

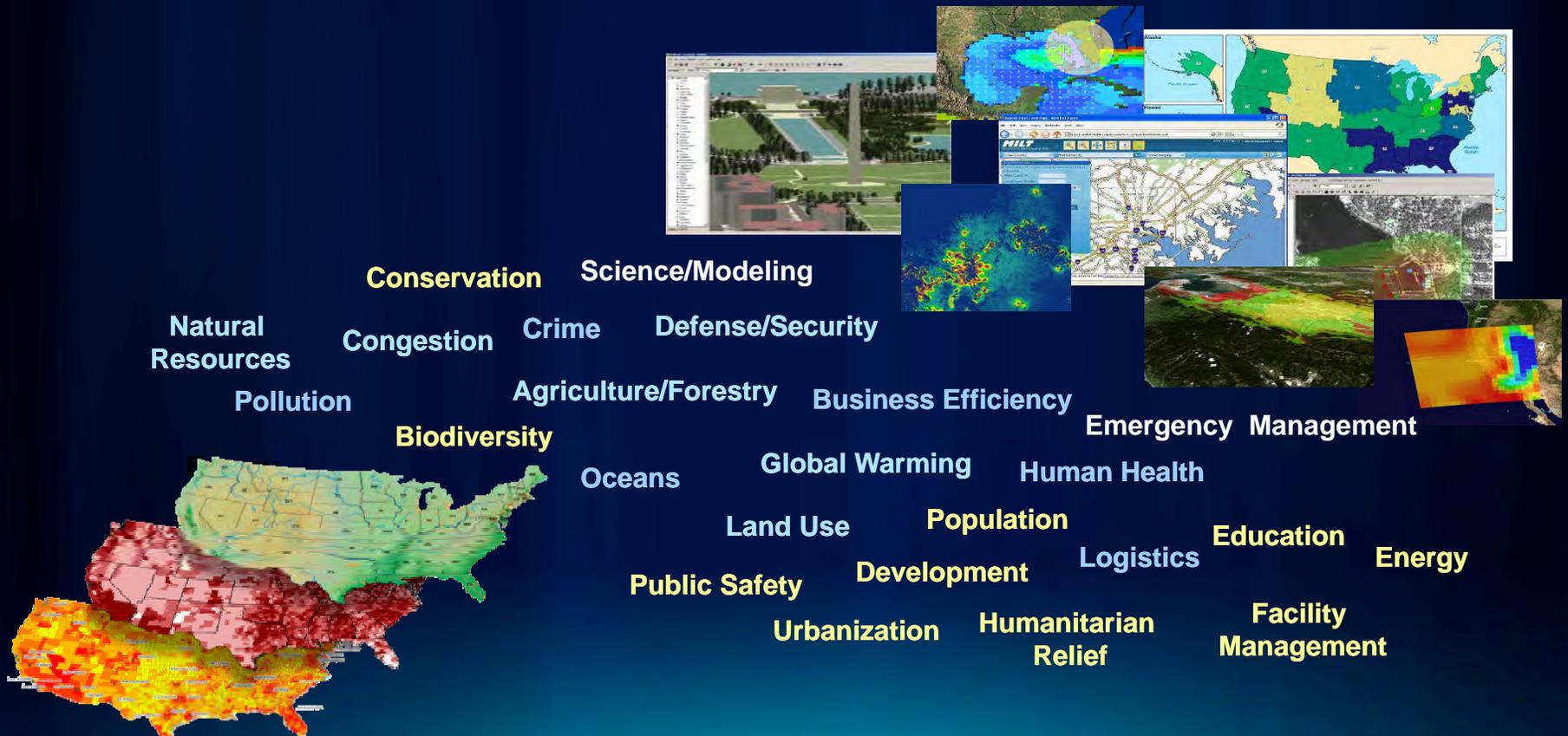
Metadata for OGC-based Geospatial
Services

**Part 3: Managing and
Discovering Resources**

Geoff Mortson

PART 2: SERVICES (REVIEW)

The power of services – especially ones that use standard protocols – is that they can be served by one group, discovered by another, and used in an infinite number of client applications.



Web Map Service (WMS)

- **International specification for serving and consuming dynamic maps on the Web.**
- **Client applications work with a WMS service by appending parameters to the service's URL. Example operations include:**
 - **Requesting metadata about the service (GetCapabilities)**
 - **Requesting a map image (GetMap)**
 - **Requesting information about features in the map (GetFeatureInfo [optional])**
 - **Requesting user-defined styles (GetStyles)**
 - **Requesting legend symbols (GetLegendGraphic)**

Web Feature Service (WFS)

- **Open specification for serving geographic features over the Web**
- **WFS service returns actual features with geometry and attributes that clients can use in any type of geospatial analysis.**
- **WFS services also support filters that allow users to perform spatial and attribute queries on the data**

Web Coverage Service (WCS)

- **Web Coverage Service (WCS) provides an open specification for sharing raster datasets on the Web**
- **WCS returns data in a format that can be used as input for analysis and modeling**
- **Raster datasets made available through WCS services are referred to as coverages**

Keyhole Markup Language (KML)

- **Keyhole Markup Language (KML) is an XML-based file format used to represent geographic features in applications such as Google Earth and ArcGIS Explorer.**
- **KML allows you to draw points, lines, and polygons on maps and globes and share them with others.**
- **Can also designate text, pictures, movies, or links to other GIS services that appear when the user clicks the feature**

Catalog Service for the Web (CSW)

- **OGC Catalog Service for the Web defines common interfaces to discover, browse, and query metadata about data, services, and other potential resources**
- **Sample Operations for a CSW include:**
 - **GetCapabilities—Returns service-level metadata and a brief description**
 - **DescribeRecord—Returns a full description of one or more records**
 - **GetRecords—Returns a record**
 - **GetRecordById—Returns a record by a unique identifier**

Example: Data.gov

- Geodata.gov – existing initiative in geospatial domain
- Data.gov – new initiative to transparent government
- Data.gov looked at building another catalog for data
- Geodata.gov and Data.gov collaborated
- Geodata.gov now supplies Data.gov with 270,000+ downloadable datasets through an OGC Web Service



Sensor Observation Service (SOS)

- **The standard defines a web service interface for the discovery and retrieval of real time or archived data produced by all kinds of sensors like mobile or stationary as well as in-situ or remote sensors**
 - **GetCapabilities: Returns a service description containing information about the service interface and the available sensor data.**
 - **DescribeSensor: Returns a description of one specific sensor, sensor system or data producing procedure containing information like position of sensor, calibration, input- and outputs, etc.**
 - **GetObservation: Provides pull-based access to sensor observations and measurement-data via a spatio-temporal query that can be filtered by phenomena and value constraints.**

How to expose your data as a web service

- **Cut red tape**
 - LOE: High
- **Cut tech tape**
 - LOE: Medium
- **Be prepared to maintain**
 - LOE: Medium
- **Do the work**
 - LOE: Low
- **Register your services**



Register your services: Where?

- GOS/ Data.gov
- ArcGIS.com
- GIS Portals

Manage My Metadata

Dataset name Status

Metadata owner Content Type

Dataset uuid

Updated date between and (mm-dd-yyyy)

1 Document found For selected records:

<input type="checkbox"/>	Action	DOCUID	Dataset Name	Owner	Method	Update Date		
<input type="checkbox"/>		{D57FFAC8-4E51-9AAB-A614-2C41B81FCE1F}		ceeggers	Unknown	2009-12-11 14:55:06	U	<input type="text" value="a.gov"/> N

For selected records:

- Delete
- Delete
- Transfer Ownership
- Check Online Status
- Share with data.gov
- Don't share with data.gov

Service Status Checker in GOS

- Service Status Checker has been integrated into GOS to help users assess the reliability of a service.

