



WEST COAST OCEAN DATA PORTAL

Esri UC

Tuesday, 21 July 2015

Steven J. Steinberg, Ph.D., GISP

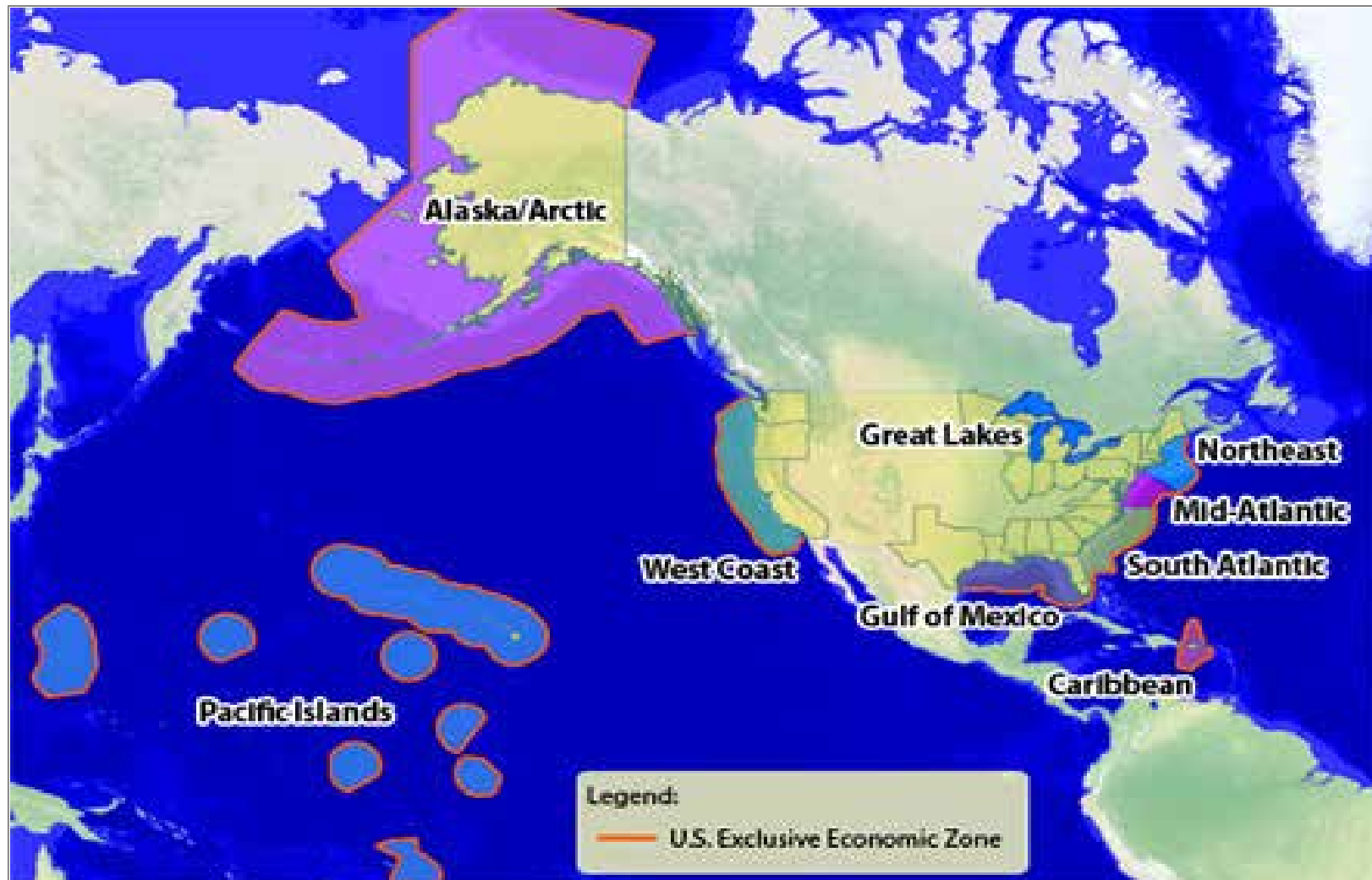
Agenda

2

- ▶ Background
- ▶ West Coast Ocean Data Portal
- ▶ Uses Cases and Debris Stories
- ▶ Demonstration
- ▶ Lessons Learned

Background

3



Background

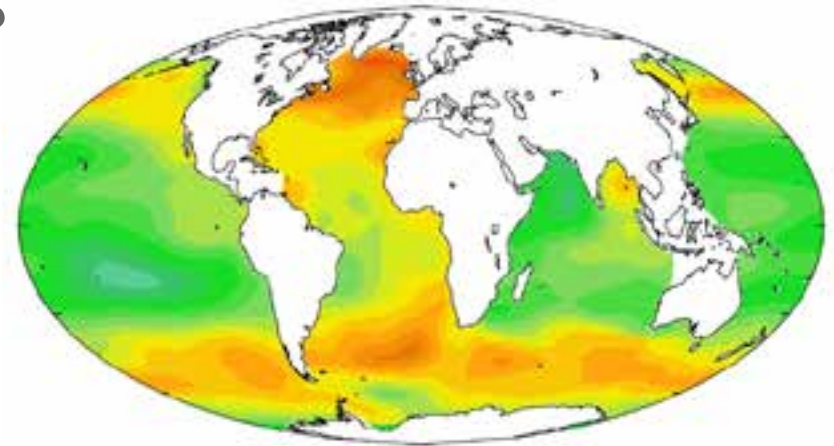
- ▶ West Coast Governor's Alliance [WCGA].
- ▶ Identify and collaborate on regional ocean health priorities.
- ▶ Support the progress of domain experts.



Background

5

- ▶ Ocean Health Priorities
 - ▶ Data Sharing
 - ▶ Marine Debris
 - ▶ Climate Change
 - ▶ Ocean Acidification



West Coast Ocean Data Portal



6

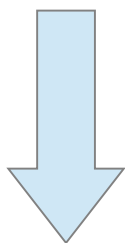
GOAL:

To increase **DISCOVERY** and **CONNECTIVITY** of ocean and coastal data and people to better **INFORM** resource management, policy development, and planning on the West Coast.

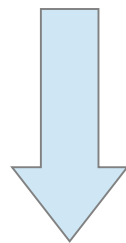
West Coast Ocean Data Portal

7

DISCOVER • **CONNECT** • **INFORM**

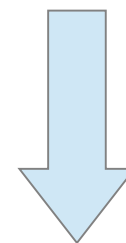


Data Catalog



Network

WEST COAST DATA NETWORK



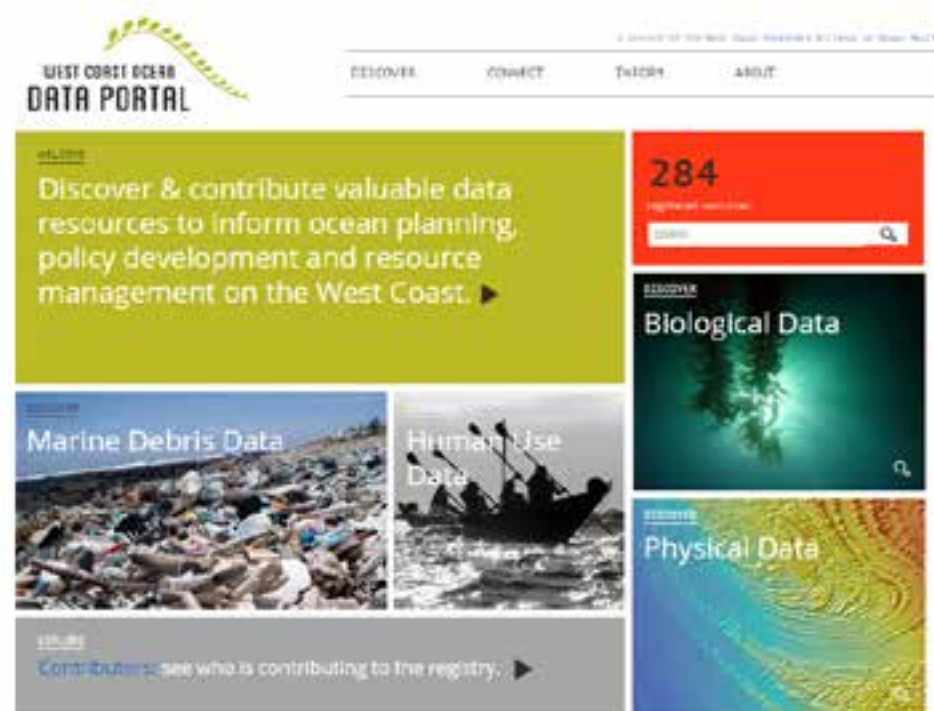
Viewer



West Coast Ocean Data Catalog

8

- ▶ Increase discovery of and access to west coast geospatial data.
- ▶ Harvest metadata from **existing** portals.
- ▶ Catalog Service for the Web (CSW).
- ▶ Curate around priority issues of the WCGA.



portal.westcoastoceans.org

West Coast Ocean Data Network

9

- ▶ Connect producers and users of data.
- ▶ Provide training materials and best practices information.
- ▶ News, events, and contributor profiles.
- ▶ Community directory and forum.

