Oregon Coastal Atlas

www.coastalatlas.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

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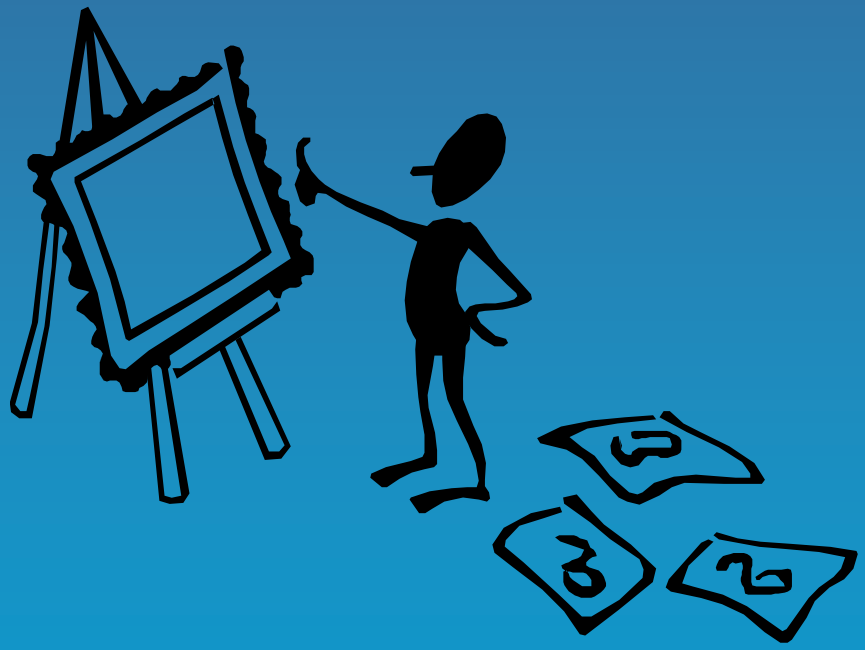
Distinguishing Features

- **What do people do with the Atlas?**



- Search
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Search

oregon coastal atlas
search...
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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 vizualization 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
aSite Name
submit
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
Submit
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...

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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 the 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...

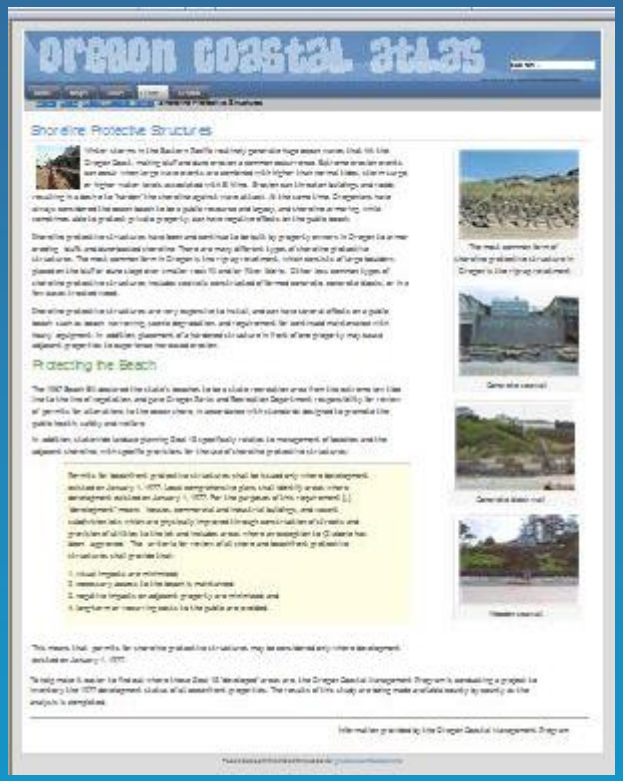
Coastal Access

There are two major pieces of public policy that provide and protect the publics' 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
Shoreline Protective Structures
Protecting the Beach

Oregon Coastal Atlas
Netarts Bay Estuary
About the Netarts Bay Estuary
Data for the Netarts Bay Estuary

Tools

Oregon Coastal Atlas

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Tools for Coastal Management

Tools help users acomplish 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 though 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 it's 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.