The screenshot shows the geodata.gov search results for 'FWS Wetlands WMS CONUS'. The search results include a list of records (1 to 12 of 14,576 documents) and a detailed view of the first result. The detailed view includes the title, content type, publishing organization, and a content description. A 'Service Availability' link is visible in the search results.

Icon	Status	Service Availability Score
	Excellent	76-100
	Good	51-75
	Not Good	26-50
	Bad	0-25
	Unknown	Insufficient data.
	N/A	Information is not available.

The screenshot shows the Service Status Checker report for 'FWS Wetlands WMS CONUS'. The report includes a registration information section, a validation section, and a daily test results section. The registration information shows a valid registration with a score of 97.38%. The validation section confirms that the registered service URL is valid. The daily test results section shows that the GetMap test passed with a score of 97.38%.

TEST	STATUS	INTERACTIVE TEST	RESPONSE	SCORE(0-100)
GetMap:		Test Now	3.39 sec	97.38%

TEST	STATUS	INTERACTIVE TEST	ERROR ID
HTTP:		Test Now	-
GetCapabilities:		Test Now	-
GetMap:		Test Now	-

Exercise Questions



Search for 'USGS Water Watch'

1. What is the Url for this service?

http://atlas.resources.ca.gov/arcgis/services/Inland_Waters/USGSWaterWatch/MapServer/WMServer?request=GetCapabilities&service=WMS

2. What type of service is this? **WMS**

Search for 'PDC Meteorology Service'

3. What is the Url for this service?

http://www.pdc.org/wfs/wfs/PDC_Met_WFS?request=getcapabilities&service=WFS&version=1.0.0

http://www.pdc.org/wms/wmservlet/PDC_Met?request=getcapabilities&service=WMS&version=1.1.1

3. What type of service is this? **WFS and WMS**

4. What is the Service status score for this record? **99.09%**

5. What is the avg response time? **1.08 sec.**



PART 3: MANAGING AND DISCOVERING RESOURCES

Training Outcomes

- **Understand publishing and managing resources**
- **Examine the discovery resources**
- **Examine using resources**
- **Exploring discovery integration options**



Goals

- Learn
- Leverage
- Leave and Lead



REGISTERING RESOURCES

Authoring and Sharing Web Services

Services:

Map
Analysis
Locators
Custom...

Imagery
Globes
Data

Author



Serve



Discover



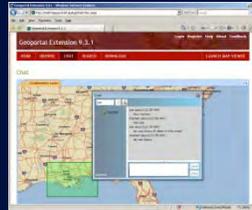
Use



...IT and Geospatial Community Standards

Metadata and Sharing

Geoportal



- Discover
- Users understand data
- Evidence of prudent data stewardship
- Cut overall costs

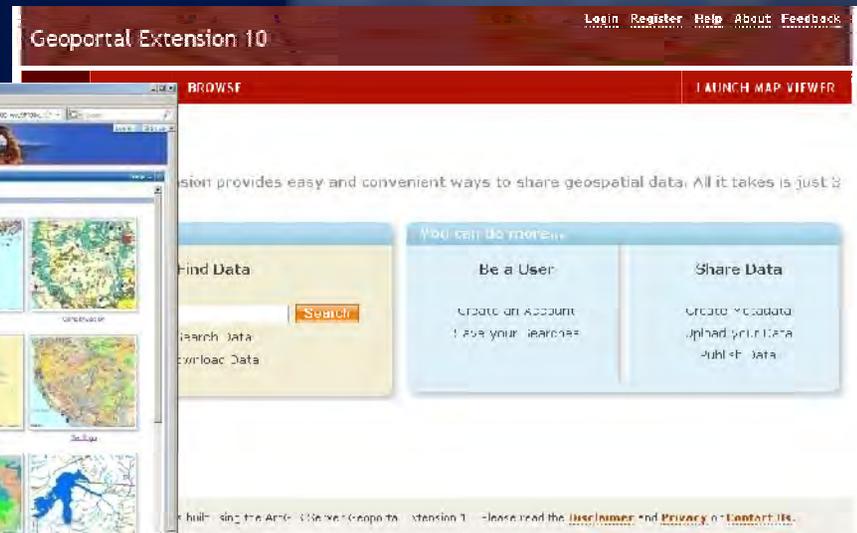
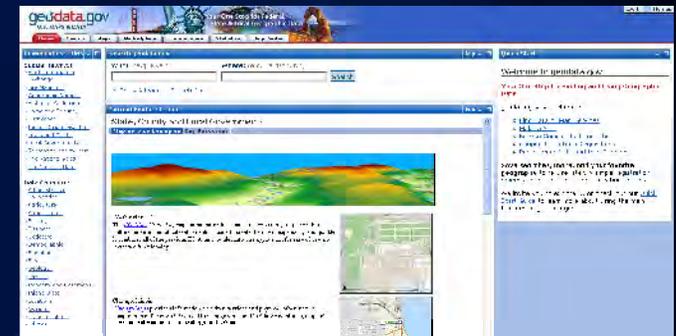
- Limit liability
- Protects investment in data
- Reduce questions about data
- Cuts overall cost

PORTALS

Geospatial Portals

Enabling discovery and use of geospatial resources

- Help to manage information of geospatial resources
- Expose the geospatial resources to users



...share and access geospatial resources of any type from anywhere

PUBLISH AND MANAGE RESOURCES

Create metadata from online form

- Portals can provide online forms for metadata standards/profiles
 - Dublin Core
 - FGDC
 - ISO
 - NAP
 - INSPIRE
 - Etc....
- Options available to create a customized metadata form

The image shows two screenshots of a metadata editor interface. The top screenshot is a 'Create Metadata' form with fields for Citation (Title, Edition, Presentation Form, Originator, Publisher, Publication Place, Publication Date, Online Linkage (URL), GetCapabilities URL) and Description (Abstract). The bottom screenshot is a 'Metadata Editor' form with fields for Identification Information (Title, Originator, Publication Place, Publisher, Publication Date, Website URL, Resource (Server) URL) and Abstract.

Geoportal B

HOME SEARCH

Manage Add

Metadata Editor

Please enter the requested information below for the content that you would like to publish to the Geoportal. Please provide as much information as you can for your content.

* **Bold-Italic** labels indicate a required field

Identification Information

Title:

Originator:

Publication Place:

Publisher:

Publication Date: (yyyy-mm-dd)

Website URL:

Resource (Server) URL:

Abstract:

Upload metadata

- Upload individual metadata documents

The screenshot shows the 'Upload Metadata' page of Geoportal Extension 10. The page has a blue header with navigation links: Marketplace, Communities, My Tools, Statistics, Help Center, admin, and Utilities. Below the header is a red navigation bar with 'HOME', 'SEARCH', 'BROWSE', and 'ADMIN'. The main content area is white and contains the following elements:

- Upload Metadata** (Section Header)
- File Name:** A text input field with a 'Browse...' button next to it.
- Upload File** (Button)
- Instructions:** 'Please use the Browse button to select the metadata file from your desktop or network to publish. Your file should be in FGDC or ISO metadata standard and in Extensible Markup Language (XML) format. The file extensions allowed are txt, xml, and sgml. Please click the Upload button to publish your file to geodata.gov.'
- Notes:** '*Your published metadata file needs to include at least a title, abstract, spatial extent, and contact information. If your file does not pass validation, you will be notified. **Only one file at a time is allowed.'
- On behalf of:** A dropdown menu showing 'gptadmin'.
- Local path:** A text input field with a 'Browse...' button next to it.
- Upload** and **Validate** (Buttons)
- Footnote:** '* ***Bold-Italic*** labels indicate a required field'

Synchronize/Harvest Resources

- Provide connection information to a resource that can be revisited by the portal catalog for new resources and updates
- Copy resources from one repository to another and periodically update those records

The screenshot displays the Geoportal Extension 10 interface. On the left, a list of resources is shown with checkboxes and icons. The 'Configure Harvesting' dialog box is open, showing a table of registered sites and their synchronization settings.

