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Open Source Mapping to improve data sharing: Environmental Response Management Application

Amy Merten  
United States. National Ocean Service. Office of Response and Restoration, amy.merten@noaa.gov

Ben Shorr  

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Open Source Mapping to improve data sharing: Environmental Response Management Application

Amy Merten, Robb Wright, Nicolas Eckhardt, & Benjamin Shorr
NOAA’s Office of Response and Restoration
Environmental Response Management Application (ERMA®)

Functions

- Web-based mapping tool
- Analyze and visualize environmental information
- Prepare for, respond to, assess impacts from hazardous incidents or conditions
- Increases communication, coordination, and efficiency

Pacific Northwest ERMA

- [https://www.erca.unh.edu/northwest](https://www.erca.unh.edu/northwest)
- Partnership with UW-Tacoma Puget Sound Institute
How ERMA Can Help?

• Data Collection, Visualization, and Sharing
  • Cross Jurisdictional boundaries (Multi Agency, Multi State, Multi Cultural, Multi Lateral)

• Resource Information
  ▪ Subsistence, cultural
  ▪ Sensitive habitats
  ▪ Species distribution and life history

• Critical Infrastructure
  ▪ Airport and landing areas
  ▪ Water intake locations
  ▪ Communication centers

• Aid in the development of Response Plans
  ▪ Environmental Sensitivity Index (ESI) maps
  ▪ Area Contingency Planning (ACP)
  ▪ Geographic Response Plans (GRP)
Uses of ERMA

- Purpose is to integrate and synthesize environmental data into a single interactive map via a Web interface from anywhere.
- Data visualization.
- ERMA Data goes across ORR spectrum from spill to NRDA and Restoration.

Response (24 hours)  (ERD)

(ARD)

Restoration - Recovery (Years to Decades)

(NMFS/ Partners)
Environmental Response Management Application (ERMA)
Spill Preparedness and Response

Washington Geographic Response Plans Boundaries (WDOE)

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Washington Booming Strategies (WDOE, 2009)

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<td>401</td>
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<td>Keep oil out of Waatch Creek</td>
<td>Deploy boom across the mouth of the creek. Must have tribal guide. If oil is present, also deploy snare boom</td>
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<td>2007-01-01</td>
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<tr>
<td>402</td>
<td>3534</td>
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<td>Keep oil out of Waatch River</td>
<td>Deploy boom near the mouth of the river as weather permits. Anchor with metal stakes on the south (Hobuck Beach) side, and rocks and trees on the north road access side. Can collect oil from the north side. Difficult due to river current. Will need Jon</td>
<td>1</td>
<td>2007-01-01</td>
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</table>
Marine Jurisdictions
NANOOS - Observations
ESIs and ESI Query Tool

Environmental Sensitivity Index: Resources at Risk

Background and Instructions

Species listed in Red are either listed as Threatened (T) or Endangered (E) by the State (S) or Federal government (F).

Notes: Click on column headers to sort rows; hover or click on species link to get more information.

Summary Results

AOI total area: 84447 acres

Puget Sound Bird Habitat
9 unique species: Caspian tern, Comorant, Gulls, Harlequin duck, Pacific loon, Pigeon guillemot, Rhinoceros auklet, Scoters, Waterfowl

Puget Sound Fish Habitat
Selected 1 features

Puget Sound Shoreline Classification (lines)
Summary Length (miles) by type:
- 5: Mudd sand and gravel beaches: 34
- 7: Exposed tidal flats: 15
- 8A: Gravel beaches: 4
- 8B: Gravel beaches and riprap: 3
- 8C: Sheltered riprap: 2
- 4: Coarse-grained sand beaches: 1
- 9A: Sheltered tidal flats: 1
- 1B: Exposed, solid man-made structures: 0.5
- 10A: Salt and brackish-water marshes: 0.1

Puget Sound Shoreline Classification (poly)
Summary Area (acres) by type:
- 7: Exposed tidal flats: 800184
- 9A: Sheltered tidal flats: 69903
Whale Telemetry and NMFS Critical Habitat
WA Shoreline Habitat Classification (PSI)
Burke Herpetology Collection - Frogs
Canadian Watersheds & Audubon Marine Important Bird Areas
Uses of ERMA and Next Steps

- Use to incorporate and share stakeholder data to improve information sharing, the evaluation of impacts and decision-making
- Optimize connection to UWT/PSI
- Provide comments on functionality and needs
- Use to analyze sensitivities of areas and proposed activities or needs
- Focus on data sharing formats, requirements and agreements
- Upcoming drills: Aug ‘14 Shell-led, CANUSPAC
- Unmanned Aerial/Underwater Systems
For More Information

https://www.erca.unh.edu/northwest
http://response.restoration.noaa.gov/ERMA

• Amy Merten, Ph.D., Spatial Data Branch Chief
  Amy.Merten@noaa.gov
• Robb Wright, Pacific Northwest ERMA Lead
  Robb.Wright@noaa.gov
• Nicolas Eckhardt, Pacific Northwest ERMA backup
  Nicolas.Eckhardt@noaa.gov
• Kari Sheets, ERMA Team Lead
  Kari.Sheets@noaa.gov
• Benjamin Shorr, ERMA Great Lakes Regional Lead
  Benjamin.Shorr@noaa.gov
ERMA Team

• NOAA:
  – Michele Jacobi
  – George Graettinger
  – Amy Merten
  – Mark Miller
  – Ben Shorr
  – Kari Sheets
  – Robb Wright

• Genwest Systems:
  – Jill Bodnar
  – JB Huyett
  – Zach Winters-Staszak
  – Hayley Pickus
  – Michael Greer
  – Ryan Ulmsberger
  – Paul Whalen

• I.M. Systems Group
  – Matt Dorsey
  – Laura Johnson
  – Jay Coady
  – Nick Eckhardt

• Development Team:
  – University of New Hampshire:
    • Nancy Kinner
    • Phillip Collins
    • Robert St. Lawrence
    • Kurt Schwehr (Google)
  – Allison Bailey, Sound GIS
  – Aaron Racicot, Z-Pulley
  – Chander Ganesan, OTG
  – David Bittner
  – Dan Little