

## **Northwest Area Committees (NWAC) Meeting**

### **Hosted by ECY and USCG Sector Puget Sound Planning Partners**

### **Lacey, WA; Remote Participation via Zoom**

### **13 March 2024, 0900-1600 hours**

#### **Welcome and Opening Statements**

This meeting is hosted by USCG Sector Puget Sound (SPS) and the Washington Dept. of Ecology (Ecology), and attendance is open to all planning partners in the Northwest Area (Washington, Oregon, and Idaho). Welcome, and introductions were given by Carlos Clements (WA Dept. of Ecology) and CAPT McDonell (USCG SPS).

#### **Area Response and OSC Reports**

##### **Makah Tribe** (Vice Chairman Chad Bowechop)

The Tribe recently met with USCG and EPA, consulting on several issues including the Sector Puget Sound Area Contingency Plan (ACP) and oil pollution/spill response concerns. The 1855 Treaty of Neah Bay established the Makah Tribe as a sovereign nation presiding over sovereign tribal lands, and the Tribe hosted a Potlatch to discuss pollution response planning with USCG and EPA. Attendees included USCG Rear Admiral Fosse and EPA Region 10 Administrator Casey Sixkiller. Vice Chairman Chap Bowechop expressed that Makah values the spirituality of the ocean and land, which is culturally and spiritually important to Makah's future generations and provides an important cultural perspective in spill response planning. The Makah recently dredged Neah Bay Harbor, and the Tribe continues marine debris salvage work. The Tribe participated in a Washington State Maritime Cooperative (WSMC) drill this past winter and will participate in a Natural Resources Damage Assessment (NRDA) drill in the coming months.

##### **Navy** (Heather Parker)

The Navy will host a worst-case discharge (WCD) exercise in August 2024.

##### **USCG Sector Columbia River**

Update: NRC Notifications: 75, RRT Activations: 0, Federal Projects: 3, CERCLA Projects: 0, Notable Incidents Presented: M/V El Conquistador (Coos Bay, OR)

- Planning/Coordination: Area Committee meeting: April 30, 2024
- Exercises/Workshops: Worst Case Discharge Exercises, refer to presentation slides

[View Presentation](#)

##### **EPA** (Stephanie Wenning)

EPA recently responded to the Olympic Pipeline Spill, as well as a series of mercury spill in Region 10.

##### **SERC** (Susan Forsythe)

The SERC hosted a lithium-ion battery symposium in March which saw over 200 participants. Tier II reports were due March 1, 2024. A new mobile app has been created for responders, please contact Diane Fowler at [diane.fowler@ecy.wa.gov](mailto:diane.fowler@ecy.wa.gov) for more information. The SERC will host a Tribal LECP conference in Ellensburg, WA April 23-25, 2024, and has grants available to help pay for rooms for LEPC

and tribal partners. The SERC will host a Tribal Workshop in Wenatchee May 3-5, 2024. Two LEPCs in the state will combine to form one LEPC in order to leverage resources and capabilities.

**Sector Puget Sound Report** (Bryan Dykens)

Sector Puget Sound (SPS) will hold an oil spill response training by the National Park Service (NPS) in Montana and will participate in upcoming WCD exercises with the Navy and WSMC.

**ODEQ** (SOSC Geoff Brown)

- Notifications: 438
- Petroleum Incidents: 173
- Chemical Incidents: 33
- Other: 277
- Sinking Tugboat Willamette River
- Columbia Pacific Biorefinery Allision

[View Presentation](#)

**King County LEPC**

The LEPC participates in WCDs as able. The last LEPC meeting was in February 2024 and included a presentation by Olympic Pipeline, and the next is scheduled for May 2, 2024 (the agenda is currently under draft). Meetings are held on an in-person and virtual hybrid platform. The LEPC is currently collecting Tier II reports and is working with Darigold on an ammonia release response drill.

**Skagit County**

The Skagit County LEPC meets quarterly on the 2<sup>nd</sup> Wednesday of each quarter, and meeting links are on the website. Marine Spill Response Corporation (MSRC) presented at the last meeting. The LEPC is currently considering an exercise of drill on gasoline/diesel spills. Skagit County is growing, and food processing operations are increasingly near residential and commercial communities. The Community Assisted Response and Engagement (CARE) Group informs the community regarding drills and incidents, and Skagit County is looking at creating a CARE group focusing on ammonia and chlorine hazards.

**Whatcom County**

The LEPC meets quarterly, and the next meeting is April 30, 2024.

**Puget Sound Area Committee** (USCG Sector Puget Sound and WA Dept. of Ecology)**USCG Sector Puget Sound (SPS)** (CAPT Mark McDonnell)

- NRC Notifications: 188
- RRT Activations: 0
- Federal Projects: 4
- CERCLA Projects: 0
- Notable Incidents Presented: P/C/ ENCOUNTER (Steilacoom, WA)
- Community Coordination: Refer to presentation slides
- Exercises and Trainings: Refer to presentation slides

[View Presentation](#)



**WA Dept. of Ecology – (Dave Byers)**

- Notifications / Incidents Count: Refer to presentation slides
- Notable Incidents Presented: Sanson Ave. Fentanyl Manufacturing (Spokane, WA)

[View Presentation](#)

**Case Study: Olympic Pipeline Gasoline Spill, Conway, WA**

**Presenters:** Monica Tonel (EPA R10), Dave Byers (WA Dept. of Ecology), Keri Clearly (Swinomish Tribe), Scott Neuhauser (Olympic Pipeline)

Presenters gave an overview of the Olympic Pipeline Gasoline Spill, which occurred on December 10, 2023, and involved tribal, federal, state, and industry responders and resources. Presentation slides provide basic information, and a general overview of discussion points follows:

**Challenges**

- High tide trapped gasoline in Hill Ditch, allowing favorable conditions for boom and skimmer deployment
- Tree line brush required removal and is under restoration
- Rain and high groundwater from artesian wells made excavation challenging, dewatering wells installed; frac tanks managed a large amount of dewater
- Wildlife takes: Installation of the sheet pile wall caused takes of aquatic wildlife including several fish. A separate take was one beaver which died due to a gasoline spill in the immediate area. Otters that previously frequented the area appear to have survived and left the area.
- Aquatic invasive species identified in the area (New Zealand Snail) require Level II decon protocol (freezing treatment or hot water pressure wash treatment of vehicles).

**Best Practices**

- Sheet pile wall installed at creek shoreline to aid excavation of impacted shoreline soil
- Dewater was treated on-site and put back into the creek
- Recovered contaminated soil was sent for incineration
- Air quality data was obtained by collection of both real-time air monitoring (fixed and roving) and air sampling for low-level contaminants of concern
- Water quality data was obtained by tissue samples collected from crabs, and analytical results are forthcoming
- The goal was to excavate sufficiently to recover all contaminants via removal before transitional actions from response to remedial action, though this remains to be determined
- Soil screening threshold triggered excavation of soil set at less than 25 ppm Model Toxics Control Act (MTCAs), which translates to 30 mg/kg in soil.
- Sheet pile wall was recycled rather than reused, to avoid the cost of decon of invasive species
- Will install fish exclusion net prior to removal of coffer dam

**Lessons Learned**

- Communication with the local community: Residents were concerned with lack of communication; 1.) residents were concerned that they did not receive notification of the spill quickly enough for them to make personal safety decisions. 2.) Community members would have liked a community meeting; The potentially responsible party provided a liaison team and

performed aggressive community outreach through door-to-door communications; however, locals expressed that notifications should be immediate and widespread. A New resulting bill stipulates that Type I and Type II hazardous events in Washington will result in at least one community meeting with a virtual option; Ecology would hold these anyway, so this is an agreeable piece of legislation. Be more intentional in communications.

- Bivalve and shellfish sampling was planned for conducted in Skagit Bay, but labs were backed up; instead the response brought in a hydrocarbon sniffing dog to clear areas of the Skagit River and Skagit Bay.

### Questions and Answers

- Each dump truck removed 39 cy, and are at 89 dump trucks to date
- Pipeline was at 850 psi, the hole was pencil-sized
- Boom has successfully contained gasoline
- Air quality real-time monitoring was for total VOCs and benzene; no benzene was detected outside of the response area
- Sampling is for the analysis of low-level organic compounds
- No requirements for low-level emissions vehicles have been placed on site. Run a shuttle from the station in Conway to transport workers who don't need vehicles on the scene to limit vehicle emissions.
- Soil VOC readings of less than 25 ppm have correlated to 30 mg/kg product in soil
- No needed repairs to the sheet pile wall so far
- Ecology designated this as a Type II hazardous spill.
- PHMSA is continuing to investigate the leak conditions and timelines in a failure investigation report which will be published and available in December 2024.
- Ecology does not require RP to share response costs, and those would not be available until the response ends. BP will pay the response costs for the state. Response and damage costs may be available in one year. Note: This is similar to EPA, the responsible party is not required to disclose total response costs
- No mutual aid agreements were employed for the response, though multiple agencies responded.
- States cannot cover costs for tribal agencies.
- The EU analyzed in-situ treatment options and determined that excavation was necessary for isolation and removal
- Excavated soil will be replaced with a specified soil type of sand/gravel with topsoil, determined by the Environmental Unit (EU).

[View Presentation](#)

### 2023 Planning Summit Drill Data Survey Results

**Presenters:** Matt Bissell (WA Dept, of Ecology) and Tim Lupher (USCG Sector Puget Sound)

Bissell and Lupher provided visual data reflecting feedback given at the 2023 Northwest Area Summit where response planning partners gave feedback communicating preferred focus areas for exercises in the Northwest. The data is presented in the slides, and comments offered during the meeting discussion are provided below:

### Comments and Proposed Actions

- Different platforms are used for drills, likely difficult to have people understand various platforms and access different platforms is a challenge
- BP comment: typically try to clearly delineate remote support roles for subject matter experts, but on-site is preferable; prefer to use only remote support for expert roles with clearly delineated functions.
- Actual command roles being remote tends to break the chain and make the role less efficient.
- Logistics and Finance Sections can be done hybrid, but Operations cannot
- Hybrid capability during the initial response is valuable
- Firewall issues are significant, especially with USCG; there is work to be done with USCG being able to use Teams
- Hybrid pieces are important to incorporate into exercises and responses since hybrid is not a reality and normality; don't exclude hybrid
- Currently USCG cannot use TRG software, or collaborate seamlessly with response partners via Teams.
- Collecting documentation in hybrid is challenging and needs to be worked through, especially with legal backing and signature options; TRG has software that captures documentation, but the firewalls continue to pose an option. HSIN software developed after Hurricane Katrina was developed to foster interagency collaboration, and this software has not been further developed, and it needs to be developed. USCG has requested that all after-action reports state the firewall issue as an issue; General frustrations voiced that the software developed by DHS after Katrina has not been developed. Issuance of temporary login credentials is something that should be happening. To be able to use the HSIM (DHS sharing platform) This Firewall issue is a significant hindrance to response for all responders, and was acknowledged by USCG and Navy. The firewall issue is costing all response partners time and resources.
- SERC EOC uses Web EOC Software, which is similar to TRG software, Susan Forsythe offers to speak to how the WA SERC uses Web EOC.
- Suggestion: RPs could provide PCs for multiagency use.
- ".mil" software can't communicate with Windows software; For web-based solutions like WEB EOC, USCG can use this – web-based allows a great chance that USCG can use it.
- USCG can have access to Can loaners PCs be used for responses? Answer: the security issue would be an issue.
- Question: Defense Connect online, Adobe Connect – is web conferencing and file download that is designed to connect federal agencies and civilian agencies. This could be an option.