Actions	ID	Name	Synchronization
	10632	NERRS_CDMO	2010-07-26
	16437	test	Once every month
	16432	GIS TRnC@SU DEM	Twice every month
	16332	neddo_also_retm	Once every week
	16277	NCDDC FWC	Once a day
	16132	UVA Scholars' Lab	Once an hour
	4297	Westchester County GIS	
	16037	NC OneMap	
	16032	North Dakota GIS Hub Data Portal	

The dialog box also includes a 'Registered Sites' section with a search bar and a 'Synchronization' dropdown menu. The 'Synchronization' dropdown is currently set to 'Once every month'.

Protocols: URL

- ◆ **Host Url:** URL by which the geoportal should access the resource. The geoportal will use the information available from the URL to generate the metadata document describing the resource.
- ◆ **Url examples:**
 - ◆ **GetCapabilities URL** to an OGC service (OWS, WMS, WCS, WFS, WPS, SOS, SPS, CSW, or KML)
 - ◆ **REST URL** formatted in GEORSS
 - ◆ **OpenSearch description XML**
 - ◆ **URL to a metadata XML** (such as FGDC, ISO-based profiles, Dublin Core, etc.)

HOME SEARCH BROWSE ADMINISTRATION

[Manage](#) [Add](#)

Create Resource

ID: *Value will be generated upon saving.*
Resource UUID: *Value will be generated upon saving.*

Protocol Type : URL ArcGIS ESRI MS OAI WAF CSW

Host Url:

Title:

Protocols: ArcGIS

- ◆ REST Url: the REST URL to the ArcGIS Server service
- ◆ SOAP Url: Because the REST URL for an ArcGIS Server service is not explicitly associated with its SOAP URL, this allows the SOAP URL to be associated with the resource in the geoportal catalog
 - ◆ URL to an ArcGIS Server which contains services
 - ◆ URL to one specific service, e.g., MapServer, GlobeServer, ImageServer, GeoDataServer, MobileServer, GPSTerver, GeocodeServer, GeometryServer, NAServer, FeatureServer, SearchServer, WMSServer, WFSServer, and WCSServer

The screenshot shows a web interface for creating a resource. At the top, there is a navigation bar with links for HOME, SEARCH, BROWSE, and ADMINISTRATION. Below this, there are links for Manage and Add. The main heading is 'Create Resource'. Below the heading, there are two lines of text: 'ID: Value will be generated upon saving.' and 'Resource UUID: Value will be generated upon saving.'. The main form area has a 'Protocol Type:' label followed by several radio button options: 'URL', 'ArcGIS', 'ESRI MS', 'OAI', 'WAF', and 'CSW'. The 'ArcGIS' option is selected and highlighted with an orange box. Below the radio buttons, there are three input fields: 'REST Url:', 'SOAP Url:', and 'Title:'. To the right of the 'REST Url:' field is a 'Test' button.

Protocols: CSW

- ◆ **Host:** URL of the server that hosts the CSW metadata repository
- ◆ **Optional Fields**
 - ◆ **Title:** the title of the resource
 - ◆ **CSW Profile:** CSW profile of the repository being harvested

The screenshot shows the 'Configure Harvesting' form on the geodata.gov website. The form is titled 'Configure Harvesting' and includes links for 'View Registered Sites' and 'Register New Metadata Site'. Under the 'Site Information' section, the 'Protocol' field has radio buttons for ArcIMS, Z39.50, OAI-PMH, Web Accessible Folder, and CS-W (which is selected). The 'Name' field is empty. The 'Host URL' field is empty with a 'Test' button next to it. Below the 'Host URL' field, there is a note '(e.g. http://www.example.com)'. The 'CS-W Profile' dropdown menu is set to 'CSW.OGCCORE.ESRI'. Below the form, there are links for 'Manage' and 'Add', and a section titled 'Create Resource'. In the 'Create Resource' section, there is a note 'ID: Value will be generated upon saving.' and 'Resource UUID: Value will be generated upon saving.'. The 'Protocol Type' field has radio buttons for URL, ArcGIS, ESRI MS, OAI, WAF, and CSW (which is selected and highlighted with an orange box). The 'Host Url' field is empty with a 'Test' button next to it. The 'Title' field is empty. The 'Profile' dropdown menu is set to 'ArcGIS Server Geoportal Extension (version 10) CSW ISO AP'.

Protocol: Web-Accessible Folder (WAF)

- ◆ Host Url: URL to the Web-accessible folder that contains the metadata records
- ◆ Optional Fields
 - ◆ Title: the title of the resource
 - ◆ User Name: if the folder is secure, then this is the username to access to the folder
 - ◆ User Password: if the folder is secure, then this is the password to access to the folder
 - ◆ Subfolders will be automatically included.



Configure Harvesting

[View Registered Sites](#) [Register New Metadata Site](#)

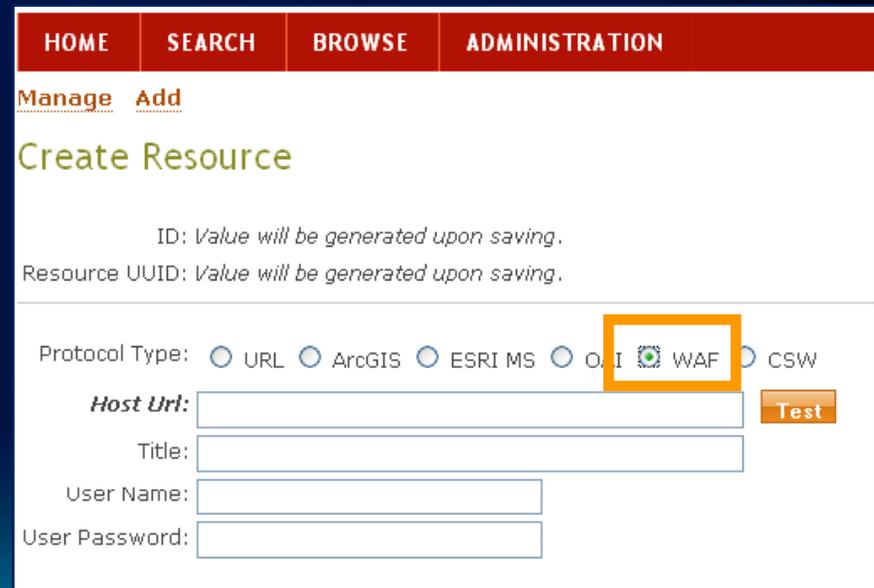
Site Information

Protocol: ArcIMS Z39.50 OAI-PMH Web Accessible Folder CS-W

Name:

Host URL:

(e.g. http://www.example.com)



HOME SEARCH BROWSE ADMINISTRATION

[Manage](#) [Add](#)

Create Resource

ID: Value will be generated upon saving.
Resource UUID: Value will be generated upon saving.

Protocol Type: URL ArcGIS ESRI MS OAI WAF CSW

Host Url:

Title:

User Name:

User Password:

Other Protocols

- Other Protocols
 - Open Archives Initiative-Protocol for Metadata Harvesting (OAI-PMH)
 - ESRI MS: ArcIMS 4.0.1, 9.x, and Geoportal 9.3 metadata services
 - Z39.50

HOME SEARCH BROWSE ADMINISTRATION

Manage Add

Create Resource

ID: Value will be generated upon saving.
Resource UUID: Value will be generated upon saving.

Protocol Type: URL ArcGIS ESRI MS OAI WAF CSW

Host Url:

Title:

Prefix:

Set:

Marketplace Communities My Tools Statistics Help Center admin Utilities

Configure Harvesting

[View Registered Sites](#) [Register New Metadata Site](#)

Site Information

Protocol: ArcIMS Z39.50 OAI-PMH Web Accessible Folder CS-W

Name:

Host URL:
(e.g. <http://www.example.com>)

Port Number:

Database Name:

Type: XML SGML

HOME SEARCH BROWSE ADMINISTRATION

Manage Add

Create Resource

Value will be generated upon saving.
Value will be generated upon saving.

