Cumulative Effects Evaluation Process for Nationwide Permits

Seattle District

Meeting with Tribes and Agencies in Washington State

February 2, 2016

9:30-12:00

US Army Corps of Engineers

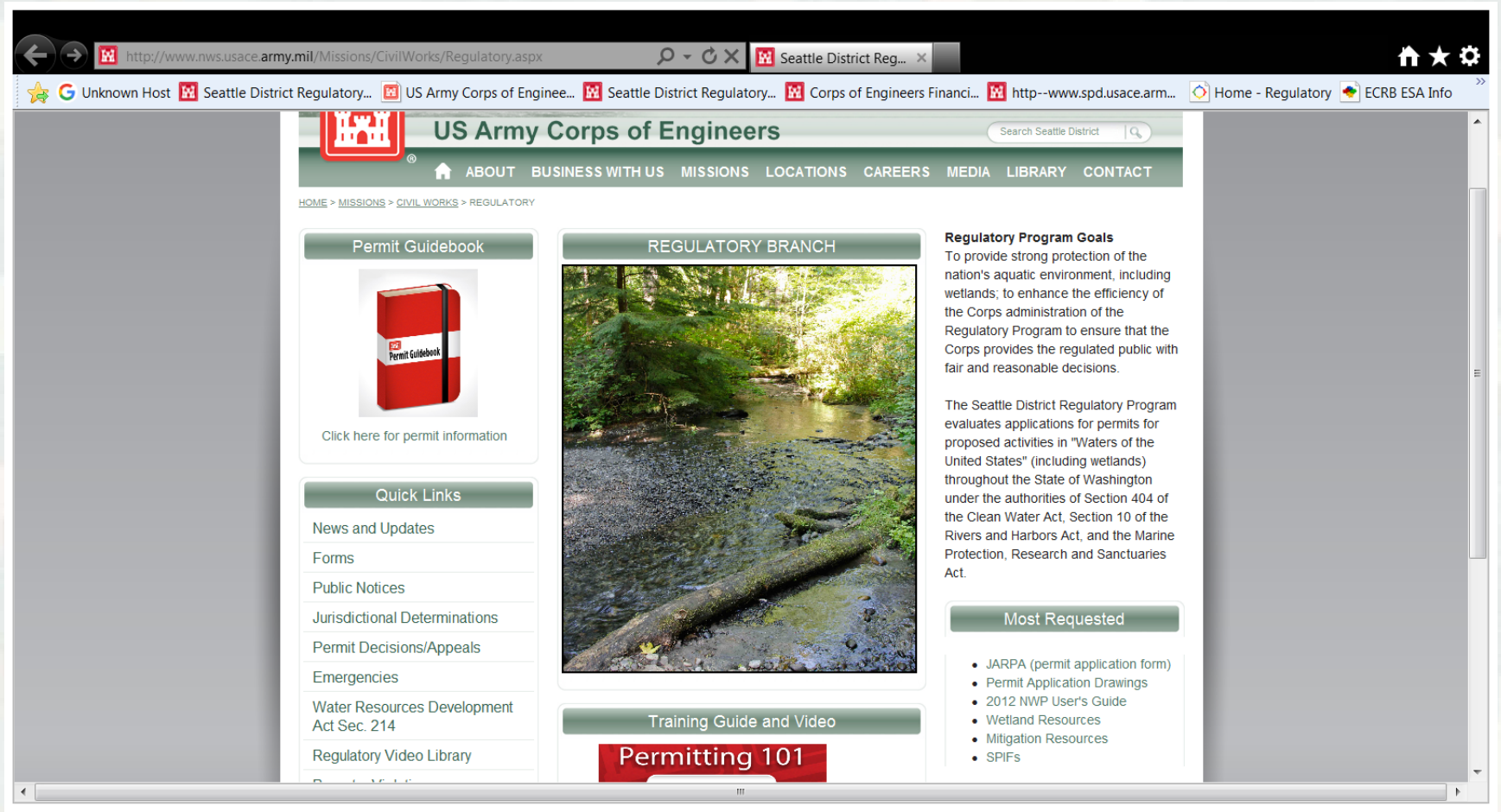
BUILDING STRONG®

Happy Groundhog Day

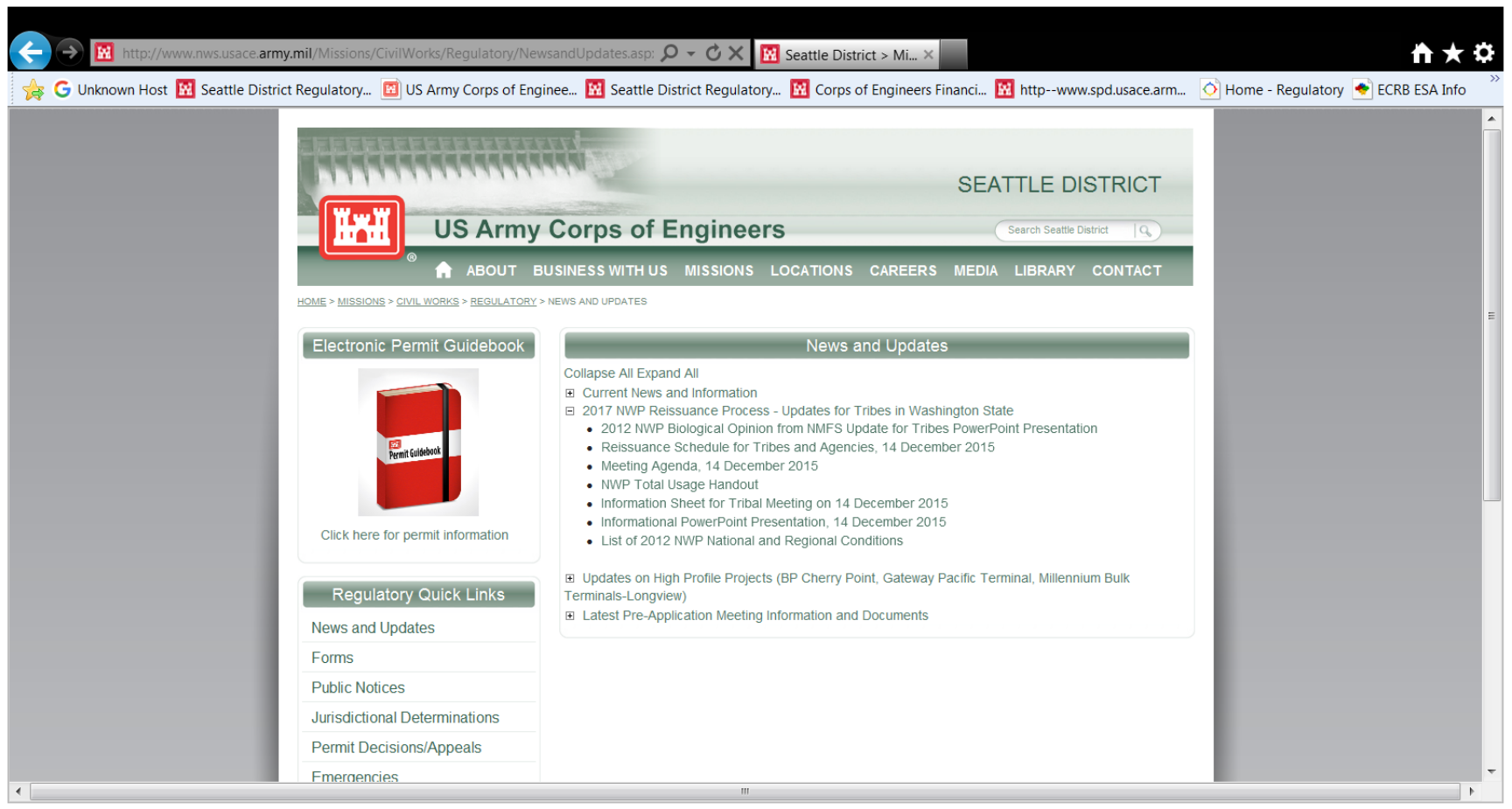
Updates

- HQ to release proposed NWPs in March (not February)
- 60-day comment period for the Seattle District Regional Conditions (not 30)
- Received proposed language for Regional General Condition for culverts from NWIFC
- NOAA Biological Opinion
- Seattle District is proposing a Regional General Permit for aquaculture
- Highest Astronomical Tide
- Available for staff or leadership level G-to-G

News and Updates (left menu)



2017 NWP Reissuance Process - Updates for Tribes in Washington State



Refresher

- NWPs are reissued every 5 years
- Expire in 2017
- Currently 50 NWPs
- 2 New NWPs for 2017: Living Shorelines & Low-head Dam Removal
- Seattle District issues enforceable regional conditions for NWPs
- Reissuance process includes cumulative effects analysis for each of the 52 NWPs

Meeting Objectives

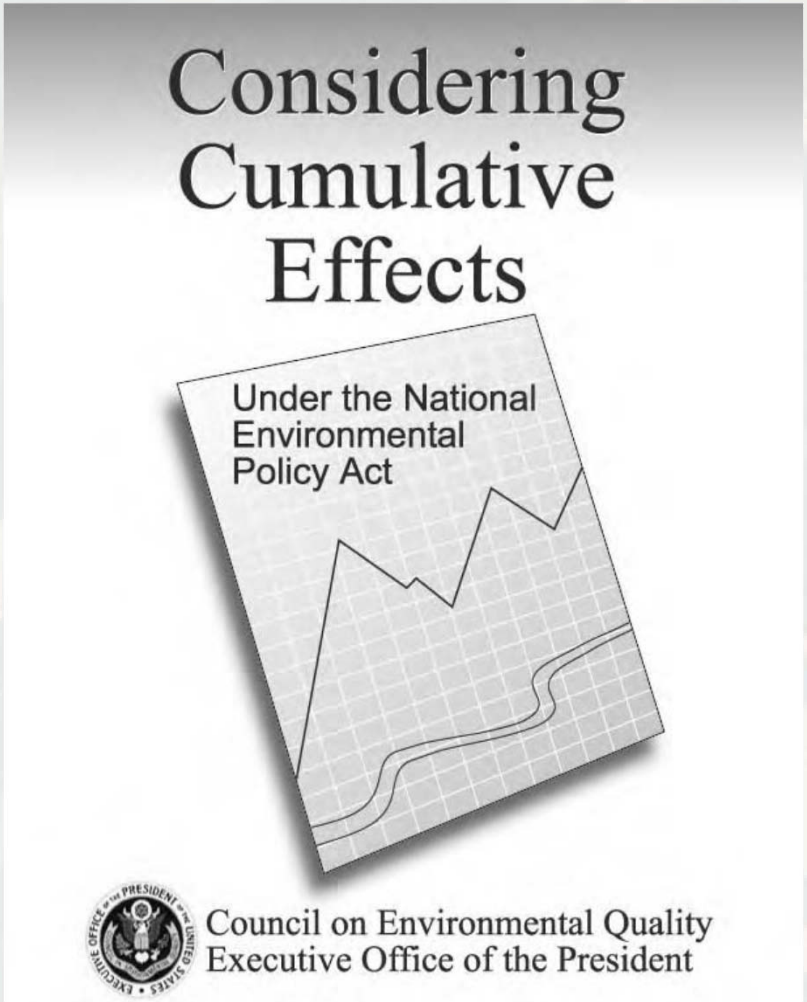
1. Discuss requirements for cumulative effects analysis (CEA)
2. Describe how we evaluated cumulative effects for the 2012 NWPs
3. Describe current tools/strategies
4. Discuss areas of particular concern and useful resources and tools

Impact Evaluation

- HQ will write decision documents for all NWPs
- Seattle District will write supplemental decision documents for all NWPs focusing on regional conditions
  - These decision documents constitute the Environmental Assessment, 404(b)(1) Guidelines Evaluation, Public Interest Review, and Statement of Findings.

Regulatory NEPA CEA Framework

⇨ Based on 1997 CEQ Guidance



National Environmental Policy Act Definition:

- "*Cumulative impact* is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." [40 CFR 1508.6]

Activities authorized by NWPs must cause only minimal adverse environmental effects when performed separately, and cause only minimal cumulative adverse effect on the aquatic environment.

Regulatory NEPA CEA Framework

Scoping

- Identify resource(s) of concern
  - Wetlands, streams, marine waters, etc.
- Geographic Scope
  - i.e., Washington, Puget Sound, WRIA/Watershed
- Temporal Scope

Regulatory NEPA CEA Framework

Describe Affected Environment

- Land use patterns (trends analysis)
  - e.g., development activities, ag., undeveloped lands
- Aquatic resources of concern
  - e.g., wetland acreage, streams
- Stressors directly and indirectly affecting the quantity and quality of the aquatic resources of concern
  - e.g., fill material in waters and wetlands, point source pollution, non-point source pollution, land use changes

Regulatory NEPA CEA Framework

Determine Environmental Consequences

- How will the proposed activity contribute to the cumulative effects occurring in the watershed?
  - ➢ Are they minor or significant contributions?
- Is mitigation required to reduce the permitted activity's contribution to cumulative effects in region?

❖ Level of detail commensurate with anticipated impacts

404(b)(1) Guidelines of the Clean Water Act 40 CFR Section 230

Goal: To restore and maintain, the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material.

- Contains substantive criteria used in evaluating discharges of dredged or fill material.

404(b)(1) Guidelines

Cumulative Effects: 40 CFR Section 230.11(g)

- Definition:
  - "Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the ***collective effect of a number of individual discharges of dredged or fill material***. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems." [40 CFR 230.11(g)]

404(b)(1) Guidelines CEA

- Number of discharges in CEA review area
  - ► Number of §404 permit actions
  - ► Amount of authorized impacts
  - ► Amount of compensatory mitigation required

Why Assess Cumulative Effects?

In high value waters, division and district engineers can:

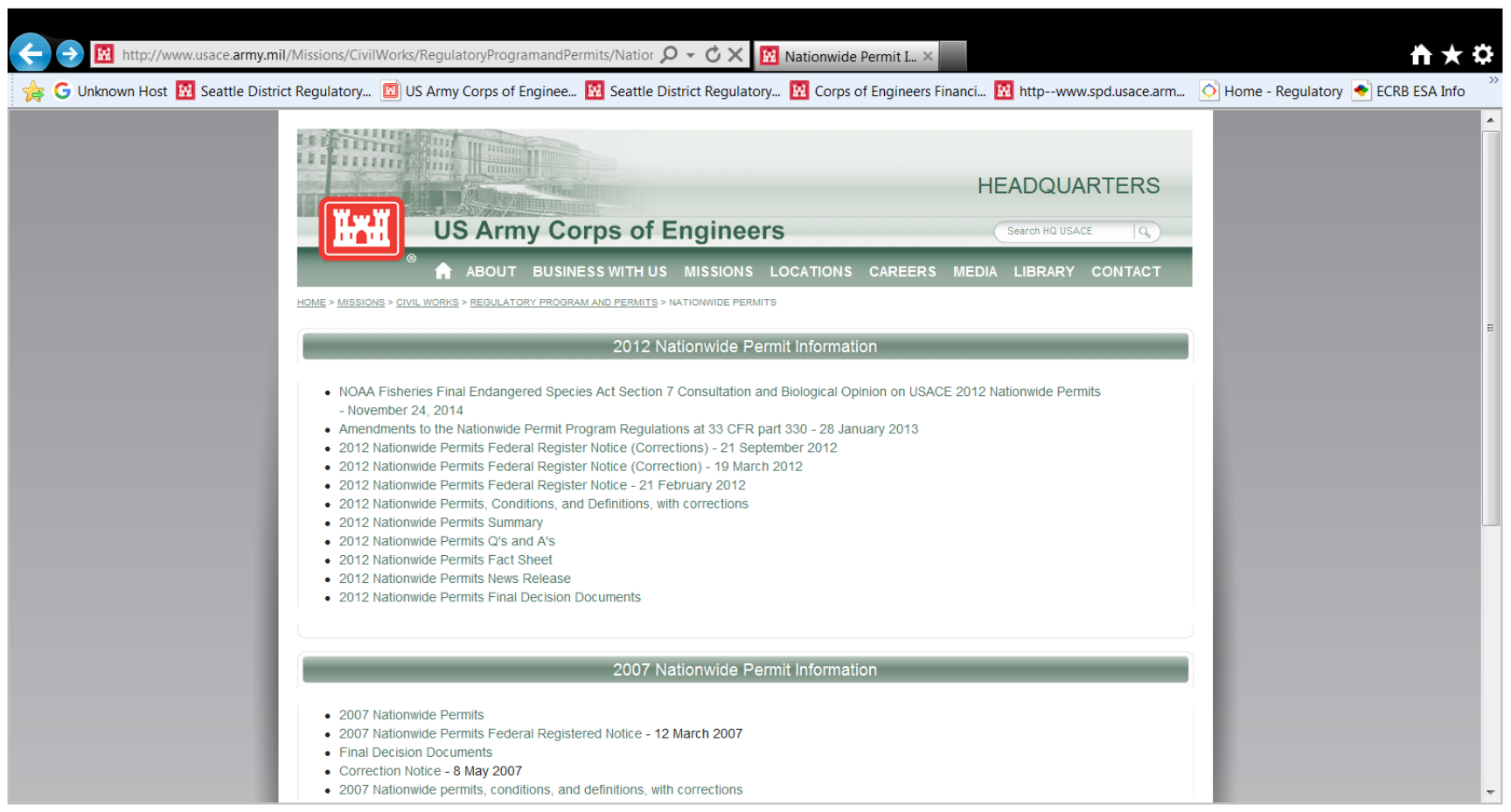
1) Prohibit the use of the NWP in those waters and require an individual permit or regional general permit.
2) Impose an acreage or linear foot limit on the NWP.
3) Lower the pre-construction notification threshold of the NWP to require pre-construction notification for NWP activities with smaller impacts in those waters.