**Slide/Questions: "What Type of Training would you want before the Next Drill?"****Comments and Proposed Actions**

- WA SERC trainings are all available on the EMD website, including an LEPC Tribal conference
- Bands of First Nations and Makah did Treaty Tribe CANUSWEST plan exercises, which were valuable
- Aaron Meadows-Hills is putting together a Joint CANUSPAC/CANUSWEST meeting for a date in the future; a border-wide policy for Treaty holders could be integrated in the CANUSWEST plans
- The Makah Tribe has considered standing up a Tribal Caucus and is interested in standing up a Tribal Caucus for oil spill pollution. US and Canadian Coast Guard have been discussing how to effectively integrate First Nations, and continue to try to figure out how to make that happen;

Question – is this incident specific? Answer CANUSPAC Makah tried to create a Treaty with Canada, but could not due to jurisdictional boundaries.

**Slide/Question: “What do you find most beneficial from participating in drills?”**

**Comments and Proposed Actions**

- Suggestion to have drills and exercises on a more frequent and deliberate schedule, suggest monthly rather than yearly.
- Makah would like to be signatories to the Area Contingency Plan

**Slide/Question: “What do You Find to be Ineffective at Drills?”**

**Comments and Proposed Actions**

- None

**Slide/Question: “How often should the RRT participate in drills?”**

**Comments and Proposed Actions**

- Suggest staggering real-time WCD drills between coastal and open ocean locations (for USCG AOR). This would enable responders to understand what resources (e.g. dedicated equipment) are readily available or need to be dedicated.

**Slide/Question: “What is your greatest barrier to participating in drills?” What do you find to be ineffective at drills?”**

**Comments and Proposed Actions**

- Suggest more coordinated effort to participate in reciprocal drills between state and Industry

**Questions and Answers**

- Have you maintained a hybrid work environment and captured lessons learned? Answer: Hybrid was very helpful and created a seamless transition for weather days where people couldn't get to the command post; RP has provided this, but Ecology could host.

[View Presentation](#)

## **Northwest Planning Update: Letter of Promulgation Continuing The Northwest Area Contingency Plan**

**Presenters:** CAPT Connoley (USCG D13) and Beth Sheldrake (EPA R10)

Response planning for the Northwest Area (Washington, Oregon, Idaho) has been traditionally addressed at both the regional and area level in one Northwest Area Contingency Plan (NWACP), which was most recently approved by signatories in 2020. The Northwest Area Planning Task Forces created products in 2022 and 2023, and NWACP signatories will approve sections of the NWACP that contain 2022 and 2023 Task Force Products by a signed Letter of Promulgation. The Letter of Promulgation is a temporary measure to ensure that spill response planning in the Northwest remains effective and communicative.

Several Sections of the NWACP will be affected. Once the Letter of Promulgation is signed, the Task Force products created since 2021 will be attached and labeled with the associated plan sections. USCG and EPA attorneys have validated the legality of the NWACP and pending Letter of Promulgation. In the future, an updated plan would be ideal.

## **NOAA Oil Spill Modeling Tools**

**NOAA Oil Spill Modeling Tools Presenter:** Amy McFayden, PhD (NOAA Emergency Response Division)

Dr. McFayden presented the capabilities of several NOAA modeling tools including the General Operational Modeling Environment (GNOME), the Routine Product Set list decision aid, and the Environmental Response Management Application (ERMA). Presentation slides summarize the materials presented, and additional discussion points are captured below:

**General Discussion**

- WebGNOME was used during the Aleutian Isle response for surface and deep surface depths
- GNOME can support regional planning by running different models using the same spill point at different times of day and during different conditions.
- Other modeling tools exist like RPS. Open Drift is an open-sourced program from Norway.
- If multiple parties produce conflicting trajectories, it can pose challenges to responders.
- IRMA is a visualization platform that can incorporate many tools, including trajectories modeled in GNOME.

[View Presentation](#)

**Round Robin Open Forum**

Northwest planning partners share the following information:

- Canada just obtained a 245-foot vessel with oil storage capacity, designed to protect the Salish Sea and Strait of Juan de Fuca.
- WA Dept. of Ecology will hold a JIC Liaison Training on April 3, 2024, and an equipment deployment exercise in August
- WA Dept. of Ecology will update the Lake Washington GRP in the next 2 months; WA GRPs are updated on a quarterly basis
- WA Rulemaking Update – certificate of financial responsibility rulemaking closed for public comment; Tug escort rulemaking is currently under draft
- Pacific virtual SCAT class will be held April 8-11, 2024. Science of Chemical Releases and Science of Oil Spills classes will be held in May 2024

**Closing Comments**

Sector Puget Sound and WA Dept of Ecology thank presenters and participants for continued support and planning efforts.

The next regular meeting of the NWACs will be on June 11, 2024 in Idaho Falls, ID hosted by the Inland Area Committee and the State of Idaho. A virtual attendance option will be offered. Information will be posted at <http://rrt10nwac.com>.

**End Meeting**



# COLUMBIA RIVER AREA COMMITTEE

Report to Region 10 Response Team

March 14<sup>th</sup>, 2024

# AREA COMMITTEE UPDATE

## Notable initiatives within the Columbia River Area Committee:

- AC Meeting April 30<sup>th</sup>, 2024 (Portland)
- Worse Case Discharge Exercises:
  - March 20, 2024 – OR DEQ WCD
  - May 15, 2024 – Kinder Morgan Willbridge Terminal
  - September 9-12, 2024 – ACP Boom Deployment Full Scale Exercise (Portland)
  - October 16, 2024 – NuStar Energy
  - October 30, 2024 – McCall Terminals
  - December 14, 2024 – Marathon/Tesoro Vancouver Terminal

# AREA CONTINGENCY PLAN UPDATE

- **Current Version – June 2021.19 (Updated April 2023) - Active**
- **Upcoming Plan updates and proposed committees:**
  - Reviewing and determining disposition of public comments from 2023
  - Architecture arrangement sub-committee
- **Plan Locations:**
  - RRT10:  
[https://www.rrt10nwac.com/USCG\\_Sector\\_Columbia\\_River\\_ACP\\_2021.pdf](https://www.rrt10nwac.com/USCG_Sector_Columbia_River_ACP_2021.pdf)
  - Homeport:  
<https://homeport.uscg.mil/Lists/Content/Attachments/80747/SCR%20ACP%202021.19%20Edition%20signed.pdf>



# CASE SUMMARY AND ENFORCEMENT

## BY DEPARTMENT:

- **Sector Columbia River (Oct-Feb):**
  - 75 NRC reports
  - 3 federalized cases
  - 14 enforcements
- **Washington State Ecology (Oct-Feb):**
  - 141 incidents
  - 32 field responses
  - 38 non-oil incidents
  - 10 vessel incidents
  - 103 oil incidents
- **Oregon State DEQ (Sep-Dec):**
  - 438 notifications
  - 173 petroleum incidents
  - 33 chemical incidents
  - 277 other incidents



**P/C NICOLE**  
**Newport, OR**

# CASE REVIEW – M/V EL CONQUISTADOR

RRT Activation:	No
Type and amount of product:	Diesel, Oily/Water Mix Potential lead and asbestos Max Potential: Est. 35,000 gal
Date of assessment:	March 4th, 2024
Location:	Coos Bay, OR
Key operational activities:	<ul style="list-style-type: none"><li>- 139' Former Icebreaking Vessel</li><li>- OSLTF accessed to fund CG travel for assessment</li><li>- Joint assessment conducted with Sector Columbia River IMD, CG Pacific Strike Team, OR DEQ, OR DSL, Coos County Sheriff</li><li>- Verified vessel condition and pollution potential</li><li>- Further action tbd</li></ul>



# AREA COMMITTEE NEEDS FOR NORTHWEST RRT10 SUPPORT

- None at this time



# AREA COMMITTEE CONTACTS

Contact us:

Karen Denny  
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CWO Brian O'Neil  
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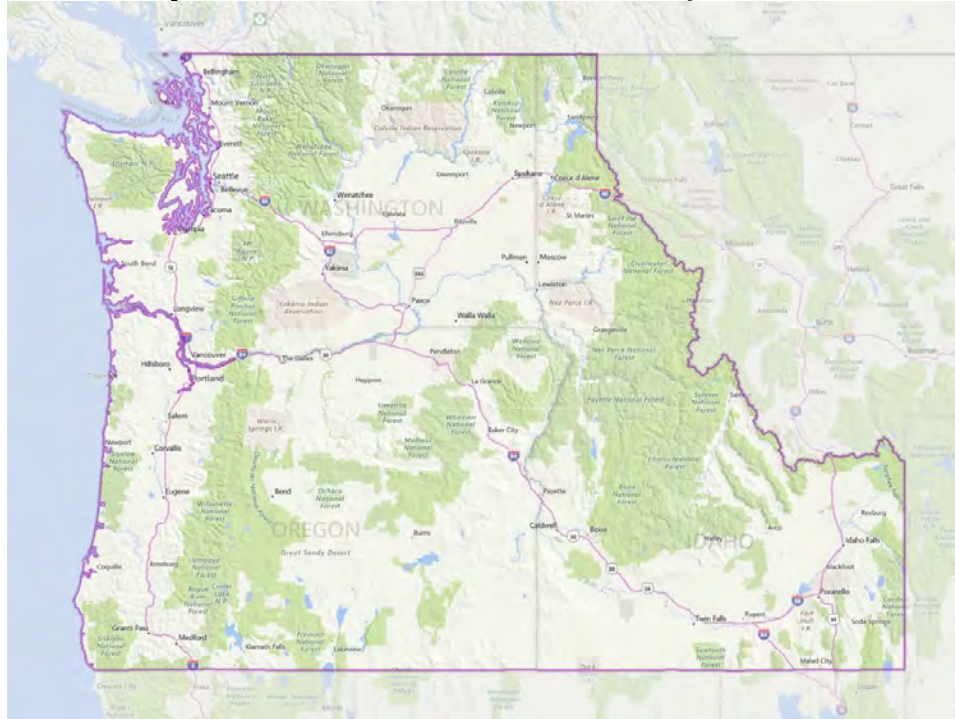
[d13-smb-seccolvr-  
areacommittee@uscg.mil](mailto:d13-smb-seccolvr-areacommittee@uscg.mil)





# Oregon DEQ

Geoff Brown, SOSC Western Region  
September 1 to December 31, 2023



Notifications	Petroleum Incidents	Chemical	Other
438	173	33	277



# Sinking Tugboat Willamette River

Type and amount of product release:	- Potential Release of 700 gallons of diesel from tug working on Abernathy Bridge for ODOT
Cause of release:	Potential release due to vessel sinking
Date of release:	KMT-3 sank 12/13/2023 and was recovered 12/28/2023. The tug sank during an abrupt stopping maneuver to avoid a deadhead
Responsible Party:	Kiewit
Key operational activities:	<ul style="list-style-type: none"><li>- Search for sunken vessel using hydrographic survey, side scanning sonar, and an ROV, 12/14-12/21, likely location was identified by sonar on 12/19 and confirmed by ROV on 12/21</li><li>- Contractor boom placed around the tug on 12/27</li><li>- On 12/28, the tug was lifted by crane, secured, dewatered, and loaded onto a barge.</li></ul>
Major lessons learned:	- Designation of RP ODOT vs RP, contracting issue.
Lead Coordinator Contact:	Kevin Chan <a href="mailto:Kevin.Chan@deq.Oregon.gov">Kevin.Chan@deq.Oregon.gov</a>





