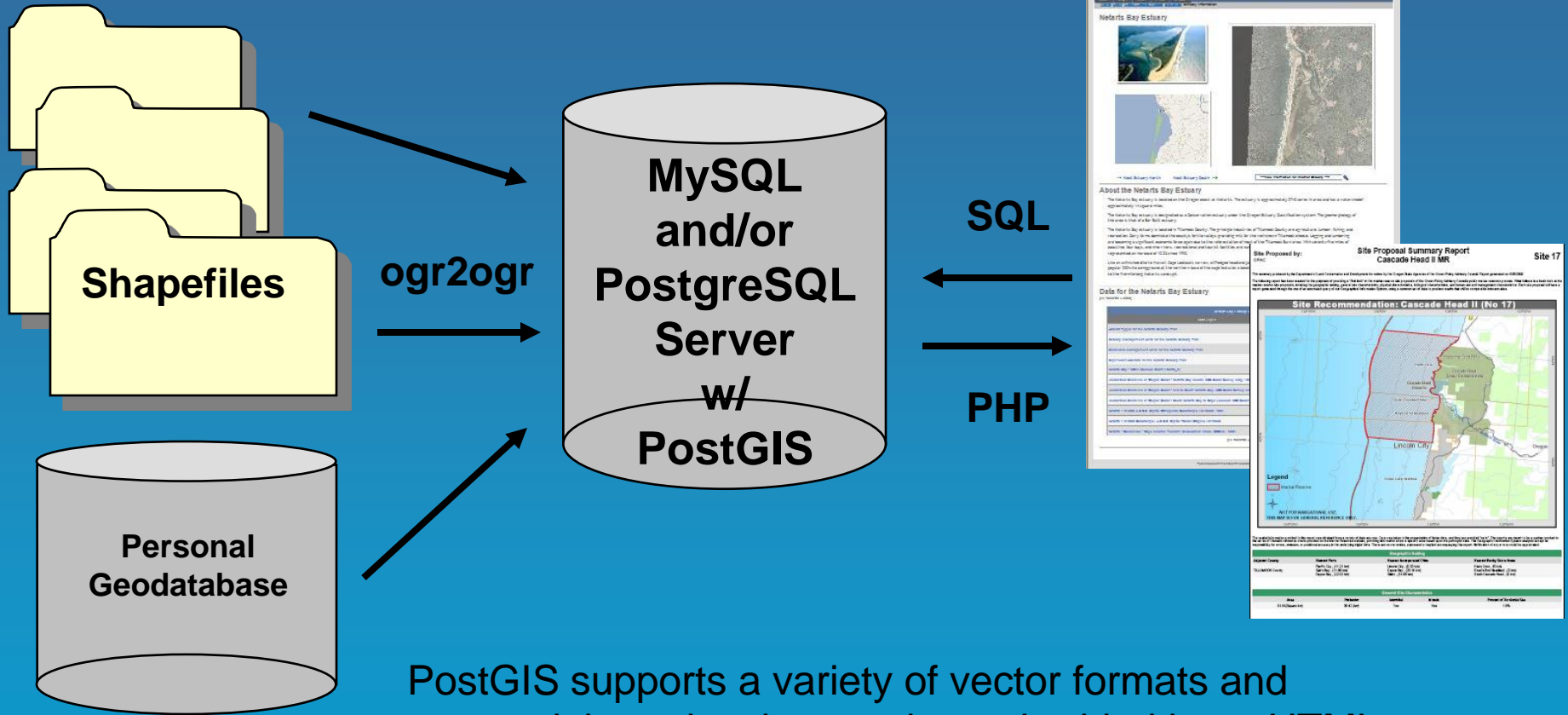
The Necanicum River estuary is designated as a conservation property under the Oregon Coastal Classification System. The geographical area of the estuary is shown in the map below.

Data for the Necanicum River Estuary

State Layer	Source	Scale	Proj	Projection
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857
Basemap	Mapbox	1:250,000	Web Mercator	EPSG:3857

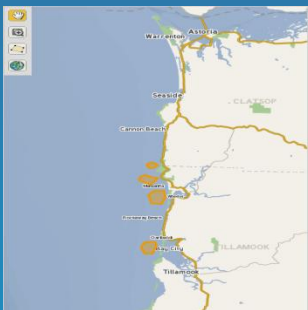


Composite Reports

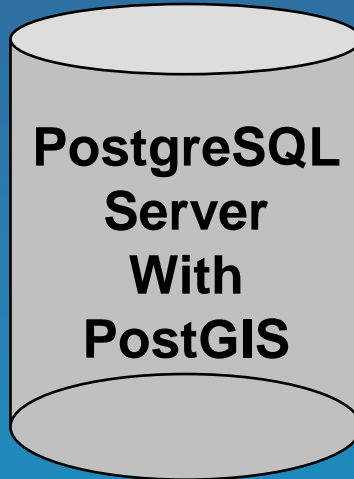


PostGIS supports a variety of vector formats and geospatial queries that can be embedded in an HTML template via PHP.