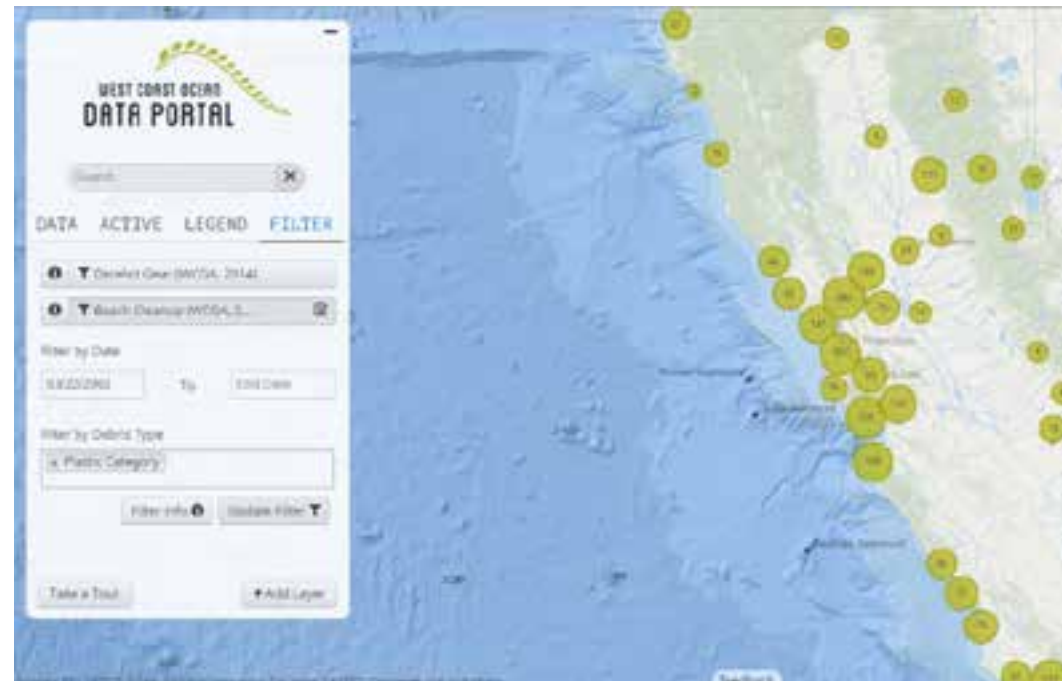


network.westcoastoceans.org

West Coast Ocean Data Viewer

10

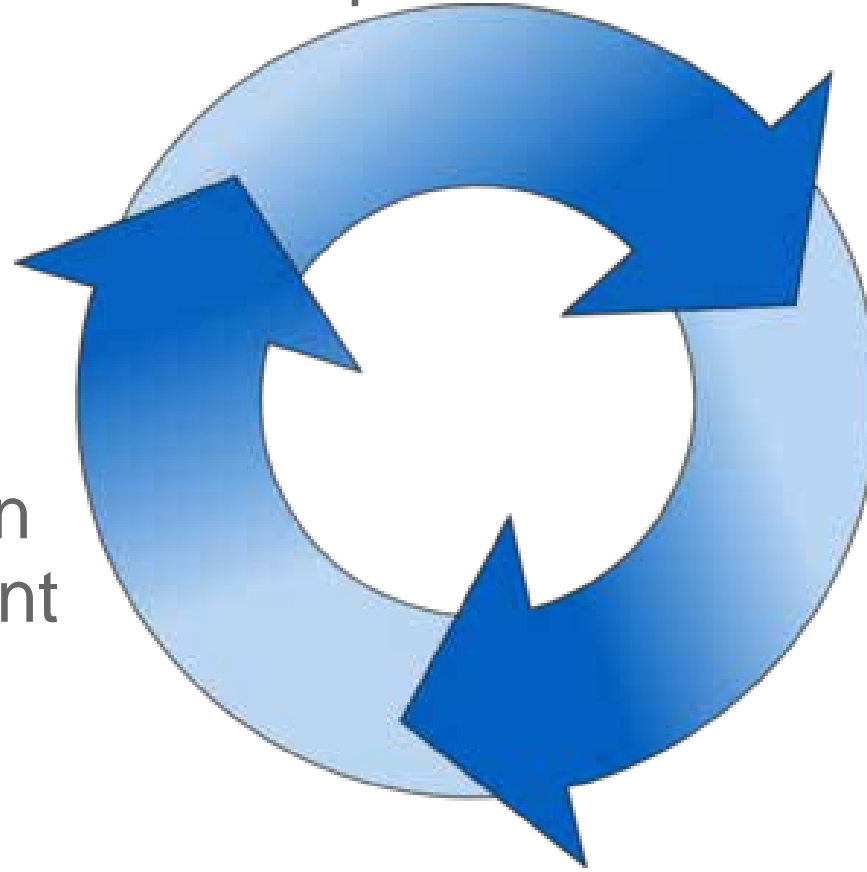
- ▶ Inform issues through data visualization.
- ▶ Utilize distributed web services from network partners.
- ▶ Provide human use, biological, physical data layers.



maps.westcoastoceans.org

Use Case and Debris Stories

Policy and
management
questions



Call to action
& engagement

Data
exploration &
understanding

Use Case and Debris Stories

12

- ▶ Researchers
- ▶ Cleanup coordinator
- ▶ Cleanup volunteers
- ▶ Policy advocate
- ▶ Policy makers
- ▶ State/Federal agencies



Each deal with important issue of marine debris along our coastline and need data and tools to do their jobs more efficiently.

Use Case and Debris Stories

Policy and management questions

- ▶ Where should new cleanups be planned?
- ▶ Where should derelict gear cleanups take place?
- ▶ Are new MPAs being impacted by marine debris?
- ▶ What are the effects of debris prevention policies?

Use Case and Debris Stories

Cleanups

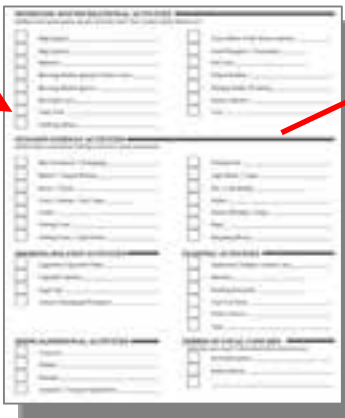


Data Cards



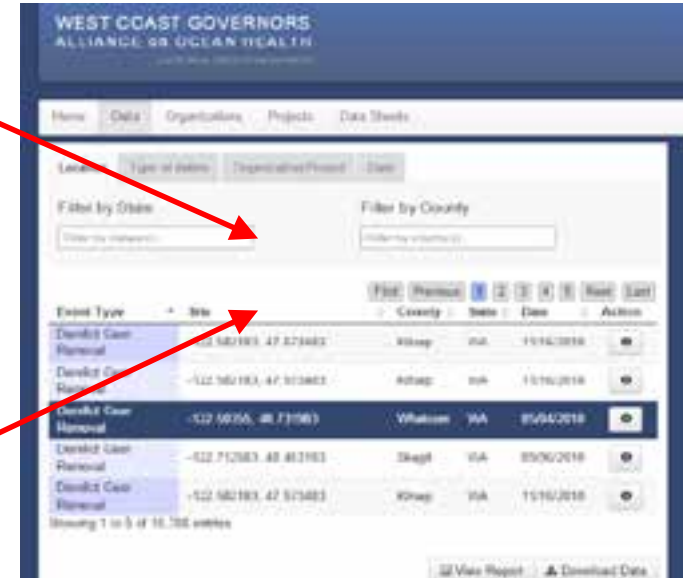
International Coastal Cleanup Data Card

Event Name: [Text]
Date: [Text]
Location: [Text]
Organizer: [Text]
County: [Text]
State: [Text]
City: [Text]
Zip: [Text]
Event Type: [Text]
Site: [Text]
County: [Text]
State: [Text]
Date: [Text]



Event Name: [Text]
Date: [Text]
Location: [Text]
Organizer: [Text]
County: [Text]
State: [Text]
City: [Text]
Zip: [Text]
Event Type: [Text]
Site: [Text]
County: [Text]
State: [Text]
Date: [Text]

Database



WEST COAST GOVERNORS ALLIANCE FOR OCEAN HEALTH

Home Data Organizations Projects Data Sheets

Filter by State: [Text] Filter by County: [Text]

Event Type	Site	County	State	Date	Action
Debris Clean Removal	-122.581983, 47.513483	Skagit	WA	11/14/2018	[Icon]
Debris Clean Removal	-122.581983, 47.513483	Skagit	WA	11/14/2018	[Icon]
Debris Clean Removal	-122.581983, 47.513483	Skagit	WA	11/14/2018	[Icon]
Debris Clean Removal	-122.581983, 47.513483	Skagit	WA	11/14/2018	[Icon]
Debris Clean Removal	-122.581983, 47.513483	Skagit	WA	11/14/2018	[Icon]

