

# Building Capacity for Implementation of Distributed Online Metadata Catalogs in the Oregon Coastal and Marine Data Network

An FGDC-endorsed Standards Implementation Training and Outreach Project  
NSDI Cooperative Agreements Program 2012 - Final Project Report

**Date:** May 30<sup>th</sup>, 2014

**Agreement Number:** G12AC20146

**Organization:** Oregon Coastal Management Program, (<http://www.oregon.gov/lcd/ocmp/>)

**Principal Investigator:** Tanya C. Haddad, 971-673-0962, [tanya.haddad@state.or.us](mailto:tanya.haddad@state.or.us)  
800 NE Oregon St, Portland, OR, 97232

## Collaborating Organizations:

- Oregon Geospatial Enterprise Office, (<http://gis.oregon.gov/>)  
Milt Hill, 155 Cottage St. NE, 4th Floor, Salem, OR, 997301
- Oregon Department of Fish and Wildlife, marine Division (<http://www.dfw.state.or.us/mrp/>)  
Caren Braby, 2040 SE Marine Science Dr, Newport, OR, 97365
- Institute for Natural Resources, Oregon State University, (<http://oregonstate.edu/inr/>)  
Lisa Gaines, 210 Strand Agricultural Hall, Corvallis, OR 97331
- Northwest Association of Networked Ocean Observing Systems, (<http://www.nanoos.org/>)  
Emilio Mayorga, University of Washington, 1013 N.E. 40th St, Seattle, WA 98105
- and other members of the Oregon Coastal and Marine Data Network (<http://www.coastalmarinedata.net/>)

## Executive Summary

This CAP effort sought to reach out to members of the Oregon Coastal and Marine Data Network (OCMDN) community and introduce them to the capabilities and benefits of sharing data catalogs using open standards. We feel that a large amount of work was accomplished within the scope of the CAP funding and anticipate that our network (and region) will feel positive add-on benefits from these outreach and training efforts for some time into the future.

Accomplishments of the OCMDN community since receiving CAP funding in June 2012 include: establishment of a Catalogs working group, six outreach and training events, 22 training videos and related materials posted online, internship at Oregon State University that worked with member organizations on catalog activities, and two functional Catalogs published by participating network member organizations. A third network member organization is also applying the knowledge gained via the CAP outreach to put yet another collection online. These organizational collection catalogs are also now further networked into the newly launched West Coast Governors Alliance Ocean Data Portal.

We have posted all of our training materials to <http://www.coastalmarinedata.net/> under a new "Training" dropdown menu item. Materials include PDFs of PowerPoint presentations, workshop handouts, and video recordings of actual training sessions.

The outreach and training efforts made possible under this project have been very beneficial for our Oregon and West Coast network partners. We expect to be able to add new records and further service links to the resulting CSW catalogs over time - an additional long-term benefit.

### **Project Narrative**

This CAP effort sought to reach out to members of the Oregon Coastal and Marine Data Network (OCMDN) community and introduce them to the capabilities and benefits of sharing data catalogs using open standards such as Catalog Services for the Web (CS-W). We feel that a large amount of work was accomplished within the scope of the CAP funding and anticipate that our network (and region) will feel positive add-on benefits from these outreach and training efforts for some time into the future.

Accomplishments of the OCMDN community since receiving CAP funding in June 2012 include:

- Establishment of an ongoing Catalogs & Data Sharing working group,
- Five outreach and training events,
- Twenty-two training videos and related materials posted online,
- Internship at Oregon State University that worked with member organizations on catalog activities, and
- Two functional Catalogs published by participating network member organizations
- A third network member organization is also applying the knowledge gained via the CAP outreach to put yet another collection online
- Newly created collection catalogs are further networked into the recently launched West Coast Governors Alliance Ocean Data Portal

Information about the content and attendance of outreach and training events is detailed below.

### **Challenges and Deviations from Original Proposal**

For the most part, this project adhered to the expectations put forth in the original CAP proposal. If anything, we exceeded the proposed training events (two were specified and three conducted) by organizing several informational workshops in addition to the original more formal training events. Minor deviations from the original proposal include 1) a slight slippage in the scheduling of the formal trainings (by 1-2 months) due to delays in signing inter-governmental agreements, and 2) the shortened nature of our internship (by 1 month), due to the fact that our excellent intern, Ryan Johnson, was offered a full time job in August of 2013. These deviations in the original schedule did not affect the original objectives or outcomes of the CAP program of outreach and training, and ultimately completion of internship work was absorbed by OCMP staff without impacting the overall budget. Funds not expended due to the shortening of the internship are to be de-obligated as specified in the attached SF425 form.