4) Require pre-construction notification for some or all NWP activities in those waters.

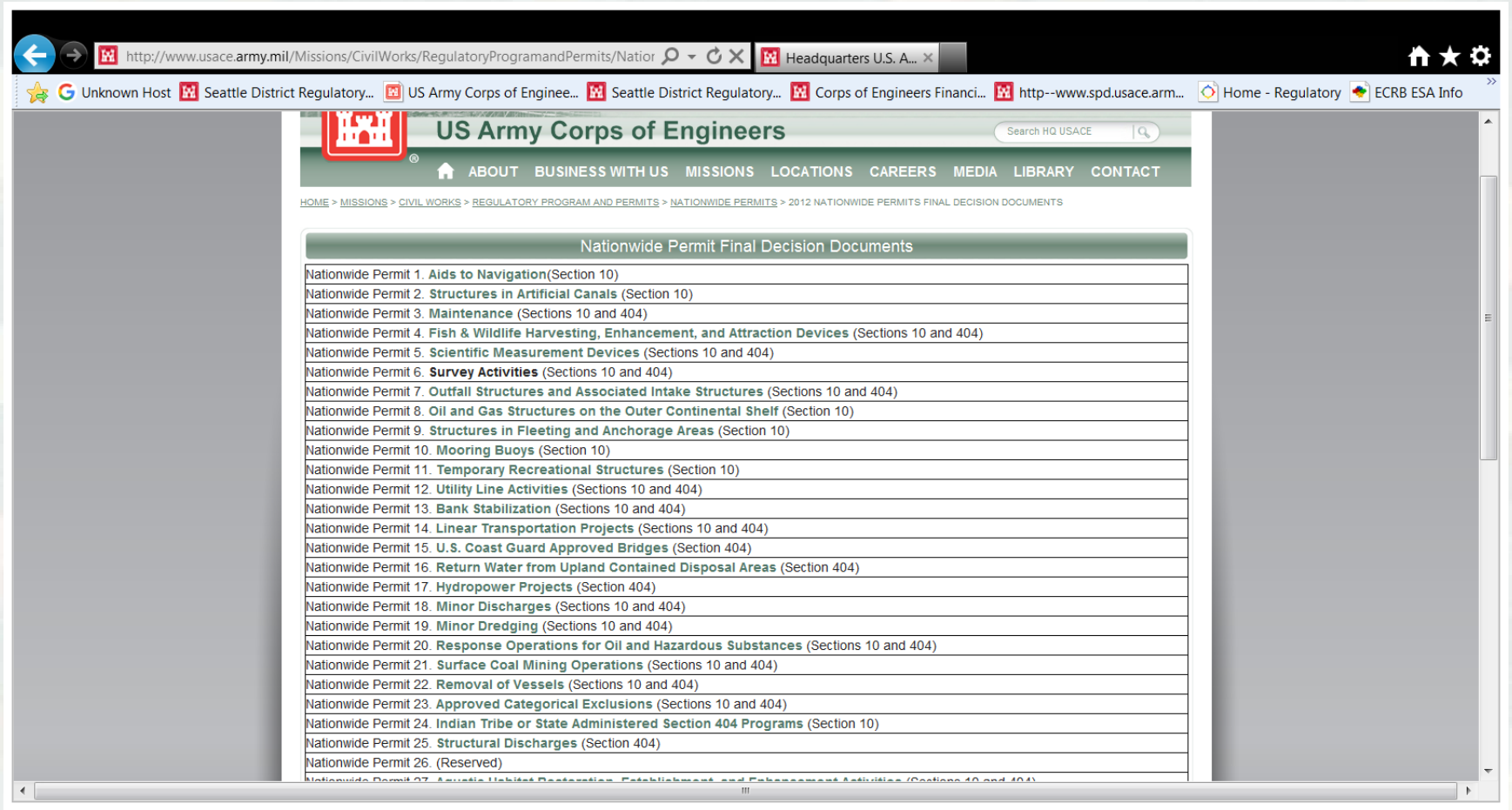
5) Add regional conditions to the NWP to ensure that the individual and cumulative adverse environmental effects are minimal.

6) For those NWP activities that require pre-construction notification, add special conditions to NWP authorizations, such as compensatory mitigation requirements, to ensure that the adverse effects on the aquatic environment are minimal.

Headquarters NWP Final Decision Documents



Nationwide Permit 13 - Bank Stabilization (Sections 10 and 404)



2012 NWP CEA for NWP 13

- To describe historical and current conditions and affected environment
  - ►Reviewed published references
    - Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) data
  - ►Researched online resources
  - ►Examined existing ORM data
    - Size, type of material, impacts, mitigation

2012 NWP CEA for NWP 13

- To identify stressors
  - ► Reviewed published references
    - PSNERP data
  - ► Researched online resources
  - ► Solicited, reviewed, and researched information received from public, resource agencies, and Tribes

2012 NWP CEA for NWP 13

- To identify future trends
  - Examined existing ORM data to project future trends
  - Researched online resources

2012 NWP CEA for NWP 13

- Cumulative effect analysis, discussion, and conclusions
  - To minimize individual and cumulative impacts, the Corps added Regional General Conditions 3 and 4 to all 2012 NWPs

2017 NWP CEA

- To describe historical and current conditions and affected environment
  - ►Review published references
  - ►Examine existing ORM data
    - Size, type of material, impacts, mitigation
  - ►Research online resources
    - New resources (i.e., GIS layers) since 2011
  - ►Utilize Cumulative Effects Assessment Tool, Puget Sound (PS Tool); Corps, Institute for Water Resources, 2013

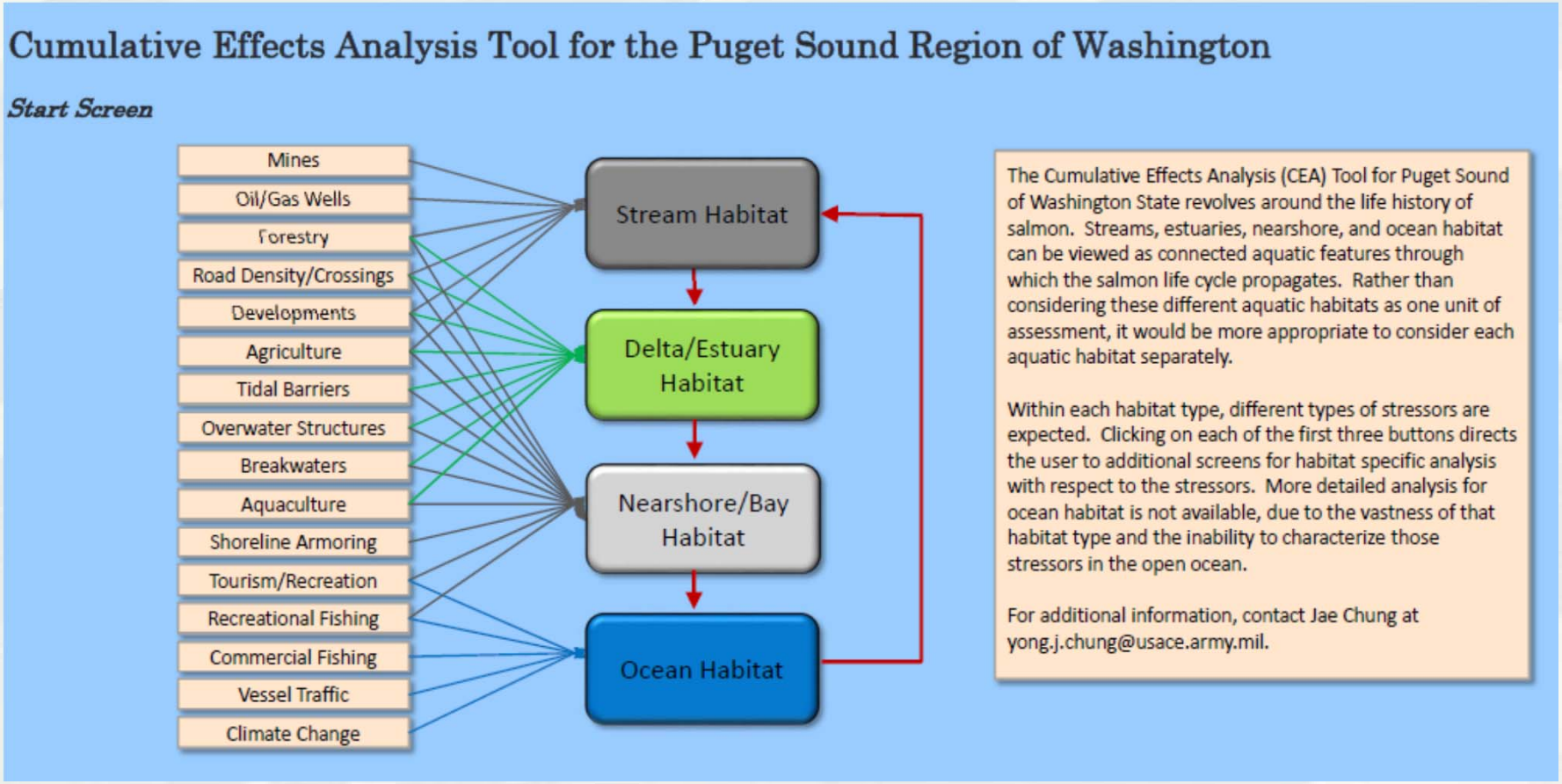
2017 NWP CEA

PS Tool, 2013

- provides an interface with available data that provides context to the cumulative effects problem for any watershed or shoreline in the Puget Sound region
- helps characterize conditions of watersheds, estuaries, and shorelines
- LIMITATIONS:
  - The tool itself does not prescribe specific outcomes, but provides information to help Regulatory project managers understand historic and current conditions and stressors.
  - Only limited to Puget Sound.
  - Static set of conditions and stressors.

2017 NWP CEA

- To describe historical and current conditions and affected environment



Characterization of Puget Sound Nearshore/Bay Habitat

1/30/2016

Select a SubBasin: South Central Puget Sound
ShoreUnit: SCW09_02

Select Data Type: Per Unit Area/Length

Geographic Feature	
Feature Code	W09_02
Feature Name	WRIA09-Elliott Bay (Seattle, Duwamish DE
Shoreline Length (miles)	21.4
100-m Buffer Land (sq mi)	1.2

Wetlands Based on NWI (acres)	Total	Disturbed
Estuarine/Marine Deepwater	576.0	0.0
Estuarine/Marine Wetland	54.9	0.0
FW-Forested/Shrub Wetland	0.3	0.3
FW-Emergent Wetland	1.6	0.9
FW-Pond	3.4	3.4
Lacustrine	0.0	0.0
Other	0.0	0.0
Riverine	0.0	0.0
Total	636.3	4.6

CCAP Aq Resources (ac)	1992	1996	2001	2006
Unconsolidated Shore	46.7	46.7	46.7	46.7
Estuarine Herbaceous	15.3	15.3	15.3	15.3
Freshwater Woody	19.1	19.1	19.1	19.1
Freshwater Herbaceous	12.9	12.9	12.9	12.9
Freshwater Aquatic Bed	0.0	0.0	0.0	0.0
Estuarine Aquatic Bed	3.1	3.1	3.1	3.1
Open Water	467.7	467.7	467.7	467.7
Total	564.9	564.9	564.9	564.9

Shoreline Features	Hist	Curr	% Chng
Shoreline Length (miles) (2009)	9.3	21.4	129.5
Bluff Backed Beach (miles) (2009)	4.2	0.0	-100.0

Presence of Plant Ecol. Resources	Contin	Patchy	Tot Pres	% Pres
Saltmarsh (miles) (2001)	0.0	0.3	0.3	1.5
Eelgrass (miles) (2001)	0.0	0.2	0.2	1.1
Kelp (miles) (2001)	0.0	0.7	0.7	3.2

Presence of Forage Fish Spawning	Present	% Pres
Smelt spawning (miles) (2008)	0.0	0.0
Sand lance spawning (miles) (2008)	0.0	0.0
Herring spawning (acres) (2009)	0.0	0.00

Presence of Protected Open Space	Acres	%
Protected open space (acres) (2011)	0.0	0.00

Buffer Land Cover (%)	1992	1996	2001	2006
Development	92.0	92.0	92.0	92.0
Developed Open Space	0.4	0.4	0.4	0.4
Cultivation	0.0	0.0	0.0	0.0
Pasture/Hay	0.0	0.0	0.0	0.0
Grassland/Herbaceous	1.6	1.6	1.6	1.6
Forested	2.0	2.0	2.0	2.0
Shrub	0.4	0.4	0.4	0.4
Barren	0.1	0.1	0.1	0.1
Unconsolidated Shore	0.8	0.8	0.8	0.8
Wetlands	2.8	2.8	2.8	2.8
Open Water	0.0	2.6	2.6	2.6
Impervious Cover			83.7	83.7

Population (#/sq mi)	2000	2010	% Change
People	505.2	492.2	-2.6
Housing Units	232.7	315.1	35.4

Shoreline Stressors	
Loss of shoreline length (%) (2008)	-129.5
Loss of bluff-backed beaches (%) (2008)	100.0
Artificial shorelines (%) (2008)	100.0
Armoring of shoreline (%) (2008)	100.6
Breakwater/jetties (%) (2006)	0.0
Nearshore fill (ac/mi shore) (1980)	62.34
Overwater structures (ac/mi shore) (2006)	10.97
Railroads w/i 25-m of shore (mi/mi shore) (2005)	0.03
Roads w/i 25-m of shore (mi/mi shore) (2007)	0.12
Tidal barriers (mi/mi shore) (2008)	0.64
Parcels (#/mi) (2007)	1.12
Industrial Facilities (#/mi shore) (2012)	6.13
NPDES/PCS Facilities (#/mi shore) (2011)	0.66
Timber Harvest Areas (ac/mi shore) (2012)	0.00

2017 NWP CEA

- To identify stressors
  - PS Tool, 2013
    - Helps to identify which stressors are critical
  - Receive information from public, resource agencies, and Tribes
    - Stressed waterbodies and aquatic resources
    - Specific NWP activities of concerns and specific reasons for concern
  - Review published references
  - Research online resources
  - LIMITATIONS: Corps does not have the time or resources to do extensive research of online resources and published references; we require input from resources agencies and Tribes to help us identify these resources for incorporation into assessments.