Showing 1 to 5 of 10,702 entries

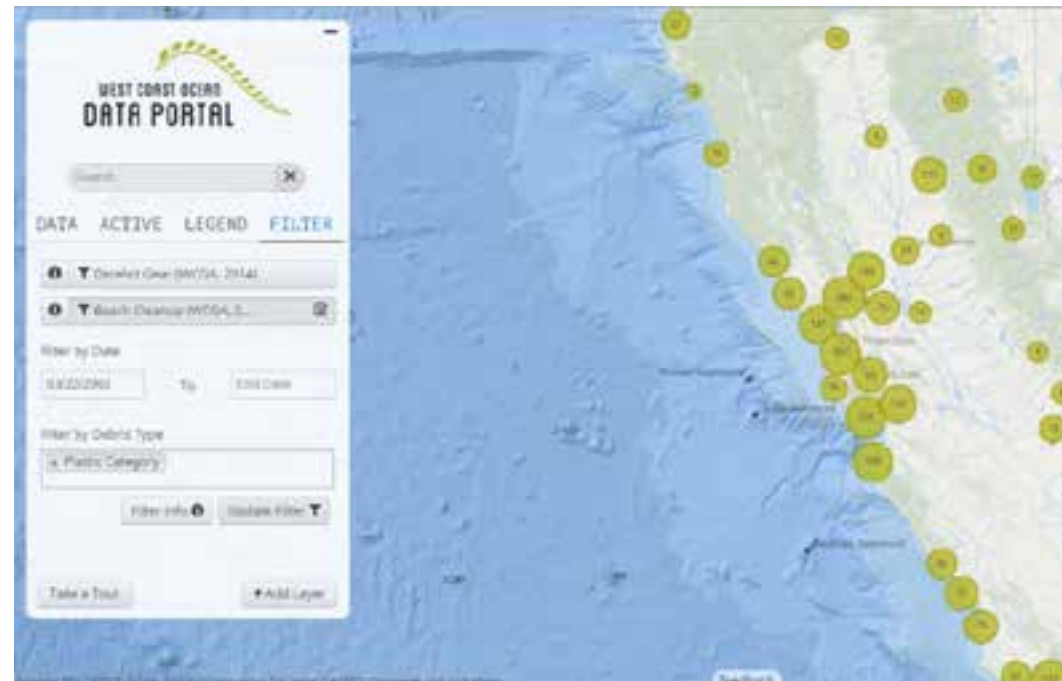
[View Report] [Download Data]

Debris.westcoastoceans.org

Use Case and Debris Stories

15

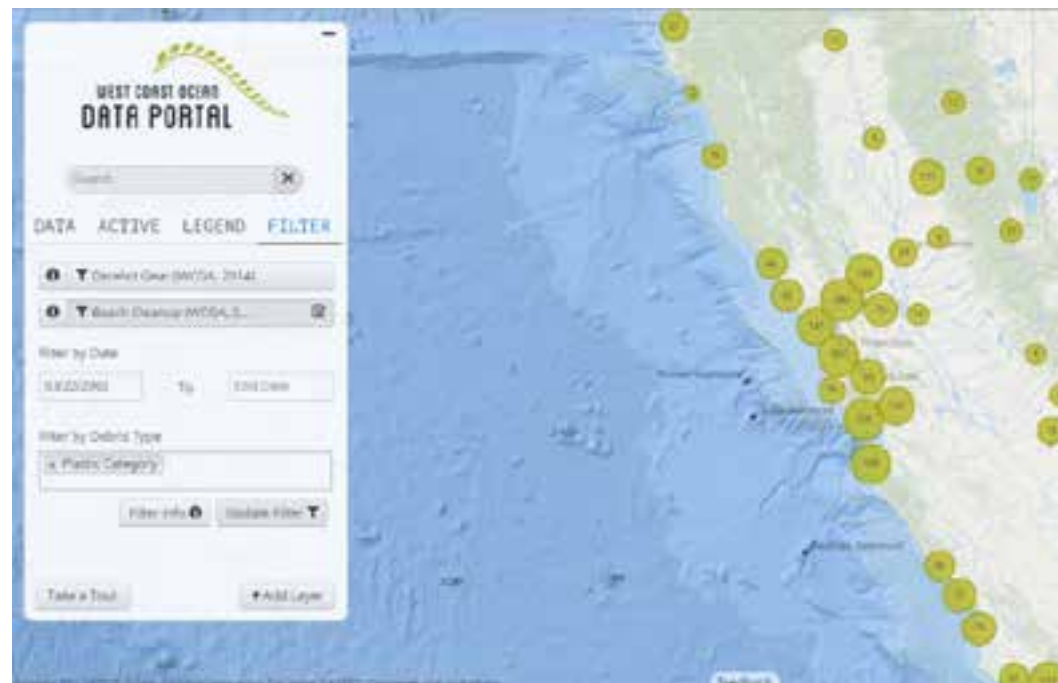
- ▶ Map interface for viewing beach cleanup and derelict gear data.
- ▶ Filter tools to specify location, time period, and debris type.
- ▶ Pulls data from West Coast Marine Debris Database.



Use Case and Debris Stories

16

- ▶ Share analysis via bookmarks and web embedding.
- ▶ Printing of maps for publications.
- ▶ Highlight and encourage collection and addition of new data to the MDDDB.