Tools = Maps Plus

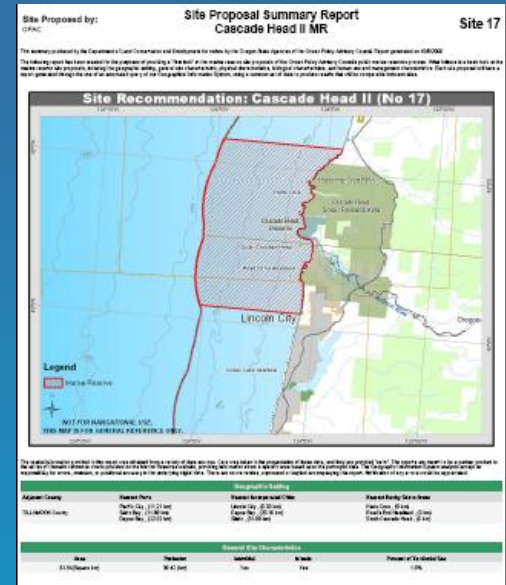


GeoJSON



SQL

PHP



OpenLayers API
Featureserver
MapServer
KaCache

When combining several FOSS parts some interesting possibilities emerge

Template
PHP
SQL

Search

- Some users only want data (& metadata)
- Requires a catalog application to manage spatially referenced (documented) resources
- MySQL is a basic solution
- GeoNetwork Open Source is a project specifically designed to enable access to geo-referenced databases, cartographic products and related metadata
- Outputs a Catalog Service for the Web (CSW)
- MySQL backend

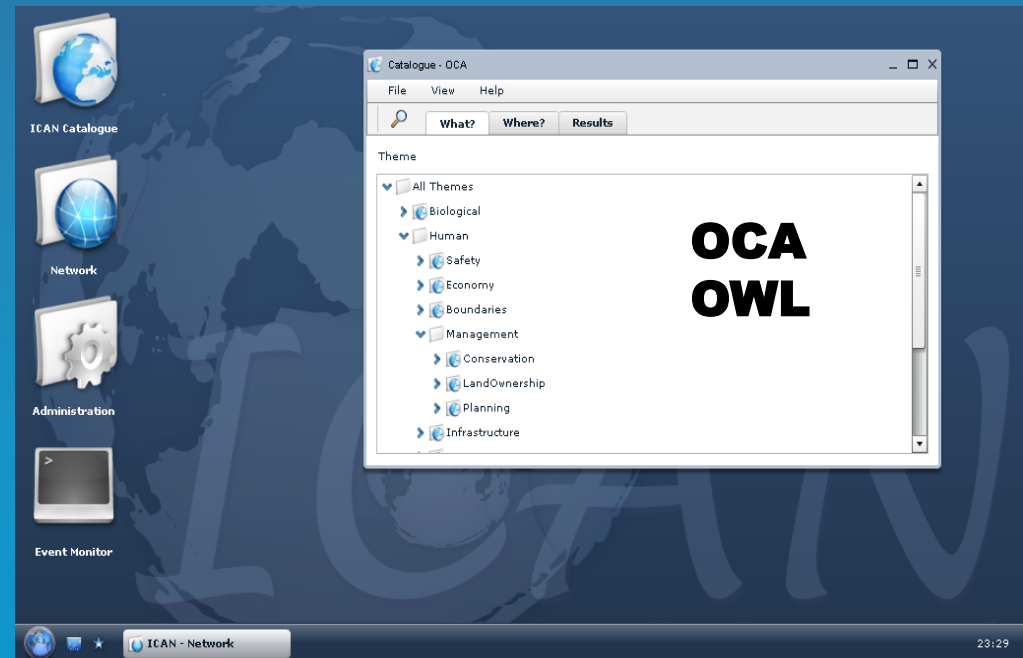
Sharing the Data Catalog

- CSW can be consumed by several clients
- When combined with an ontology (OWL), can result in powerful new search options



GeoNetwork

CSW



ICAN Prototype

Lessons Learned

- Many lessons about user needs, abilities and interface design
- Utility of various tool types for different audiences
- Standards have made life much easier
- Benefits of analyzing server statistics to document usage patterns and trends

Future Directions

- Continue enhancing mapping interfaces
- Improve search, from query to results
- Incorporate new tools / data sets
- Fully deploy GeoNetwork
- Connecting to ICAN
- Increase number of public WxS services
- Increase use of embedded maps
- Increase use of PostGIS for analysis tools

A scenic landscape photograph of a coastline. In the foreground, there are dark, silhouetted evergreen trees. The middle ground shows a wide bay or inlet with several large, dark rock formations protruding from the water. In the background, there are layers of blue-toned mountains under a cloudy, overcast sky. The overall mood is serene and somewhat somber due to the muted colors.

www.coastalatlus.net

Questions?

tanya.haddad@state.or.us

Photo: Laurel Hillmann, OPRD

Links

- <http://www.coastalatlantlas.net>
- <http://www.joomla.org>
- <http://www.opensourcecms.com>
- <http://www.mysql.com>
- <http://www.postgresql.org>
- <http://www.gdal.org>
- <http://postgis.refrations.net>
- <http://www.maptools.org>
- <http://www.mapserver.org>
- <http://geonetwork-opensource.org>
- <http://protege.stanford.edu>
- <http://ican.ucc.ie>