Assessment of Puget Sound Nearshore Habitat

1/30/2016

Elliott Bay (Seattle, Duwamish DELTA)

W09_02

Indicator Group	Current Condition	Literature?	Low Value	High Value	Current Score	Group Scores	Rescaled Score
Ecological Quality Indicators							
Bluff backed beach (%) (2009)	0.00		0.63	75.37	-1.00		
Saltmarsh (weighted %) (2001)	0.76		0.00	49.17	-0.97		
Eelgrass (weighted %) (2001)	0.55		0.00	63.83	-0.98		
Kelp (weighted %) (2001)	1.60		0.00	62.68	-0.95		
Aquatic vegetation (ac/mi) (2006)	2.36		6.04	152.08	-1.00	-0.99	-1.00
Sand lance spawning (%) (2008)	0.00		0.00	17.52	-1.00		
Smelt spawning (%) (2008)	0.00		0.00	34.31	-1.00		
Herring spawning (%) (2009)	0.00		0.00	46.73	-1.00		
Protected open space (%) (2011)	0.00		0.00	31.93	-1.00		
Shoreline Stressors							
Loss of shoreline length (%) (2008)	-129.49		-6.45	35.72	1.00		
Loss of bluff-backed beaches (%) (2008)	100.00		-0.77	43.97	-1.00		
Artificial shorelines (%) (2008)	100.00		0.00	43.63	-1.00		
Armoring of shoreline (%) (2008)	100.57		0.62	79.18	-1.00		
Breakwater/jetties (%) (2006)	0.00		0.00	6.20	1.00		
Nearshore fill (ac/mi shore) (1980)	62.34		0.00	14.43	-1.00		
Overwater structures (ac/mi shore) (2006)	10.97		0.01	1.84	-1.00		
Railroads w/i 25-m of shore (mi/mi shore) (2005)	0.03		0.00	0.10	0.35		
Roads w/i 25-m of shore (mi/mi shore) (2007)	0.12		0.00	0.23	-0.07	-0.20	-0.79
Tidal barriers (mi/mi shore) (2008)	0.64		0.00	0.52	-1.00		
Parcels (#/mi) (2007)	1.12		3.28	44.88	1.00		
Industrial facilities (#/mi shore) (2012)	6.13		0.00	1.74	-1.00		
NPDES/PCS facilities (#/mi shore) (2011)	0.66		0.00	0.22	-1.00		
Timber harvest areas (ac/mi shore) (2012)	0.00		0.00	2.09	1.00		
Agriculture (%) (2006)	0.00		0.00	19.91	1.00		
Population (#/sq mi) (2010)	492.21		15.27	1278.81	0.25		
Impervious cover (%) (2006)	83.72		0.74	30.32	-1.00		

Current Score of Ecological Quality Indicators: Red Score of -1.00 indicates the ecological quality of resource in watershed has been degraded compared to other areas in PS.
Current Score of Stressors: Red Score of -1.00 indicates the specific watershed has been degraded by the particular stressor

2017 NWP CEA for NWP 13

- To identify future trends
  - Examine existing ORM data to project future trends
  - Research online resources
  - Research published references
  - LIMITATIONS: Corps does not have the time or resources to do extensive research of online resources and published references; we require input from resources agencies and Tribes to help us identify these resources for incorporation into assessments.

2017 NWP CEA for NWP 13

- Cumulative effect analysis, discussion, and conclusions
  - To minimize individual and cumulative impacts, the Corps will retain Regional General Conditions 3 and 4 to all 2012 NWPs and may add additional Regional Conditions
    - Corps requests input from resource agencies and Tribes on need for specific regional conditions to minimize individual and cumulative impacts

Regional Data Review Tools

- IWR Viewer
  - Institute for Water Resources
  - Developed by the Corps with EPA funding
  - Internal use by USACE currently
  - Most GIS layers publicly available
- ORM data mapped in Google Earth
  - High resolution
  - Can apply filters to answer specific questions
  - Subject to data entry.

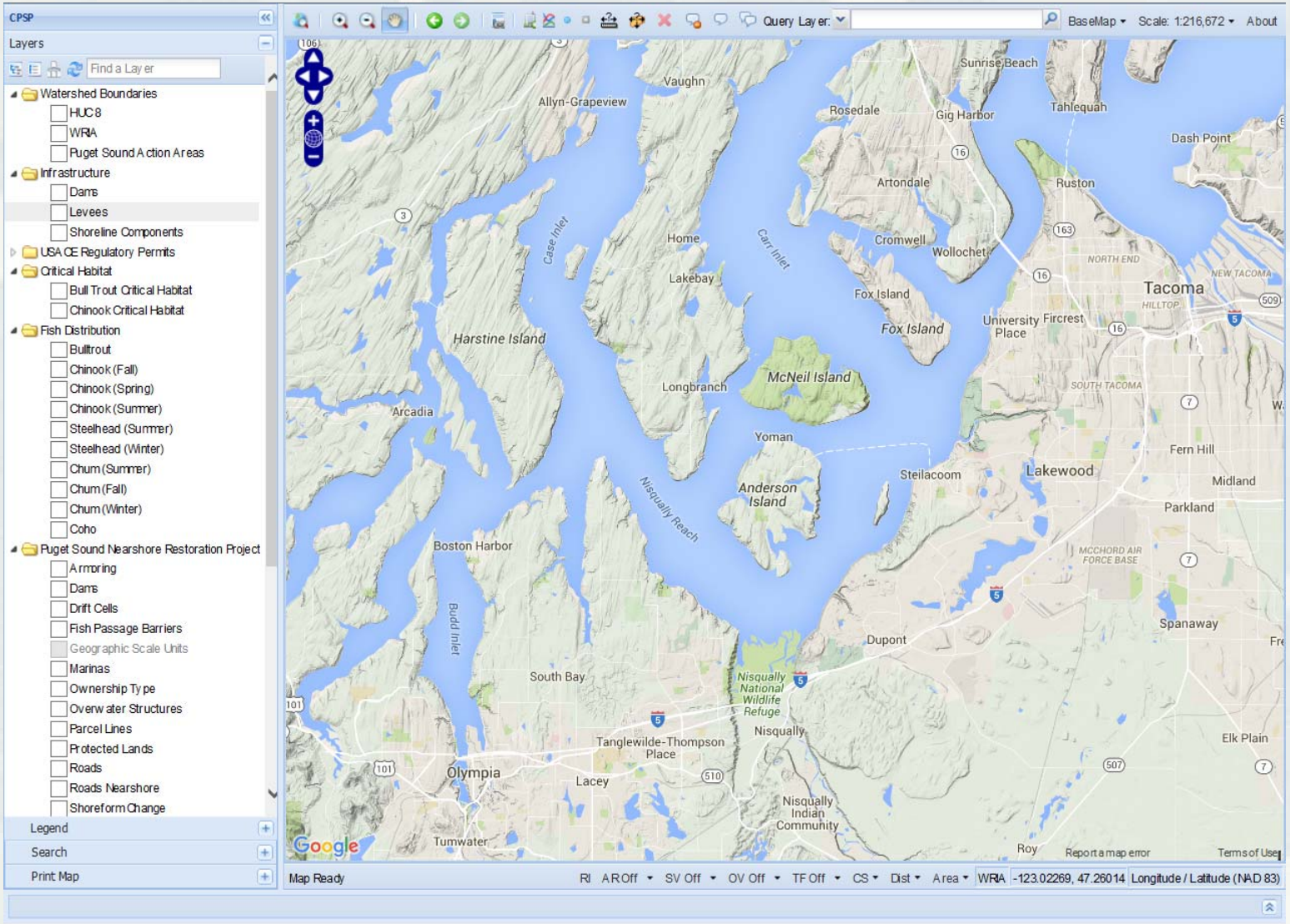
IWR Viewer

- Tool allows quick display of environmental data relevant to a cumulative impact review.
- New layers can be added with additional funding and need.
- Meta Data information in a single location

Available Layers

- Watershed Boundaries
  - HUC 8, WRIA, Puget Sound Action Areas
- Infrastructure
  - Dams, Levees, Shoreline Components
- USACE Regulatory Permits
  - NWP, RGP, LOP, Standard Permits
  - Most Recent Update in 2014

IWR Viewer Example 1



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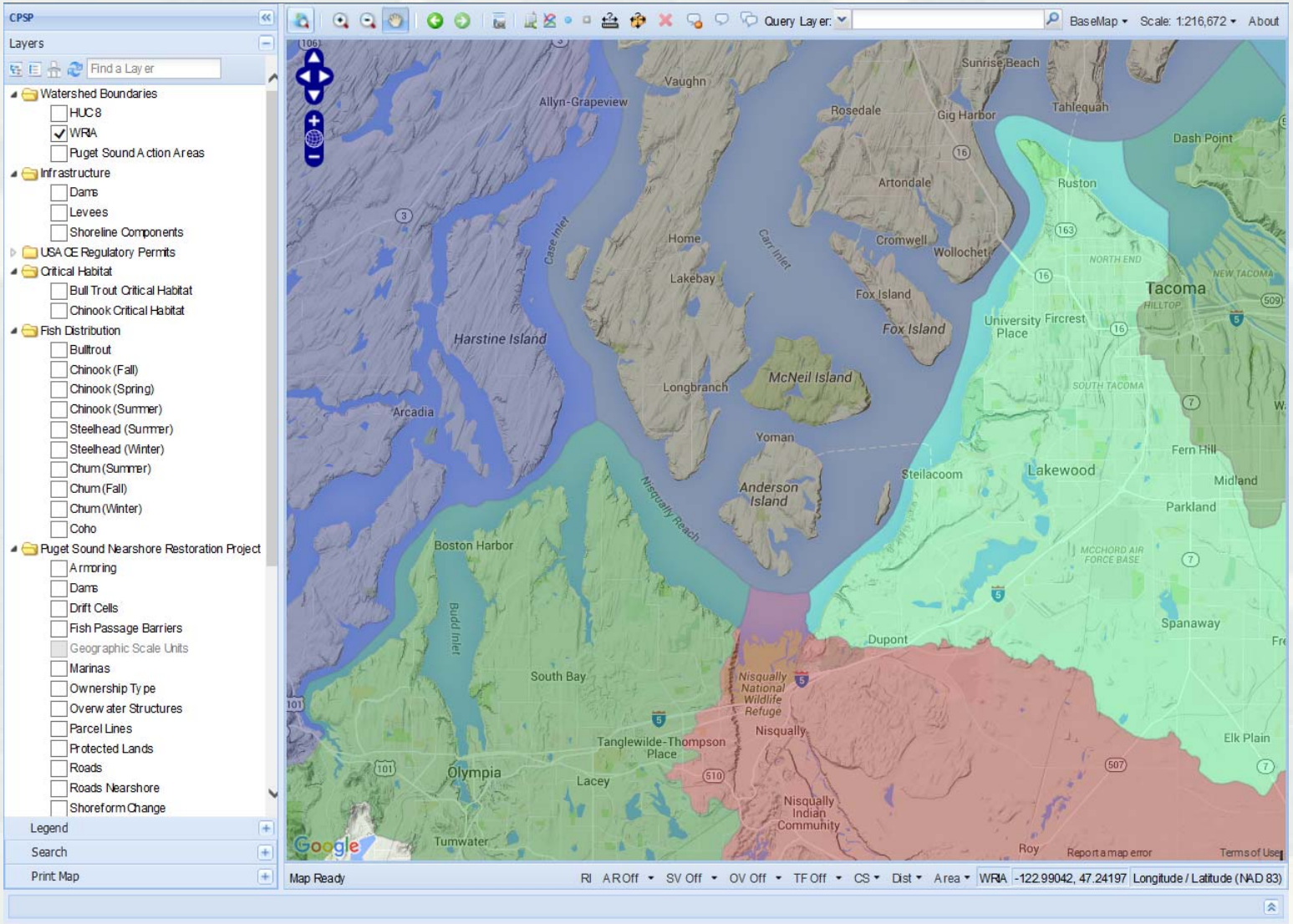

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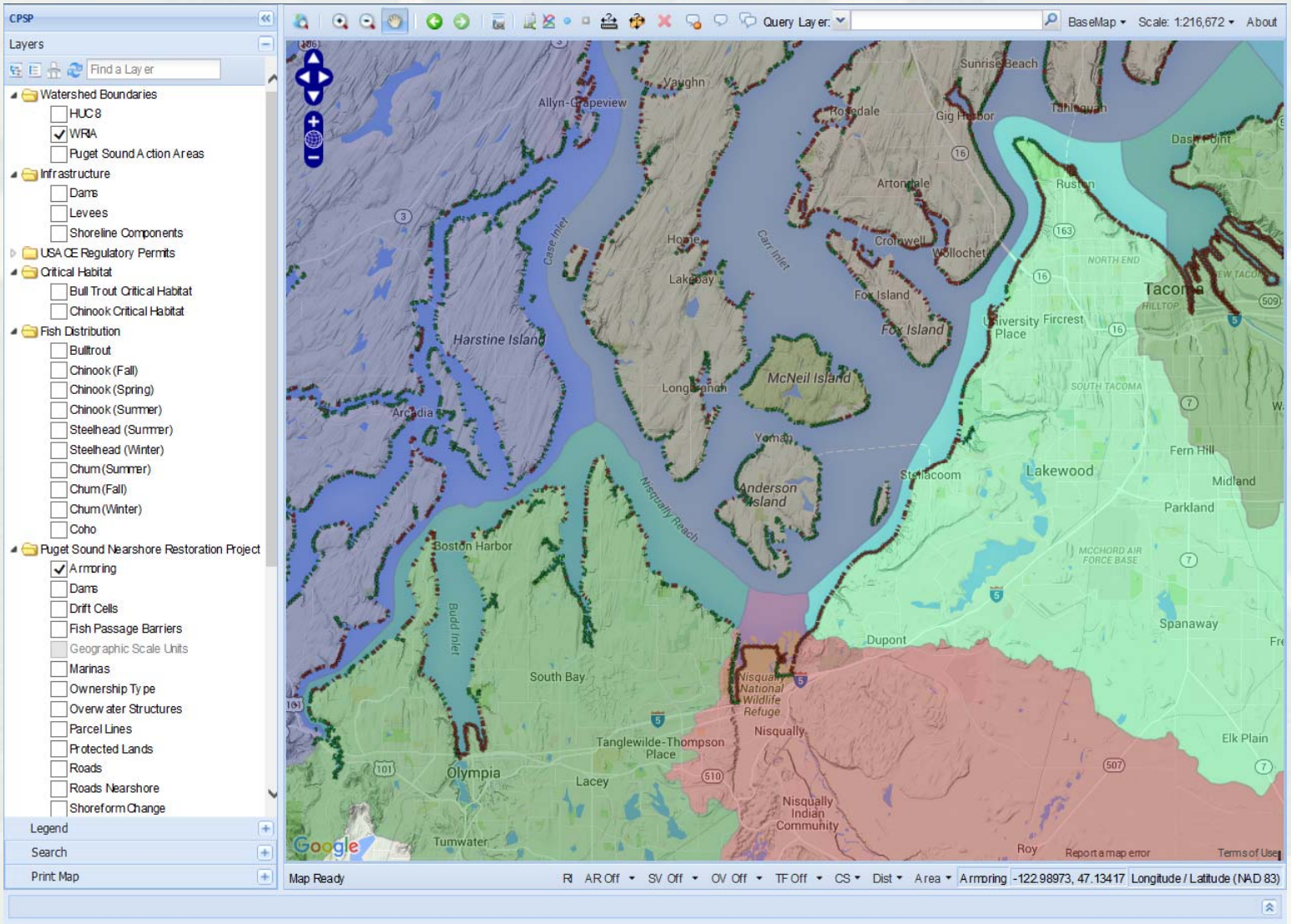