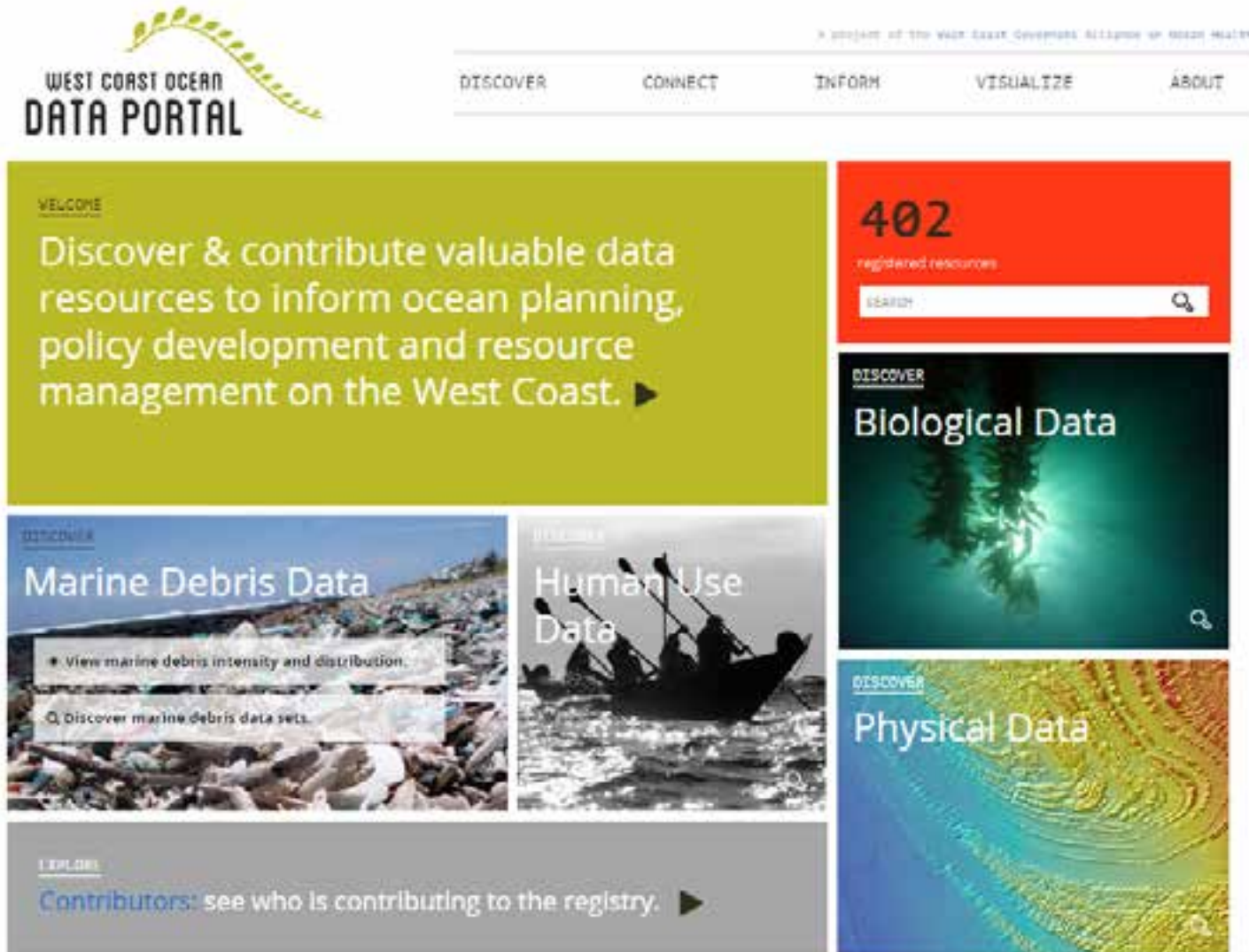
Demonstration



17

portal.westcoastoceans.org

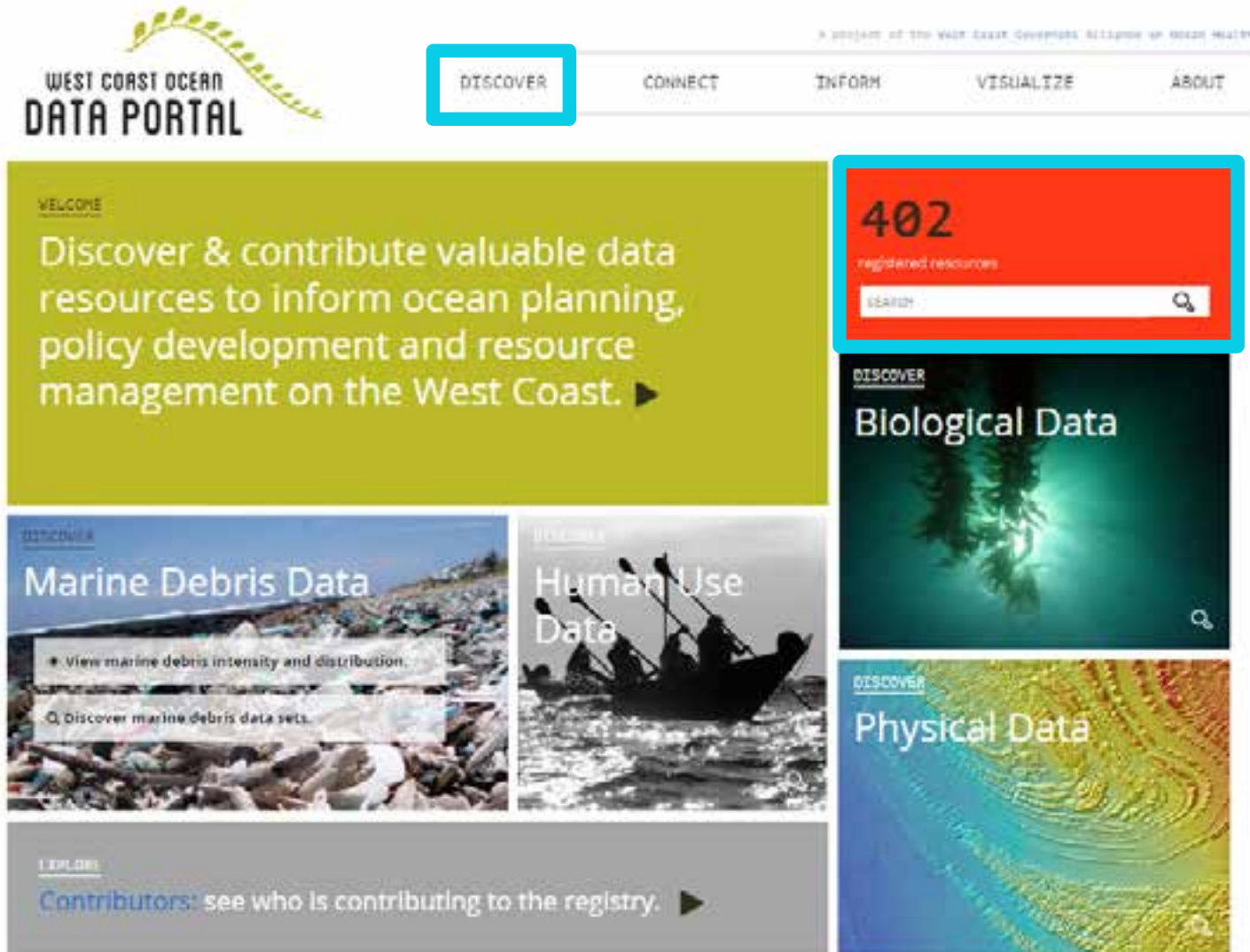
Demonstration



The screenshot shows the West Coast Ocean Data Portal website. At the top left is the logo with the text "WEST COAST OCEAN DATA PORTAL". To the right is a navigation menu with links for "DISCOVER", "CONNECT", "INFORM", "VISUALIZE", and "ABOUT". Below the navigation is a large green banner with the text: "WELCOME Discover & contribute valuable data resources to inform ocean planning, policy development and resource management on the West Coast. ▶". To the right of the banner is a red box containing the number "402" and the text "registered resources", with a search bar below it. Below the banner are two smaller tiles: "Marine Debris Data" with a photo of debris and a link to "View marine debris intensity and distribution", and "Human Use Data" with a photo of kayakers. To the right of these are two more tiles: "Biological Data" with an underwater photo of seaweed, and "Physical Data" with a bathymetric map. At the bottom left is a grey box with the text "Contributors: see who is contributing to the registry. ▶".

Demonstration

19



The screenshot shows the West Coast Ocean Data Portal website. At the top left is the logo with the text "WEST COAST OCEAN DATA PORTAL". To the right is a navigation menu with buttons for "DISCOVER", "CONNECT", "INFORM", "VISUALIZE", and "ABOUT". Below the navigation is a large green banner with the text: "WELCOME Discover & contribute valuable data resources to inform ocean planning, policy development and resource management on the West Coast." To the right of the banner is a red box containing the number "402" and the text "registered resources", with a search input field below it. Below the banner are three smaller cards: "Marine Debris Data" with a photo of debris and a search icon, "Human Use Data" with a photo of kayakers and a search icon, and "Biological Data" with a photo of seaweed and a search icon. At the bottom left is a grey box with the text "EXPLORER Contributors: see who is contributing to the registry." To the right of this is a large "Physical Data" card with a colorful bathymetric map and a search icon.

Demonstration



A PRODUCT OF THE WEST COAST COASTGUARD ALLIANCE AND USFWS HEALTH

DISCOVER

CONNECT

INFORM

VISUALIZE

ABOUT

SEARCH KEYWORDS



📍 Location



🗃️ Categories



👉 Issues



🏠 Sources



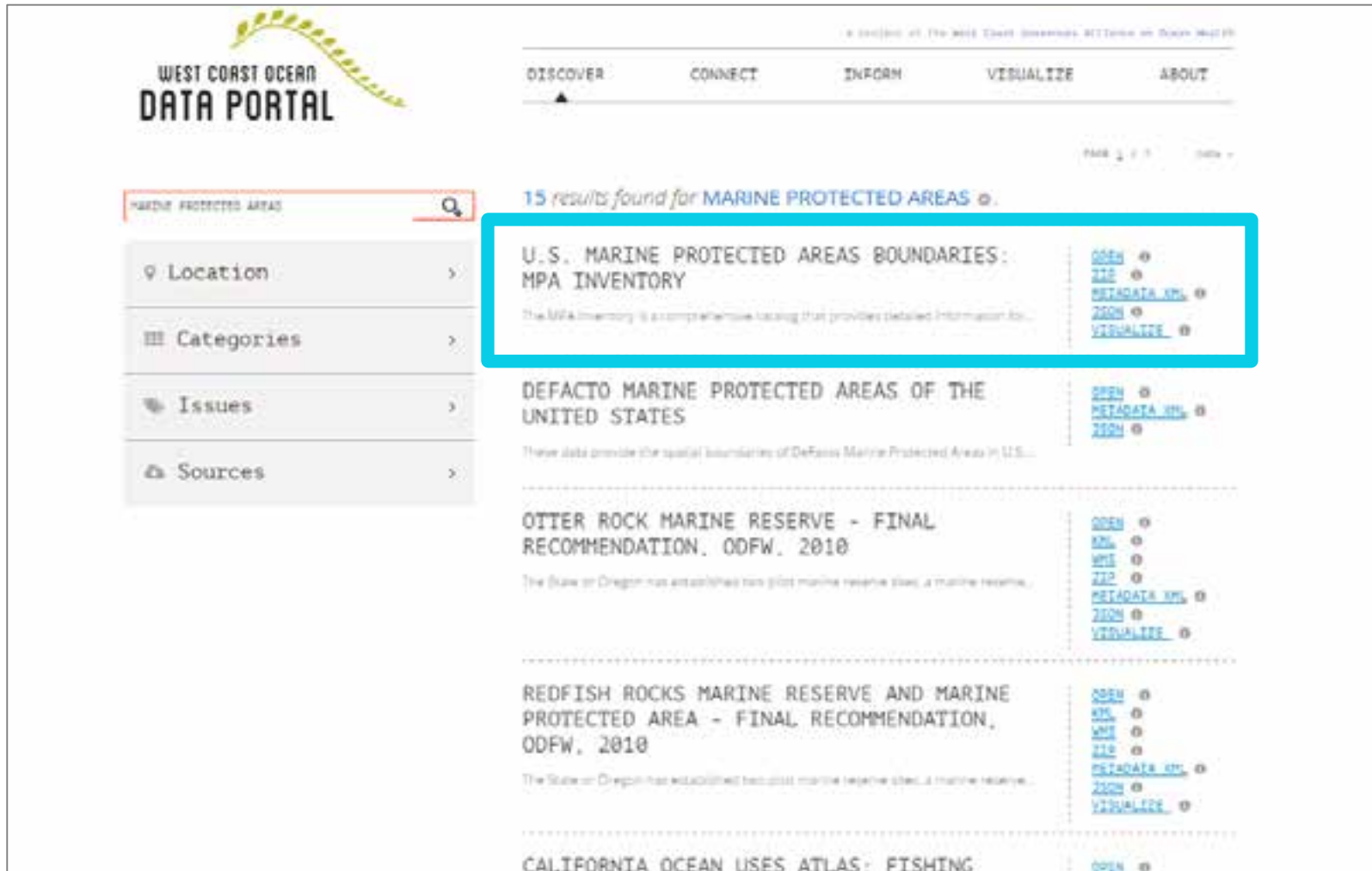
Welcome to the West Coast Ocean Data Portal. There are **562** registered resources available to discover.