## Incident Command

USCG  
DEQ  
Kewitt

## Other Agencies Contractors

ODOT  
Washington DOE

Extrax  
Obrien's Group  
Ballard Marine







# Columbia Pacific Biorefinery Allision

Type and amount of product release:	- Potential for 25,000 gallon release from the Columbia Biorefinery piping when a tug and barge crashed a dock and piping.
Cause of release:	Human Error
Date of release:	11/12/2023
Responsible Party:	Columbia Pacific Biorefinery
Key operational activities:	<ul style="list-style-type: none"><li>- Removing product from the lines</li><li>- Stabilizing and removing damaged piping and structures</li><li>- Precautionary response actions such as triple booming pipeline area, standing by with response personnel, and vessels, etc.</li></ul>
Major lessons learned:	<ul style="list-style-type: none"><li>- Reporting discrepancies in the beginning regarding potential release volume residual vs 25,200 gallons</li><li>- Standing up ICS earlier would have been helpful in standing up a robust response</li></ul>
Lead Coordinator Contact Information:	Scott Smith <a href="mailto:Scott.Smith@DEQ.Oregon.Gov">Scott.Smith@DEQ.Oregon.Gov</a> Kevin Chan <a href="mailto:Kevin.Chan@DEQ.Oregon.Gov">Kevin.Chan@DEQ.Oregon.Gov</a>







ICS

FOSC USCG

SOSC Oregon DEQ

SOSC Washington DOE

RPIC CPBR





Other Agencies  
Port of Columbia County  
NOAA  
DSL

Contractors  
US Ecology  
Global Partners











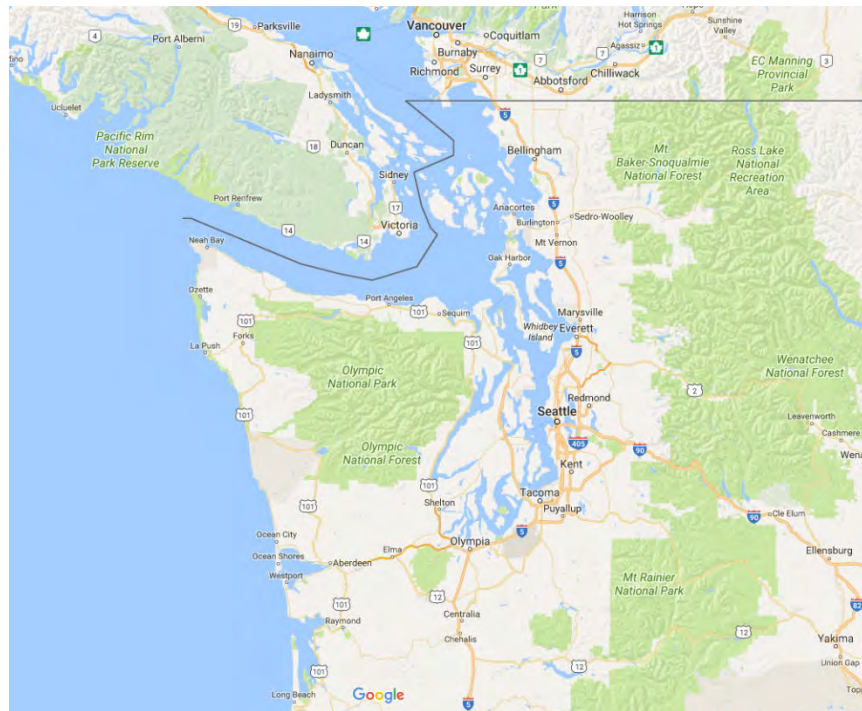






# Sector Puget Sound

Captain Mark McDonnell, Sector Commander



**Dec 2023 – Feb 2024**

NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
188	0 Surface Washing Agents 0 In-Situ Burns 0 Dispersants	4	0



# P/C ENCOUNTER



<b>RRT Activation:</b>	No
<b>Type and amount of product:</b>	Diesel Max Potential: 180 gallons
<b>Cause:</b>	Water Ingress / Sinking
<b>Date of incident:</b>	November 2023
<b>Location:</b>	Steilacoom, WA
<b>Key operational activities:</b>	<ul style="list-style-type: none"><li>- 27' cabin cruiser</li><li>- Removed 70 gallons of fuel</li><li>- Shoreside removal</li></ul>





# Community Coordination



Description	Dates
RRT 10 Meeting	March 14
Tribal Subcommittee	Multiple Dates
GRP Subcommittee and BMP Subgroup	Multiple Dates
Derelict Vessels in Tacoma Workgroup	Monthly
Thurston County LEPC Meeting	Quarterly
Clallam County LEPC Meeting	Quarterly
King County LEPC	Quarterly
Skagit County LEPC Meeting	Quarterly

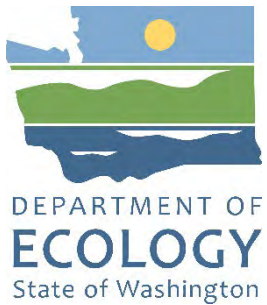


# Exercises and Training



Description	Dates
UAV Training (USCG)	Ongoing / March 5-8
Oil Spill Response for Cultural Resource Professionals	March 25-28
WCD – WSMC	April 11
WCD – US Navy	July 31
Harbor Patrols	Ongoing





# Ecology Spills Program

## March NW Area Committee Update

# Incident Totals

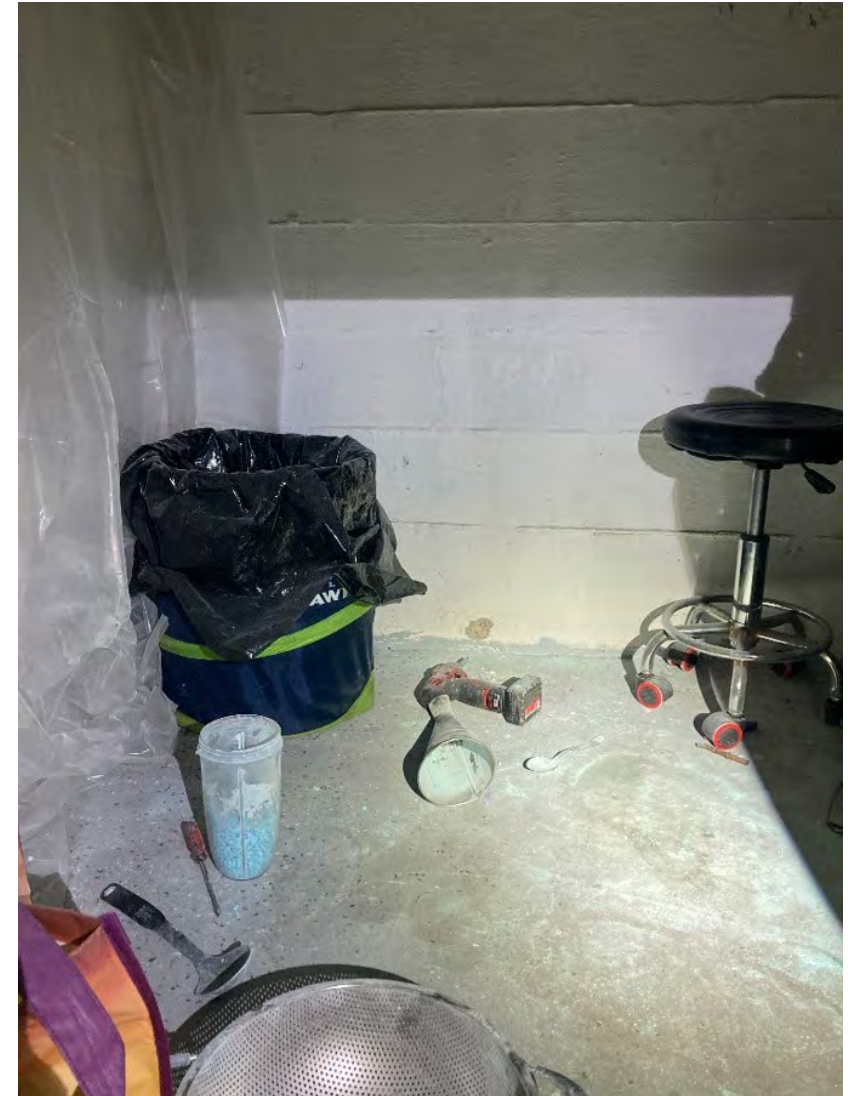
October 1, 2023 – February 29, 2024

	Inland	Sector Puget Sound	Sector Columbia River
<b>Counties</b>	Adams, Asotin, Benton, Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lewis, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman, Yakima (21)	Clallam, Island, Jefferson, King, Kitsap, Mason, Pierce, San Juan, Skagit, Snohomish, Thurston, Whatcom (12)	Clark, Cowlitz, Grays Harbor, Pacific, Skamania, Wahkiakum (6)
<b>Incidents</b>	226	1,400	141
<b>Field Reponses</b>	74	214	32
<b>Drug Labs</b>	7	4	0
<b>Non-Oil Incidents*</b>	63	372	38
<b>Vessel Incidents</b>	2	26	10
<b>Oil Incidents</b>	157	1,062	103