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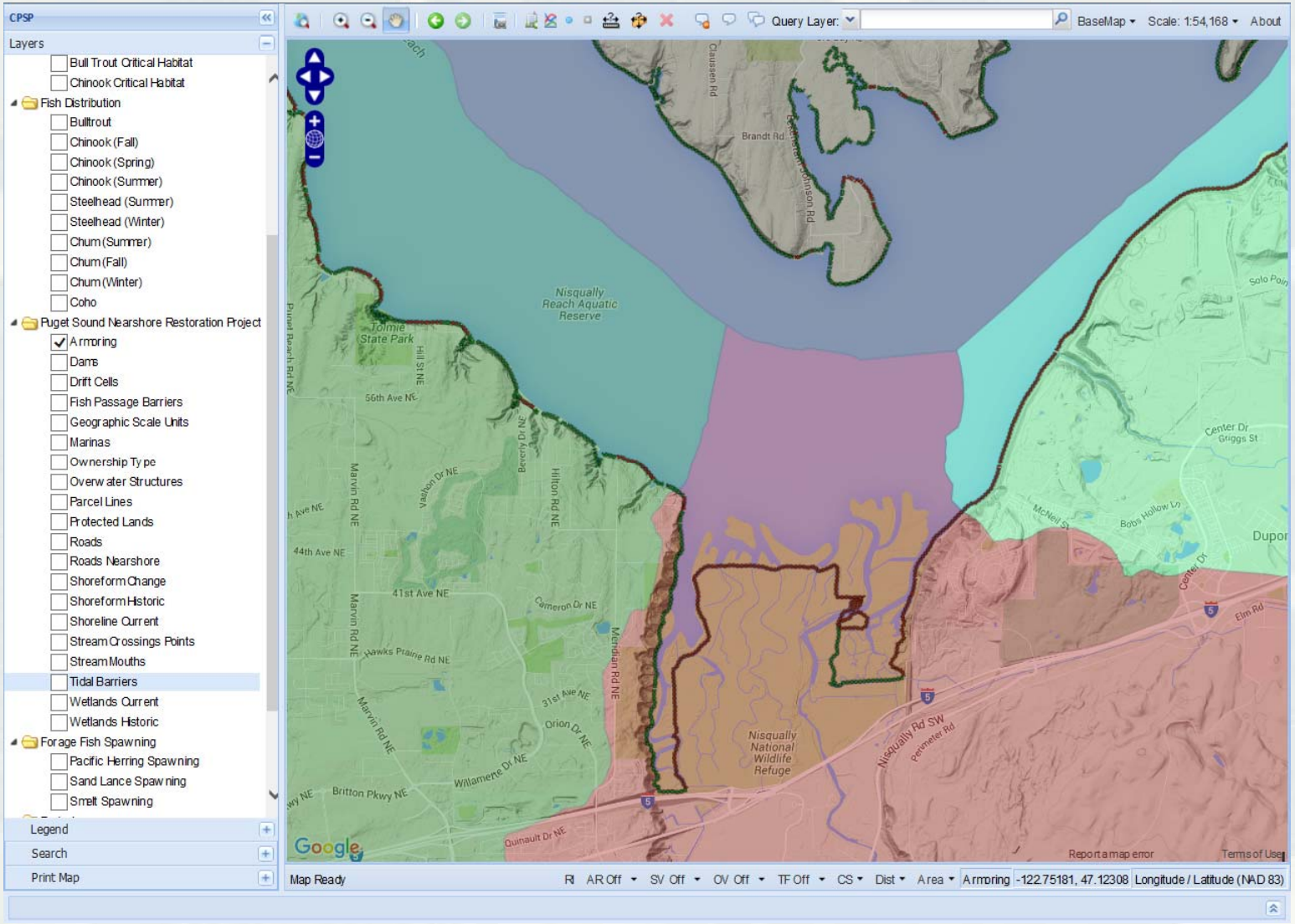

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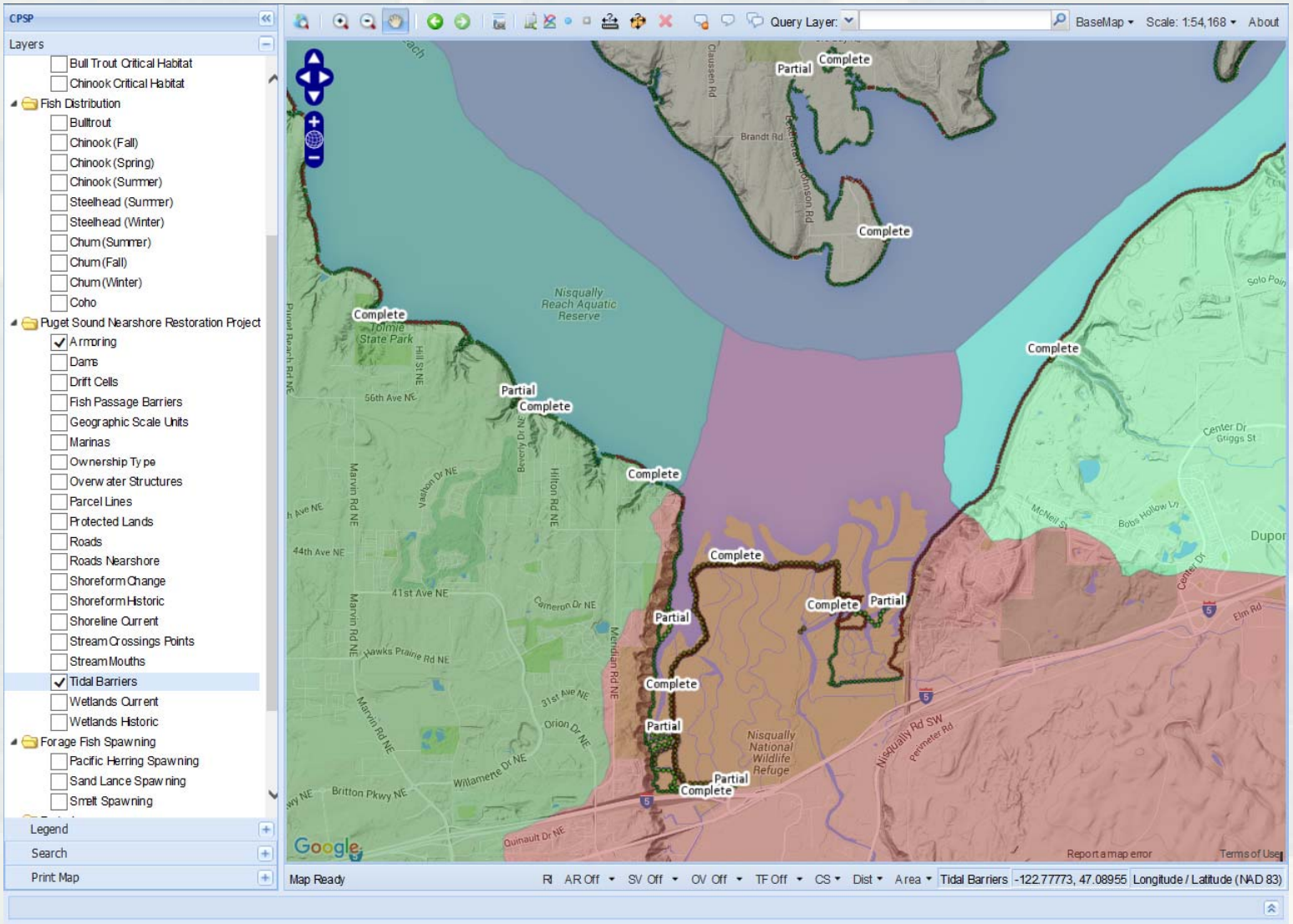

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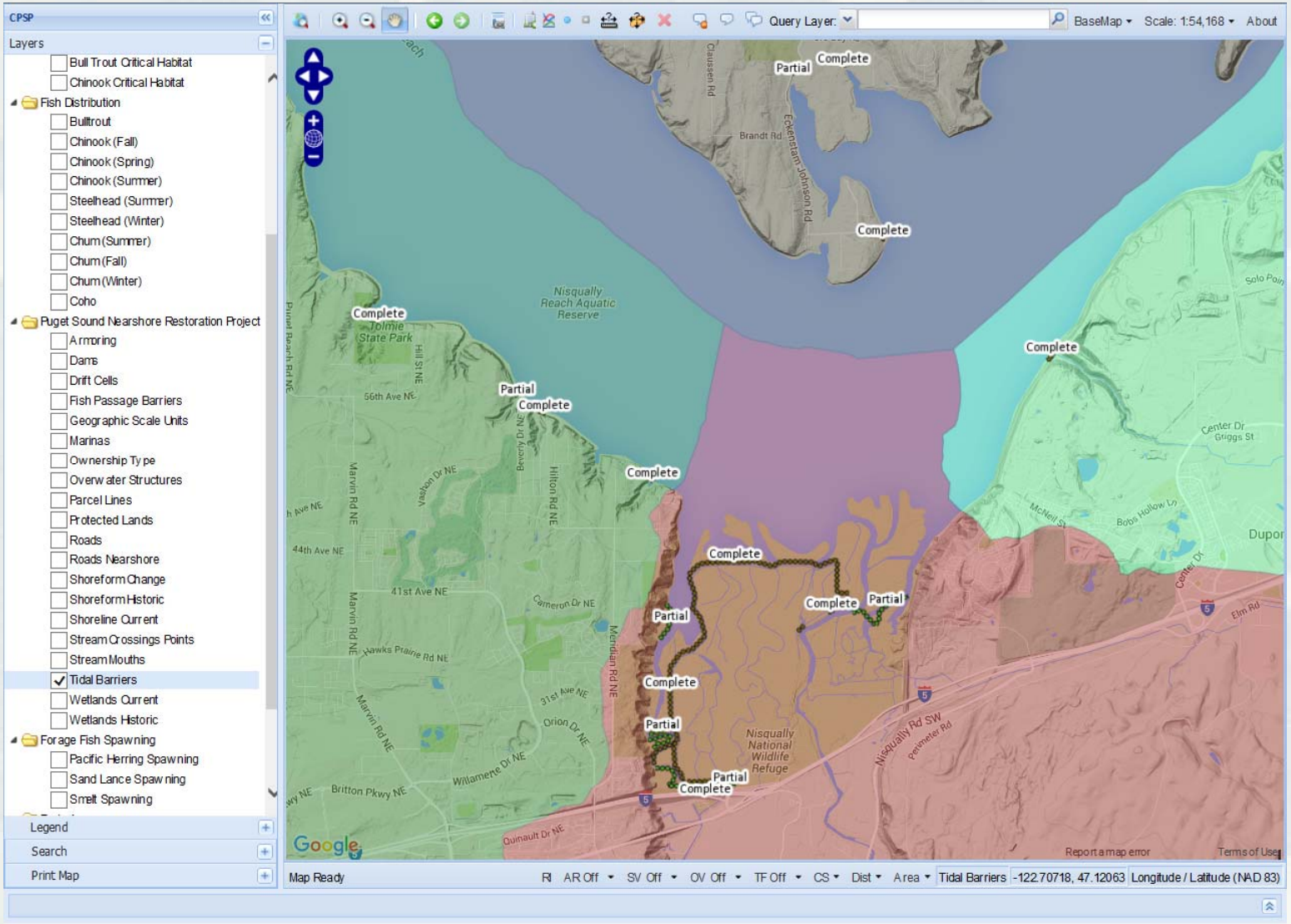

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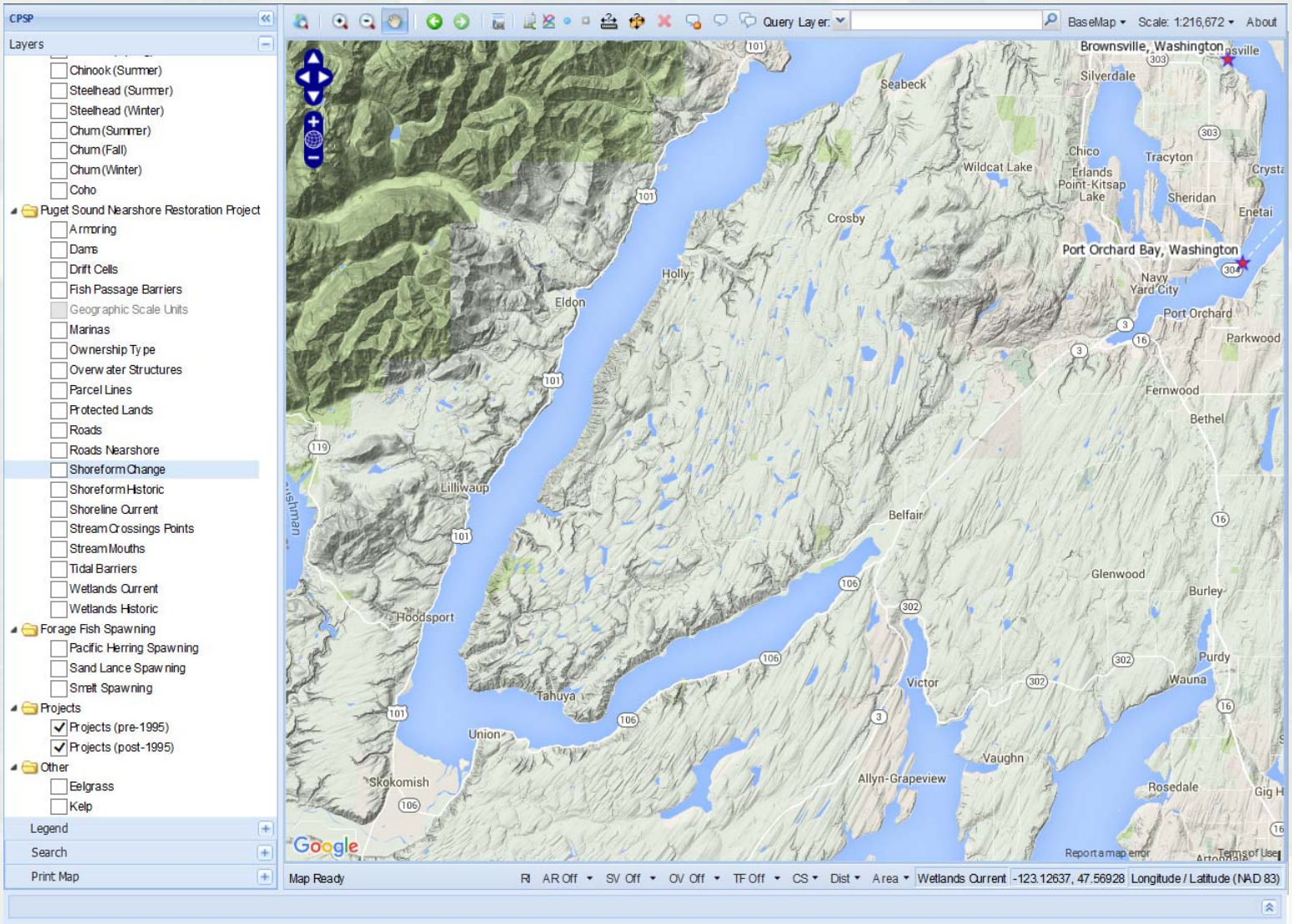

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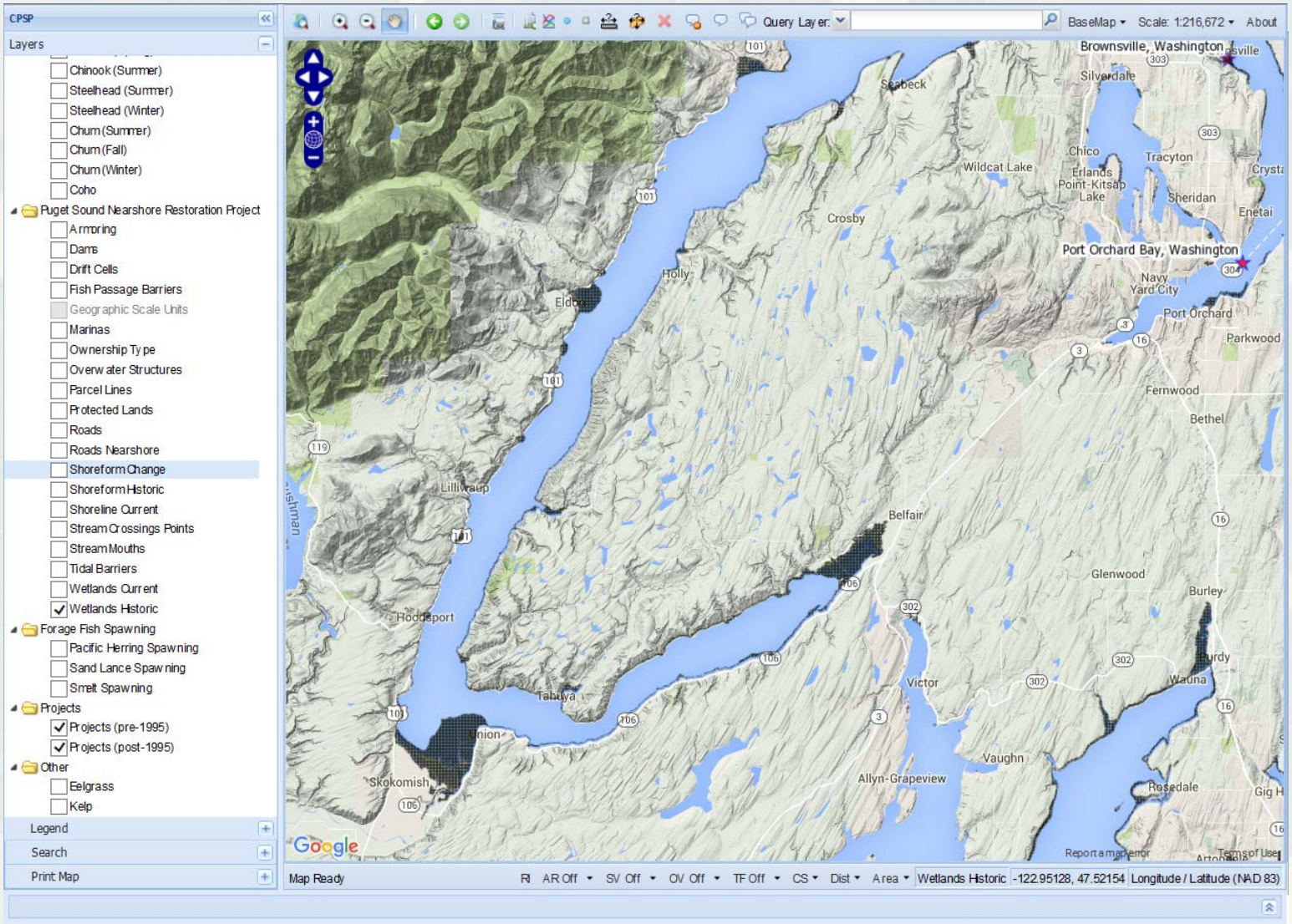