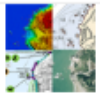
Read more...

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...

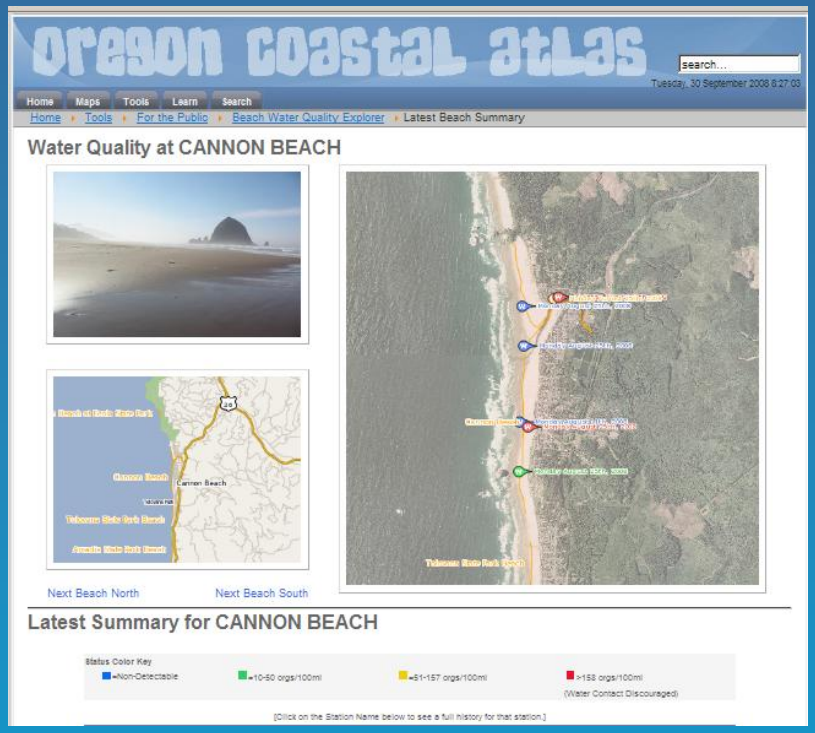
Coastal Inundation Visualization

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
Find Public Beach Access Location Information
Search for an Access Site
Facilities