### **Collaboration Activities**

As CAP lead within the OCMDN Catalogs working group, DLCD entered into 2 collaboration agreements with OCMDN partners for the purposes of hosting the intern to help network members with implementing standards based catalogs and creating training materials. As part of this collaboration:

- DLCD entered into an Inter-governmental Agreement (IGA) with INR for the purpose of recruiting and hosting the CAP project intern, and for creation and posting of the CAP project deliverables in a freely available online space.
- DLCD entered into a Letter of Agreement (LA) with Oregon Department of Fish and Wildlife marine program to formalize their co-mentorship of the intern as they work to deploy a standards-based catalog of the ODFW Nearshore Ecological Data Atlas collection (NEDA).

The Intern was housed at the Institute for Natural Resources, also home to the Oregon Spatial data Library (OSDL), to benefit from close proximity to OSDL and ODFW staff,

### **Deliverables**

Deliverables from these CAP activities are available to the public online at no cost and without restriction at the Oregon Coastal & Marine Data Network website: <http://www.coastalmarinedata.net>. Deliverables include informational materials from workshops about catalog technologies and existing successful catalog implementations, as well as more formal training materials and recorded videos. A linked chronological listing of major deliverables is included in Appendix I.

### **Attendance**

A summary list of number, duration and venue of workshops and trainings is provided below, including metrics on number of attendees by organization and organization type:

### **Workshops**

Two full-day informational workshops (lecture style) were held at Corvallis Public Library in October 2012 and October 2013. The combined attendance of the 41 individuals at these workshops was distributed over the following organization types:

- County (1)
- State (20)
- Federal (6)
- Regional (1)
- Nongovernmental (4)
- University (9)

Promotion of these workshops was done via the OCMDN listserv which has subscribers from across Oregon and the west coast, as well as on the local GIS Program Leaders, statewide GIS Info, and West Coast Coastal & marine Data Network listservs. Detailed listing of all organizations in attendance are included in Appendix II.

### **Trainings**

Three half-day formal trainings were held as part of CAP activities, two at Corvallis Public Library (lecture style), in May 2013 and one online (trainings lecture and exercise style) in June 2013. The combined attendance of the 60 individuals at these workshops was distributed over the following organization types:

- City (1)

- County (3)
- State (12)
- Federal (8)
- Tribal (1)
- Regional (2)
- International (5)
- Nongovernmental (10)
- University (18)

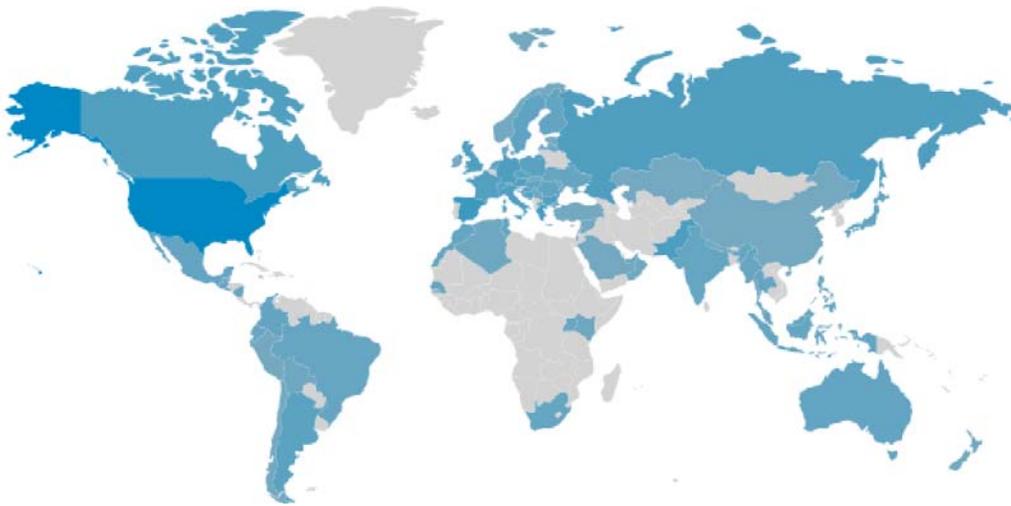
Promotion of these workshops was done via the OCMDN listserv which has subscribers from across Oregon and the west coast, as well as on the local GIS Program Leaders, statewide GIS Info, and West Coast Data Network listservs. The event notice for the pycsw training was also forwarded to the pycsw listserv and at least one IOOS listserv, resulting in a larger contingent of University and international attendees. We calculated that attendees for the pycsw training webinar spanned 12 time zones, which was a new record for an Oregon event. Detailed listing of all organizations in attendance are included in Appendix II.