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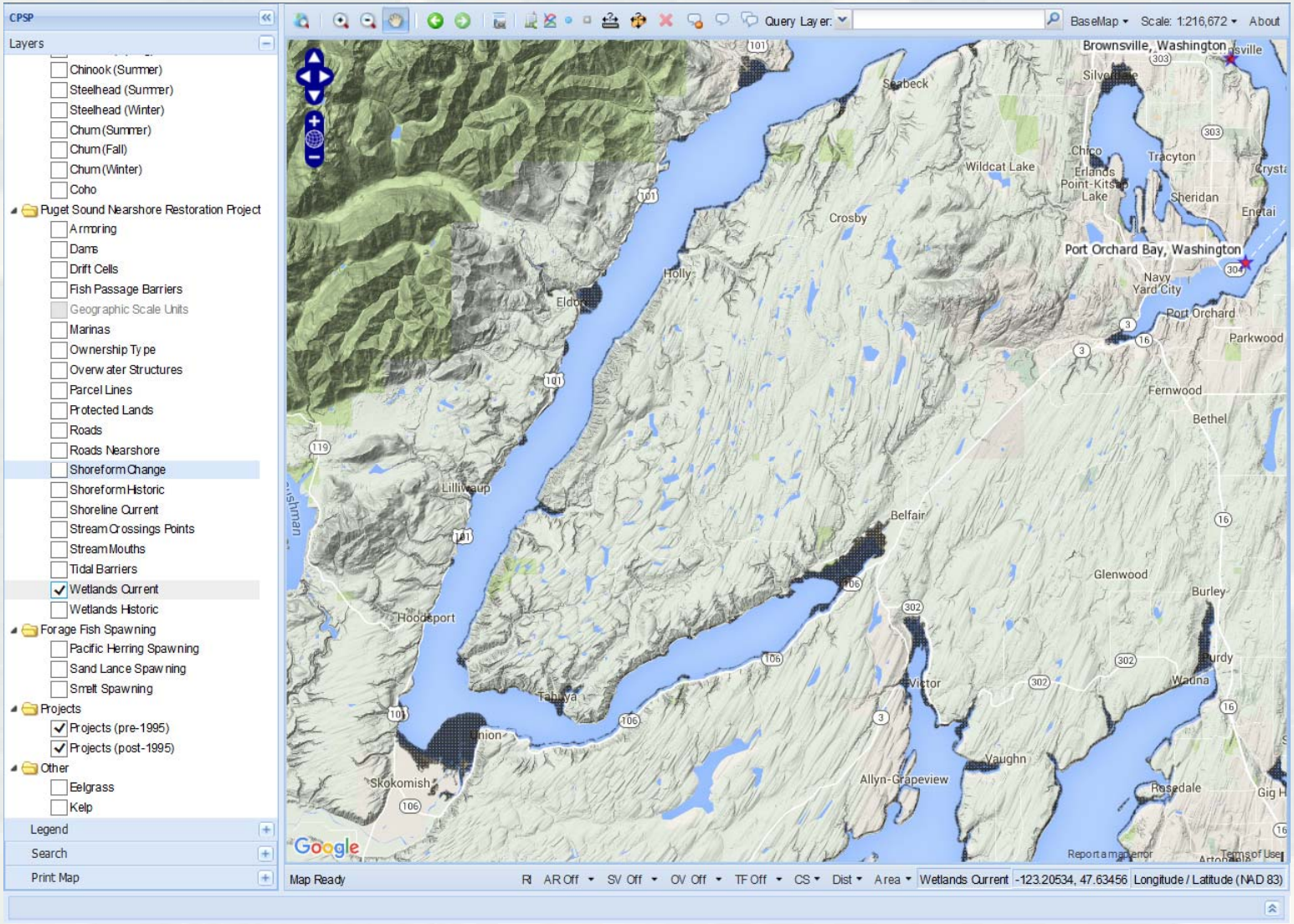

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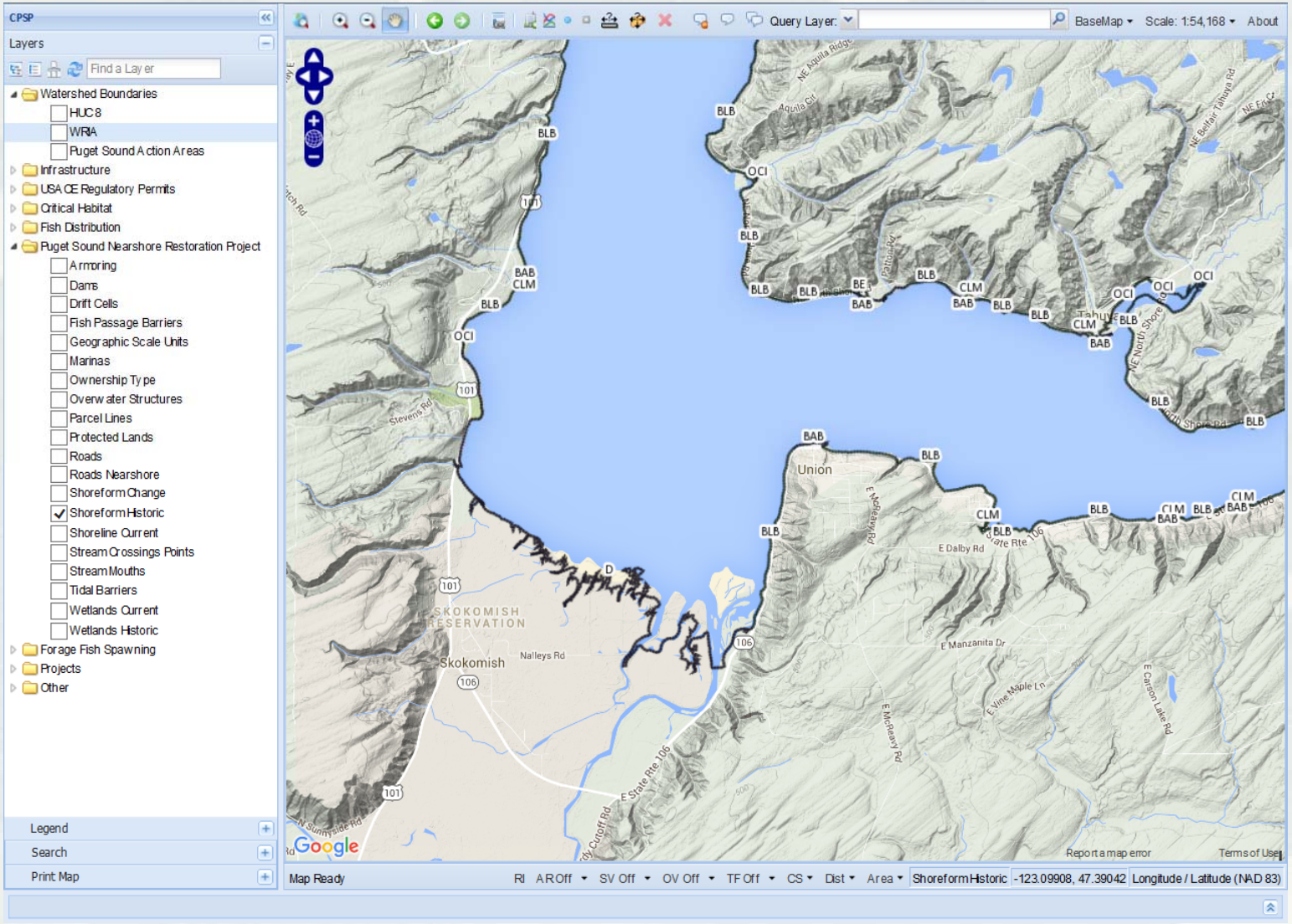

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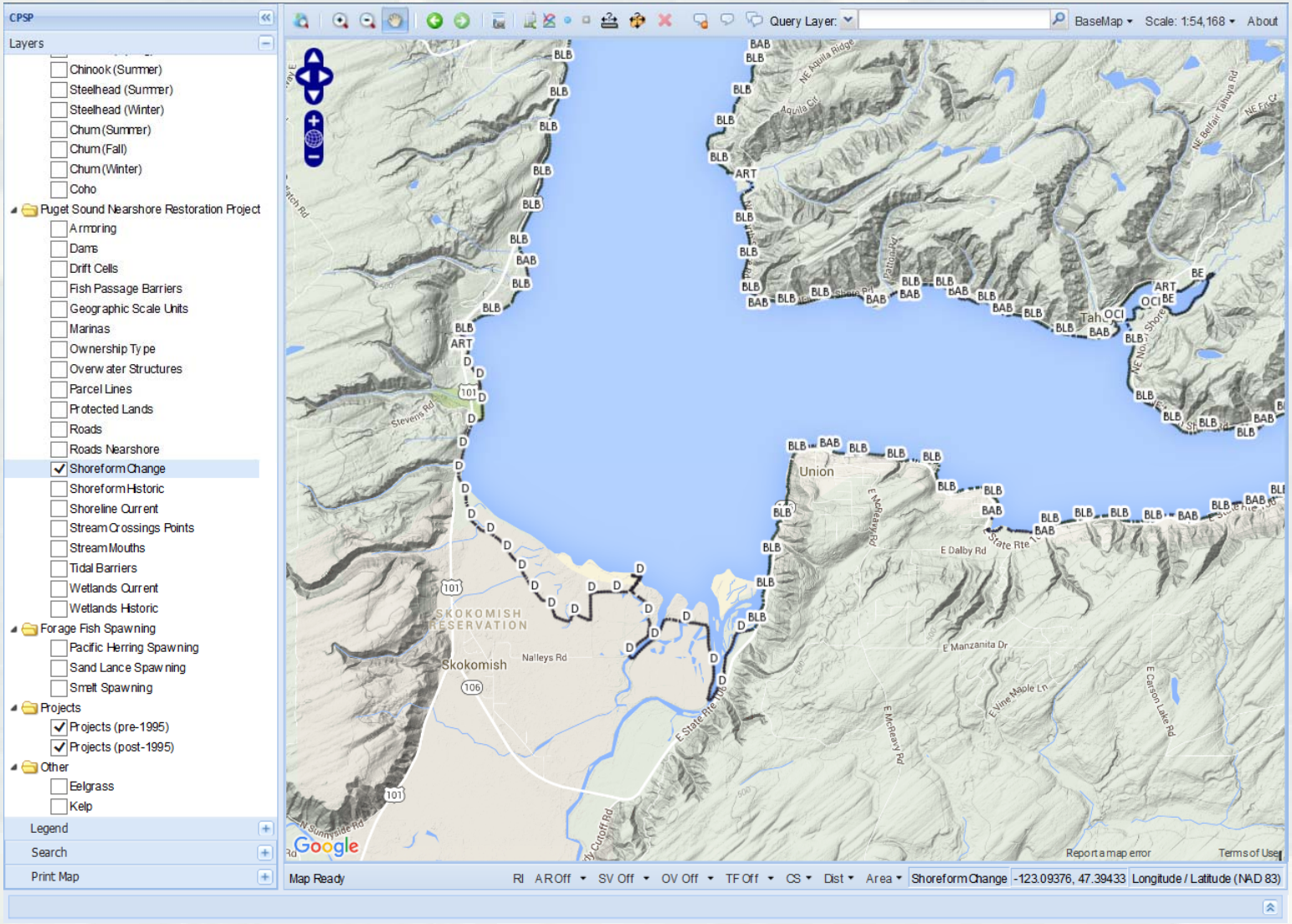


IWR Viewer Example 2

Shoreform Change_PSNERP_3.0

Metadata also available as

Frequently-anticipated questions:

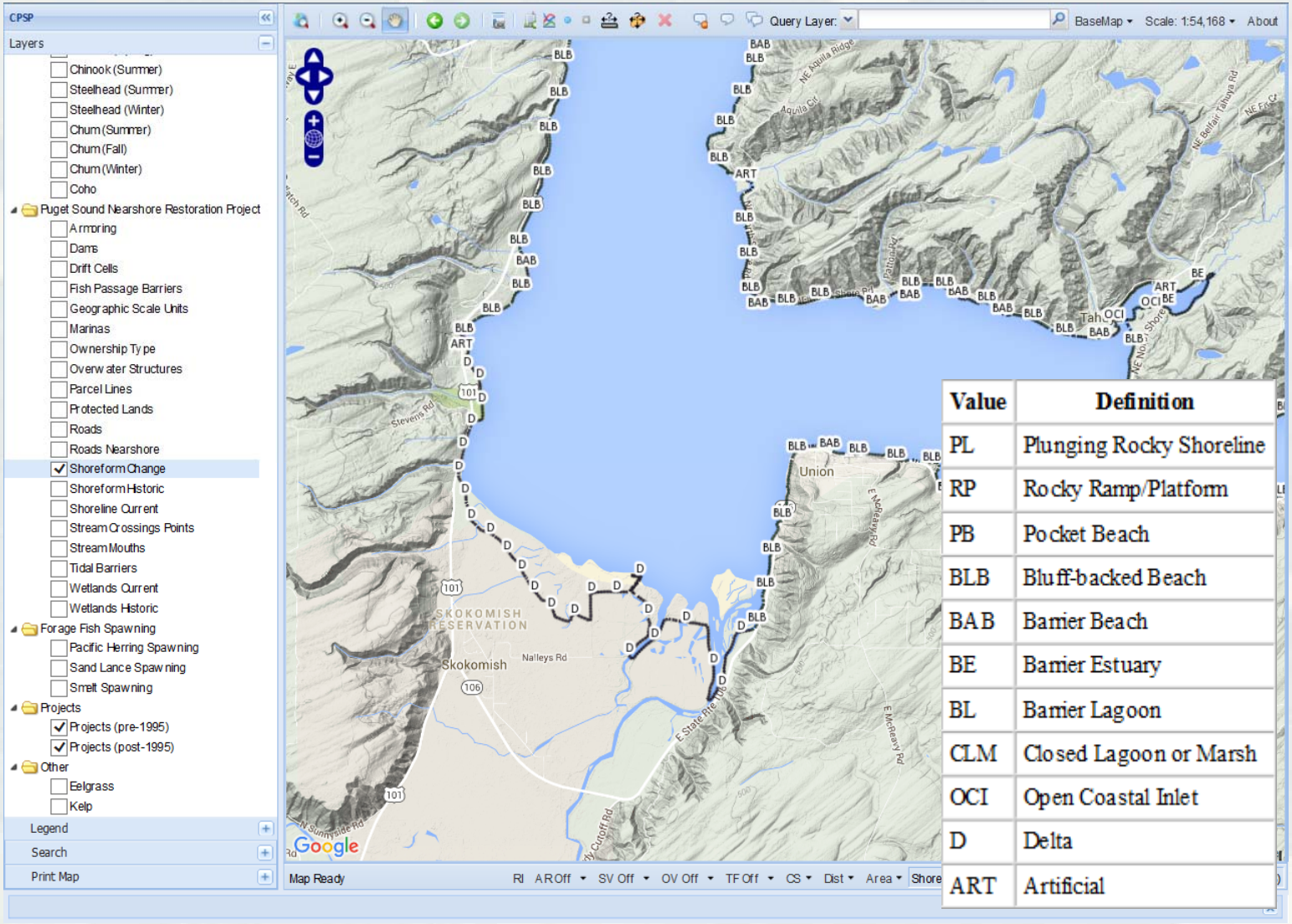
- What does this data set describe?
    1. How should this data set be cited?
    2. What geographic area does the data set cover?
    3. What does it look like?
    4. Does the data set describe conditions during a particular time period?
    5. What is the general form of this data set?
    6. How does the data set represent geographic features?
    7. How does the data set describe geographic features?
- Who produced the data set?
    1. Who are the originators of the data set?
    2. Who also contributed to the data set?
    3. To whom should users address questions about the data?
- Why was the data set created?
- How was the data set created?
    1. From what previous works were the data drawn?
    2. How were the data generated, processed, and modified?
    3. What similar or related data should the user be aware of?
- How reliable are the data; what problems remain in the data set?
    1. How well have the observations been checked?
    2. How accurate are the geographic locations?
    3. How accurate are the heights or depths?
    4. Where are the gaps in the data? What is missing?
    5. How consistent are the relationships among the data, including topology?
- How can someone get a copy of the data set?
    1. Are there legal restrictions on access or use of the data?
    2. Who distributes the data?
    3. What's the catalog number I need to order this data set?
    4. What legal disclaimers am I supposed to read?
    5. How can I download or order the data?
- Who wrote the metadata?