Use the filtering tools provided to browse. You can filter by any combination of 🔍 keyword, 📍 location, 🗃️ category and 👉 issue.

Browse All Resources ▶

Demonstration

21



The screenshot shows the West Coast Ocean Data Portal interface. At the top left is the logo and name 'WEST COAST OCEAN DATA PORTAL'. A navigation bar contains the words 'DISCOVER', 'CONNECT', 'INFORM', 'VISUALIZE', and 'ABOUT'. Below the navigation bar is a search bar containing the text 'MARINE PROTECTED AREAS'. To the left of the search results is a sidebar with filters: 'Location', 'Categories', 'Issues', and 'Sources'. The search results are displayed in a list format. The first result, 'U.S. MARINE PROTECTED AREAS BOUNDARIES: MPA INVENTORY', is highlighted with a red box. This result includes a description: 'The MPA Inventory is a comprehensive listing that provides detailed information fo...', and a set of action links: 'ODFW', 'SIC', 'METADATA.MD', 'ZOOM', and 'VISUALIZE'. Below this are other results: 'DEFACTO MARINE PROTECTED AREAS OF THE UNITED STATES', 'OTTER ROCK MARINE RESERVE - FINAL RECOMMENDATION, ODFW, 2010', 'REDFISH ROCKS MARINE RESERVE AND MARINE PROTECTED AREA - FINAL RECOMMENDATION, ODFW, 2010', and 'CALIFORNIA OCEAN USES ATLAS: FISHING'. Each result also has a set of action links.

WEST COAST OCEAN
DATA PORTAL

DISCOVER CONNECT INFORM VISUALIZE ABOUT

MARINE PROTECTED AREAS

15 results found for MARINE PROTECTED AREAS

U.S. MARINE PROTECTED AREAS BOUNDARIES: MPA INVENTORY

The MPA Inventory is a comprehensive listing that provides detailed information fo...

ODFW
SIC
METADATA.MD
ZOOM
VISUALIZE

DEFACTO MARINE PROTECTED AREAS OF THE UNITED STATES

These data provide the spatial boundaries of DeFacto Marine Protected Areas in U.S...

OTTER ROCK MARINE RESERVE - FINAL RECOMMENDATION, ODFW, 2010

The State of Oregon has established two pilot marine reserve sites, a marine reserve...

ODFW
SIC
METADATA.MD
ZOOM
VISUALIZE

REDFISH ROCKS MARINE RESERVE AND MARINE PROTECTED AREA - FINAL RECOMMENDATION, ODFW, 2010

The State of Oregon has established two pilot marine reserve sites, a marine reserve...

ODFW
SIC
METADATA.MD
ZOOM
VISUALIZE

CALIFORNIA OCEAN USES ATLAS: FISHING

ODFW

Demonstration

22



WEST COAST OCEAN
DATA PORTAL

MARINE PROTECTED AREAS

- Location >
- Categories >
- Issues >
- Sources >

A portion of The West Coast Ocean Data Portal on Data Hub

DISCOVER CONNECT INFORM VISUALIZE ABOUT

PAGE 1 / 1

15 results found for MARINE PROTECTED AREAS

U.S. MARINE PROTECTED AREAS BOUNDARIES: MPA INVENTORY

The MPA inventory is a comprehensive catalog that provides detailed information for existing marine protected areas in the United States. The inventory provides geographic boundary information (in polygon format) and classification attributes that can be used to define the conservation objectives, protection level, governance and related management criteria for all sites in the database. The comprehensive inventory of federal, state and territorial MPA sites provides governments and stakeholders with access to information to make better decisions about the current and future use of space based conservation. The information also will be used to inform the development of the national system of marine protected areas as required by Executive Order 13756.



DATA PROVIDED BY:
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), OFFICE OF NATIONAL MARINE SANCTUARIES (ONMS), NATIONAL MARINE PROTECTED AREAS CENTER (NPMAC)

PUBLISHED BY:
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), OFFICE OF NATIONAL MARINE SANCTUARIES (ONMS), NATIONAL MARINE PROTECTED AREAS CENTER (NPMAC)

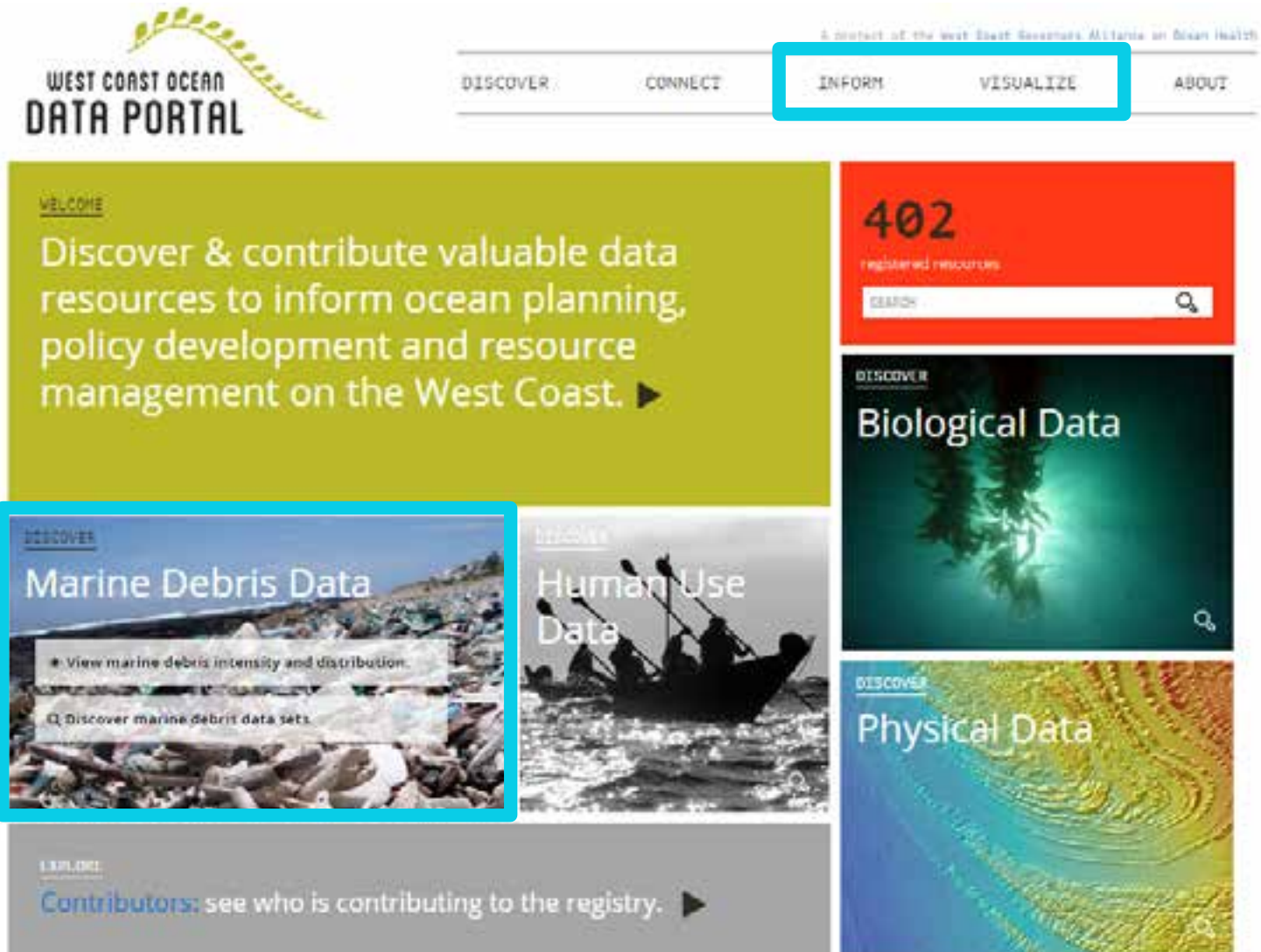
CONTACT:
MPAINVENTORY@NOAA.GOV

CONTACTS:
ONMS DATA ARE IN THE PUBLIC DOMAIN. THE DATA

OPEN
INFO
ESTIMATE MPA
ZOOM
VISUALIZE

Demonstration

23



The screenshot shows the West Coast Ocean Data Portal website. At the top left is the logo with the text "WEST COAST OCEAN DATA PORTAL". To the right is a navigation menu with five items: "DISCOVER", "CONNECT", "INFORM", "VISUALIZE", and "ABOUT". The "INFORM" and "VISUALIZE" items are highlighted with a red border. Below the navigation is a large green banner with the text "WELCOME Discover & contribute valuable data resources to inform ocean planning, policy development and resource management on the West Coast. ▶". To the right of the banner is a red box containing the number "402" and the text "registered resources", with a search bar below it. Below the banner are three data category tiles: "Marine Debris Data" (with a photo of a beach), "Human Use Data" (with a photo of kayakers), and "Biological Data" (with a photo of a coral reef). Below the "Marine Debris Data" tile is a grey box with the text "CONTRIBUTORS Contributors: see who is contributing to the registry. ▶". To the right of the "Biological Data" tile is another search bar. At the bottom right is a "Physical Data" tile with a bathymetry map.

