

# How Open Geoportal Supports Development of a Coastal Spatial Data Infrastructure

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with

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*Boston, Massachusetts*

*Sunday, October 27, 2013*

# ICAN

International Coastal Atlas Network

Promoting coastal web atlases worldwide for conservation, management, and governance.

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- Documentation, Tutorials



## What is the International Coastal Atlas Network (ICAN)?

Submitted by dawn on 6 March 2013 - 3:51am

[Read more](#) [Español](#)

[Español](#)

## North Carolina Coastal Atlas Joins ICAN!

Submitted by dawn on 29 July 2013 - 8:40am

ICAN is very pleased to welcome its latest member, the North Carolina Coastal Atlas ([www.nccoastalatlus.org](http://www.nccoastalatlus.org)). From their site: "The North Carolina Coastal Atlas is a collaborative effort to enable access to coastal data and information."

is provided  
on coastal  
information  
to these

## Upcoming ICAN Events

No upcoming events available



[more](#)

International Coastal Atlas Network  
<http://icoastalatlus.net/>

ICAN aims to be a global reference for the development of coastal web atlases.

# What is a Coastal Web Atlas?

- A Coastal Web Atlas is 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.

*-- O'Dea et al., 2007*

More simply stated, a CWA is a web resource designed to promote data sharing and decision support for coastal management.

## Home

The Wisconsin Coastal Atlas is an innovative web resource that helps people better understand coastal issues, share coastal data, and inform decision-making about sustainable use of the Great Lakes. It is intended for use by coastal resource managers, planners, researchers, educators, tourists, citizen scientists, and coastal residents. The atlas serves as a gateway to spatial decision support tools relevant to Great Lakes management and provides access to educational resources about coastal issues in Wisconsin. The initial focus is on coastal hazards, but new themes will be added over time. The atlas is built with an open architecture that allows easy addition of new maps, data, and tools. Initial development of the Wisconsin Coastal Atlas began in February 2010 with funding from the University of Wisconsin Sea Grant College Program.

## Maps



A gallery of interactive web mapping interfaces, allowing users to explore the many coastal issues facing Wisconsin.

[Go to maps...](#)

## Catalog



A path to discover, assess, and download geospatial data relevant to the Great Lakes.

[Go to catalog...](#)

## Tools



A gateway to decision-support tools relevant to coastal management.

[Go to tools...](#)

## Learn



Information about Great Lakes coastal issues and place-based learning.

[Go to learn...](#)

**Wisconsin Coastal Atlas**  
**<http://wicoastlatlas.net/>**



# Map Module

- Map Gallery
  - web mapping applications for a variety of coastal issues
  - demonstrate the range of web mapping technologies
- Links to other web mapping apps relevant to Great Lakes issues



# Catalog Module



- Make it easier to find and acquire coastal GIS data
- Test GeoCatalog software
- Network distributed catalogs

# Tools Module

- Build spatial decision support tools that leverage the WCA map and catalog modules
- Apply social science methods to build more effective decision support tools.

The screenshot shows the 'Tools' section of the Wisconsin Coastal Atlas website. The header includes the WCA logo and navigation links: Home, Maps, Catalog, Tools, Learn, About. A search bar is also present. The main content area is titled 'Tools' and contains a paragraph explaining its purpose as a gateway to spatial decision-support tools. Below this, there are five tool cards, each with a title, a small image, a description, and a 'View the tool...' link.

**Tools**

The tools section of the Wisconsin Coastal Atlas serves as a gateway to spatial decision-support tools relevant to coastal management on the Great Lakes. This is accomplished in two ways - first, through the ability of the web mapping services and spatial data catalog for the atlas to serve as a platform for development of new spatial decision support tools; and second, by pointing to external resources that provide access to innovative decision support tools. The initial focus is on tools that promote communities that are resilient to coastal hazards and more effective implementation of comprehensive plans in coastal communities.