### Continuing Impact & Next Steps

This project’s activities will continue beyond the performance period in several ways:

We will continue to work within the Oregon coastal and marine data community to support member organizations that wish to expose their data collections using CSW technologies. This now includes partners who have thematic roles that are not exclusive to the coastal zone (such as those working in hazard preparedness). The OCMDN continues to support member organizations that would like to share information held in local collections, and provides a supportive environment for those working through the challenges of each.

The knowledge acquired through this project will be transferred to user communities beyond the performance period by virtue of being provided for free over the internet without restriction. Already, our collection of twenty-two training videos has received over four hundred and fifty-five plays, and almost three thousand, five hundred loads from 74 countries:



**Figure 1: Geography of Training Video Access by Country of Origin, Jun 21, 2013 – May 31, 2014 (Vimeo Stats)**

In addition to a plan to continue to support these online training materials, the OCMDN is committed to working within the technical groups of the West Coast Governors Alliance on Ocean Health to bring the lessons learned within the CAP activities to the organizations participating in regional data sharing efforts.

**Feedback on Cooperative Agreements Program (To be completed for the final report)**

We would like to thank the FGDC for its support through the duration of this CAP project. The CAP program has been of great benefit to OCMDN, not just due to funding available for NSDI work, but also as a mechanism for interacting with federal peers who might otherwise not have been connected to our local or regional efforts. In particular, the convening regular meetings of the CAP team members, and ensuring that members were kept up to date with developments was particularly helpful. The assistance and advice from the individuals on the CAP team was always timely, and often helped us anticipate next steps, enabling our project to be extremely efficient over the term of the project.

# Appendix I: Deliverables

## Workshop Materials and Training Videos

### October 2012 Informational Workshop

- [Terminology: Catalog Services for the Web](#) – Tanya Haddad, OCOMP
- Elements of Successful Catalogs:
  - [Oregon Spatial Data Library](#)- Marc Rempel, OSU
  - [NOAA Geoportal Server & Catalog examples](#) – Kim Jenkins, NOAA/NOS
  - [Coastal catalogs and Data Management](#) – Kevin Kirby, EPA
- [Overview of Catalog Technology](#) – Tim Welch, Ecotrust

### May 2013 Training Workshop I: Introduction to Catalogs

This training is designed to present an overview of the FGDC endorsed OGC catalog standard CSW as a means for sharing coastal and marine data via the web. Also covered is the use of metadata and metadata creation tools such as ArcCatalog to produce data collection records that can be successfully incorporated into CSW-compliant catalogs. The training was conducted by Christine White of ESRI.

- [Handouts](#) (PDF)
- [Slides](#) (PDF)
- Workshop Videos:
  - [Intro to Catalogs \(1\): Metadata Basics](#) (Video 59:08)
  - [Intro to Catalogs \(2\): CS-W Overview](#) (Video 50:57)
  - [Intro to Catalogs \(3\): CS-W Clients](#) (Video 17:44)
  - [Intro to Catalogs \(3\): CS-W Clients](#) (Video 17:44)
  - [Intro to Catalogs \(4\): Metadata in ArcGIS 10](#) (Video 40:20)

### May 2013 Training Workshop II: Introduction to Geoportal Server

This training is designed to present an overview of the ESRI Geoportal Server, a CSW catalog product that can be used to share coastal and marine data via the web. The training was conducted by Christine White of ESRI.

- [Workshop Handouts](#) (PDF)
- [Workshop Slides](#) (PDF)
- Workshop Videos:
  - [Intro to Geoportal \(1\): Oregon Spatial Data Library](#) (Video 22:05)
  - [Intro to Geoportal \(2\): Publishing](#) (Video 59:30)
  - [Intro to Geoportal \(3\): Indexing](#) (Video 4:38)
  - [Intro to Geoportal \(4\): Synchronization](#) (Video 13:27)
  - [Intro to Geoportal \(5\): Publish Client](#) (Video 14:50)
  - [Intro to Geoportal \(6\): Discover Resources](#) (Video 49:55)
  - [Intro to Geoportal \(7\): Geoportal Clients](#) (Video 18:36)

## June 2013 Training Workshop: Intro to pycsw

This training was designed to present an overview of pycsw (<http://pycsw.org/>) and the FGDC endorsed OGC catalog standard CSW as a means for sharing coastal and marine data via the web. Attendees learned how to install, configure, and use pycsw to both publish and discover geospatial metadata. The workshop was conducted by one of the leaders of the Open Source community, Jeff McKenna, and Angelos Tzotsos, members of the pycsw team.