# Sanson Ave. Fentanyl Manufacturing

Spokane  
Nov. 30, 2023

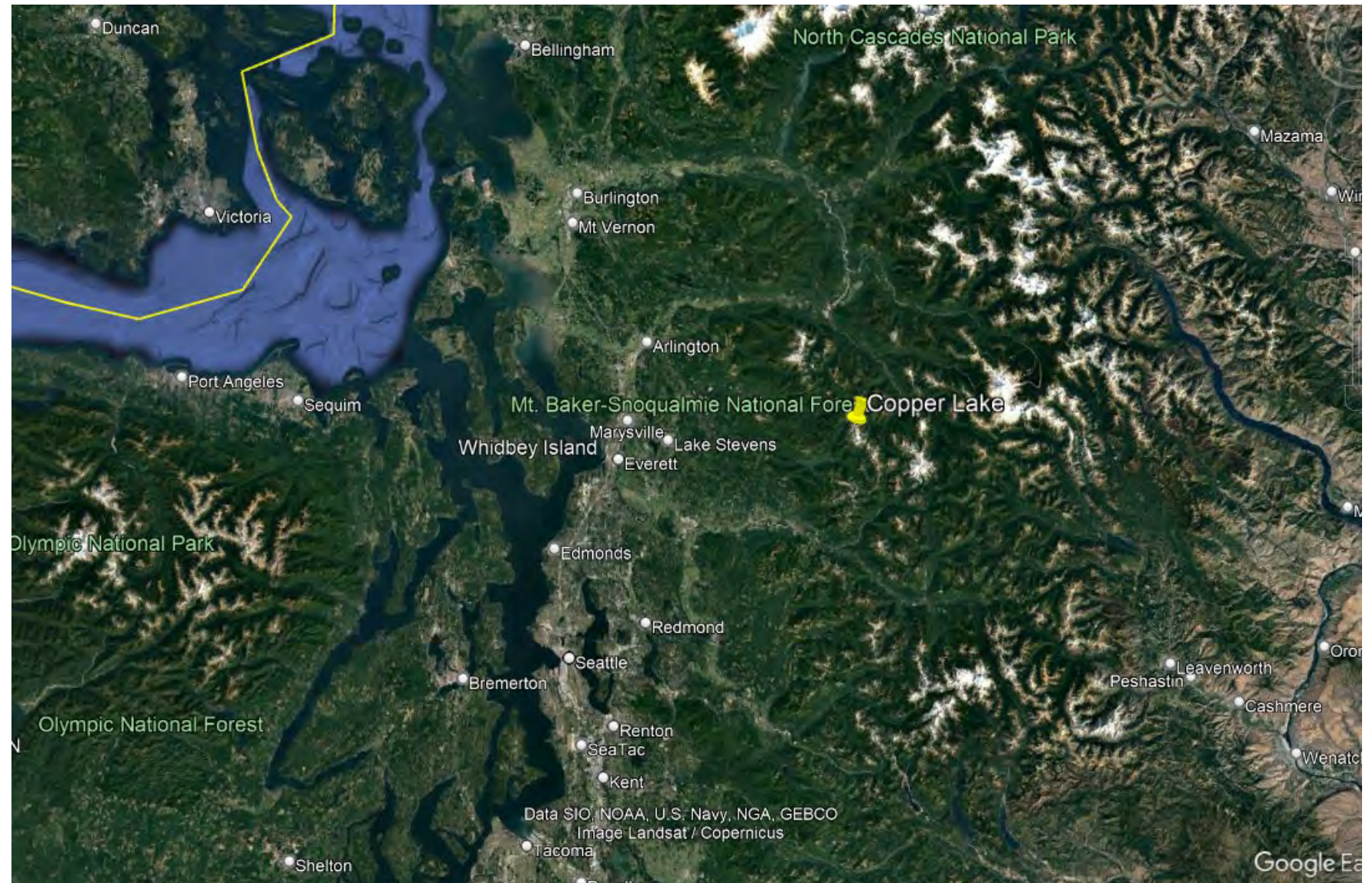




# Copper Lake Helo Crash

Mount Baker  
Nat. Forest

Oct. 19, 2023













Questions?



# Olympic Pipeline Gasoline Spill, Conway, WA

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March 13, 2024

NW Area Committee & SPS Meetings



- **Presentation**

- Timeline, Incident description
- Response operations

- **Q&A**



# Acknowledgments

## Spill response is a group effort

### Public entities

National Oceanic and Atmospheric Administration (NOAA); US Fish & Wildlife; Environmental Protection Agency; Washington Department of Fish & Wildlife; Dike District 3; Washington Department of Ecology; Skagit County; Conway Fire Department; Skagit County Department of Emergency Management; Skagit County Public Health; Conway School District

### Tribal partners

Swinomish Indian Tribal Community; Lummi Nation; Nooksack Indian Tribe; Muckleshoot Indian Tribe; Samish Indian Nation; Sauk-Suiattle Indian Tribe; Stillaguamish Tribe of Indians; Suquamish Tribe; Tulalip Tribes; Upper Skagit Indian Tribe



# Unified Command

## **Monica Tonel**

Federal On-Scene Coordinator  
Environmental Protection Agency

## **David Byers**

State On-Scene Coordinator  
Dept of Ecology

## **Joan Cromley**

Local On-Scene Coordinator  
Skagit Dept of Emergency Management

## **Keri Cleary**

Tribal On-Scene Coordinator  
Swinomish Indian Tribal Community

## **Terry Zimmerman**

Responsible Party Incident Commander  
bp/Olympic Pipeline Company

## **Scott Neuhauser**

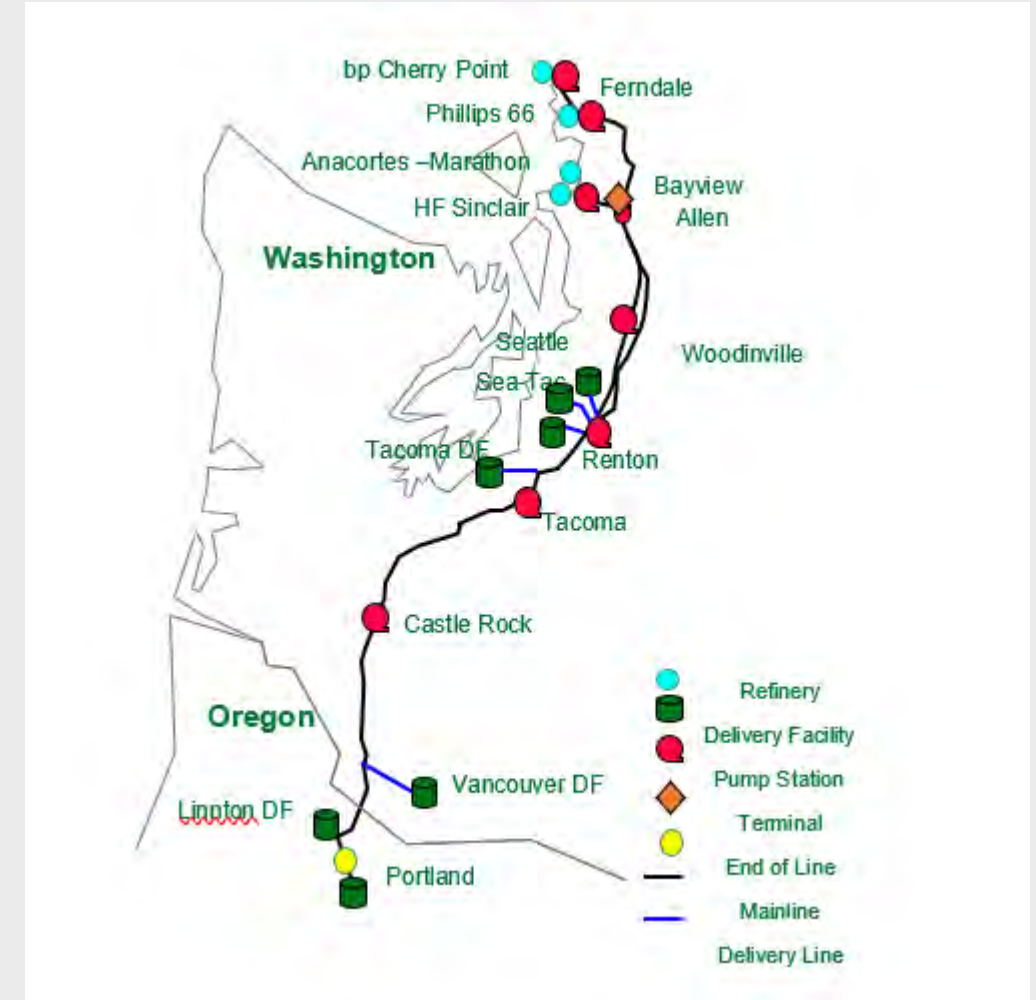
Deputy Incident Commander  
bp





# Olympic Pipe Line Company

- **400-mile pipeline system**, laid in 299-mile pipeline corridor
- Transports **gasoline, diesel and jet fuel** from NW refineries to markets in Seattle, Tacoma, Portland
- **Joint venture company**, operated by bp Pipelines North America, Inc. (bp)





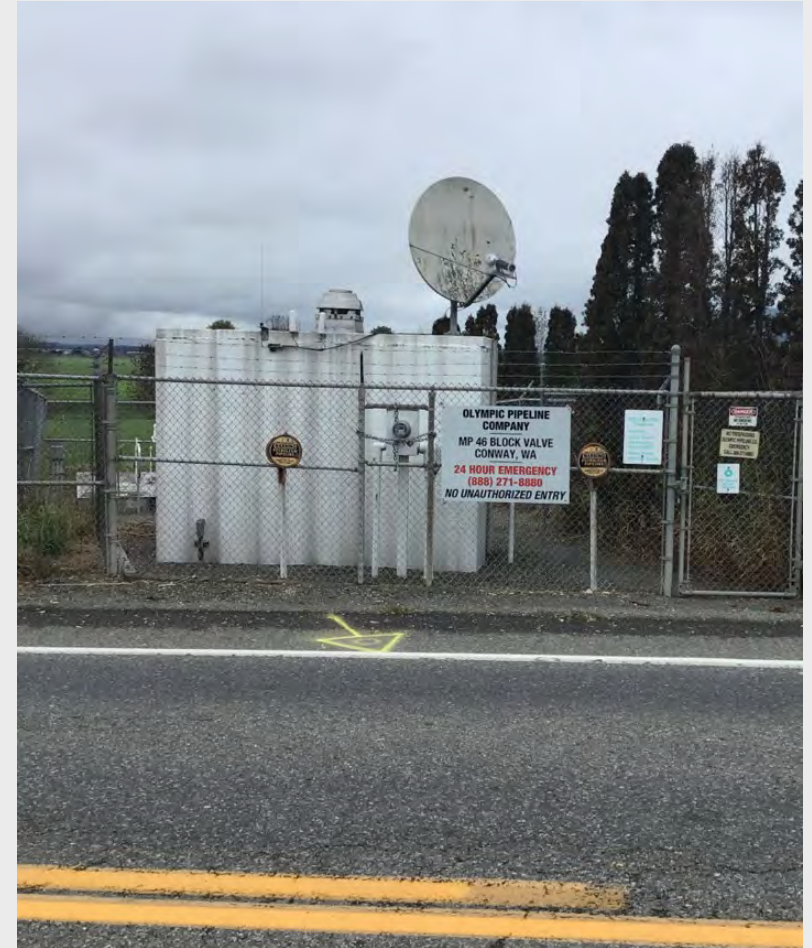
# Incident description



- **Discharge of gasoline was reported early morning, Dec. 10, 2023**
  - Location: MP 46, block valve site in Conway, along SR 534
- **The discharge was secured Sunday evening**
- **Approximately 21,168 gallons of gasoline were determined to have been discharged**
  - 5,297 remained inside the vault and were recovered
  - Approximately 15,871 gallons entered the environment
  - 8,324 gallons have been recovered

# Incident description

- The vault is situated at the top of a **small hill above Hill Ditch**
- The vault was **partially filled with stormwater** at the time of the discharge
- The **gasoline/stormwater mixture flowed out of the vault**, through the field, toward a forested streambank along Hill Ditch
- **Notifications** were made to agencies, response was activated, and resources were deployed to the site
- **Containment and absorbent boom** set in Hill Ditch according to pre-identified Geographic Response Plans and Olympics' Oil Spill Response Plan
- **Vacuum truck** arrived and recovered gasoline from the vault





# Initial response and cleanup actions

- **Deployed containment boom** at strategic locations in Hill Ditch between the spill site and the Skagit River floodgate
- Placed boom across the **inlets to the Fisher Slough Nature Conservancy Preserve** as a precautionary measure
- **Deployed surface skimmers, vac trucks and Sorbent boom** along Hill Ditch north and south of **SR 534** to recover any gasoline floating on the water
- Shoreline assessment teams **surveyed 4.5 miles of shoreline** along Hill Ditch



# Cleanup and response actions so far

- **Excavation of impacted soils**
- **Removed 8,815 cubic yards of impacted soil through March 11, 2024.**





# Cleanup and response actions so far



- **Removed 289 trees from the forested area along the east bank upstream of SR 534**

# Protecting Hill Ditch during cleanup



- **Fish exclusion** – Prior to installing sheet wall, nets were placed in Hill Ditch north of the SR 534 bridge to exclude fish from the area during installation and removal of the sheet pile wall.
- **Sediment control** – Silt curtains were placed in the ditch to help prevent silt from flowing downstream during wall installation and soil excavation.
- **Boom** was deployed at the SR 534 bridge and other downstream locations to catch any liberated gasoline pockets.