**Wisconsin Beach Health**

This tool helps people make informed choices about health risks when deciding to go to the beach. Water quality sampling is provided for public beaches on the Great Lakes and inland waters.

**U.S. Geological Survey**

[View the tool...](#)

**Milwaukee County Beaches**

This tool provides accurate and timely information to the public about the beach, nearshore and weather conditions at public beaches within the Milwaukee County Parks system.

**Great Lakes Restoration Initiative**

[View the tool...](#)

**Emergency Response**

The Great Lakes Environmental Response Management Application (ERMA) is a tool that supports coastal pollution cleanup, restoration, and response efforts in the Great Lakes basin.

**NOAA, Office of Response and Restoration**

**Visualizing Coastal Erosion on the Great Lakes**

Information collected about erosion of coastal faults is often very technical in nature and difficult to understand. This web-based educational exhibit integrates animation, aerial photography, pictures, charts, and text to help the public better understand: (1) the natural process of coastal erosion; (2) how local land development decisions impact coastal erosion; and (3) the case for scientifically-based coastal development setbacks. It examines coastal erosion processes for a location just south of Concordia University in Ozaukee County, Wisconsin.

**Geography Department, UW-Madison**

[View the tool...](#)

**SSEC WMS Map Server Project**

This site provides data visualization of weather data for desktop and mobile clients. The WMS product manager provides access to 50+ useful satellite and imagery products including precipitation phase, icing potential, road conditions and fire danger index.

**Space Science and Engineering Center, UW-Madison**

[View the tool...](#)

# Learn Module

**wca** Wisconsin Coastal Atlas

Home Maps Catalog Tools Learn About

**Learn**

The learn section of the Wisconsin Coastal Atlas provides information about Great Lakes coastal issues and place-based education.

**Paddle-to-the-Sea, Google Lit Trip**



Paddle-to-the-Sea, a picture book written and illustrated by Hokey C. Holmg, teaches children and adults alike about the natural and cultural wonders of the Great Lakes. It remains timely seven decades after its initial publication. Follow "Paddle-to-the-Sea", a carving of a young Indian boy in a canoe, on a journey through all the Great Lakes. This Google Earth application shows the path of Paddle's journey to the sea.

(summary, K-12 file, Google Lit Trips)

**Big Two-Hearted River, Google Lit Trip**



The Big Two-Hearted River by Ernest Hemingway was initially published in 1925 and recounts a trout fishing trip near Sarney, Michigan in the eastern Upper Peninsula. This Google Earth application marks the sequence of features described in the essay and weaves science on stream ecology, entomology, and water resource management into the spatial narrative.

(summary, K-12 file, Google Lit Trips)

**Up River Quest, ARIS**



In Up River, players use their iPhone or iPad to "interact" with virtual characters located at three locations in the St. Louis River Estuary - Canal Park, Sage's Point and Grassy Point. Your "quest" is to create a meal from resources found in and around the estuary. Along the way, you become physically immersed in the estuary, exploring tourist attractions, industrial sites and restored habitats. To complement these real-world experiences, you also access geo-located stories and science via your mobile device.

(ARIS demo, how to get ARIS, up river stories)

**Barker's Island Quest, ARIS**



In the Barker's Island Quest, players use their iPhone or iPad to "interact" with virtual characters located at the headquarters of the Lake Superior National Estuarine Research Reserve in Superior, Wisconsin. Your "quest" is to help a stranded ship Captain get back on his journey. Along the way, you figure out the origins of Barker's Island and how people and wildlife that make use of the island and surrounding estuary.