- [Workshop Instructions](#) (PDF)
- [Workshop Materials](#) (HTML format)
- Workshop Videos:
  - [Intro to pycsw \(1\): Background & Setup](#) (Video 6:44)
  - [Intro to pycsw \(2\): Metadata Background](#) (Video 4:29)
  - [Intro to pycsw \(3\): OGC CSW Specification](#) (Video 8:55)
  - [Intro to pycsw \(4\): Introduction to pycsw](#) (Video 19:01)
  - [Intro to pycsw \(5\): pycsw Exercises](#) (Video 1:33:12)
  - [Intro to pycsw \(6\): Data Discovery with GeoExt](#) (Video 11:59)
  - [Intro to pycsw \(7\): Transactions](#) (Video 12:11)
  - [Intro to pycsw \(8\): Harvesting](#) (Video 15:02)
  - [Intro to pycsw \(9\): Community](#) (Video 3:51)
  - [Intro to pycsw \(10\): Question/Answer & Future Development](#) (Video 16:08)

## October 2013 Informational Workshop

- [Updates from Work Groups – Tanya Haddad](#) (PDF)
- [Report from the West Coast Governors Alliance – Todd Hallenbeck](#) (PDF)
- [Essential Fish Habitat Catalog: Data and Services – Chris Romsos](#) (PDF)

# **Appendix II: Attendees**

## **Outreach Workshops and Training Events**

Over the course of 5 outreach and training events 91 distinct individuals participated in CAP activities. These individuals spanned a wide range of organizations and organization types. Organizations are listed below:

### **Local Government**

- City of Portland
- Coos County
- Lane County
- Lincoln County

### **State Government**

- California Ocean Protection Council
- Oregon Department of Environmental Quality
- Oregon Department of Fish and Wildlife
- Oregon Department of Geology and Minerals Industries
- Oregon Department of Land Conservation and Development
- Oregon Department of State Lands
- Oregon Geospatial Enterprise Office
- Oregon Military Department
- Oregon Sea Grant
- Oregon Water Resources Department
- Oregon Coastal Management Program
- Washington Department of Ecology

### **Federal Government**

- National Park Service - Ocean and Coastal Resources Program
- National Oceanic and Atmospheric Administration - Coastal Services Center
- National Oceanic and Atmospheric Administration - National Ocean Service
- National Oceanic and Atmospheric Administration - National Marine Fisheries Service
- National Oceanic and Atmospheric Administration - Marine Protected Areas Center
- National Oceanic and Atmospheric Administration - Office of Ocean Resources Conservation and Assessment
- U.S. Forest Service - Corvallis Research Lab
- U.S. Forest Service - Pacific Northwest Research Station
- U.S. Department of the Interior - Bureau of Land Management
- U.S. Environmental Protection Agency
- U.S. Fish & Wildlife Service

### **International**

- Global Facility for Disaster Reduction and Recovery Labs (GFDRR Labs)
- VIDECI Ministerio de Defensa Civil – Bolivia

### **Non-Governmental Organizations**

- Ecotrust
- Estuary Technical Group
- Fruits of Thought
- GeoInformics Solutions
- GIS Jammers/Oregon Walks
- Green Point Consulting
- Rensselaer Polytechnic Institute
- Sitka Technology Group
- The Nature Conservancy
- The Ocean Foundation
- The Wetlands Conservancy

### **Regional Organizations**

- Pacific States Marine Fisheries Commission
- WCGA Regional Data Framework

### **Tribes**

- Cow Creek Umpqua Tribe

### **University**

- National Technical University of Athens
- Northwest Association of Networked Ocean Observing Systems (NANOOS)
- Oregon State University - College of Forestry
- Oregon State University - College of Earth, Ocean, and Atmospheric Sciences
- Oregon State University - GIScience
- Oregon State University - Sustainable Natural Resources
- Pacific Islands Ocean Observing System (PacIOOS)
- Partnership for Interdisciplinary Studies of Coastal Oceans
- Portland State University
- Southern California Coastal Ocean Observing System (SCCOOS)
- University of Calabria
- University of Connecticut
- University of North Carolina Department of Marine Sciences
- University of South Carolina
- Wisconsin Sea Grant

### **Other**

- Unaffiliated / Self-employed