# Clean up actions

- Installed a temporary sheet pile wall/coffer dam along ~220' of the eastern bank of Hill Ditch to protect the creek.
- Removal of remaining impacted soil and sediment on site is ongoing.
- Replacement of removed soil and reconstruction of the streambank is ongoing.





# Clean up actions – Water Management

- Installed six 15' deep dewatering wells to control ground water during excavation
- Installed a water treatment system to collect, treat and release surface and ground water from the site
- Has the capability to operate at 400gpm
- We have 204k gallons of off-site storage capacity in Frac tanks available to mitigate heavy rain events
- System has treated and released 746,608 gallons of water through March 9, 2024



# Environmental response

- **Protecting human health and the environment** has been a key incident objective of the spill response since the incident occurred.
- Unified Command has been sampling air quality, water quality, and soils and sediment since the beginning of the incident.
- Environmental impacts **have mostly been limited to the immediate area of the spill.**



(Shoreline assessment team in Hill Ditch)



# Air quality



(Real-time air monitor at Conway School.)

**Testing of community air samples for gasoline-related pollutants have shown no concerns for public health.**



# Water quality

## **We routinely test water to ensure:**

- It's safe for wildlife, people, pets, and livestock.
- Boom strategies remain effective.

## **Sampling has confirmed the success of efforts to contain and clean up the gasoline:**

- Water samples from Hill Ditch temporarily showed elevated levels of gasoline-related pollutants in some locations.
- Continued sampling of Hill Ditch has shown no levels concerning to human health and safety since Dec. 22, 2023.



(Water sampling in Hill Ditch)

# Water quality

- **Hundreds of samples** have been collected in Hill Ditch, Fisher Slough, Skagit River, and Skagit Bay.
- **No gasoline has traveled** past the Hill Ditch floodgate into the Skagit River.



(Surface water sampling locations)



# Water quality

- Domestic water well sampling results have shown no indication that the spill impacted these wells.
- Sample results of tissue collected in December 2023 from crab and bivalve shellfish in Skagit Bay are expected in mid-March 2024.



(Routine surface water sampling locations)

# Shoreline monitoring

## Shoreline Cleanup and Assessment Technique (SCAT) teams:

- Examined both shorelines of Hill Ditch for gasoline impacts.
- Surveyed surface water and assessed vegetation and debris that might have trapped gasoline.
- Went out by boat into Fisher Slough and the Skagit River to look for gasoline impacts.

## SCAT team findings:

- Teams determined that no gasoline traveled past the Hill Ditch floodgate into the Skagit River.
- Conducted final shoreline survey at Divisions B-E; determined No Oil Observed and/or No Further Treatment. Met approved SCAT Plan endpoints, March 4, 2024.



(SCAT team in Hill Ditch)





# Wildlife



(Still image of mallard ducks from wildlife camera at Fisher Slough, Feb. 5, 2024.)

- Wildlife response led by **Washington Department of Fish and Wildlife**
- Support from **Focus Wildlife** (state-certified Wildlife Response Service Provider, based in Anacortes)
- Capabilities include wildlife monitoring, deterrence, rescue, and rehabilitation
- Responders conduct wildlife field observations and respond to any wildlife reports
- Daily field surveys along Hill Ditch and intermittent surveys along Fisher Slough

# Emergency Response Endpoints

- No persistent rainbow sheen on Hill Ditch
- Removal of contaminated soil to level as dictated by any of the following limiting parameters:
  - No soil VOC readings >25ppm, or
  - Excavation depth risks compromise of aquifer, or
  - Excavation depth poses safety threat to operations
- Meet Approved SCAT Plan Endpoints in Divisions B-E after Sheet Pile Installation (Met on March 4, 2024)
- Removal of sheet pile



(SCAT team in Hill Ditch)





# Some of the challenges

- Weather – Snow and flooding
- Aquatic Invasive Species
- Resource restrictions - Hazmat certified dump truck availability





# Current Status and Outlook

- Planned to meet soil excavation end-points this week
- ER next steps
  - Shoreline area inside coffer dam to be backfilled and stabilized prior to removal of coffer dam
  - Cofferdam removal





Questions?

# Thank you

**More information and follow-up  
questions:**

[liaison@ecy.wa.gov](mailto:liaison@ecy.wa.gov)

[ecology.wa.gov/OlympicPipelineSpill](http://ecology.wa.gov/OlympicPipelineSpill)





# 2023 Drill Survey

- Analysis
- Solutions
- Actions
- Mitigations
- Responsibility



# Survey Methodology

- **What:** Seven open-ended survey questions
- **Who:** Northwest regional spill response community
- **When:** December 07, 2023 (annual planning summit)
- **Where:** Seattle WA, and online via zoom
- **Why:** to gather feedback on drill effectiveness, training needs, and fresh ideas for 2024.





Q1

# Rate your level of comfort in participating in hybrid drills / responses.

0 = fish out of water  
5 = fish in water

2 pretty awful or (S)

3 (F)

3-4 we do them a lot but tech changes often and new functions are available (S)

4 but don't feel they are very effective for wildlife purposes - I

(I) 0 - never needed

3 (S)

3 (F)

1 (F) however we should drill more with a hybrid capacity to build capacity & provide more opportunities to engage when in person isn't feasible

4 (S) \* depends on the drill & how it's set up. Sometimes remote participants get isolated & forgotten, but if they are included & things it works well

and for people participating from not attending

Biggie Fish (I)

3 (T)

can be complicated for some people. Some may not have resources necessary to participate - BUT, is the way of the future & necessary to train

intimidating

4 (S) If Teams are pre-developed

1 (F)

0 (F)

3 comfortable, but not as beneficial as developing relationships (W&SP)

4 (I)

I think for certain roles has been extremely effective

4 (F) - Haven't done drill but fine with virtual

5 (F) - Alaska RRT has great resources for putting into practice they'd be happy to share

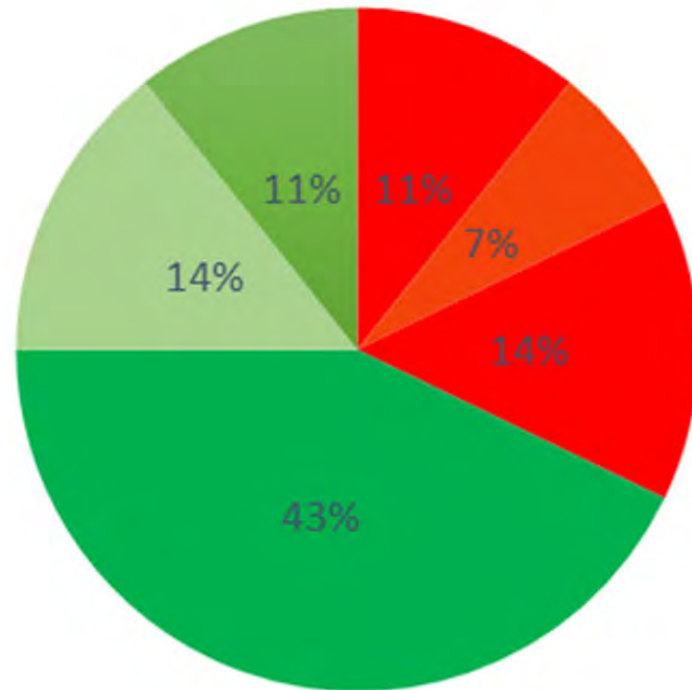
3+ but success depends on access to platforms & consistency in rules of engagement (F)

2 - every drill has a seemingly different hybrid platform the learning curve & adaptation you're in person. It's so much more difficult to keep the virtual folks engaged using hybrid drills. (S)

2 (T)

3 (F) But strongly prefer all in-person (online misses a lot)

## Comfort level with Hybrid Drills



■ 0 (zero) ■ 1 ■ 2 ■ 3 ■ 4 ■ 5



# Proposed solutions, actions, and mitigations

- Continue to focus on hybrid response capabilities
- Capture and compile lessons learned and best practices
- Recommend pre-drill training and platform familiarization
- April 3<sup>rd</sup> JIC and Liaison workshop – special focus on hybrid
-

Q2

What would you like to see tested in 2024 drills? (ex: dispersant & ISB decision making, community air monitoring, marine mammals, fisheries, closures, volunteers, non-floating oils, oiled wildlife, NRDA, RRT activation, etc.)

- Whale deterrence (F) + 1 (F)

Practice the CAMP with state/local fed responders

- NRDA

(+) scenario for non wildlife/oil spill

- Activation of a Public Health Unit (or scenario w/ significant public health threats) (F)

(Yes Phase 2) 72 hour start drill (S)

- Public health impacts & evacuation thresholds/notifications (F)

open coast spill (S)

(F) Marine Mammals in play X2 (F)

RRT activation

- US Army Corps - Participation in drills to review "Safety Concerns"

(I) Drills beyond day 1, exercise days 2-5

complex incidents (like Pacific Producer) (T)

multiagency handoff/multiple jurisdictions

- Booming strategies. Actually put in the boom.

Wildlife should Always be part of WCDs - F

- Yes to "Community Air Monitoring" test w/in a drill.

1-2 w/ RRT voting

- Oiled wildlife (I)

(I) multi state drills to see how along borders

Inland + coastal combo drill

- non-floating oils (S), challenging weather conditions (S)

Killer whale deterrence (S) X2 (F)

Exercise the Community Air Monitoring plans w/ Federal + state partners

NRDA & Mammals (S)

\* Exercise on outer coast in both sectors (Queets River area) (F)