(ARIS demo, how to get ARIS)

- Learn about coastal issues and places
- A repository for place-based learning
- Provide guidance on building a coastal spatial data infrastructure



# WCA Catalog Components

## Download Geospatial Data

Layers	SHP	KML	KMZ
Beaches, Great Lakes, Wisconsin			✓
Bike Routes, Coastal Counties, Wisconsin			✓
Bluff Top, Kenosha County, 1956	✓		
Bluff Top, Kenosha County, 2000	✓		
Bluff Top, Kenosha County, 1956	✓		
Bluff Top, Kenosha County, 2000	✓		
Bluff Top, Racine County, 1956	✓		
Bluff Top, Racine County, 2000	✓		
Bluff Top, Racine County, 1956	✓		
Bluff Top, Racine County, 2000	✓		
Bluff Top, Milwaukee County, 1956	✓		
Bluff Top, Milwaukee County, 2000	✓		
Bluff Top, Milwaukee County, 1956	✓		
Bluff Top, Milwaukee County, 2000	✓		
Bluff Top, Ozaukee County, 1956	✓		
Bluff Top, Ozaukee County, 1999	✓		
Bluff Top, Ozaukee County, 1956	✓		
Bluff Top, Ozaukee County, 1999	✓		
Bluff Top, Sheboygan County, 1961	✓		
Bluff Top, Sheboygan County, 1999	✓		
Bluff Top, Sheboygan County, 1961	✓		
Bluff Top, Sheboygan County, 1999	✓		

- Catalog list modeled after City of Vancouver, BC Open Data Catalogue (<http://data.vancouver.ca/>)
- 57 datasets in SHP and KML formats

City of VANCOUVER Open Data Catalogue									
Data catalogue									
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z									
Name & Information about Data	CSV	XLS	DWG	KML	SHP	ECW	Other Formats	Google Maps	Bing Map
<b>B - 6</b>									
3-1-1 case location details	✓ CSV	✓ XLS							
3-1-1 case volume	✓ CSV	✓ XLS							
3-1-1 contact centre metrics	✓ CSV	✓ XLS							
3-1-1 interaction volume	✓ CSV	✓ XLS							
<b>A</b>									
Accessible parking			✓ DWG	✓ KML	✓ SHP				
Address labels for map display			✓ DWG	✓ KML	✓ SHP				

## WHAT?

## WHERE?



- User defined -

Search

Reset Advanced

Options

- All Datasets
- Elevation
- Hazards
- Imagery
- LandUse
- Parcels
- other
- recreation



- Lake Superior Circle Tour
- Land Use, Door County, Various Years
- Land Use, Kewaunee County, 2006
- Land Use, Sheboygan County, 2002
- Land Use, Manitowoc County, 2010
- Bluff Top, Manitowoc County, 1999
- Bluff Top, Manitowoc County, 1961
- Bluff Top, Manitowoc County, 1961
- Land Use, Town of Peshtigo, 2008
- Land Use, Marinette County (south), 2008

## Show map

## WELCOME TO THE WISCONSIN COASTAL ATLAS CATALOG: FIND INTERACTIVE MAPS, GIS DATASETS, AND RELATED APPLICATIONS

Aggregate Results matching search criteria : 31-33/33 (page 4/4), 0 selected

Select : [all](#), [none](#)

actions on selection

Sort by [Relevance](#)☐ LAND USE, TOWN OF PESHTIGO, 2008

## Abstract

A map to use with the understanding of the land uses in the Bay-Lake region. To be used with comprehensive planning for development

## Keywords

Polygon, Development Planning, Comprehensive Planning, Land Cover, Land Use, North America, United States, County, Marinette, Wisconsin, Peshtigo, Town, City, 2008

Metadata

Download

☐ BLUFF TOP, KENOSHA COUNTY, 1956

## Abstract

This is a shapefile containing polylines that delineate the bluff top for Kenosha County as it existed in 1956.

## Keywords

Environmental Hazard, Land Status, Landform, Coastal Erosion, Bluff Top, Kenosha County, Somers, Pleasant Prairie, 1956

Metadata



## Abstract

WCA GeoNetwork


















<http://maps.aqua.wisc.edu/geonetwork/>

## Layer Preview

List of all layers configured in GeoServer and provides previews in various formats for each.