Activities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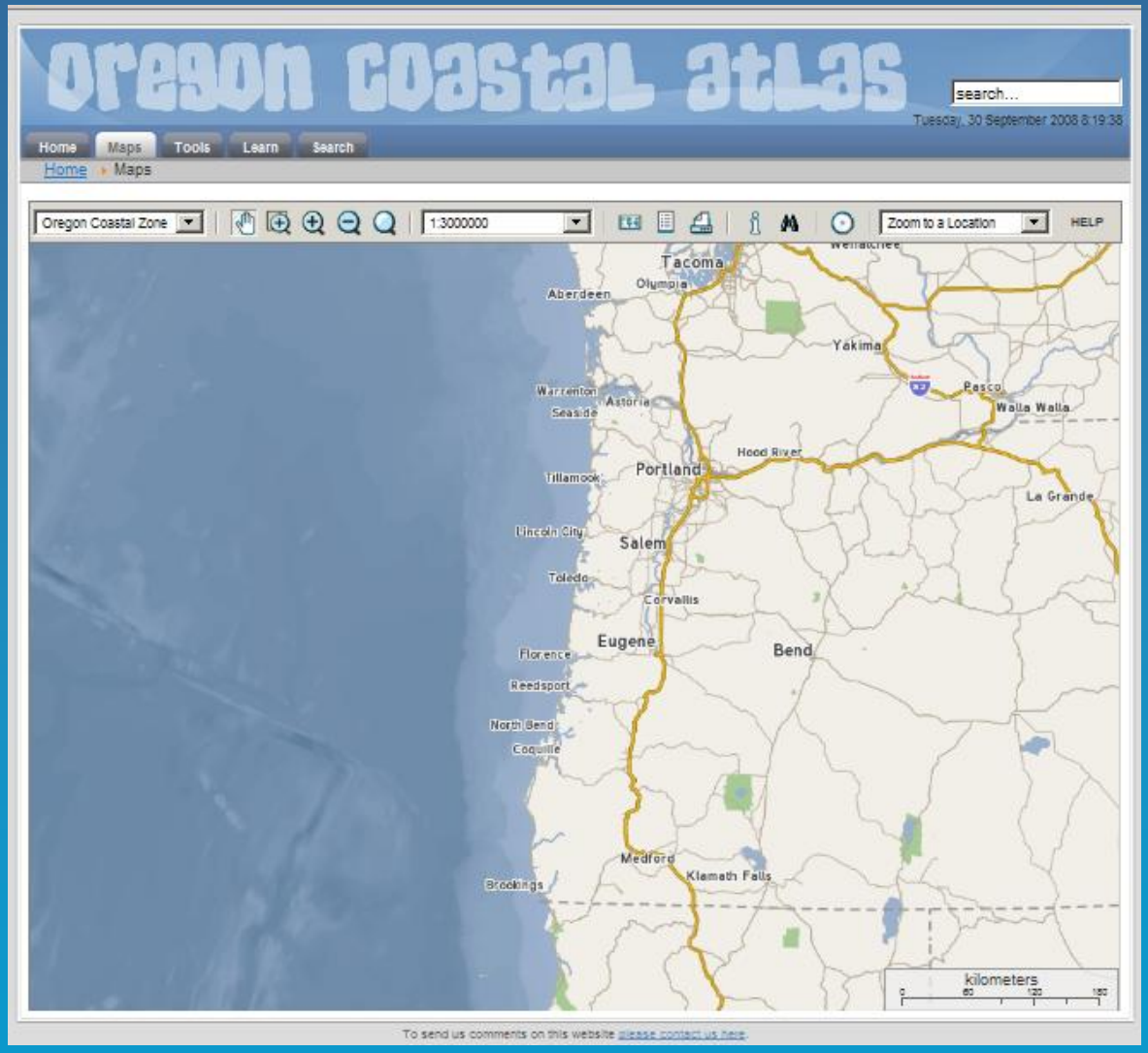
Water Quality at CANNON BEACH
Next Beach North
Next Beach South
Latest Summary for CANNON BEACH
Status Color Key
=Non-Detectable
=10-50 orgs/100ml
=51-157 orgs/100ml
>158 orgs/100ml
(Water Contact Discouraged)
[Click on the Station Name below to see a full history for that station.]