URL ArcGIS ESRI MS OAI WAF CSW

User Password:

Planning Resource Acquisitions

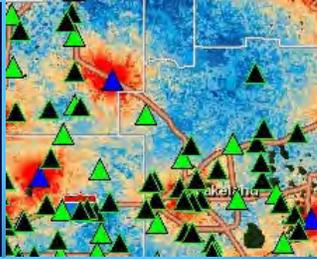
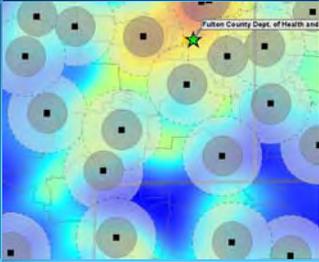
- Allows you to collaborate about data requests and planned acquisitions

The screenshot displays the geodata.gov Search Marketplace interface. The header includes the logo "geodata.gov U.S. MAPS & DATA" and navigation tabs for Home, Search, Maps, Marketplace, Communities, Statistics, and Help Center. The main content area is divided into two columns. The left column contains search filters: "Search In: Marketplace:" with a search box and "Search" button; "Planned Data Activity Types" with radio buttons for "Any Type" (selected) and "Selected Type(s) Only", and checkboxes for "Data Requests" and "Planned Data Acquisitions"; "Publisher" and "Sort By" dropdown menus; and "My Geography" with a "Where:" search box and radio buttons for "Anywhere" (selected), "Overlapping this area", and "Fully within this area". The right column shows "Search Results" with "Reset" and "Download Results" buttons, a pagination bar (1-10), and a record count of "Records 1 to 12 of 2,209 documents (0.308 seconds)". The results list includes: "Cass Co, ND FEMA remapping project" (LIDAR data); "Lyon County NV PMR" (1ft ortho imagery); "To Be Determined"; "Integrated Ocean and Coastal Mapping (IOCM) Project NY1007; GREAT PECONIC BAY, NY" (with a detailed objective and publishing organization); and "Data Collection data of ongoing (in work) field activity W-1-10-WO in Southwest Washington from 07/11/2010 to 08/28/2010" (with a detailed objective and publishing organization).

Demo

Register Resources

Manage Resources



DISCOVER RESOURCES

Search with keywords

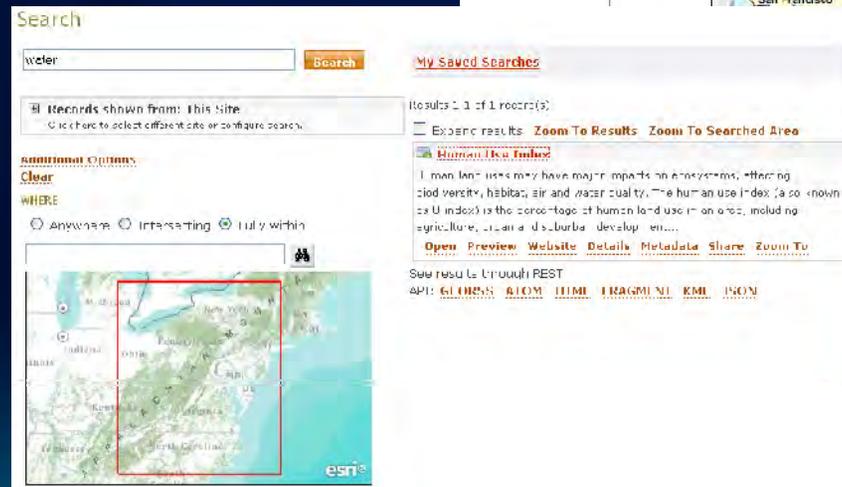
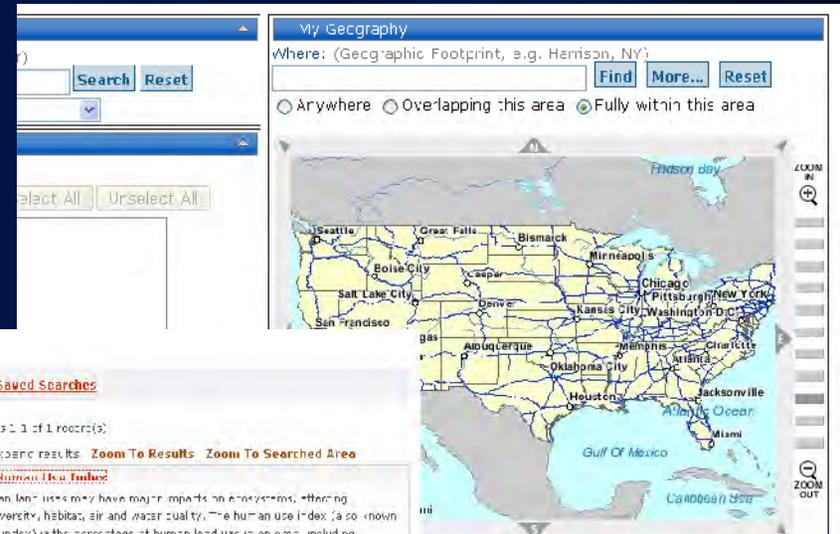
- Search with simple keyword(s)

The screenshot shows the geodata.gov search page. At the top, there are navigation tabs for HOME, SEARCH, and BROWSE. The main search area has a text input field containing the word "water" and a "Search" button. Below the search bar, it indicates "Records shown from: This Site" and provides a link to "Click here to select different site or configure search." On the left side, there are "Additional Options" including a "Clear" button and a "WHERE" section with radio buttons for "Anywhere", "Intersecting", and "Fully within". Below these options is a map of the United States with a red rectangular box highlighting the western region. The main content area features a search bar with the text "Search in geodata.gov" and a "What:" field with the placeholder text "(text search, e.g. 'river')". There are "Search" and "Reset" buttons. Below the search bar, there is a "Content Type" section with a "Selected type(s) only" dropdown and a "Content Type" list with checkboxes for: Live Data and Maps, Downloadable Data, Online Data, Documents, Applications, Geographic Services, Clearinghouses, and Planned Data Activities. At the bottom of the search area, there are dropdown menus for "Data Category", "Publisher", "Time Frame", and "Sort By".

The screenshot shows the DATA.GOV search results page. At the top, there is a search bar with the text "Search our catalogs" and a "SEARCH" button. Below the search bar, there are navigation tabs for HOME, DATA, TOOLS, COMMUNITY, METRICS, DIALOGUE, GALLERY, and WHAT'S NEW. The main content area is titled "Data.gov Catalogs" and contains a paragraph of text: "At the Data.gov Catalog, click to access U.S. Federal, Executive, and State datasets. Click on the name of a dataset to view additional metadata for that dataset. By accessing the data catalogs, you agree to the Data Policy. Data.gov offers data in three ways: through the 'raw' data catalogs, using tools and through the geodata catalog. The 'raw' Data Catalog provides an instant download of machine-readable, unaltered metadata datasets while the Geodata Catalog provides hyperlinks which may lead to agency tools or agency websites that allow you to filter the results." Below the text, there are three tabs: "RAW DATA CATALOG", "TOOLKIT CATALOGS", and "GEODATA CATALOG". The "GEODATA CATALOG" tab is selected. Below the tabs, there are three search filters: "Search geodata by keywords", "Search geodata by single/multiple category", and "Search geodata by single/multiple agency". The "Search geodata by single/multiple category" filter has a dropdown menu with "All Categories" selected. The "Search geodata by single/multiple agency" filter has a dropdown menu with "All Agencies" selected. Below the filters, there is a "Page 1 of 27,028 (270,195 records)" and "Results per page: 10 | 15 | 20". Below the page information, there is a table of search results with columns for Name, Rating, Category, and Data Download. The table contains three rows of results: 1. "(SUPERSEDED) 13,000,000 scale Hydrologic Units of the United States (SUPERSEDED)" with a 5-star rating and "Inland Water Resources" category. 2. "2003 BATHY_TRM: Geophysical Surveys of Bear Lake, Utah, Idaho, September, 2002" with a 5-star rating and "Coastal and Fisheries" category. 3. "1934 Bathymetry Grid of Jamaica Bay, New York" with a 5-star rating and "Fluvial and Wetland Products" category. Below the table, there is a map of the United States with a red rectangular box highlighting the western region. The map is titled "Pacific Ocean" and "Atlantic Ocean". There is a scale bar for 0 to 1000 miles and a "ZOOM OUT" button.