<< < 1 2 3 > >>

Results 1 to 25 (out of 54 items)

Type	Name	Title	View
	usa:states	States, USA - Population	OpenLayers <input type="button" value="Go"/>
	UWSeaGrant:DoorCountyVariousYearsLandUse	DoorCountyVariousYearsLandUse	PNG <input type="button" value="Go"/>
	UWSeaGrant:LandUseFlorenceCounty2009	Florence_County_LU_2009	
	UWSeaGrant:LandUseKewauneeCounty2006	KewauneeCounty2006LandUse	
	UWSeaGrant:LandUseManitowocCounty2010	Manitowoc_County_LU_2010	
	UWSeaGrant:LandUseMarinetteCountynorth2008	LandUseMarinetteCountynorth2008	
	UWSeaGrant:LandUseMarinetteCountysouth2008	Marinette_South_LU_2008	
	UWSeaGrant:LandUseOcontoCounty2007	Oconto_County_2007_Land_Use	
	UWSeaGrant:LandUseSheboyganCounty2002	shebcounty02lu_mergeall	
	UWSeaGrant:LandUseTownofPeshtigo2008	Marinette_T_Peshtigo_LU_2008	
	UWSeaGrant:BluffToeKenoshaCounty1956	1956-Kenosha-County-Bluff-Toe-Linework	OpenLayers <input type="button" value="Go"/>
	UWSeaGrant:BluffToeKenoshaCounty2000	2000-Kenosha-County-Bluff-Toe-Linework	OpenLayers <input type="button" value="Go"/>
	UWSeaGrant:BluffToeKewauneeCounty1961	1961-Kewaunee-County-Bluff-Toe-Linework	OpenLayers <input type="button" value="Go"/>
	UWSeaGrant:BluffToeKewauneeCounty2000	2000-Kewaunee-County-Bluff-Toe-Linework	OpenLayers <input type="button" value="Go"/>
	UWSeaGrant:BluffToeM		
	UWSeaGrant:BluffToeM		
	UWSeaGrant:BluffToeMilwaukeeCounty1956	1956-Milwaukee-County-Bluff-Toe-Linework	OpenLayers <input type="button" value="Go"/>

- PNG

**Applications**
  - OpenLayers
  - Google Earth
  - GeoExplorer**WMS Formats**
  - application/vnd.google-earth.kmz
  - application/xml
  - AtomPub
  - GeoTiff
  - GeoTiff 8-bits
  - GIF
  - image/png; mode=8bit
  - JPEG
  - KML (network link)
  - KML (plain)
  - PDF
  - PNG**
  - SVG
  - text/html
  - Tiff

WCA GeoServer

<http://maps.aqua.wisc.edu/geoserver/>



Search for data layers...