IWR Viewer Example 2

- Metadata
  - Historic and current shoreforms in Puget Sound were independently delineated using Geographic Information System (GIS) techniques and image interpretation. These two data sets were then combined to provide a comparison of historic to current conditions.

Value	Definition
PL	Plunging Rocky Shoreline
RP	Rocky Ramp/Platform
PB	Pocket Beach
BLB	Bluff-backed Beach
BAB	Barrier Beach
BE	Barrier Estuary
BL	Barrier Lagoon
CLM	Closed Lagoon or Marsh
OCI	Open Coastal Inlet
D	Delta
ART	Artificial

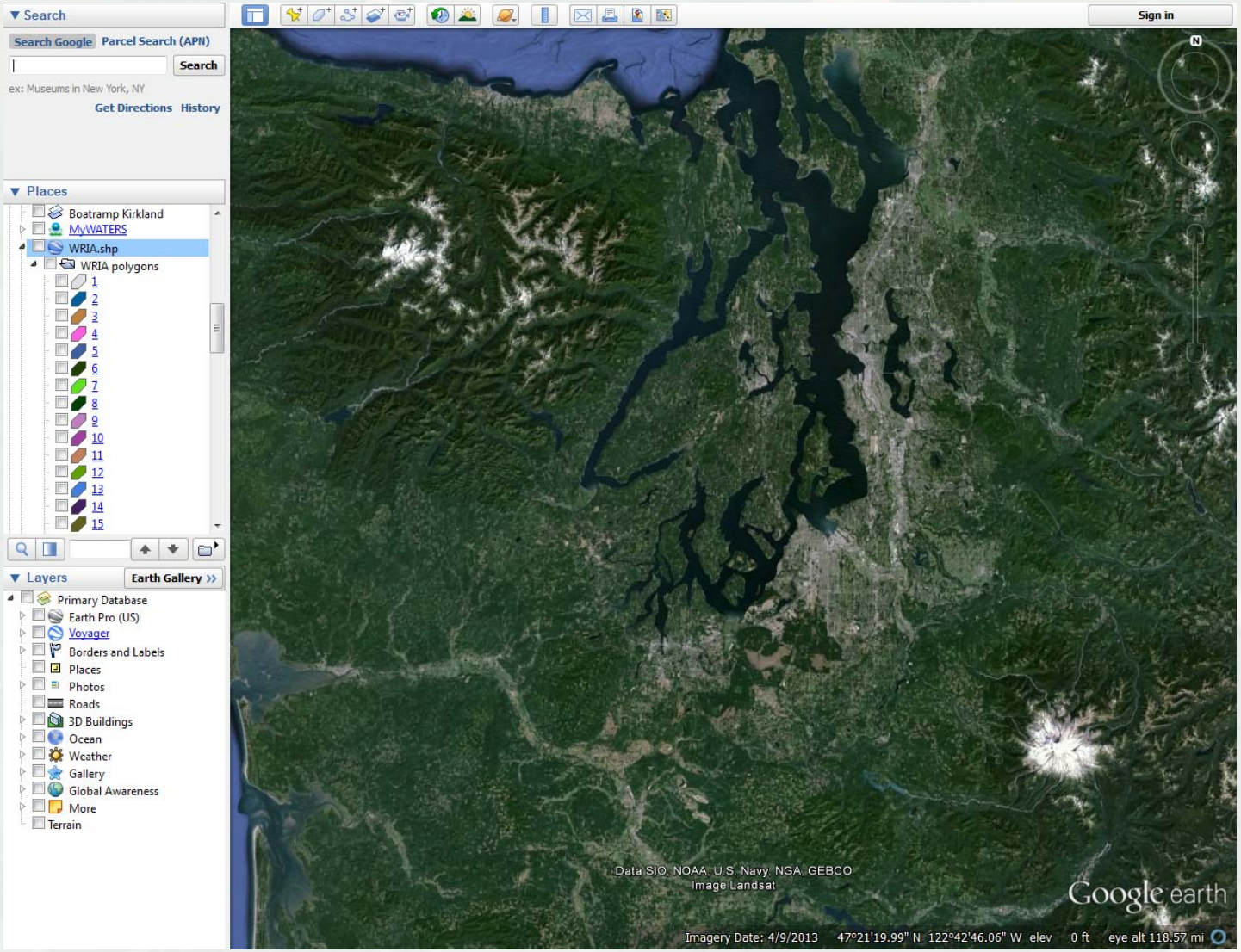
IWR Viewer Example 2



IWR Viewer: Other Layers

- Critical Habitat
  - Bull trout
  - Chinook
- Fish Distribution
  - Bull trout, Chinook (seasonal), Steelhead, Chum, Coho
- Forage Fish Spawning
  - Pacific herring, Sand lance, Smelt
- Eelgrass
- Kelp
- Puget Sound Nearshore Restoration Project
  - Armoring
  - Dams
  - Drift Cells
  - Fish Passage Barriers
  - Marinas
  - Overwater Structures
  - Protected Lands
  - Roads Nearshore
  - Stream Crossing Points

ORM Data in Google Earth



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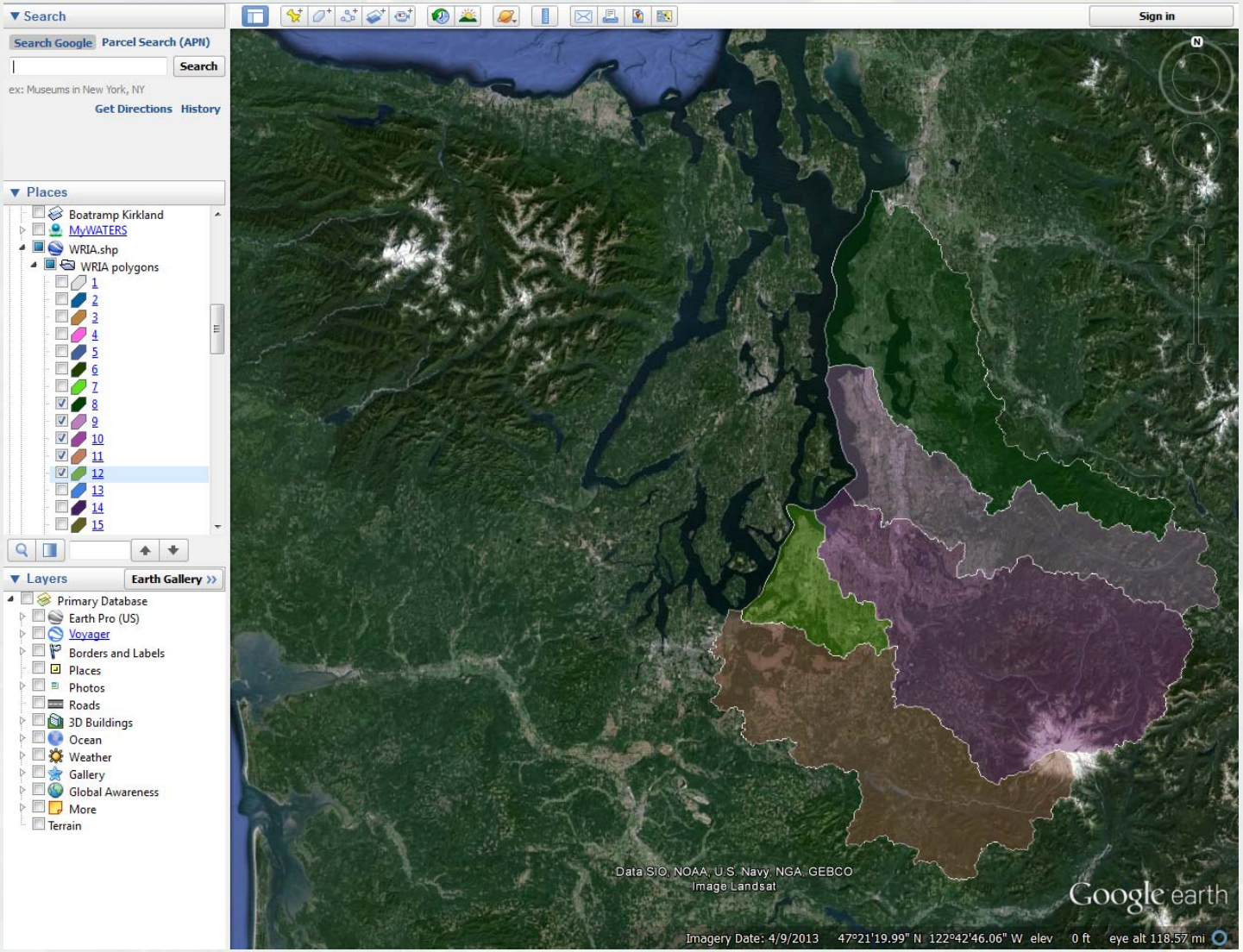
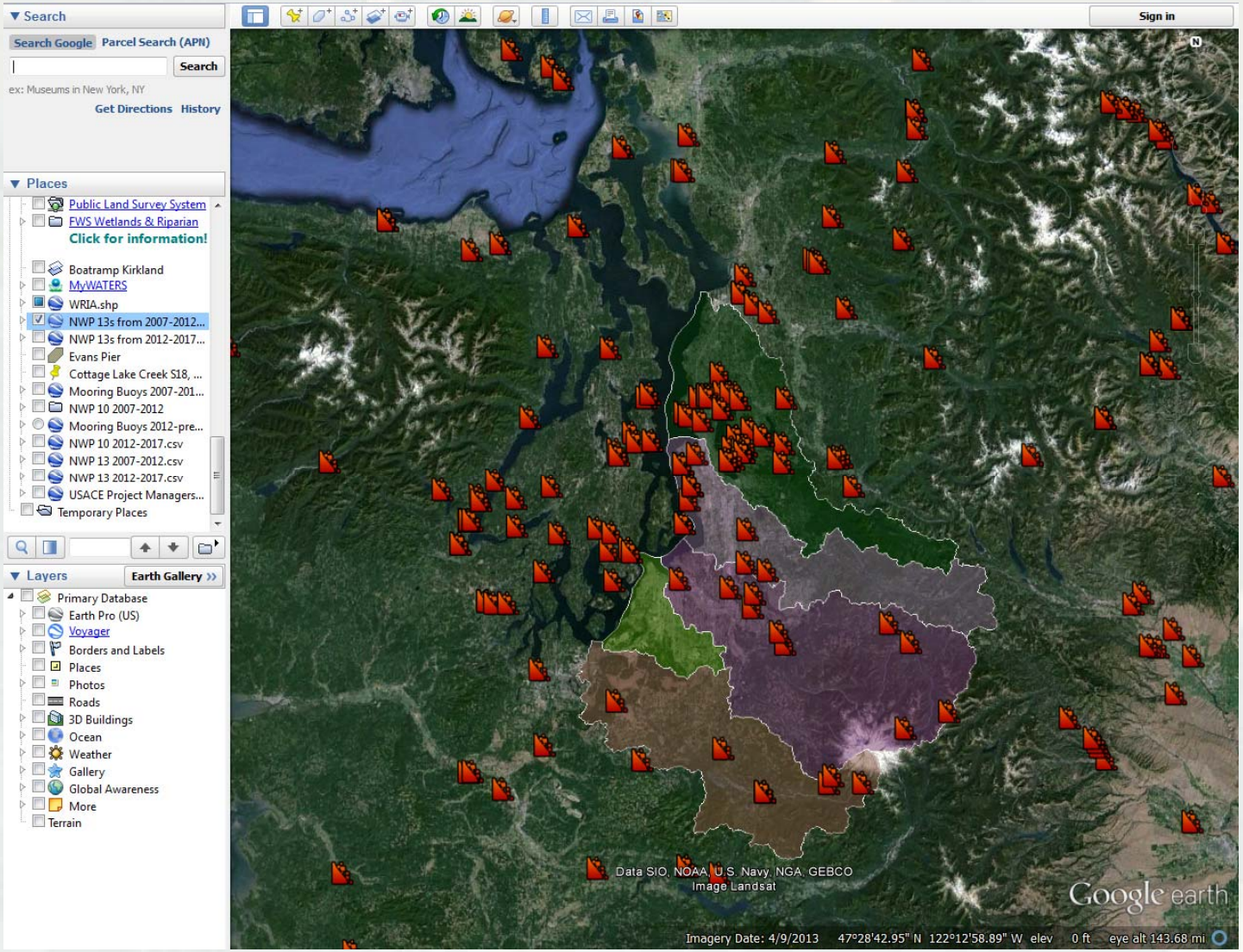