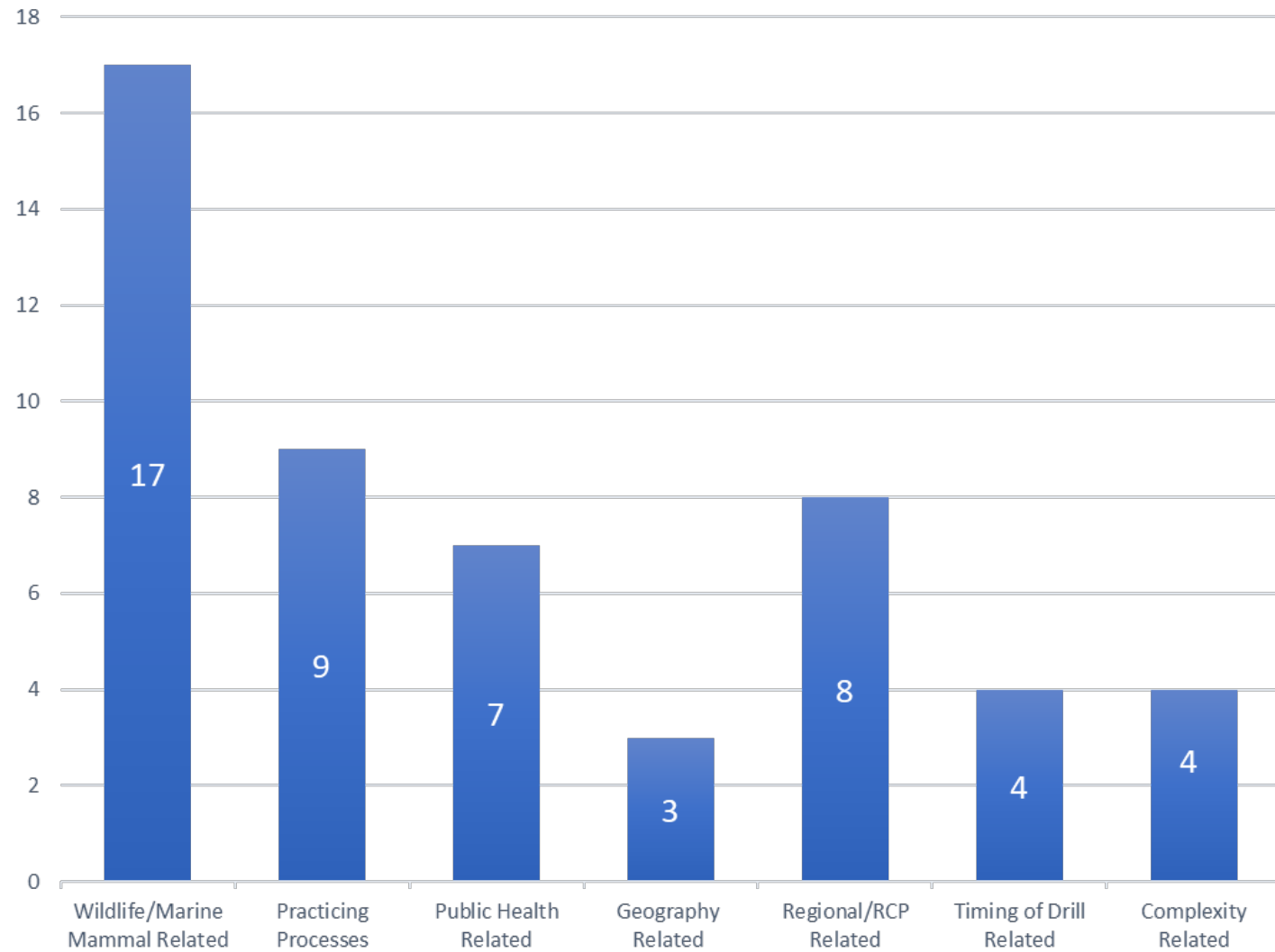
NRDA!! (T)

Newly updated JIC/Liaison MANUALS (E)

wildlife only drill including man/serw (w/serw) 72 hour start time (w/serw)



## Overall Topic Suggestion Breakdown for 2024 Drills



# Proposed solutions, action, and mitigations

- Work with wildlife response agencies and service providers in drill design and pre-drill training.
- Coordinate between NRDA agencies and industry to identify opportunity.
- Work with public health agencies in drill design and pre-drill training.
- Coordinate with RRT to determine process exercise needs.
- Continue to work on ICS process improvement during exercises.
-

Q3

What type of  
training would you  
want before next drill?

0 (I) Section specific / Role specific

Tribal Engagement

more advanced ICS training (+)

EU (I)  
IC/UC

IAP training when used (S)

more specific impacts oil types  
on marine mammals (C)

res 234, 215 and 204 (S)

- Training on what an "optimal" situation behind ONLINE looks like. ← Alaska RET would be a good resource for this. Reach out!
- Training on the best practices for processes to run a hybrid ICP (S)

Science of oil spills (CF)  
ESA compliance

resources at risk  
waste management plans  
wildlife plans

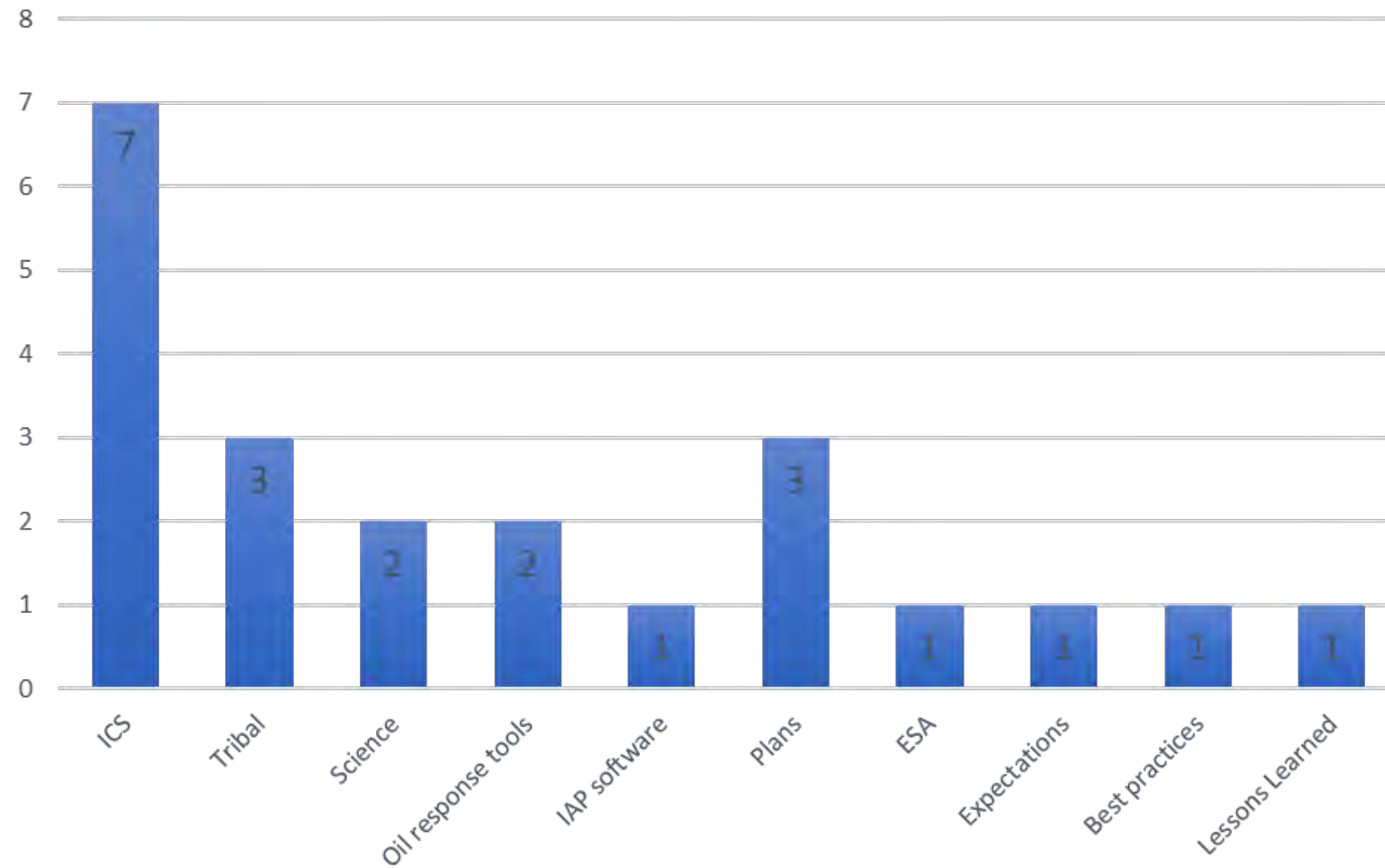
- State specific issues / topics  
"what does good look like" (F)

- ERMA as a COP (F)  
- SSC 101 (F)

tribal engagement (all WC Branch in particular) (new)  
incorporating lessons learned into drill planning (WASP)



## What type of training would you want before next drill?



# Proposed solutions, actions, and mitigations

- ICS Training
- NOAA Science of Oil Spills
- NOAA Shoreline Cleanup Assessment Techniques
- Clean Rivers Coop ICS training
- FRP/VRP/ACP/RRT/Tribal Plan Training
- JIC and Liaison Training
- NWOSCC

Q4

What do you find most beneficial from participating in drills?

Networking w/ other agencies/industry (S)

Networking & practicing communication (F)

(F) Networking and meeting the people you would work with in a response

Networking, testing plans (F)

Networking/new contacts (T)

Networking (S)

Relationship building, getting better understanding of what responses look like, learning opportunity in general (T)

finding holes in the plan (S)

Networking - building relationships (F) before an emergency response happens

Testing plans, "budding" training, "teaching others, teaching skills community at tribal days/events" (T)

(S) Networking with fellow responders & decision makers - Testing response plans & capability - Testing people & training effectiveness

(I) Learning from Experienced Responders and Implementing in my team

Learning how to respond before a real event - networking, role practice, testing plans (F)

Finding gaps/lessons learned in advance of an incident (WESP)

(S) Networking and getting more familiar with terms and plans

Relationships - knowing people ahead of time & learning! (F)

Networking (S) - Relationship building (F)

Relation building (S)  
Practicing skill/plans (S)

Relationships - I introduce to my reality.

Networking / Planning (F)

In-person networking (F)

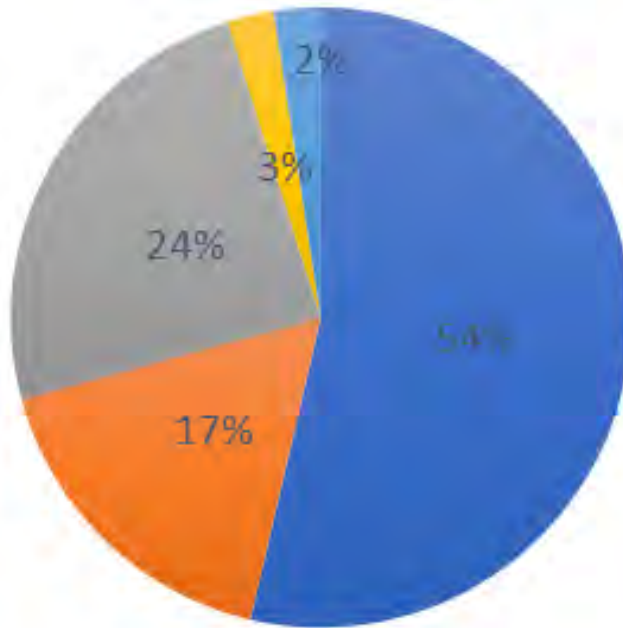
Networking (T)

Familiarity with terms, forms, roles (T)

Learning new techniques from other people, getting practice in a high-stress environment



## Biggest benefit from participating in drills?



- Networking/Relationship Building
- Testing Plan
- Training Opportunities
- Tribal integration
- Other

# Proposed solutions, actions, and mitigations

- Continue in-person/hybrid drills
- Develop in-person training opportunities
  - ICS Positions
  - ICS Processes
  - Response tools
  - Plan familiarization
- Expand exercise/training participation
-

Q5

# What do you find to be ineffective at drills?

Not having a structured/planned time to actually do training for players who aren't fully qualified (S)

(F) Unrealistic timelines + (I)

Beyond first 24 hrs (F)

The oil always going exactly where the trajectory says it will. Unrealistically fast pace of team deployment (S)

Lack of tribal engagement/understanding from many parties how Tribes are integrated in Response (T)

SCAT gets left out as it's not a good fit during the first day timeline. (S)

Unrealistic timelines/pace - suggest multi day drill to build or picking up where you left off in next industry drill

Not using actionable data & compressed timelines with excessive rationalization (F)

Wildlife response is tested at a very superficial level. 24 hr timeline doesn't allow for more complex engagement and opportunities to really measure preparedness (WSP)

Little participation by EPA (S)

(S) Worse getting past the first 24-hours. Need making it to Recovery phase

Unrealistic scenario & timeline (P)

Don't get the marine mammal component when the drills are freshwater focused, but this is where there is a lot of confusion (F)

Only first day tested. (S)

(S) Unrealistic Timelines

(S) Lack of Tribal Engagement often Tribes from lack of invitation or training opportunities

Always starting on day 1 (I)  
E (yes - let's get beyond this)  
yes!