Search

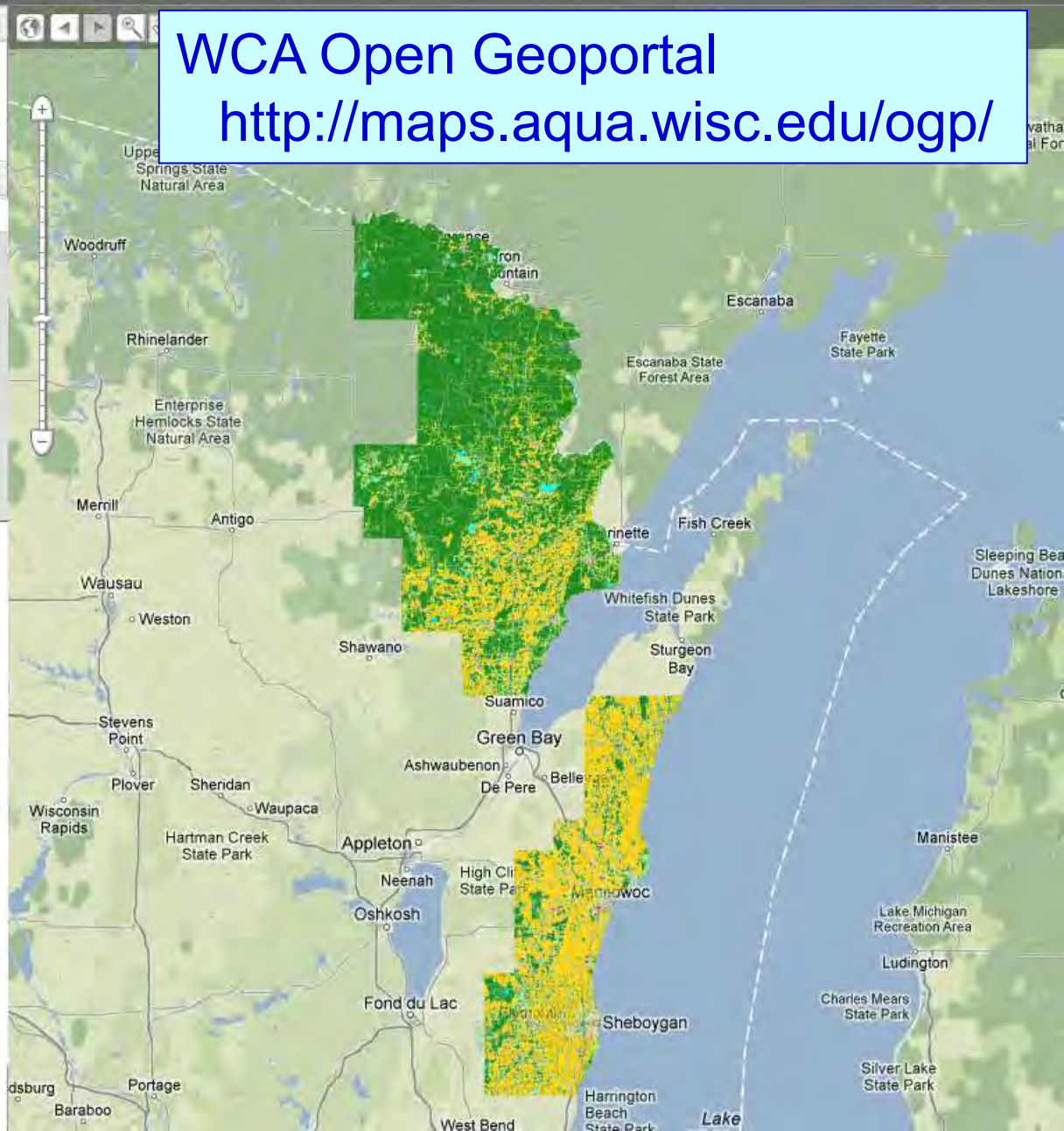
☒ Limit results to visible map area[advanced options](#)

25 RESULTS by Relevancy

Columns

Preview	Name	Originator	Rep	Type	Download
<input checked="" type="checkbox"/>	Land Use, Sheboygan Count Bay-Lake R	SG	1	SHP	KMZ
<input checked="" type="checkbox"/>	Land Use, Florence County, Bay-Lake R	SG	1	SHP	KMZ
<input checked="" type="checkbox"/>	Land Use, Manitowoc County, Bay-Lake R	SG	1	SHP	KMZ
<input checked="" type="checkbox"/>	Land Use, Kewaunee Count Bay-Lake R	SG	1	SHP	KMZ
<input checked="" type="checkbox"/>	Land Use, Marinette County ( Bay-Lake R	SG	1	SHP	KMZ
<input checked="" type="checkbox"/>	Land Use, Town of Peshtigo, Bay-Lake R	SG	1	SHP	KMZ
<input checked="" type="checkbox"/>	Land Use, Marinette County ( Bay-Lake R	SG	1	SHP	KMZ
<input checked="" type="checkbox"/>	Land Use, Oconto County, 20 Bay-Lake R	SG	1	SHP	KMZ
opacity: 100% In width: 1px					
<input type="checkbox"/>	Land Use, Door County, Vari Bay-Lake R	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Toe, Manitowoc County, UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Top, Manitowoc County, UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Toe, Manitowoc County, UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Top, Manitowoc County, UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Toe, Sheboygan County UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Top, Sheboygan County UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Toe, Sheboygan County UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Top, Sheboygan County UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Toe, Ozaukee County, 1 UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Top, Ozaukee County, 1 UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Toe, Ozaukee County, 1 UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Top, Ozaukee County, 1 UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Top, Milwaukee County, UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Toe, Milwaukee County, UWSeaGra	SG	1	SHP	KMZ
<input type="checkbox"/>	Bluff Top, Milwaukee County, UWSeaGra	SG	1	SHP	KMZ