WEST COAST OCEAN
DATA PORTAL

A project of the West Coast Governors Alliance on Ocean Health

DISCOVER CONNECT **INFORM** VISUALIZE ABOUT

WELCOME
Discover & contribute valuable data resources to inform ocean planning, policy development and resource management on the West Coast. ▶

402
registered resources
SEARCH

DISCOVER
Marine Debris Data
• View marine debris intensity and distribution.
🔍 Discover marine debris data sets.

DISCOVER
Human Use Data

DISCOVER
Biological Data

DISCOVER
Physical Data

CONTRIBUTORS
Contributors: see who is contributing to the registry. ▶

Demonstration



A PROJECT OF THE WEST COAST OCEAN OBSERVATION AND DATA NETWORK

DISCOVER

CONNECT

INFORM

VISUALIZE

ABOUT

Informing marine debris policies and decisions

Marine debris is a problem that costs West Coast states and communities millions of dollars each year in cleanup and ecosystem impacts. Cleanup groups, regulators, researchers, and decision makers need tools for easily visualizing beach cleanup and derelict fishing gear data along with other information. You can explore further by clicking the maps below and filtering by debris type, date, and location.

BY THE NUMBERS

1467 Crab pots and traps collected

1,637 Miles cleaned by volunteers

11,000 Pounds of traps collected

1,000,000 Pounds of debris collected from West Coast beaches

View more data and explore marine debris statistics.

Are California's MPAs impacted by marine debris, and how can we enhance our cleanup efforts in these protected areas?



Significant amounts of debris are reported and have been found along California's highly protected coast, meaning that areas are not immune to this issue. Learn how to explore debris events within the WCOON system and generate reliable data on the presence of debris that are available to aid in research that will be used to inform the government.

Do human population density and beach cleanup events correlate, and where are the most significant gaps in cleanup events near highly populated areas?



Understanding the correlation between population density and beach cleanup events may highlight areas that are under-served from additional cleanup events, which population events may have more data to help us be able to make more informed decisions from the cleanup operations to help a successful event.

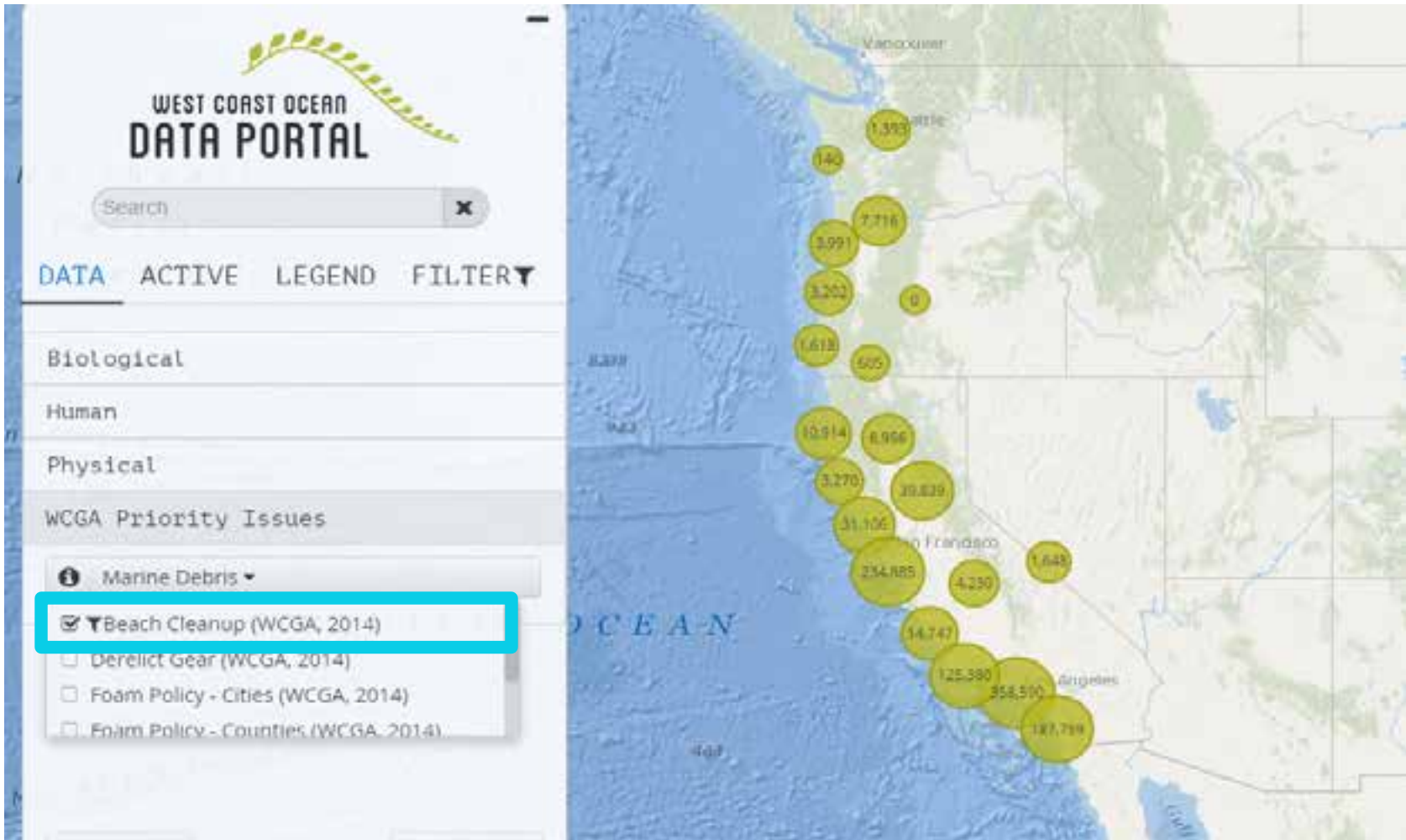
Did the 2018 Prawn Dredging ban in LA County have an impact on reducing the presence of trap containers in beach cleanups?



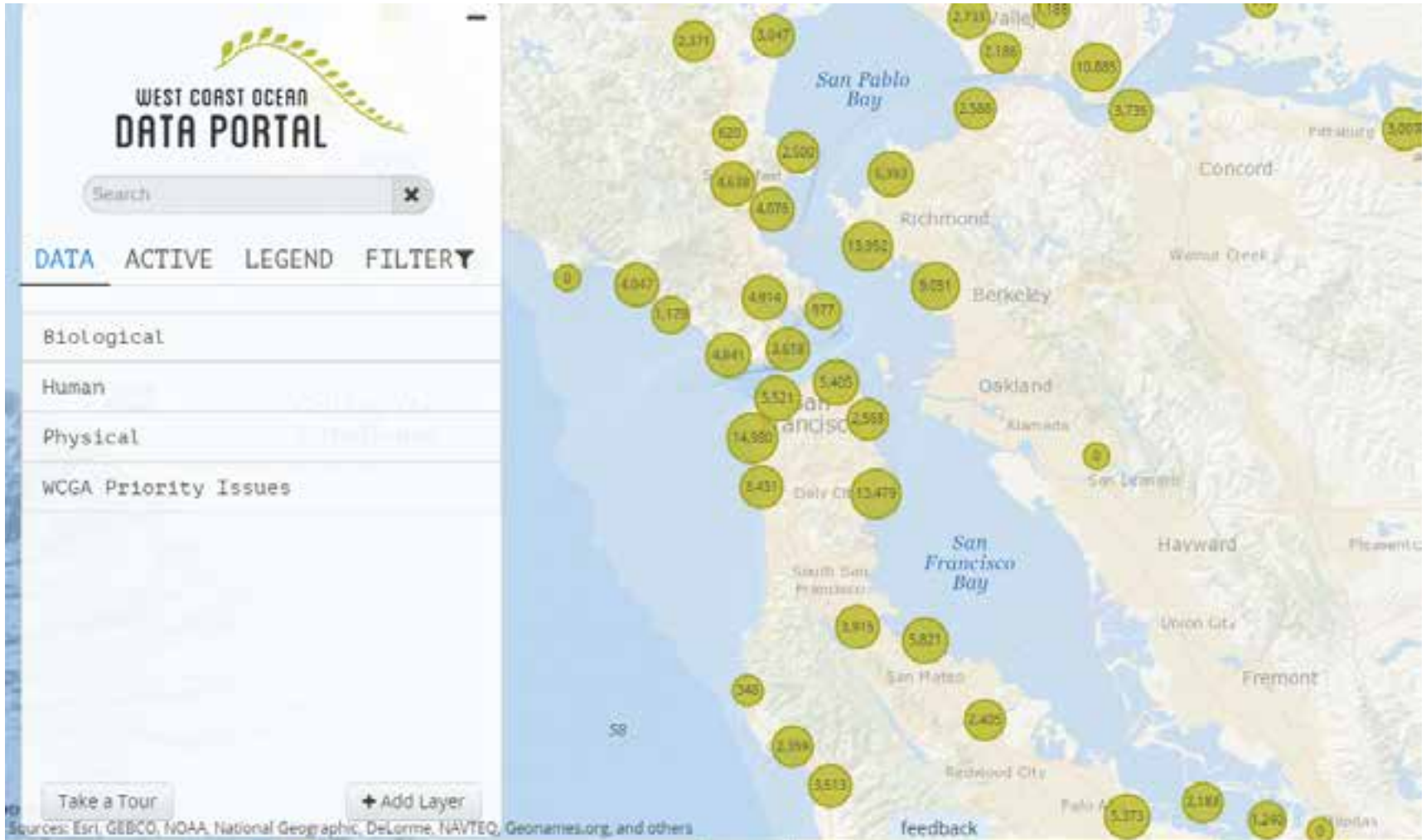
LA County banned trap containers in 2018, comparing trap packaging specific trap cleanup data for LA County from an API endpoint may provide information about the effectiveness of this policy and how well these traps debris. View the Beach Cleanup Layer by the "Trap/Container" debris type to see the effect the ban may have on trap debris.