ORM Data in Google Earth



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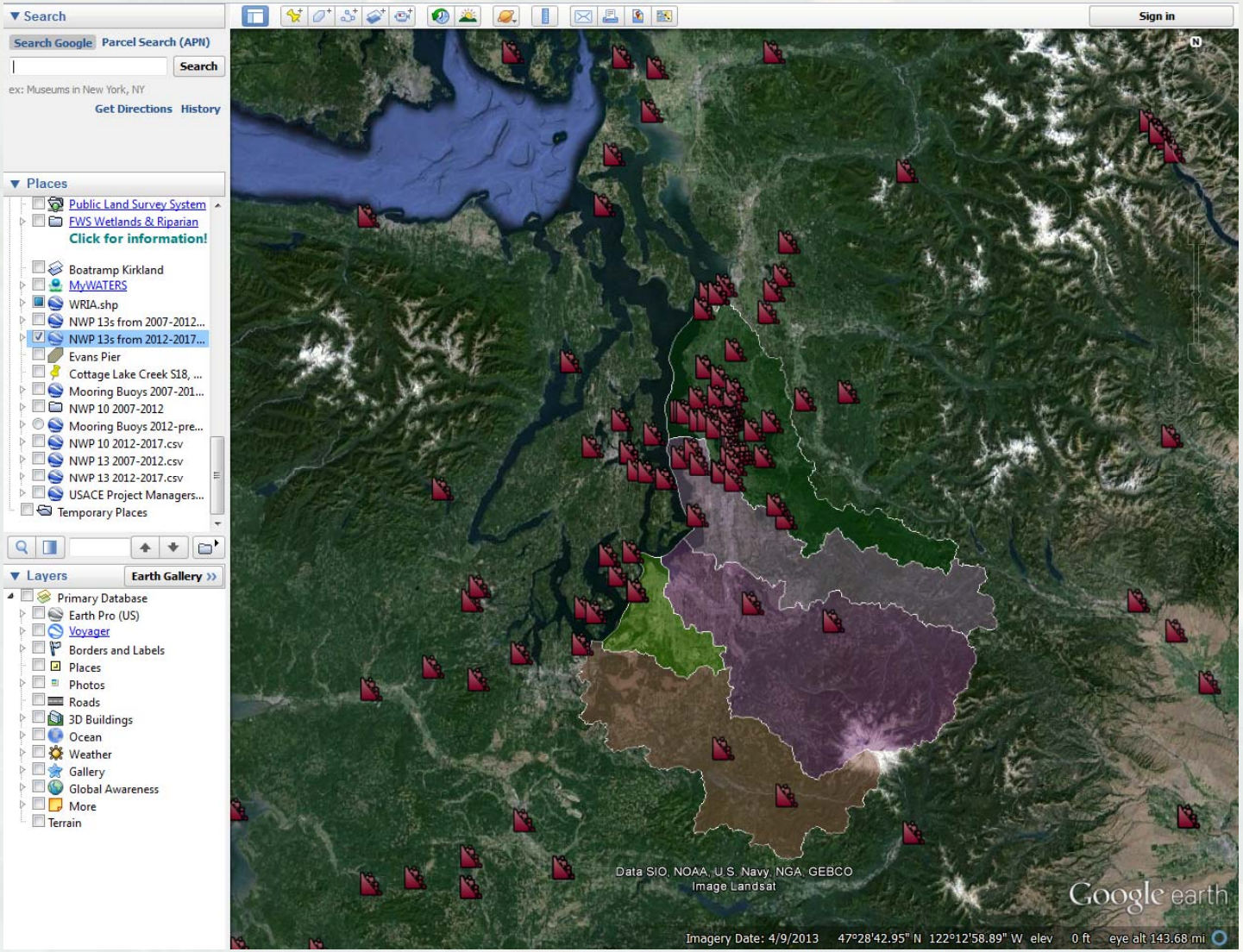

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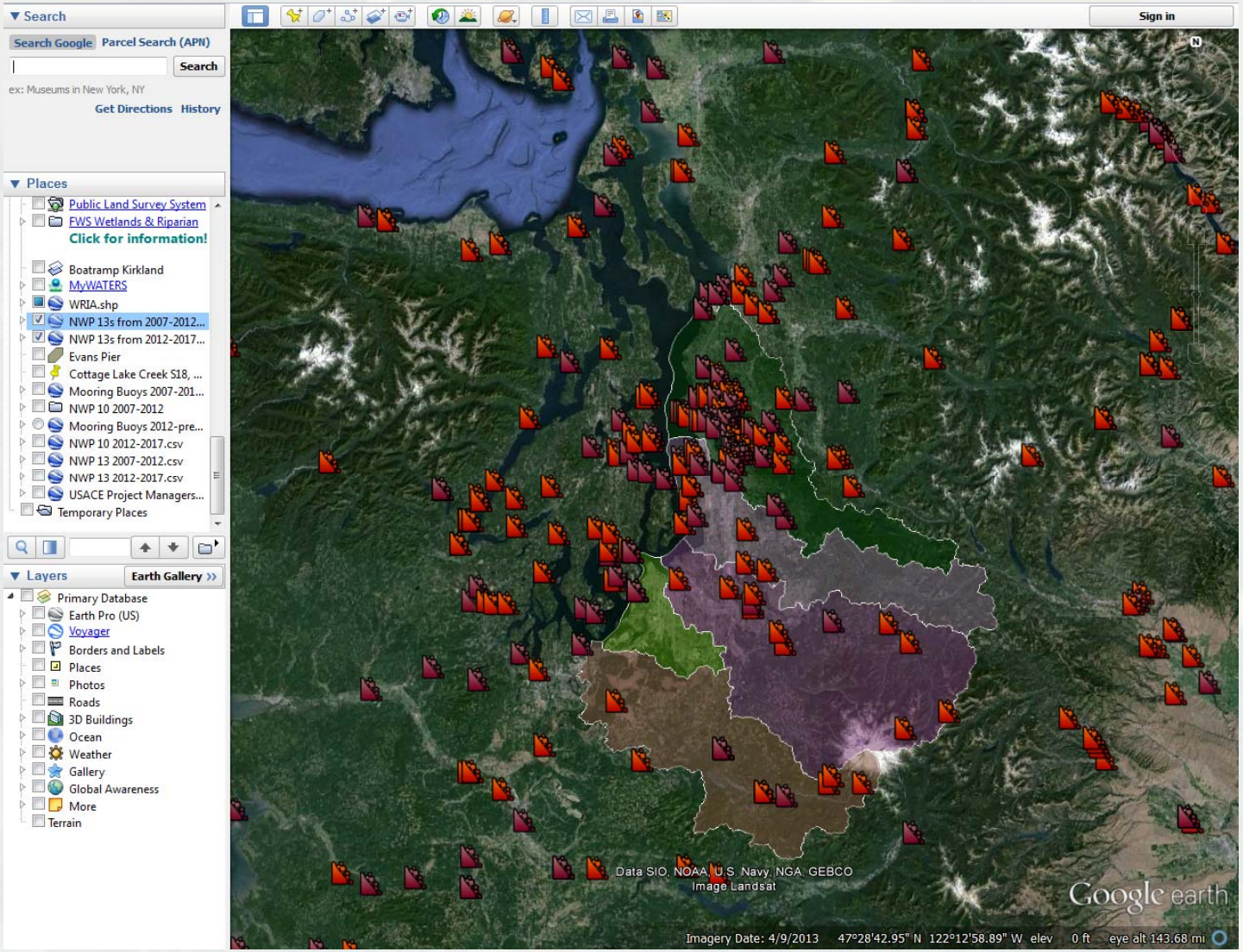

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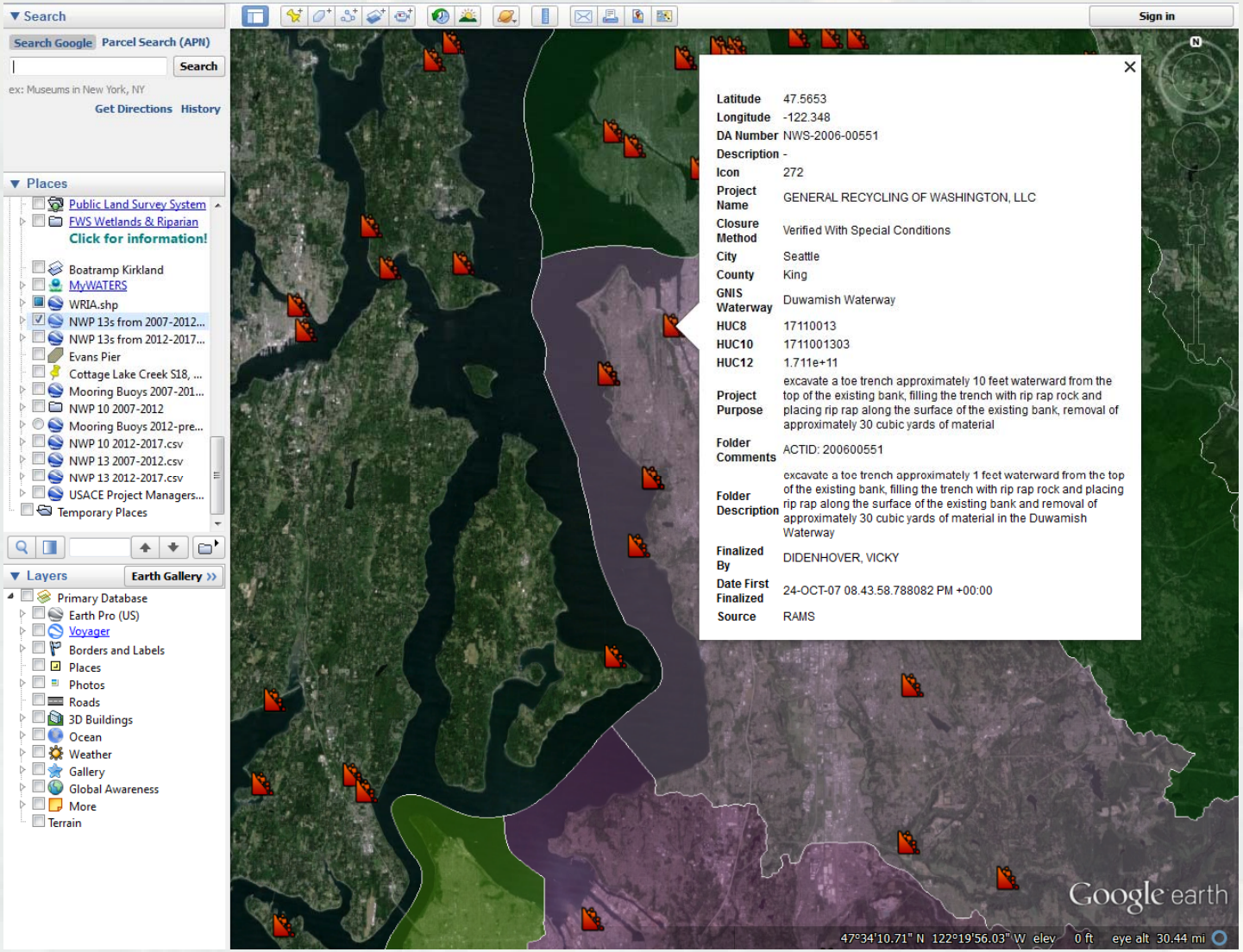
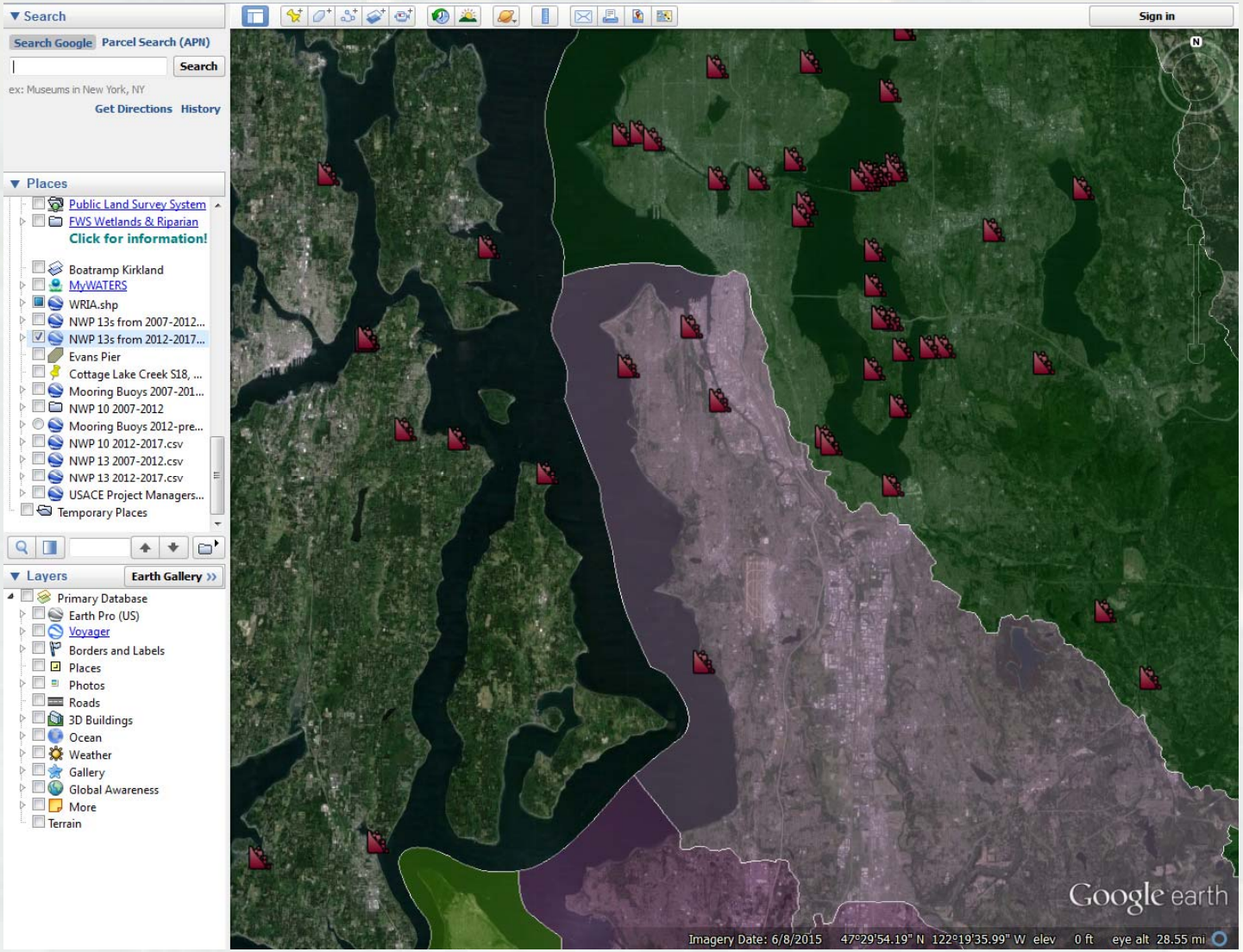


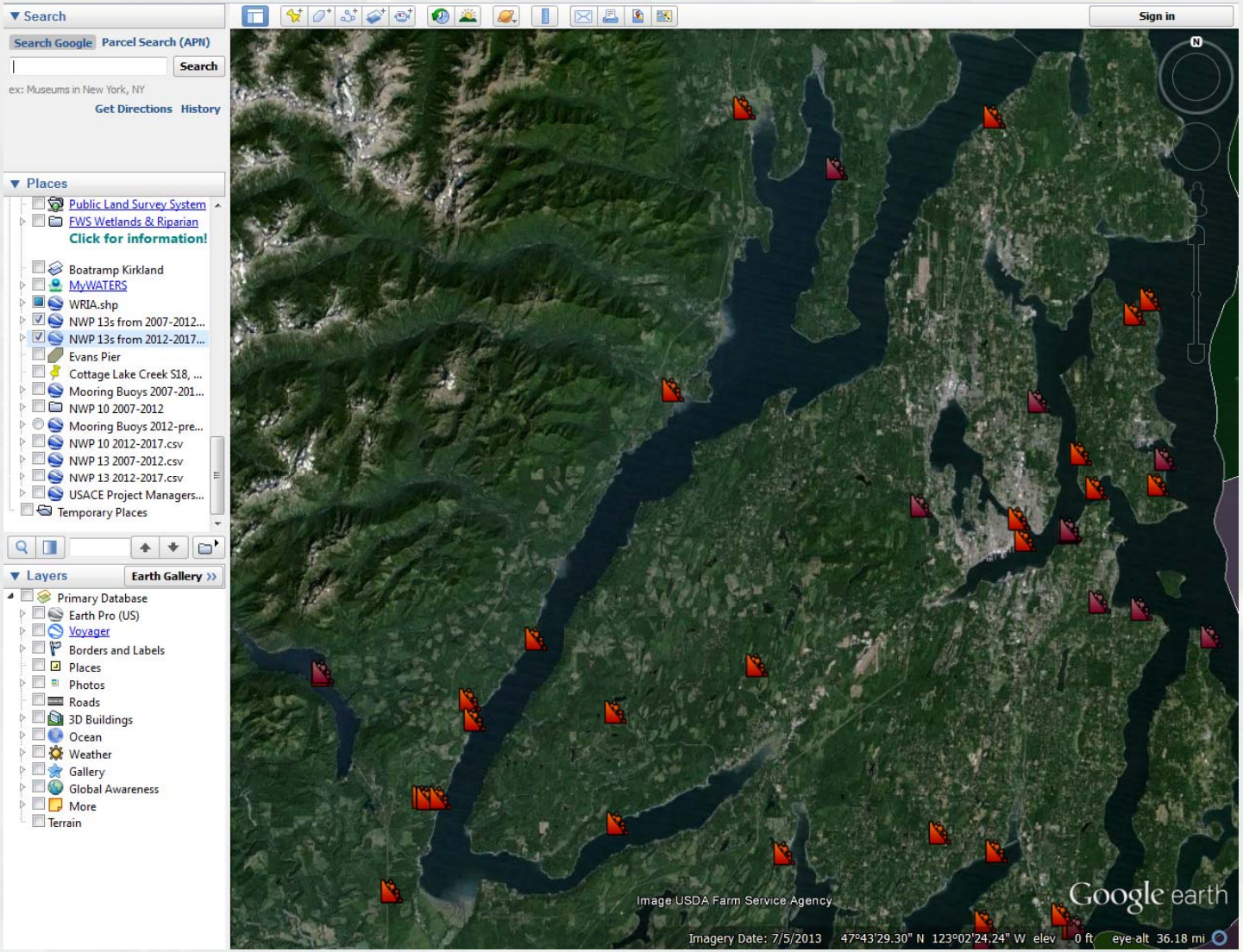
ORM Data in Google Earth



ORM Data in Google Earth

- Total Projects for New Bank Stabilization authorized under NWP 13 2007-2012
  - ►1
- Total Projects for New Bank Stabilization authorized under NWP 13 2012-Present:
  - ►0