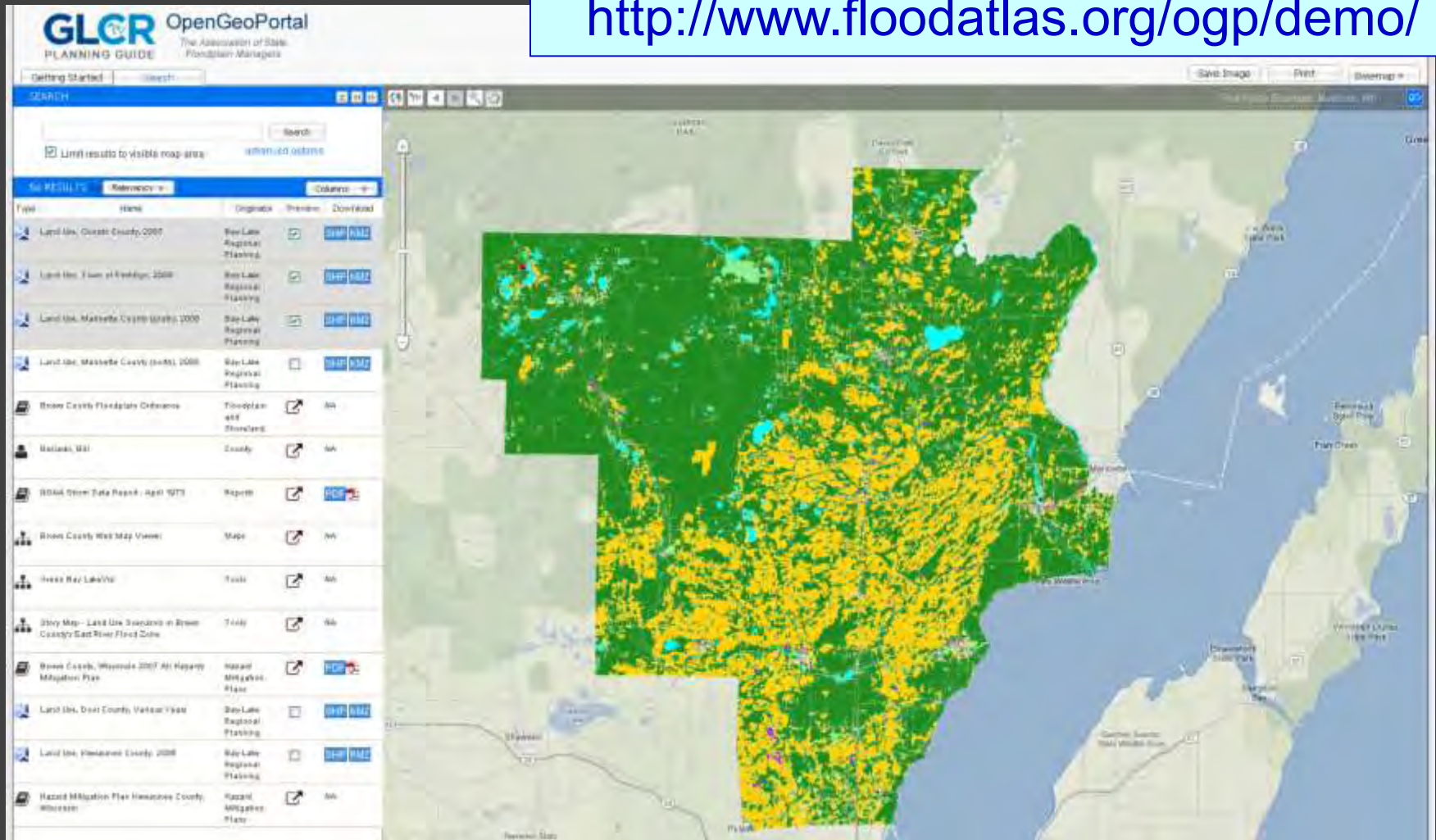
## WCA Open Geoportal

<http://maps.aqua.wisc.edu/ogp/>



## ASFPM Open Geoportal

<http://www.floodatlas.org/ogp/demo/>



# WCA Open Geoportal – 3 Bullets

- Upgrades/support in a student employment dominated environment.

# WCA Open Geoportal – 3 Bullets

- Upgrades/support in a student employment dominated environment.
- Filtered harvesting.

# WCA Open Geoportal – 3 Bullets

- Upgrades/support in a student employment dominated environment.