Demonstration

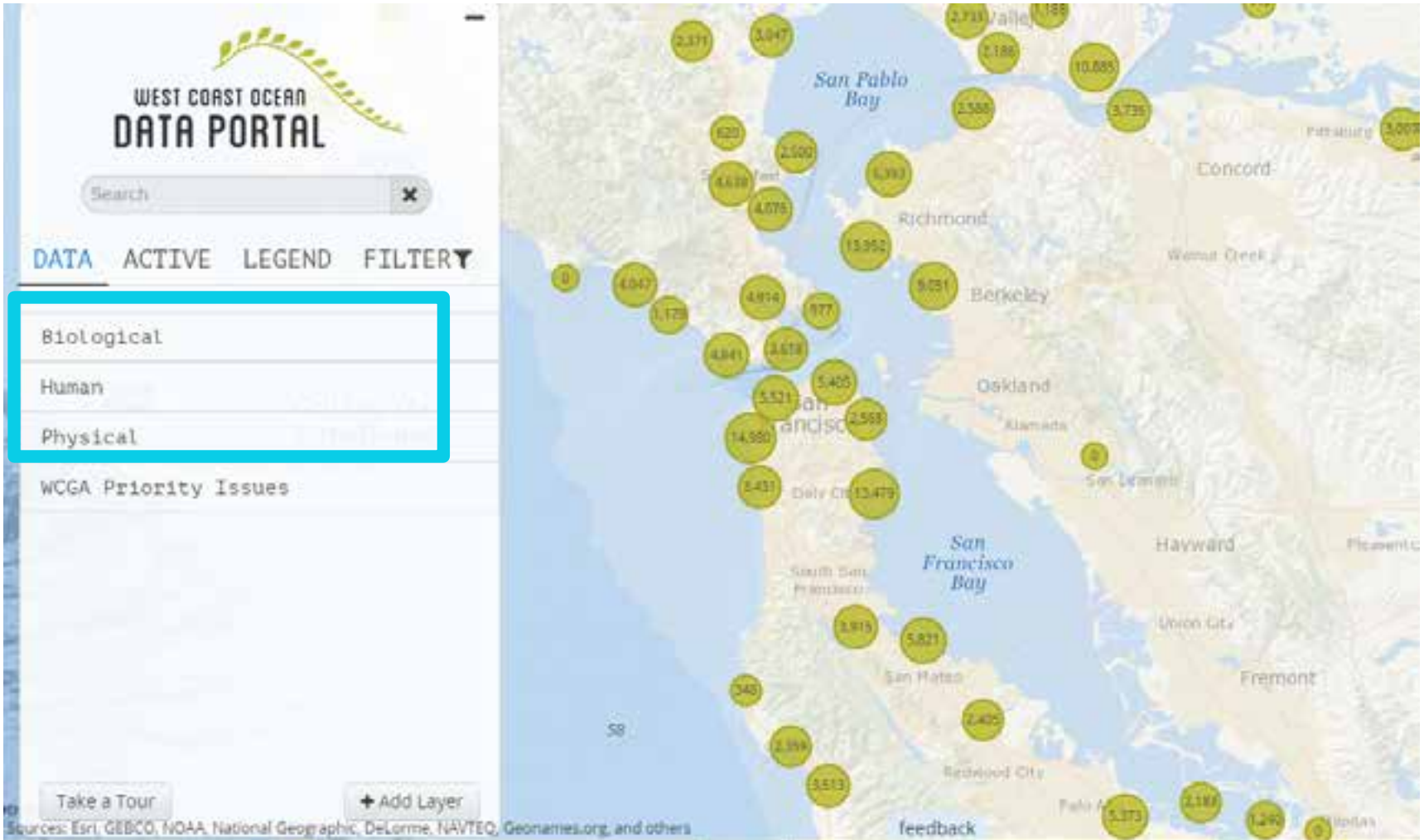
25



Demonstration

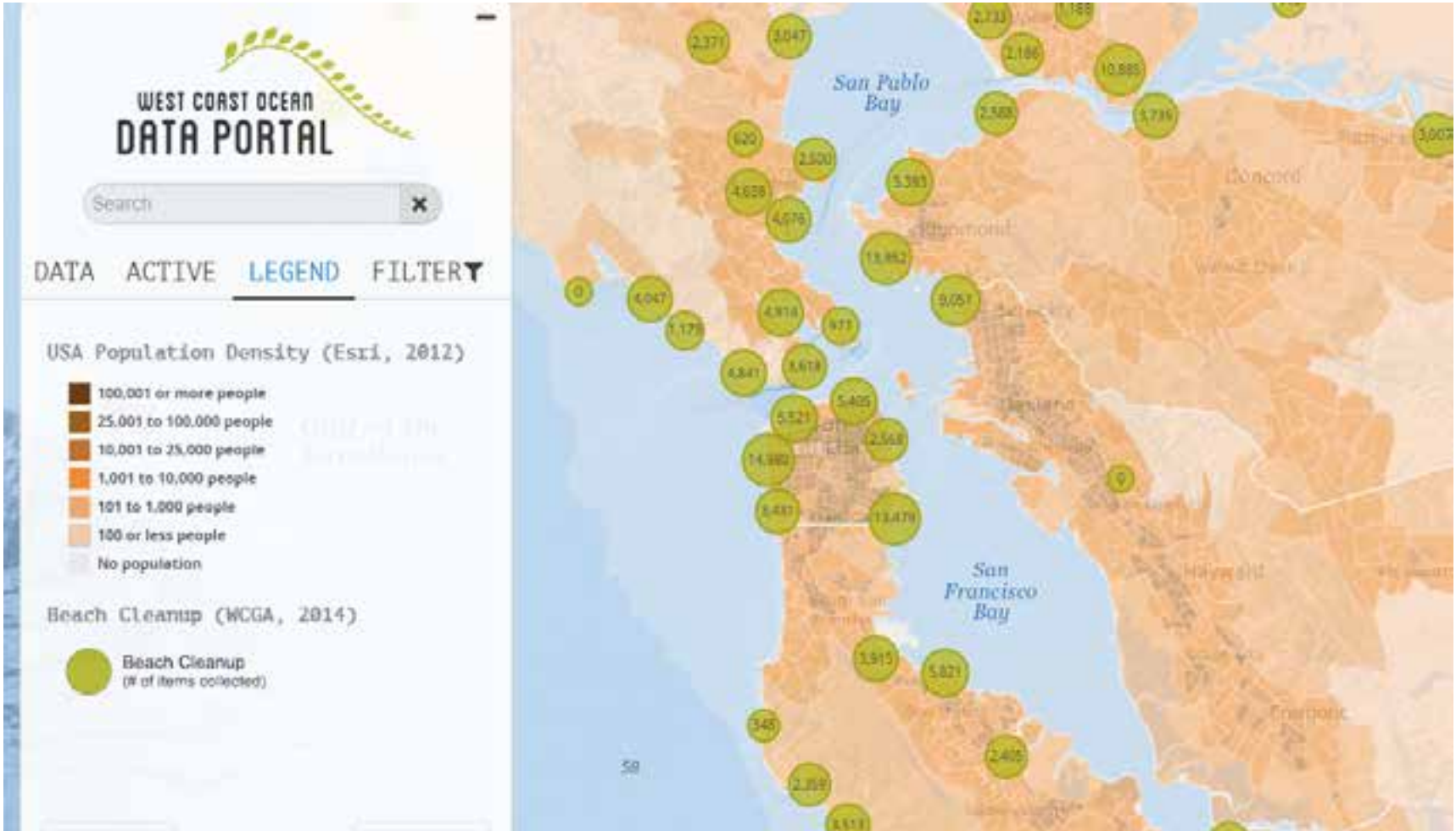


Demonstration

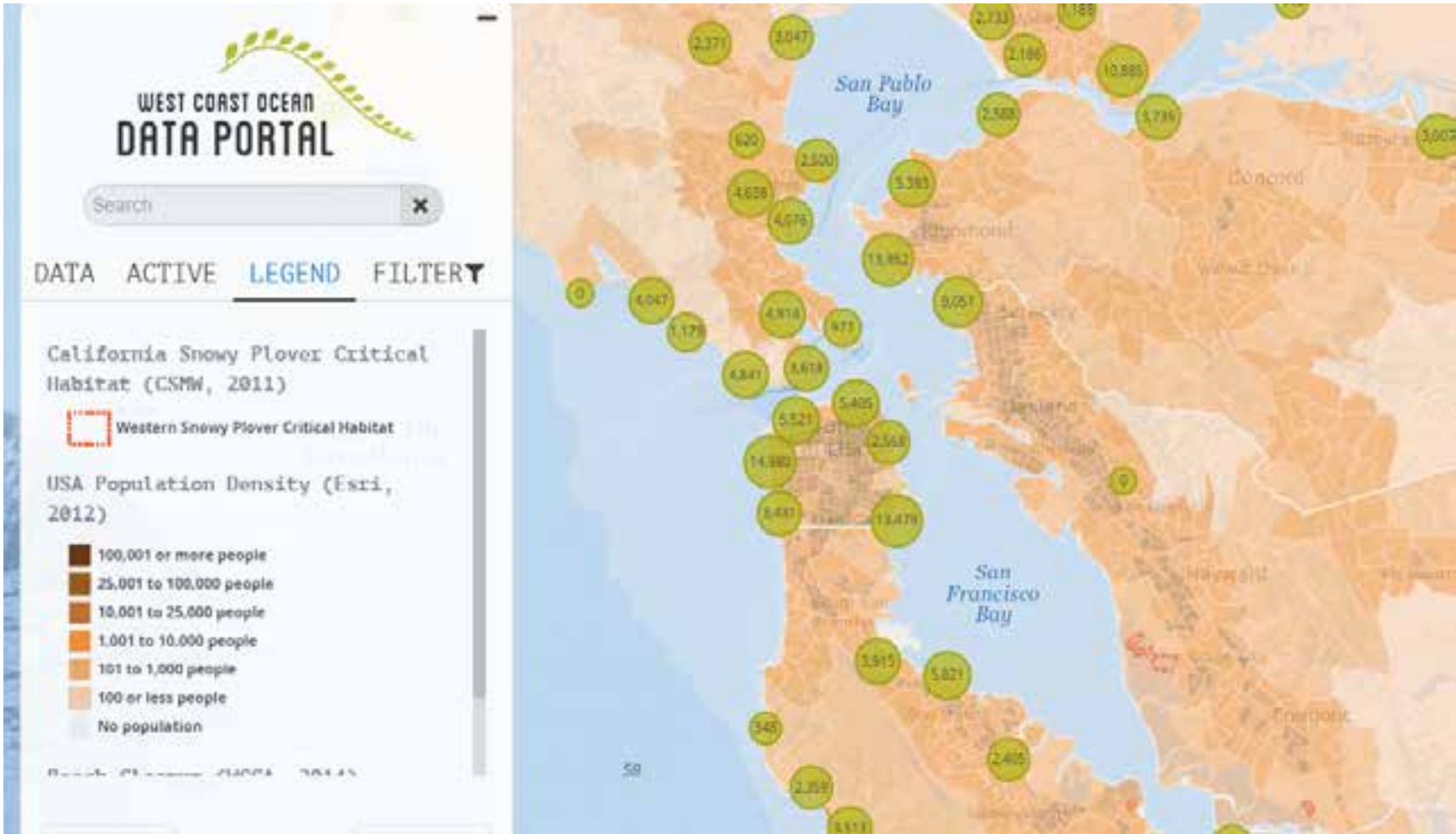


The screenshot displays the West Coast Ocean Data Portal interface. On the left, the portal's logo and name are at the top, followed by a search bar. Below the search bar are navigation tabs: DATA, ACTIVE, LEGEND, and FILTER. The FILTER tab is selected, and a dropdown menu is open, showing three categories: Biological, Human, and Physical. The Physical category is highlighted with a red border. Below the filter menu is a section for WCGA Priority Issues. At the bottom left, there are buttons for 'Take a Tour' and '+ Add Layer'. The main area of the interface is a map of the San Francisco Bay Area, showing San Pablo Bay and San Francisco Bay. Numerous yellow circular data points are plotted on the map, each containing a numerical value. The map also shows major cities and