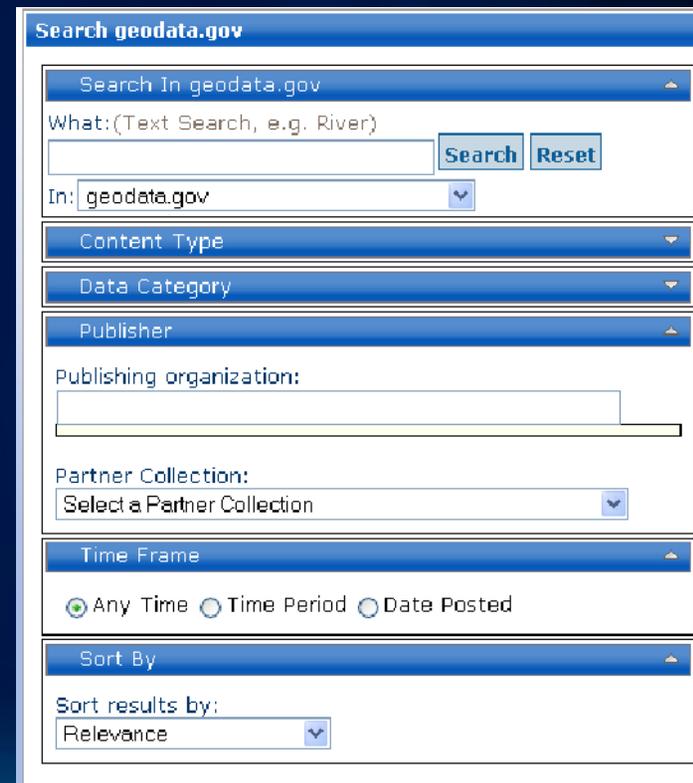
Search with spatial option

- Can perform spatial queries to limit results to area of interest
 - Anywhere
 - Intersecting
 - Fully Within



Search with Additional Options

- **Filter through Additional Options Link**
 - **Content Type**
 - **Data Category**
 - **Modified Date**
- **Sort Results by**
 - **Relevance**
 - **Title**
 - **Content Type**
 - **Ascending / Descending Date**
 - **Ascending / Descending Area**



The screenshot displays the search interface for geodata.gov. It features a search bar with the text "Search In geodata.gov" and a dropdown arrow. Below the search bar, there is a text input field labeled "What:(Text Search, e.g. River)" with "Search" and "Reset" buttons. The "In:" dropdown is set to "geodata.gov". Below the search bar, there are three dropdown menus for "Content Type", "Data Category", and "Publisher". The "Publisher" section includes a text input field for "Publishing organization:" and a dropdown menu for "Partner Collection:" with the text "Select a Partner Collection". The "Time Frame" section has three radio buttons: "Any Time" (selected), "Time Period", and "Date Posted". The "Sort By" section has a dropdown menu for "Sort results by:" set to "Relevance".

Ontology Service

- ◆ The Geoportal will reference the ontology service to find not only records that contain the search term but also records with the terms associated with that search term.
- ◆ Example: like|river: This not only returns records with the word *river* but also delta, estuary, waterfall, and more.

Browse Resources

- Ability to browse for resources
- Customize categories

The screenshot shows the GEO Portal website. The header includes the GEO logo, "GROUP ON EARTH OBSERVATIONS", and "GEO Portal Provided by: ESRI Inc.". Navigation links include "HOME", "BROWSE", "MAP GALLERY", "SEARCH", "AIP", and "GEO VIEWER". The "BROWSE" tab is active. The main content area is titled "Browse Content" and features a left-hand navigation tree under "Catalog" with categories like "Content Types", "Societal Benefit Air", "Disasters", "Health", "Energy", "Climate", "Water", "Weather", "Ecosystems", "Agriculture", "Biodiversity", and "ISO Topic Category". The main pane displays search results for "European Chemical Weather Forecasting Portal", "Great Lakes Bathymetry", and "Global Ocean Observing System". Each result includes a brief description and links for "Open", "Preview", "Details", and "Metadata". A search bar with "Keyword(s):" and "Search" and "Clear" buttons is located at the top right of the results area.

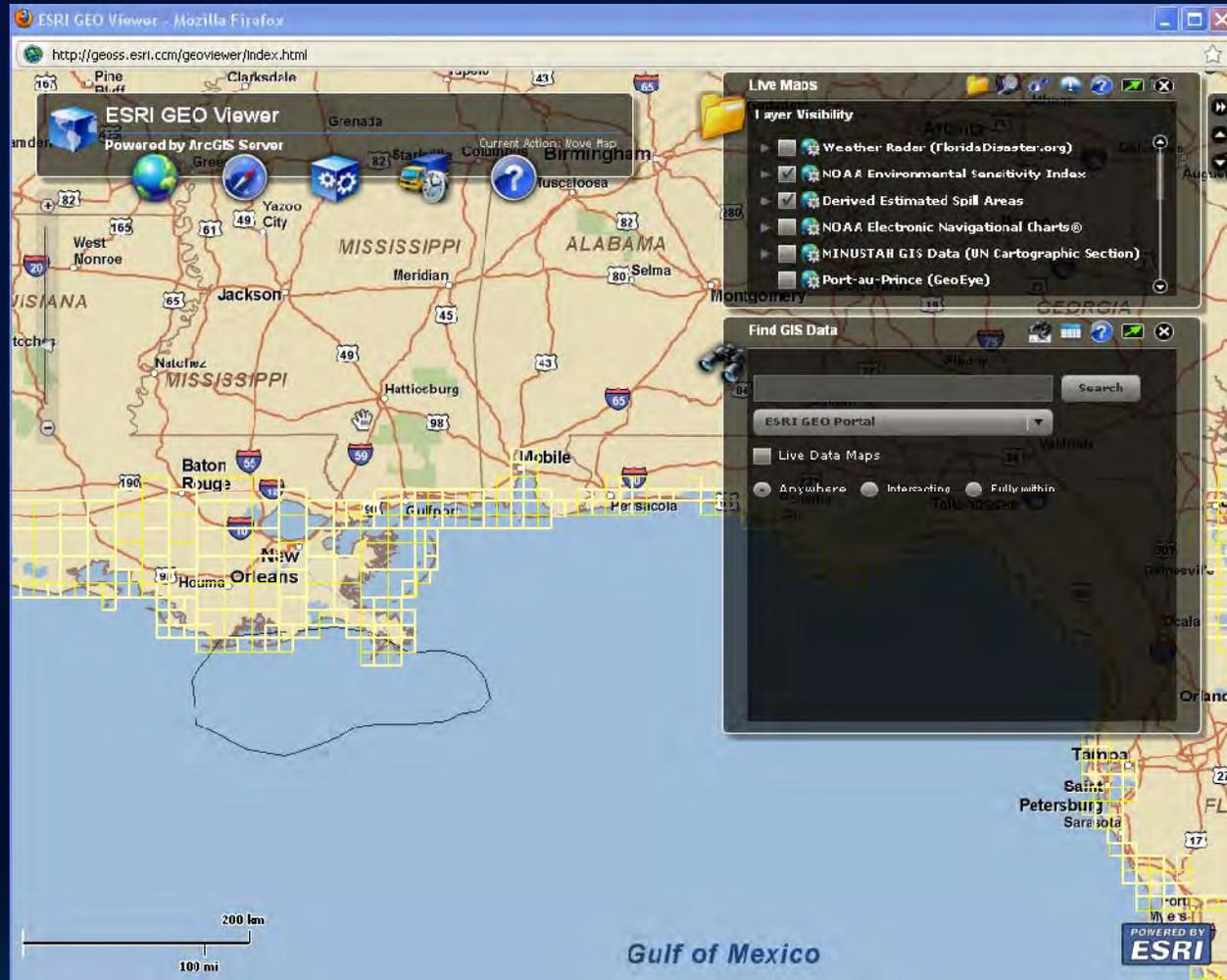
The screenshot shows the "Extension 10" website. The header includes "Extension 10" and navigation links "Login", "Register", "Help", "About", and "Feedback". The "BROWSE" tab is active. The main content area is titled "Browse Content" and features a left-hand navigation tree with categories like "type", "ations", "ghouses", "ints", "eable Data", "phic Activities", "phic Services", "op Services", "es", "Data", "Map Images", and "Category". The main pane displays search results for "USDA Geospatial Data Gateway" and "Royal Botanic Gardens, Kew, Madagascar GIS". Each result includes a brief description and links for "Open", "Preview", "Details", and "Metadata". A search bar with "2 results" and "Filter" and "Clear" buttons is located at the top right of the results area.