- Filtered harvesting.
- A gallery of OGP implementations



# Great Lakes Coastal GIS/Coastal Atlases



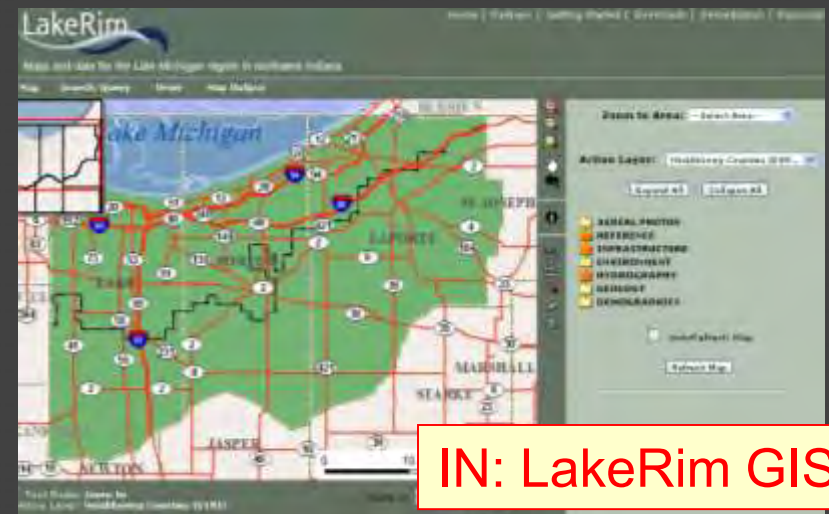
OH: Ohio Coastal Atlas



NY: Ocean & Great Lakes Atlas



MN: Lake Superior GIS



IN: LakeRim GIS

# Great Lakes Coastal GIS/Coastal Atlases

MN Coastal GIS

Promote a “bottom-up” approach to Great Lakes GIS that strengthens existing regional efforts (e.g. GLIN, GLOS, etc.)