geographical features like the Golden Gate Bridge and the San Francisco Peninsula. At the bottom of the map, there is a 'feedback' link and a small 'Sources: Esri, GEBCO, NOAA, National Geographic, DeLorme, NAVTEQ, Geonames.org, and others' text.

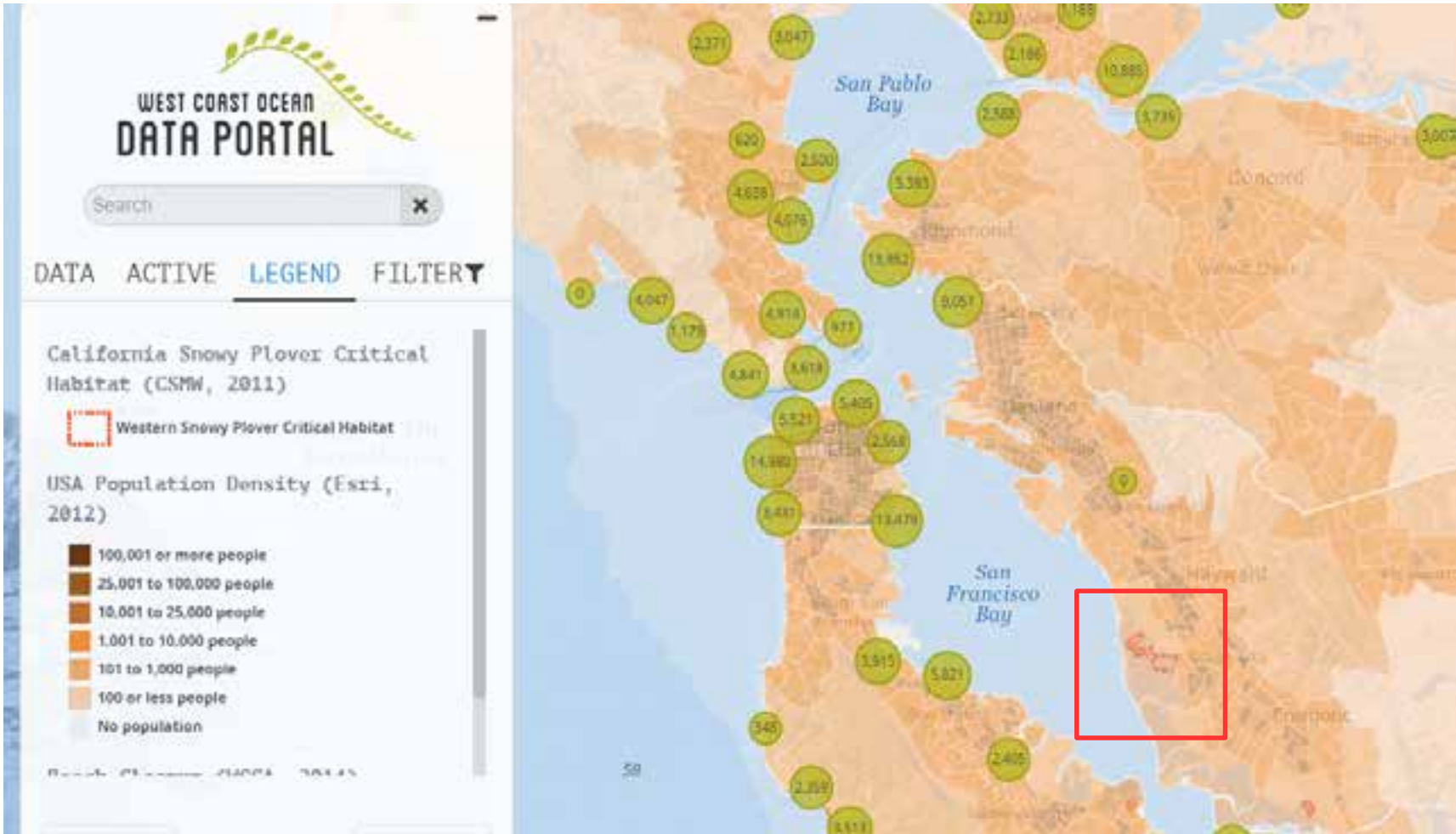
Demonstration



Demonstration



Demonstration



Demonstration



Demonstration



Lessons Learned

- ▶ Engage both end users and domain experts from the beginning to understand needs.
- ▶ Recognize data limitations.
- ▶ Data exploration is only one use, objective to create **action**.
- ▶ Plan for costs of administration, operations and maintenance.

Questions?

portal.westcoastoceans.org

Steven J. Steinberg, Ph.D., GISP

**Principal Scientist • Information Management & Analysis
Southern California Coastal Water Research Project**

3535 Harbor Blvd., Suite 110

Costa Mesa, California 92626

steves@sccwrp.org • 714.755.3260



BOEM
BUREAU OF OCEAN ENERGY MANAGEMENT