Distributed Search

- ◆ Search many external catalogs from within one Geoportal search interface.
- ◆ Directed search will work with default site(s) and the catalogs that are exposed via CSW and OpenSearch.

The screenshot displays the 'Geoportal Extension 10' search interface. At the top, there are navigation links for 'HOME', 'SEARCH', and 'BROWSE'. The search bar contains the text 'water' and a 'Search' button. Below the search bar, there are options to 'Expand results', 'Zoom To Results', and 'Zoom To Searched Area'. The search results are organized into two columns. The left column shows 'Records shown from: This Site' with a link to 'select different site or configure search'. It lists three sites: 'This Site' (34 Results), 'ArcGIS.com' (270 Results), and 'Geospatial One-Stop' (134677 Results). Below this, there are checkboxes to 'Select sites where the search will be distributed', with 'This Site', 'ArcGIS.com', and 'Geospatial One-Stop' all checked. The right column shows a list of search results, including 'WISE_Bathing', 'EPRTB - Diffuse Water', 'EPRTB - Diffuse Water (WMS)', 'my River Basin Districts', 'my River Basin Districts (WMS)', 'Copy_of_EPRTB_diffuse_water_parr', 'EPRTB_REVIEW/EPRTB_diffuse_water_prbd', 'EPRTB_REVIEW/EPRTB_diffuse_water_prbd (WMS)', and 'EPRTB_REVIEW/EPRTB_diffuse_water_parr'. At the bottom, there are 'Additional Options' and a 'WHERE' section with radio buttons for 'Anywhere', 'Intersecting', and 'Fully within'. A map of the world is shown with a red box highlighting a region in the Pacific Ocean. The Esri logo is visible in the bottom right corner of the map.

Discover Resources from Map Viewers



USE RESOURCES

Search results

- Shows number of records retrieved
- Lists metadata title, abstract, and links(further actions)
- Offers results through REST API
 - GEORSS
 - ATOM
 - HTML
 - FRAGMENT
 - KML

The screenshot displays search results for wetlands data. At the top, it shows 'Results 1-10 of 223 record(s)' with navigation buttons for pages 1 through 5 and a 'Last' button. Below this, there are several search results, each with a title, a small map icon, and a brief abstract. The first result is 'Zonas hidrograficas en Colombia'. The second result is 'World Vegetation', with an abstract that reads: 'The ESRI Vegetation map service contains vegetation polygons, country boundaries, and city locations for the world. This map service depicts the great diversity of the Earth vegetation patterns. The maps show the current macrostructure of vegetation cover...'. Below the abstract are links for 'Preview', 'Website', 'Details', 'Metadata', and 'Zoom To'. A context menu is open over the first result, showing options like 'View Summary', 'View Full Metadata', 'Go to Web to', 'Add to Map', 'Add to Favorite', 'Service Availability', 'Contact Owner', 'Print', and 'Close Menu'. At the bottom of the screenshot, there are links for 'REST API: GEORSS ATOM HTML FRAGMENT KML'.

Metadata Footprints

- Search results listed will have a corresponding footprint on the map.
- Highlight the footprint to show a corresponding record in the results list.
- Highlight a record, and it will show the footprint for that record.

The screenshot displays a web application interface for metadata footprints. On the left, a map shows the continental United States with several colored rectangular footprints overlaid. A mouse cursor is positioned over one of these footprints. To the right of the map is a list of search results, each with a small footprint icon and a title. The results include:

- EWS Wetlands WMS CONUS**: Geospatial Wetlands Digital Data within the continental United States in Open Geospatial Consortium (OGC) Web Map Service format. This data set includes EWS Wetlands WMS CONUS metadata location and type of wetlands and associated habitats in the conterminous United States.
- EWS Wetlands Data K12 DENNIS**: A metadata Language File has been created to view wetlands data within the continental United States with a single search. Please refer to the Sample File for more information. The file is located in the metadata repository.
- Fredrick County Sheriff's Office Sexual Offenders Mapping**: This IMG provides information on Registered Sexual Offenders, which has been provided to the Sheriff's Office by the relevant state and is based upon the last notification received.
- Fredrick County Sheriff's Office Crime Mapping**: This IMG provides map layers of selected offense reports taken by the Frederick County Sheriff's Office, the Brandywine Police Department and the Humansville Police Department. It does not include any reports taken by the Frederick County Police Department.
- Fredrick County Internet Map Service**: This IMG provides base county map layers including the municipal boundaries, police stations, schools, libraries, roads and...

Below the list, there are three additional map-related sections:

- Detection in Western U.S.**
- West Coast Observations Viewer**
- Watersheds of the United States Image Service**

On the right side of the interface, there is a larger map showing the Pacific Ocean and the Pacific Ocean. A legend at the bottom of this map indicates: Metadata boundaries (green outline), Data requests (blue outline), and Planned acquisitions (red outline). A zoom control is visible on the right side of the map.

Search result links

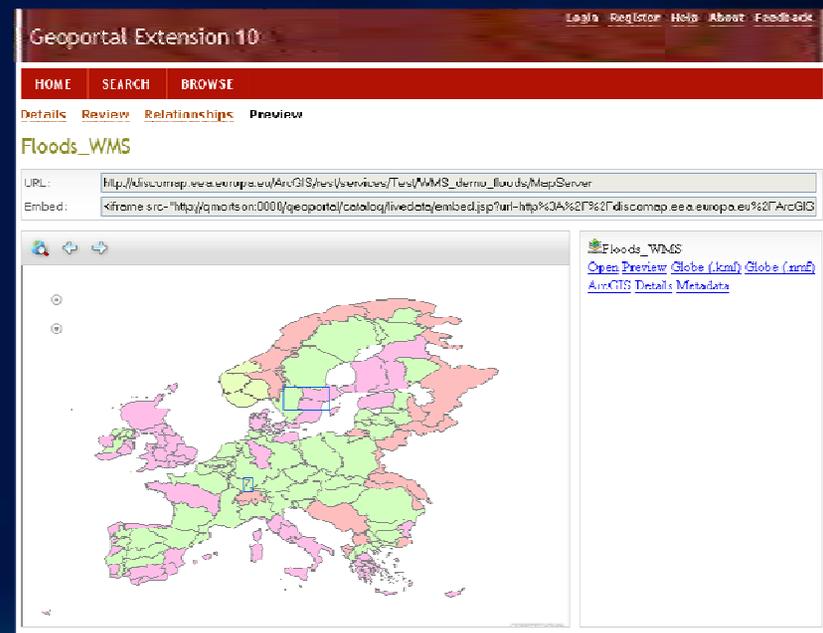
- Returned record has some links associated with it based on the Resource:
 - Website or Go To Website
 - Preview
 - Add to Map/Globe
 - Download or Download Data
 - Service Availability
 - Details or View Summary
 - Metadata or View Full Metadata
 - Zoom To