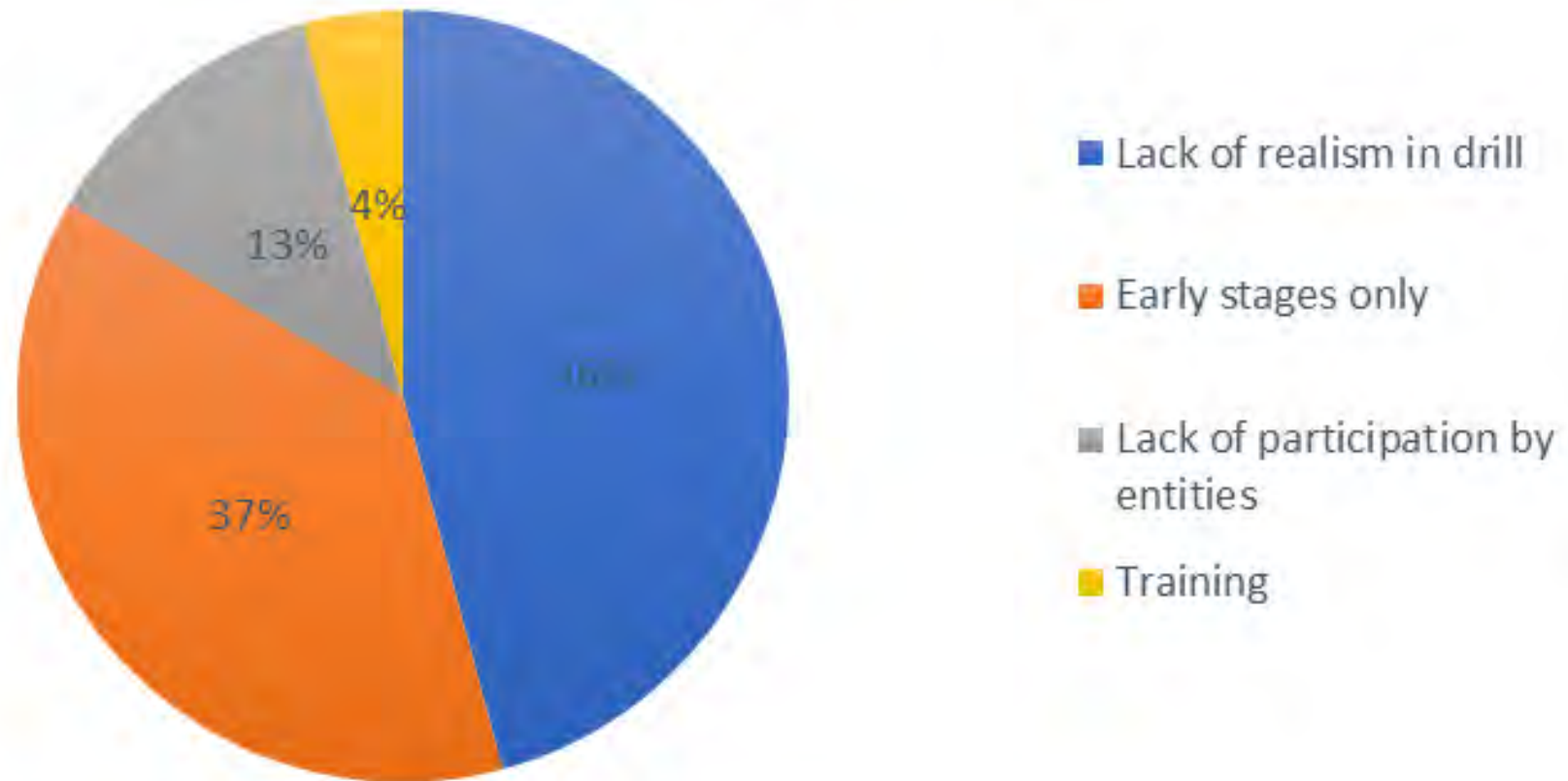
only having less than 24 hrs (F)

tribal engagement during the drill, often seems like many missed learning opportunities (T)

Drilling early stages only (F)



## What is ineffective at drills?



# Proposed solutions, actions, and mitigations

- Bring subject matter experts into drill design process
- Consider 2-3 day exercises
- Use real time measurements when feasible
  - Weather
  - Tides and currents
  - Trajectories
- Encourage additional participation
-

Q6

How often should RRT  
participate in WCD drill in both  
coastal and inland areas?

As many times as possible (V)

Every drill.

Every Drill - I

At least a few times a year (T)

As much as possible  
to minus possible (T)

1-2 a year (T)

3-4 times a year (S)

Couple (1-2) times per year (F)

Whenever RRT decisions or assets are needed for the  
spill scenario (S)

1-2 a year (S) mostly to exercise their role in the response.

1-2 Per Year, Per ACP or region (I)

As many as possible

A couple times a year (F)

about half the time, or maybe as often as possible.  
A lot of people only go to one or two drills each year  
so the RRT only gets activated once in a while, some  
people might keep missing these drills  
and not get practice w/ RRT. (S)

(I) often as time Services are  
available to provide support to the  
response

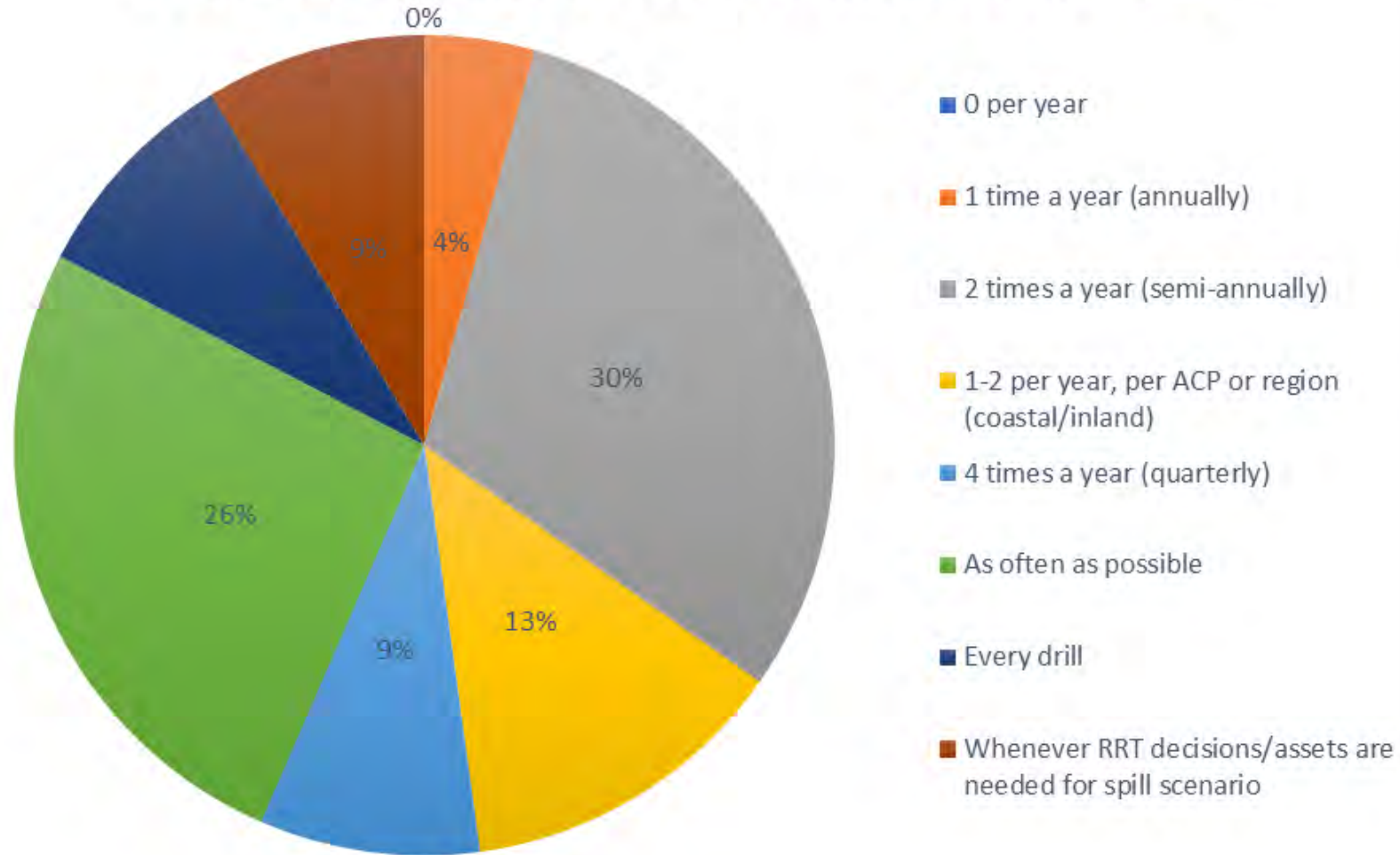
• twice a year - 1 for coastal +  
1 for inland (I)

Yes! (I) But at  
min. 1x/yr/area

2-3 times per year - especially inland where other agency personnel are  
not as strong as in the coast (near)



## Desired Frequency for RRT Participation in Drills



# Proposed solutions, action, and mitigations

- Incorporate RRT notifications into each WCD drill
  - Notification
  - Conference calls
- Work with RRT and industry to identify additional opportunities
-

Q7

What is your  
greatest barrier to participating  
in drills?

Workload (F)

Time/capacity (F) X2 (F)

Time/Budget/shift (S) X2 (F)

TIME & \$\$\$ (S)

(VC) Funding + time

Time/Finely (T)

Invite - I

Time/Workload (S)

Lack of staff (F) + I (T)

Time/capacity (I) + I (T)

Workload → lack of time (S)

Time + \$\$\$ (S)

advance invitations/notice

Time/capacity (F)

Lack of funding to attend (F)

Being invited (I)

(T) time, money, awareness of drill  
~~that~~ responsible party may not  
recognize that duties should be  
included.