Maps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Portland
Tillamook
La Grande
Lincoln City
Salem
Toledo
Corvallis
Eugene
Bend
Florence
Reedsport
North Bend
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Klamath Falls
Brookings
kilometers
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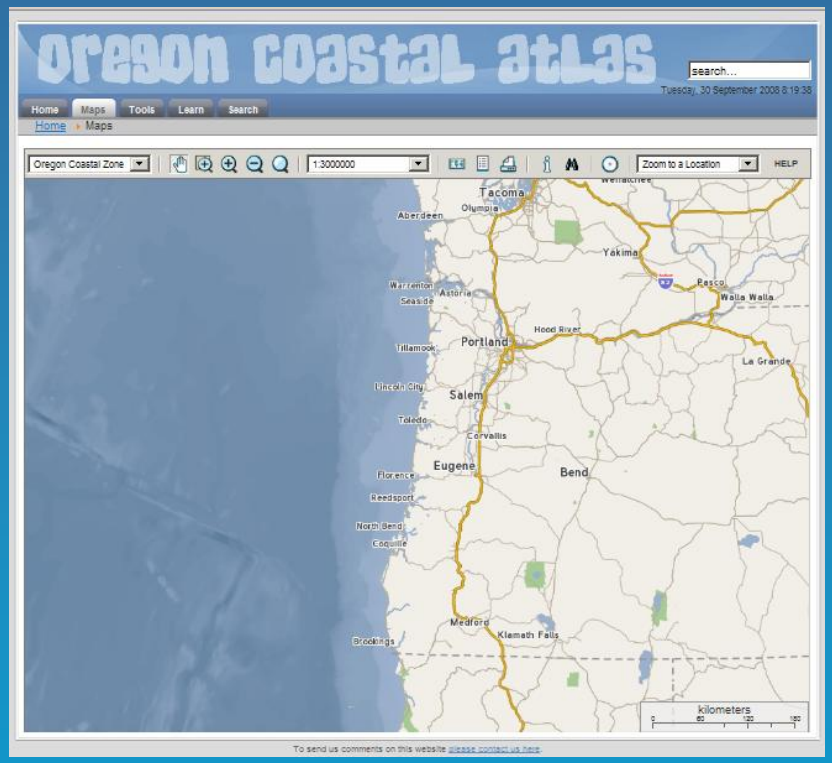
Maps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Portland
Tillamook
La Grande
Lincoln City
Salem
Toledo
Corvallis
Eugene
Florence
Bend
Reedsport
North Bend
Coquille
Medford
Klamath Falls
Brookings
kilometers
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Oregon Coastal Atlas
Netarts Bay Estuary
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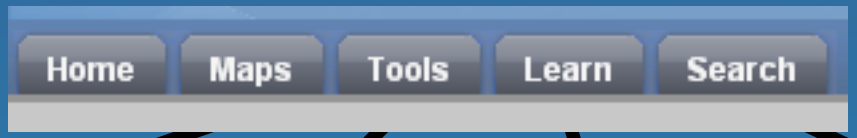
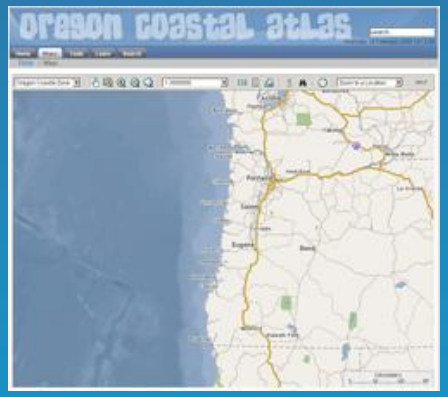
Data for the Netarts Bay Estuary

Technology Used

Joomla! CMS: PHP, MySQL





MapServer
KaMap
OpenLayers

MySQL
MapServer
PostGIS
OpenLayers
ArcIMS
etc.