The screenshot displays a search result interface. A context menu is open over the first result, listing actions: View Summary, View Full Metadata, Go To Website, Add to Map, Add to Globe, Service Availability, Contact Owner, Zoom To, and Close Menu. The search results list includes:

- Wetlands Data**: This data set represents the extent, approximate location and type of wetlands and deepwater habitats in the conterminous United States. U.S. Fish and Wildlife Service. [View Full Metadata](#)
- CONUS**: This file has been created to view Wetlands Data within the continental United States with Google Earth. File version 4.2, or higher, is required to run this file. This data set represents the extent, app... U.S. Fish and Wildlife Service. [View Summary](#)
- Sexual Offenders Mapping**: This mapping shows Registered Sexual Offenders, which has been provided to the Sheriff's Office by the registrant notification received. Frederick County Government. [View Summary](#)
- Crime Mapping**: This mapping shows selected offense reports taken by the Frederick County Sheriff's Office, the Brunswick Police Department Police Department. It does NOT include any reports taken by the Frederick City Police. Frederick County Government. [View Summary](#)
- Frederick County Internet Map Service**: This IMS provides basic county map layers including the municipal boundaries, police stations, schools, libraries, rivers and lakes, election districts, roads, ortho imagery and ortho imagery grids. **Publishing Organization:** Frederick County Government. [View Summary](#)
- Election Districts and Precincts in Frederick County, Md**: This service allows the user to find their election precinct and download a precinct map. [View Summary](#)
- World Street Map**: This worldwide street map presents highway-level data for the world and street-level data for the United States, Canada, Japan, Southern Africa, and a number of countries in Europe and elsewhere. This comprehensive street map includes highways, major road... [Open](#) [Preview](#) [Globe \(.kml\)](#) [Globe \(.nmf\)](#) [ArcMap](#) [Details](#) [Metadata](#) [Zoom To](#)

Preview Resource

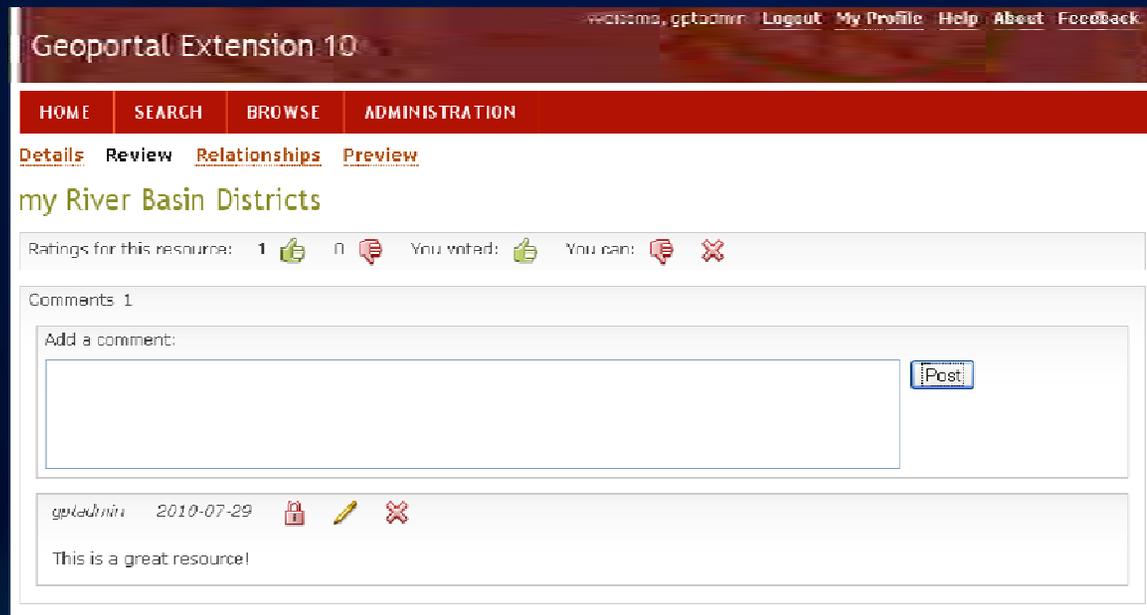
- Enables users to preview live data such as WMS, SOS and ArcGIS Server services
- Preview has four sections:
 - Service field
 - Embed field
 - Preview window
 - REST API



The screenshot displays the 'Geoportal Extension 10' interface. At the top, there is a navigation bar with 'HOME', 'SEARCH', and 'BROWSE' buttons. Below this, the 'Floods_WMS' service is highlighted in the 'Preview' section. The interface includes a 'URL:' field with the value 'http://kllscomap.eea.europa.eu/ArcGIS/Server/services/Tier1/WMS_demo_floods/MapServer' and an 'Embed:' field with a complex URL for embedding. A map of Europe is shown in the preview window, with a red box highlighting a specific region. To the right of the map, there are links for 'Open Preview', 'Globe (.kml)', 'Globe (.xml)', and 'ArcGIS Details Metadata'.

Review Resource

- Users can leave a rating (thumbs up or thumbs down)
- Users can also leave a comment



The screenshot shows a web application interface for reviewing a resource. At the top, there is a navigation bar with links for HOME, SEARCH, BROWSE, and ADMINISTRATION. Below this, there are tabs for Details, Review, Relationships, and Preview. The main heading is "my River Basin Districts". Underneath, there is a section for ratings, showing a rating of 1 with a thumbs up icon, and a "You voted:" section with a thumbs up icon and a "You can:" section with a thumbs down icon and a close icon. Below the ratings, there is a "Comments 1" section with a text input field and a "Post" button. A comment is visible, dated 2010-07-29, with a thumbs up icon, a pencil icon, and a close icon. The comment text is "This is a great resource!".

Geoportal Extension 10

welcome, gptadmin Logout My Profile Help About Feedback

HOME SEARCH BROWSE ADMINISTRATION

[Details](#) [Review](#) [Relationships](#) [Preview](#)

my River Basin Districts

Ratings for this resource: 1   You voted:  You can:  

Comments 1

Add a comment:

gptadmin 2010-07-29   

This is a great resource!

REST Options in Search Results

- Possible Output Formats
 - GeoRSS, ATOM, HTML and KML

The screenshot shows a search results page with a 'My Saved Search' section and a list of results. The results include metadata for 'Australia Ocean', 'Ostia Sea Surf', and 'DOCgis GeoSp'. A highlighted box at the bottom of the screenshot contains the text: 'See results through REST API: [GEORSS](#) [ATOM](#) [HTML](#) [FRAGMENT](#) [KML](#)'.