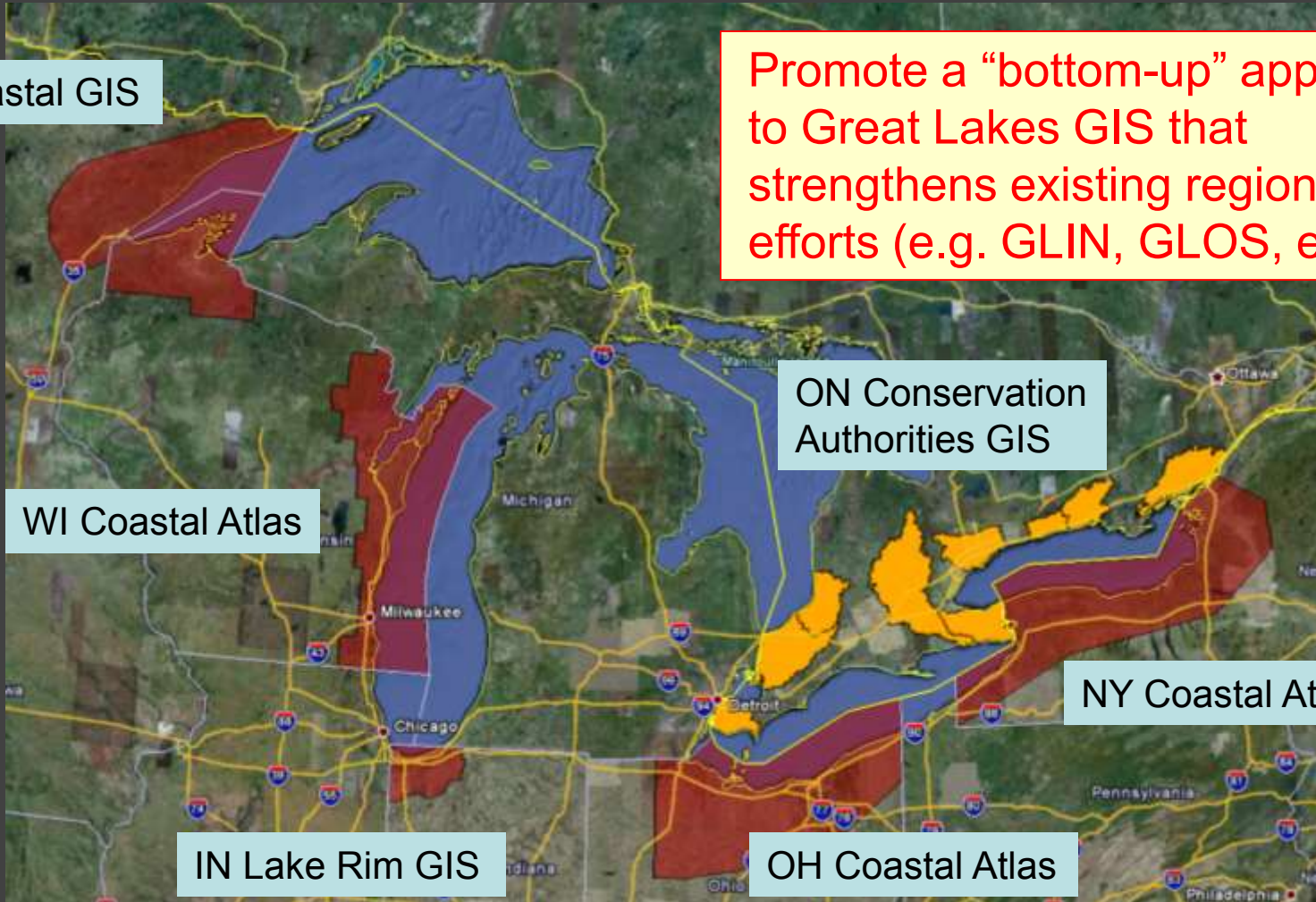
WI Coastal Atlas

ON Conservation Authorities GIS

NY Coastal Atlas

IN Lake Rim GIS

OH Coastal Atlas



# Promote a Regional Coastal Atlas Network

## International Coastal Atlas Network-Great Lakes meeting

- Pyle Center – Madison, WI – September 13-15, 2010 – 52 attendees
- Support from USGS, NOAA CSC, Wisconsin DNR, ICAN



- Showcased the impacts of mature CWAs
- Explored emerging use cases for networked CWAs
- Described how CWAs relate to broader initiatives
- Hands-on Training: Creating Robust Web Services and Catalogs for Coastal Web Atlases



What role can Open Geoportal  
play in building a networked  
Great Lakes Coastal Atlas?