PHP
MySQL
MapServer

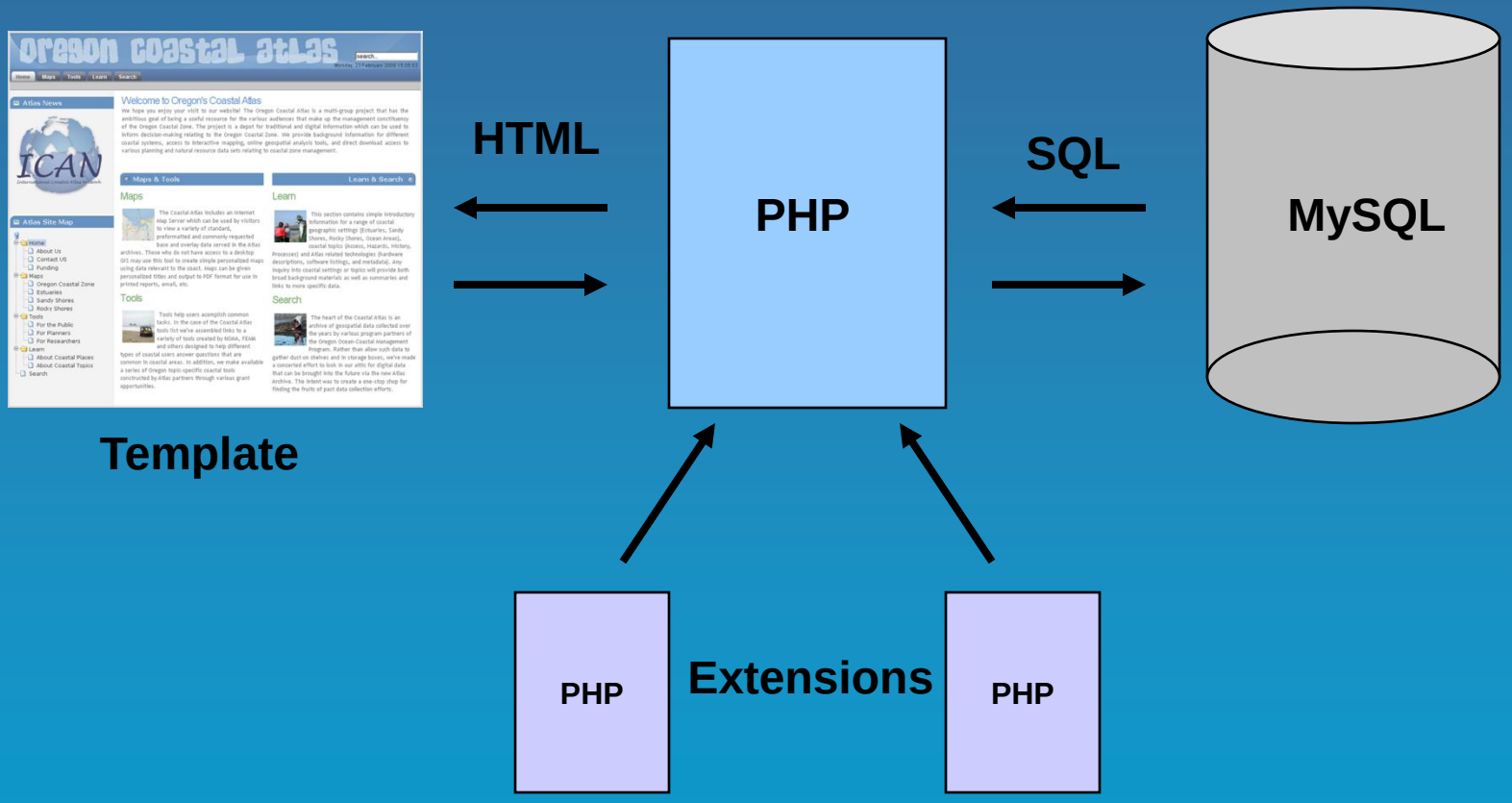
PHP
MySQL
Protégé
GeoNetwork

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



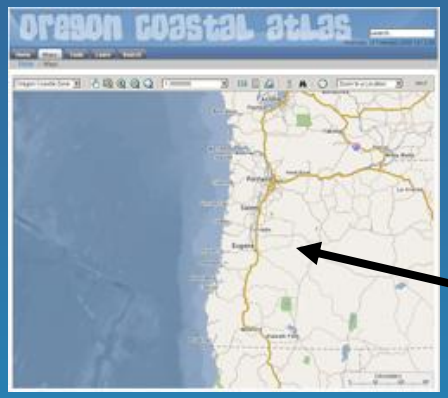
Lots of good features in the basic package, and you can always add more