ORM Data in Google Earth



Collaboration

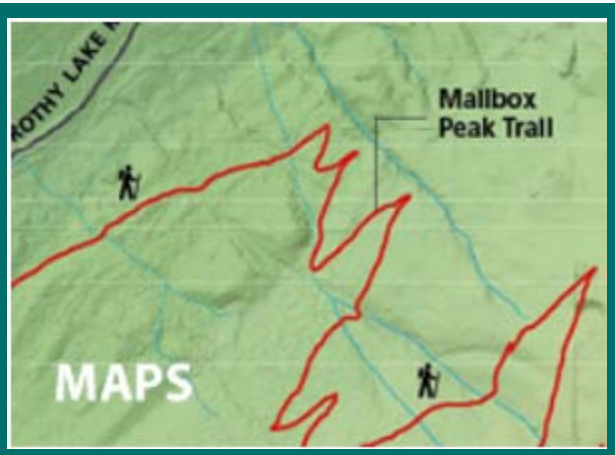
- Tribes
- State and Federal Resource Agencies
  - Environmental Protection Agency
  - National Marine Fisheries Service
  - U.S. Fish and Wildlife Service
  - Coast Guard
  - Department of Ecology
  - Department of Fish and Wildlife
  - Department of Natural Resources

WASHINGTON STATE DEPARTMENT OF

Natural Resources

Peter Goldmark - Commissioner of Public Lands

http://www.dnr.wa.gov



Select Find GIS Data

Publically Available GIS Layers for Aquatic Lands

- Washington Marine Vegetation Atlas
  http://www.dnr.wa.gov/programs-and-services/aquatics/aquatic-science/washington-marine-vegetation-atlas

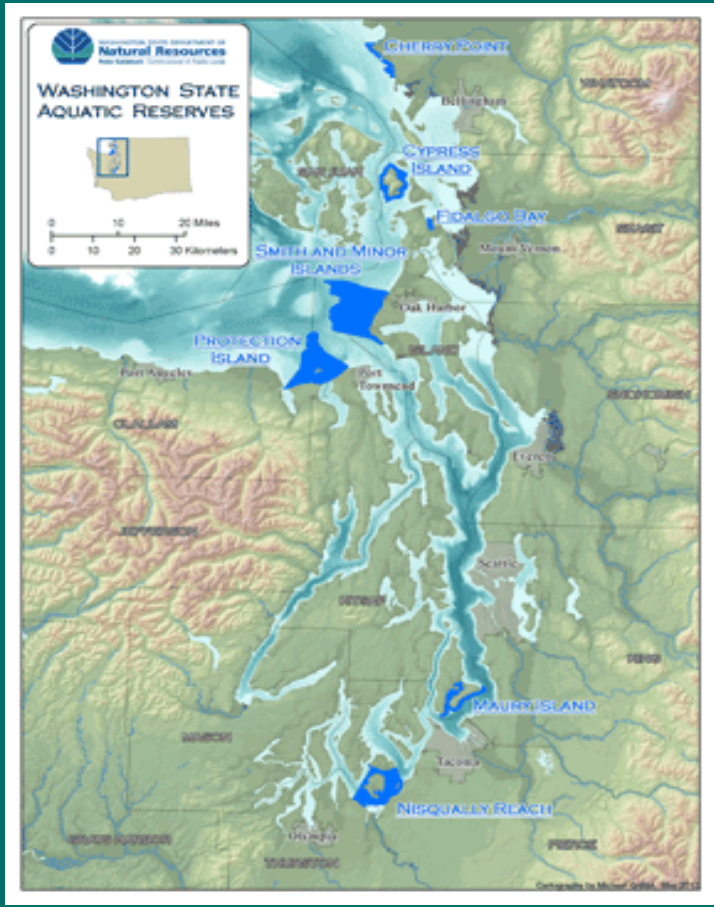
- Marine Spatial Planning
  http://www.ecy.wa.gov/programs/sea/msp/

- Aquatic GIS Layers (datasets)
  - Aquatic Land Ownership Boundaries (Statewide)
  - Aquatic Land Ownership Parcels (Statewide)
  - Aquatic Land Ownership Parcels (by County)
  - ShoreZone Inventory (nearshore habitat)
  - Skagit Co. Intertidal Habitat Inventory
  - Whatcom Co. Intertidal Habitat Inventory
  - USGS Lake/Reservoir Water Quality Samples of Washington
  - Kelp Monitoring Data
  - Over Water Structures (Lakes) on State Aquatic Lands
  - Over Water Structures (Rivers) on State Aquatic Lands
  - Over Water Structures (Marine) on State Aquatic Lands
  - Puget Sound Eelgrass Monitoring Dataset (SVMP) – Sites & Results
  - Puget Sound Eelgrass Monitoring Dataset (SVMP) – Central Puget Sound Transect Data
  - Puget Sound Eelgrass Monitoring Dataset (SVMP) – Hood Canal Transect Data
  - Puget Sound Eelgrass Monitoring Dataset (SVMP) – North Puget Sound Transect Data
  - Puget Sound Eelgrass Monitoring Dataset (SVMP) – San Juan Islands/Strait of Juan de Fuca Transect Data
  - Puget Sound Eelgrass Monitoring Dataset (SVMP) – Saratoga Passage/Whidbey Basin Transect Data

  http://www.dnr.wa.gov/GIS

DNR Aquatics Programs

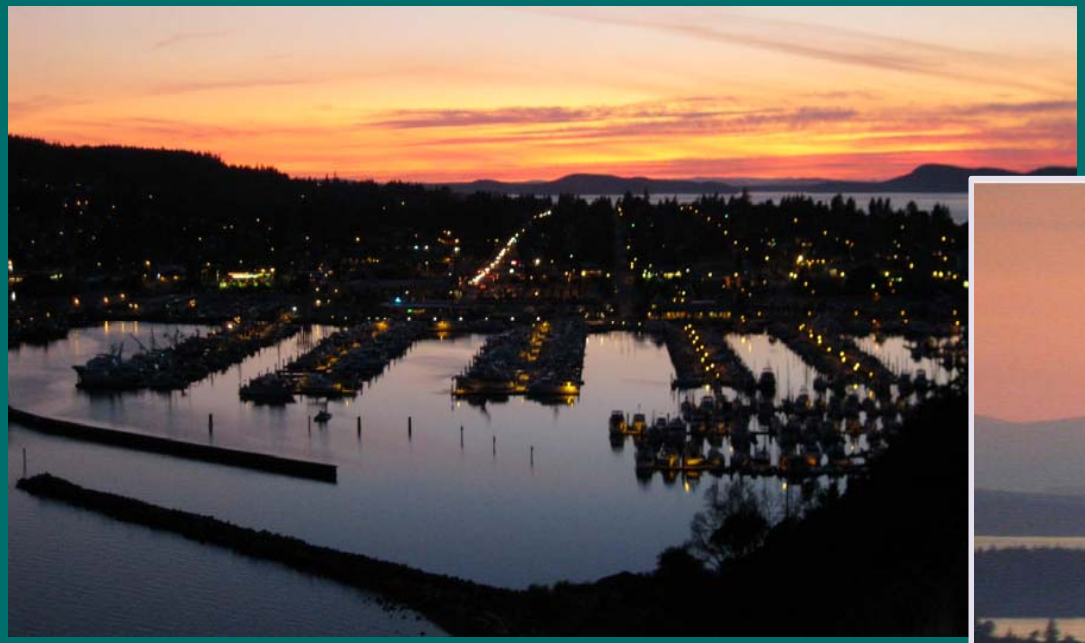
DNR Aquatic Reserves Program



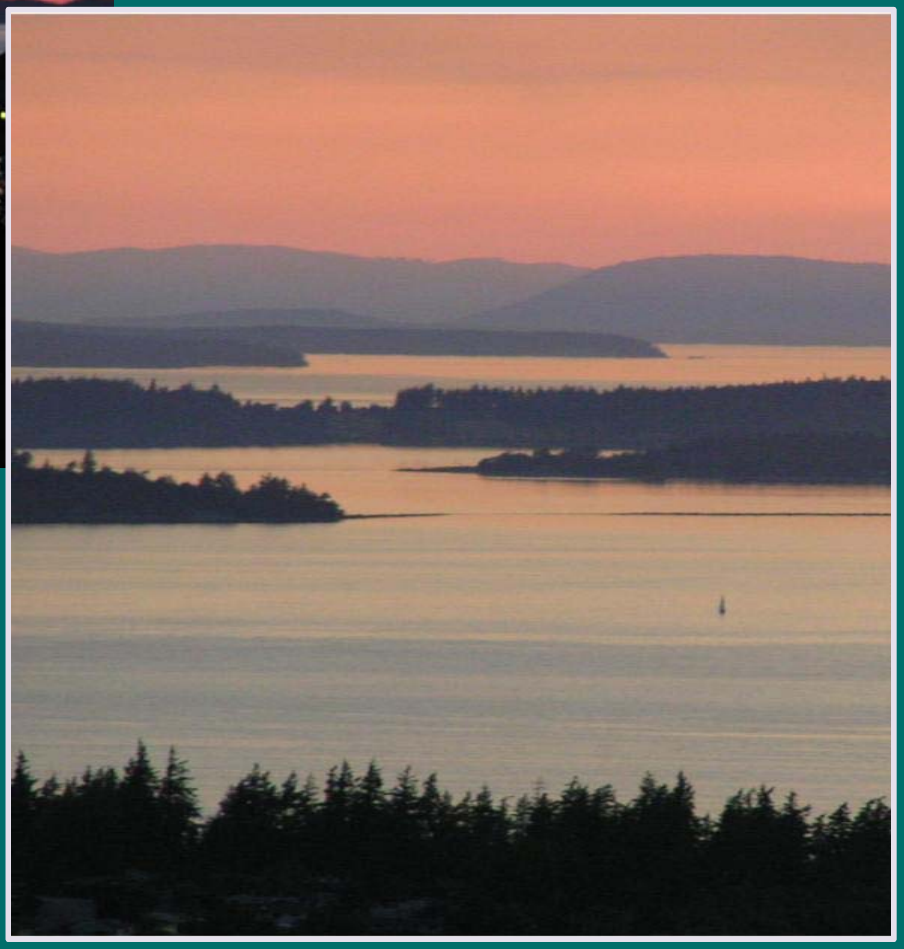
DNR Aquatic Restoration & Creosote Removal Program

Derelict Vessel Removal Program

Leasing State-owned Aquatic Lands



Habitat Stewardship Program



WASHINGTON STATE DEPARTMENT OF
Natural Resources
www.dnr.wa.gov

Cumulative Effects Analysis
Eastern Shore of Central Puget Sound
Washington

Final

February 7, 2014

US Army Corps
of Engineers ®

Puget Sound Partnership

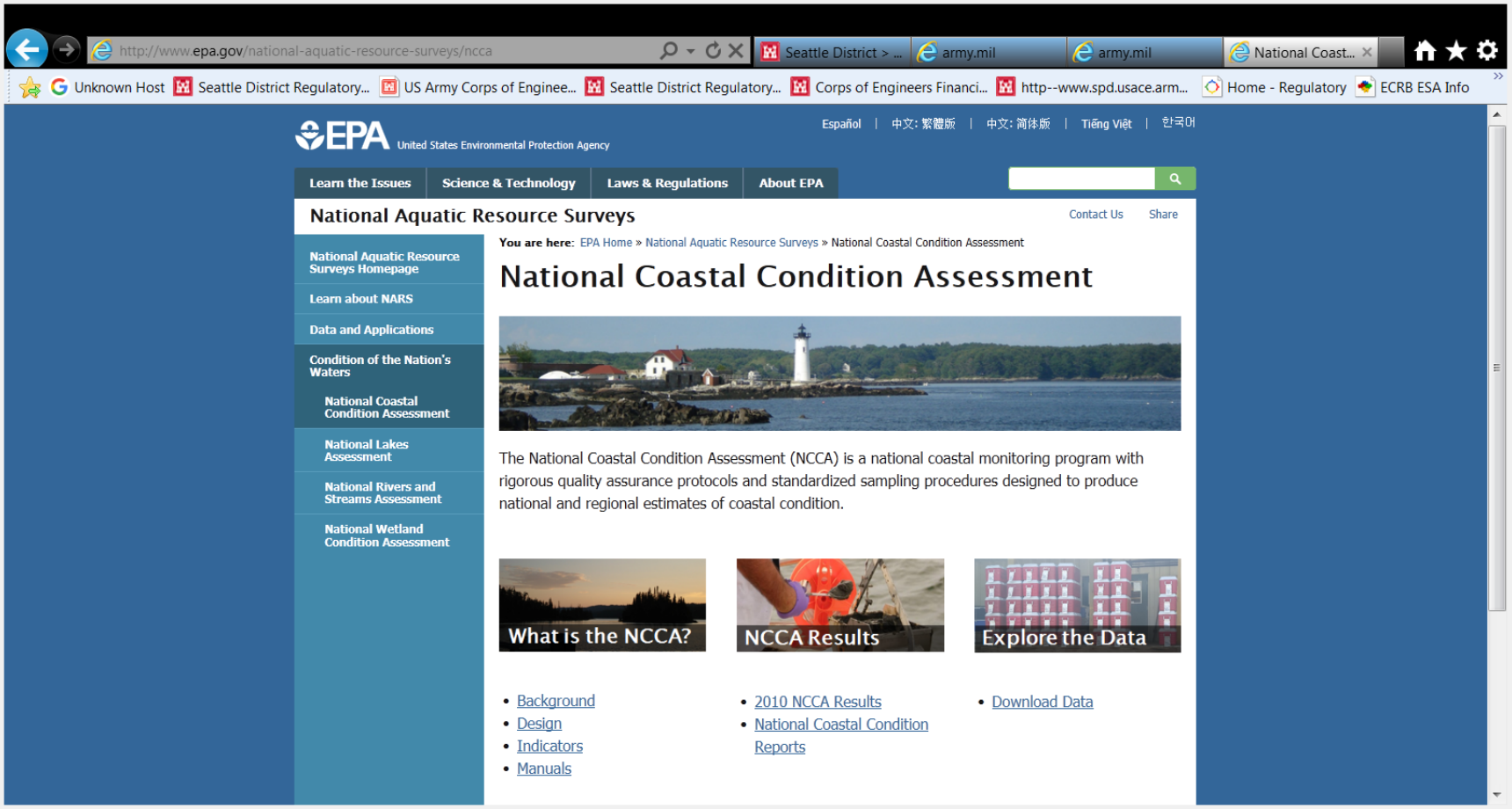
Hundreds of partners that plan, prioritize, and implement actions

State of the Sound “Annual Report”

- Summary of the current state of affairs that highlights priority work needed to advance recovery and protection efforts

2015 State of the Sound:
Report on the Puget Sound Vital Signs

The National Coastal Condition Assessment (NCCA) is a national coastal monitoring program with rigorous quality assurance protocols and standardized sampling procedures designed to produce national and regional estimates of coastal condition.



Need Qualitative and Quantitative Data to Support Regional Conditions

- Puget Sound Science Review
- Shoreline Master Program
- Watershed Plans
- Puget Sound Nearshore Ecosystem Restoration Project (Corps General Investigation)
- Encyclopedia of Puget Sound
- Threatened and Endangered Species Recovery Plans
- Land Use and Zoning (City or County)

Discussion

Till We Meet Again!