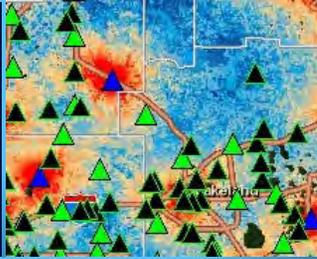
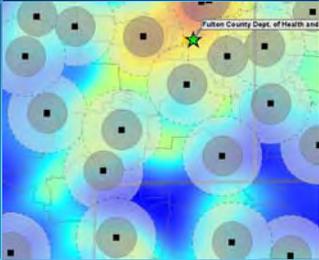
<http://catalog.geodata.gov/geoportal/rest/find/document?searchText=rivers&f=georss>

<http://yourServer/geoportal/rest/find/document?searchText=map&f=atom>

Demo

Discover Resources

Use Resources



INTEGRATION OPTIONS

Discovering in Familiar Applications

The screenshot displays the ESRI GEO Viewer interface within a Mozilla Firefox browser window. The main map shows a geographical view of the United States with various cities and states labeled. The interface includes several panels and toolbars:

- ESRI GEO Viewer:** Powered by ArcGIS Server. Includes navigation icons and a 'Current Action: Move Map' indicator.
- Live Maps:** A panel on the right showing 'Layer Visibility' with a list of layers including Weather Radar, NOAA Environment, NOAA Electronic, MINUSTAH GIS, and Port-au-Prince.
- Exploring DefaultMap:** A search panel on the left with fields for 'Find', 'In Catalog', and 'Live Data and Maps Only'. It shows search results for 'Baltimore (DEM)' and other DEM files.
- Layers Panel:** A panel on the right showing a list of layers with checkboxes for visibility. The selected layer is 'Ecosystem Content from GOS'.
- Inset Window:** A detailed view of a river system with a color-coded overlay (red, orange, yellow, green, blue) representing different ecosystem content or data values.

Below the main map, there is a text box titled 'Ecosystem Content from GOS' with the following content:

Ecosystem Content from GOS

Geospatial One-Stop GeoRSS.
Forest Ecosystem Dynamics Project

The Forest Ecosystem Dynamics (FED) Project is concerned with modeling and monitoring ecosystem processes and patterns in response to natural and anthropogenic effects. The research area is concentrated near Howland, Maine. The spatial data archive offers...
[WebSite Contact Details/Metadata](#)
More...

Sierra Nevada Ecosystem Project:
Geochronology in the South Florida Ecosystem and Associated Ecosystem Programs
Forest Ecosystem Zones

FDEP ECOSYSTEM MANAGEMENT AREAS
FDCP ECOSYSTEM MANAGEMENT AREAS
SDEIS Ecosystem Analysis at the Watershed Scale
SDEIS Ecosystem Analysis at the Watershed Scale
SDEIS Ecosystem Analysis at the Watershed Scale
SDEIS Ecosystem Analysis at the Watershed Scale

On the right side of the text box, there is a Microsoft Windows SharePoint Services logo and a 'Links [1]' section with the text: 'There are currently no favorite links to display. To add a new link, click "Add new link" below.'

Data.gov

The screenshot shows the Data.gov homepage. At the top left is the Data.gov logo with the tagline "EMPOWERING PEOPLE". Below the logo are three map options: "World Street Map", "World Topographic Map", and "World Imagery Map". The main area features a world map with numerous blue circular data points scattered across the continents. On the right side of the map, there are several interactive buttons: "Table of Contents", "Find Place", and "View Details". A scale bar at the bottom left indicates 5000 km and 10000 mi. At the bottom of the page, there is a navigation menu with links for "About", "FAQ", "Contact Us", "Data Entry", "Accessibility", "Privacy Policy", and "Support".

This screenshot shows a detailed view of a dataset on Data.gov. The dataset is titled "Global Trade - World Copper Smelters". The page includes a "DATASET SUMMARY" section with the following information:

Agency	Department of the Interior
Sub-Agency	US Geological Survey
Category	Geography and Environment
Date Released	2008
Date Updated	2008
Time Period	Current as of 2008
Frequency	Esri/IDC
Description	Locations and characteristics of world copper smelters

Below the summary is a "DATASET RATINGS" section showing a "Current" rating of 4 stars and a "Your Rating" of 5 stars (based on 1 review). The "Data Utility" is also rated 4 stars.

On the right side, there is a "DOWNLOAD INFORMATION" section with various file format options: XML, CSV, XLS, KML/KMLZ, KML, SHP, MIF, Shapefile, and PDF. There are also links for "Maps" and "View Map". At the bottom right, a message reads: "Cannot find data you are looking for? Suggest other datasets!"

State of Delaware and Geospatial One-stop

- Search GOS through an HTML client.
- Extent matches the State of Delaware

The screenshot displays the Delaware.gov website with a search interface for geospatial data. The page header includes the text "Delaware.gov | Text Only" and a banner image with the "State of Delaware" logo and the tagline "The Official Website of the First State". Below the banner is a search bar labeled "Your Search..." with a "SEARCH" button. The main content area is titled "Office of State Planning Coordination" and features a section for "A Delaware Spatial Data Catalogue". This section includes a search box labeled "Search geodata.gov" and a magnifying glass icon. The text below the search box describes the catalogue as a listing of key geospatial data resources for the state of Delaware, providing metadata, data web sites, and direct data download links. It also mentions that the collection is based on searches of the Inventory and of GOS and that users should contact Mike Mahaffie at mike.mahaffie@state.de.us if they are aware of data not listed here. The page also includes a sidebar with navigation links under "HOME" and "SERVICES".

Delaware.gov | Text Only

State of Delaware
The Official Website of the First State

Your Search... SEARCH

Office of State Planning Coordination

HOME

SERVICES

- State Strategies
- The PLUS Process
- Municipal Annexation
- Planning Assistance
 - From OSPC
 - From UD
- Geospatial Information
 - GIS Coordination
 - DGDC News Blog
 - GIS Data Catalogue
 - OSPC GIS Data
 - The DataMIL
- Demographics
 - 2010 Census
 - Census Data Center
 - Pop. Projections
 - State Rerigitling
 - News Services

A Delaware Spatial Data Catalogue

Search for Delaware Data on the GeoSpatial OneStop

The widget below provides a simple text-search of geospatial data holdings for Delaware for which metadata has been developed by the GOS team and customized to limit searches to metadata for GIS data sets whose footprint however, you may see some results from New Jersey.)

Search geodata.gov

A Listing by Data Categories

This is a catalogue of some of the key geospatial data resources for the state of Delaware. For each data set information and links (where available) to metadata, a data web site, and direct data download. Where we do not have a link to metadata, a data web site, or direct data download, we will provide a link to the metadata page on the Inventory and of GOS.

This collection is based on searches of the Inventory and of GOS and on our knowledge of the data resources. If you are aware of data that is not listed here, please contact Mike Mahaffie at mike.mahaffie@state.de.us.

These resources are organized into major data categories determined by the International Standards Organization (ISO).

Bookmarks and Sharing

- Share or bookmark resources through different bookmarking or social media sites

The image shows a screenshot of the DATA.GOV website interface. At the top, the header includes the text "An Official Web Site of the United States Government" and the date "Monday, August 09, 2010". The main navigation bar contains links for HOME, DATA, TOOLS, COMMUNITY, METRICS, DIALOGUE, GALLERY, and WHAT'S NEW. A "Bookmark & Share" popup menu is open, displaying various sharing options: Favorites, Print, Delicious, Digg, Google, MySpace, Messenger, Facebook, StumbleUpon, and Twitter. Below these options is a link to "Get AddThis for Firefox" and an "AddThis" button. The background of the screenshot shows a search results page for "my River Basin Districts" with links for "Open", "Preview", "Globe (.kml)", "ArcGIS (.nmf)", and "ArcGIS (.lyr)". A "Most Popular" list is visible on the right side of the page, and a search bar is located at the bottom right.

GIS Portal Examples

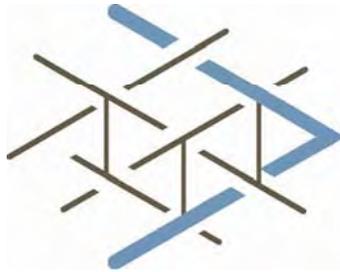
- [Data.gov and Geospatial One-stop](#)
- [NOAA NCDC Geoportal](#)
- [Washington State Geospatial Clearinghouse](#)
- [IDENA](#)
- [ESRI Geoportal extension Beta site](#)
- [Italy Geoportal](#)

QUESTIONS?

THANK YOU!



ESRI



NARC

Building Regional Communities

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