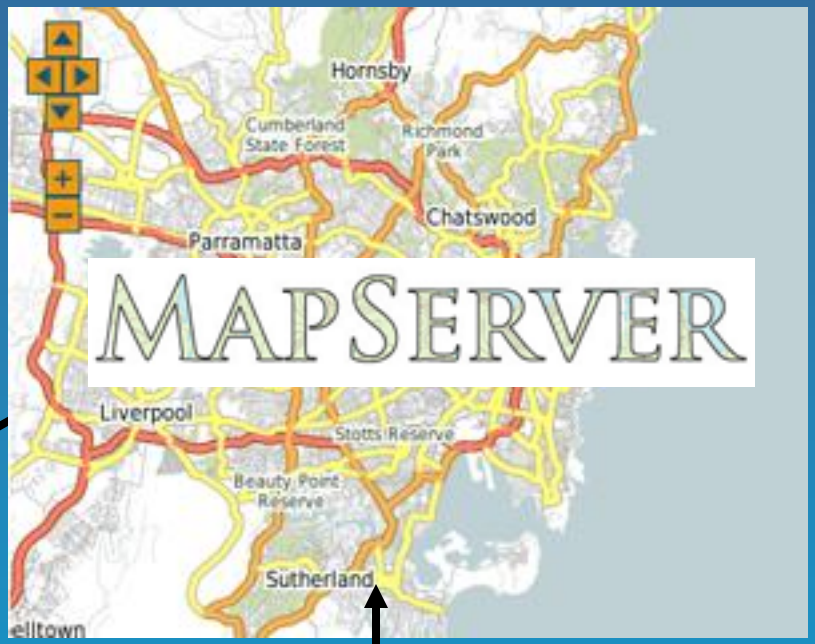
Web Content vs. Geospatial Data

- 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





JPEGs

GeoTiffs

Grids

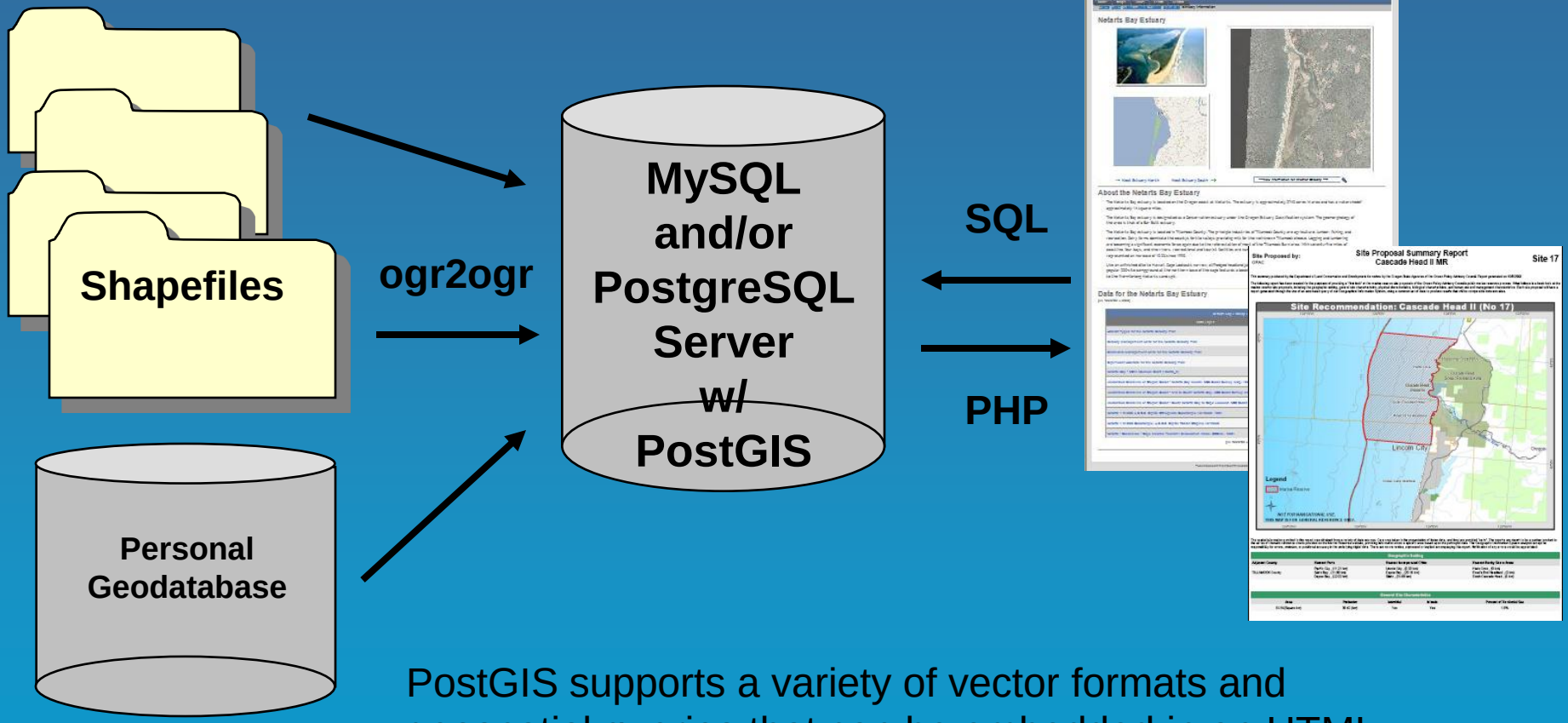
Shapefiles

MySQL Server

PostgreSQL Server With PostGIS

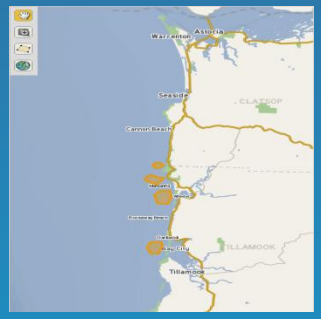
Map Files

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



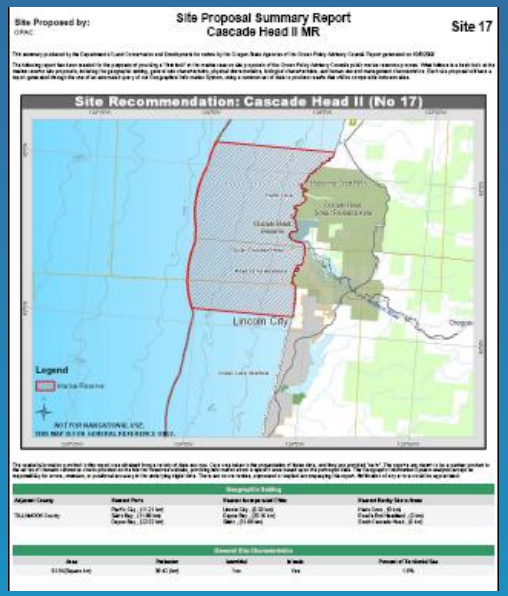
OpenLayers API
Featureserver
MapServer
KaCache

GeoJSON

PostgreSQL Server With PostGIS

SQL

PHP



Template
PHP
SQL

When combining several FOSS parts some interesting possibilities emerge

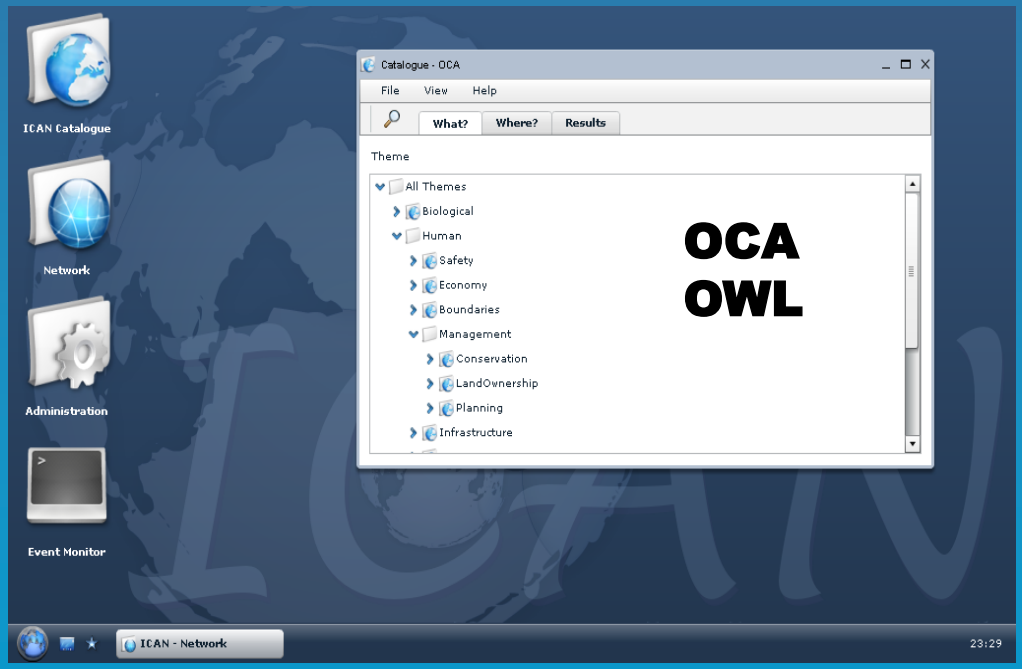
Search

- 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

CSW



GeoNetwork

ICAN Prototype

Lessons Learned

- Many lessons about used 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

www.coastalatlas.net

Questions?

tanya.haddad@state.or.us

Photo: Laurel Hillmann, OPRD

Links

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