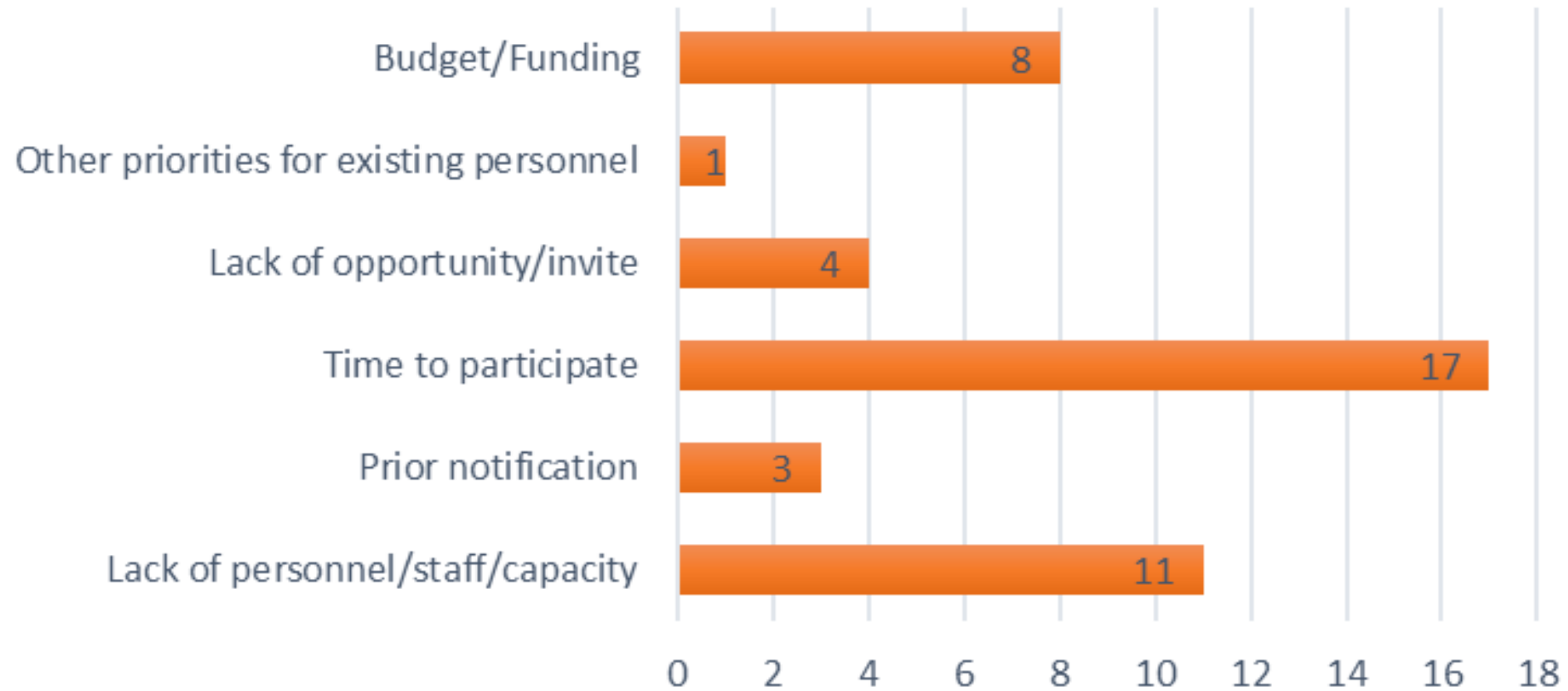
BALBED MRE (I)

advance invitations/notice fixed

Time (F)



## Barriers to Drill Participation



# Proposed solutions, action, and mitigations

- Hybrid drills to offer more accessibility
- Intentional distribution of drills over space and time
- Early scheduling of drills (NACES)
- Encourage robust and timely invitation to participate
- Tribal travel stipend
-

# Responsibility

- Federal Agencies
- State Agencies
- Industry
- OSROs
- Tribal Nations
- Local EMDs
- SMT
- QIs



# 2024 WCD Drill Schedule

- April: WSMC (SPS), Union Pacific (EPA)
- July: Navy (SPS)
- September: Phillips 66 (SPS)
- October: Tacoma Rail (SPS), Tidewater (SCR)
- November: HF Sinclair (SPS), Tesoro (SCR)
- TBD: Alon (SPS), REG (SCR)



NOAA | Office of Response and Restoration

# ***NOAA Oil Spill Modeling Tools***

Sector Puget Sound Area Committee  
& Northwest Area Committee Meeting, March 13

Amy MacFadyen

Response Support Group Supervisor

Emergency Response Division





# Office of Response and Restoration

Business Services  
Group

Marine Debris  
Division

Disaster  
Preparedness  
Program

Emergency  
Response  
Division

Assessment &  
Restoration  
Division

Response  
Operations  
Branch

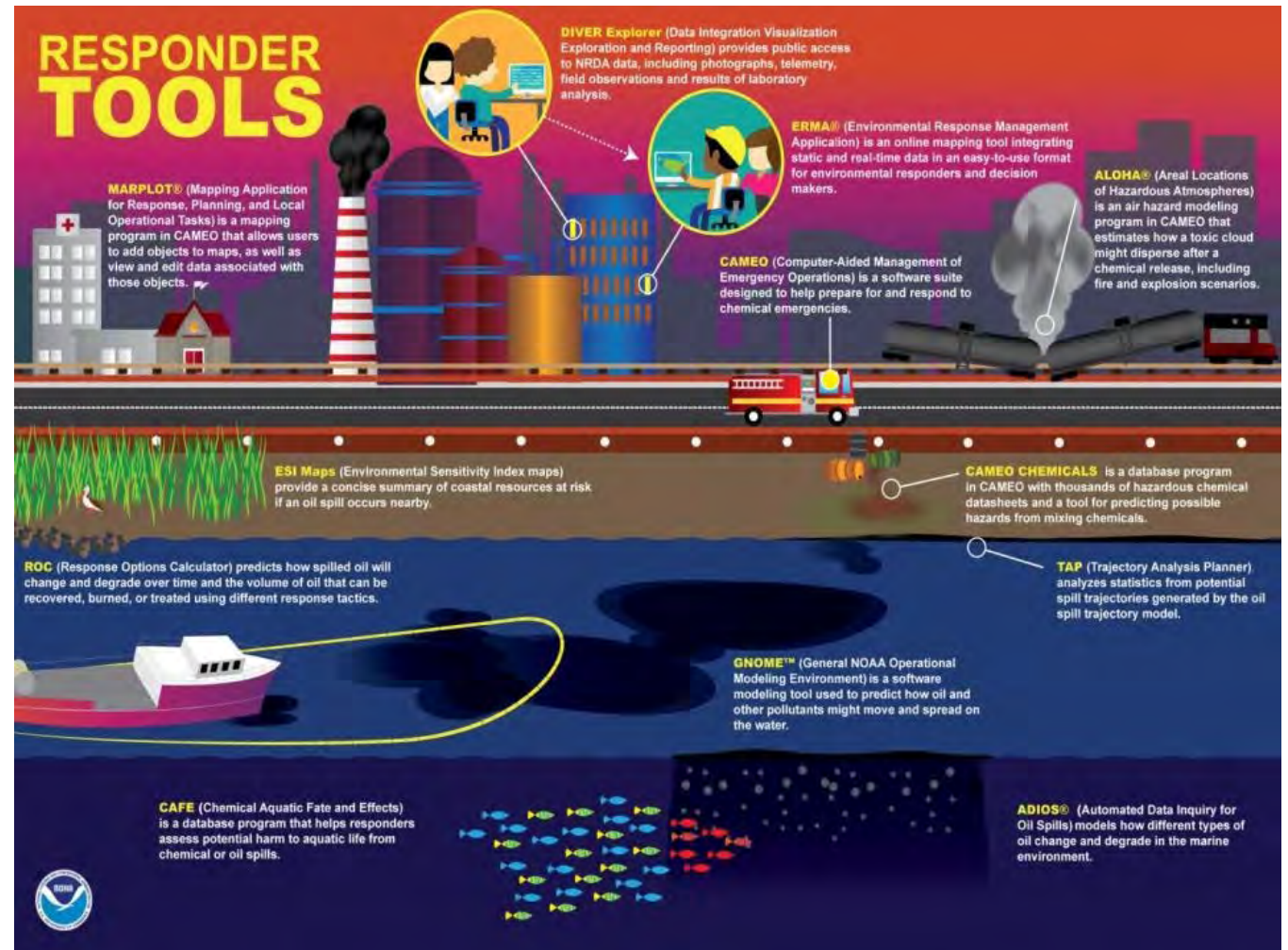
Technical Science  
and Services  
Branch





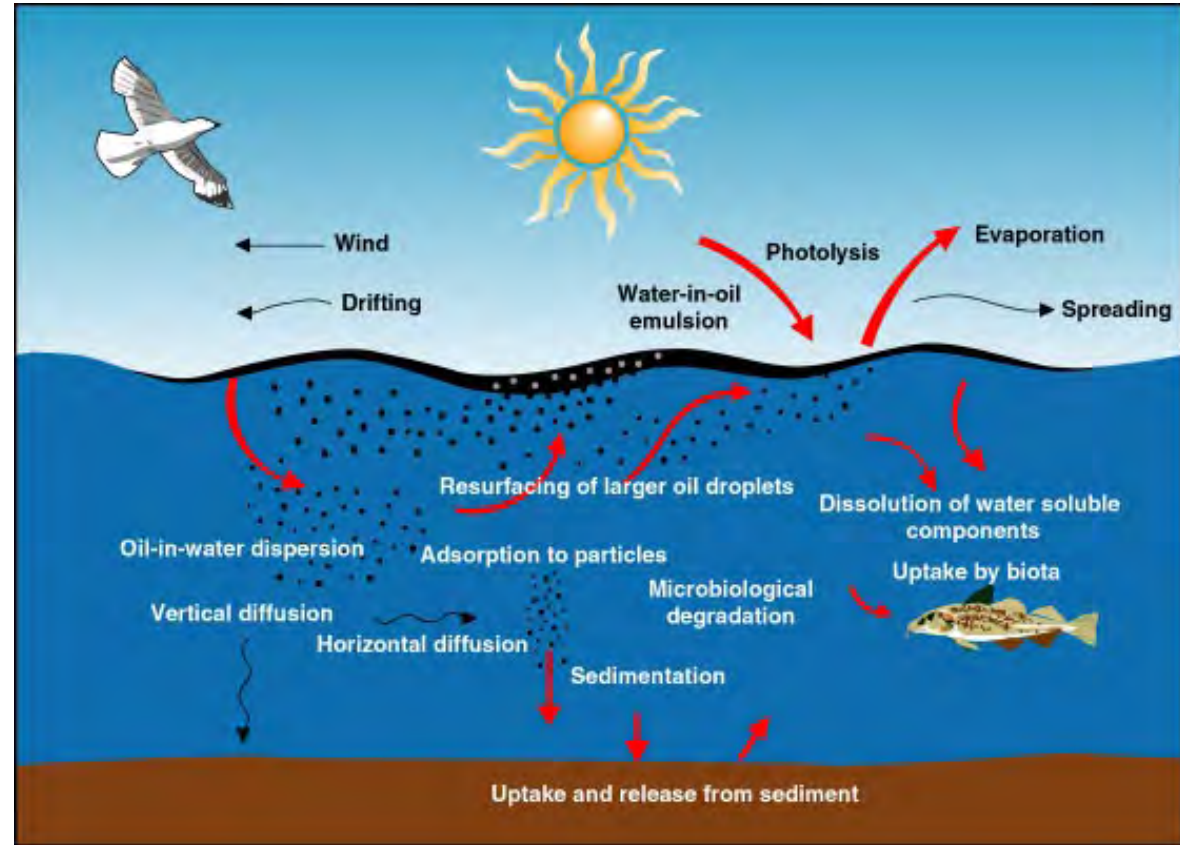
# Technical Science & Services Branch Products & Services

- Based (mostly) in Seattle, we are a team of oceanographers, chemists, biologists, physical scientists, and developers
- Provide expertise to support SSC in oil and chemical spill response (or other regional concerns)
  - Predicting where pollutants released into the environment (oil/chemical) are transported
  - Overflight observations and mapping
  - Identifying resources at risk
  - Recommending appropriate clean-up method



# What happens when oil is spilled?

- Spreading
- Transport
  - Wind drift
  - 3D ocean currents
  - Turbulent mixing/spreading
- Weathering of oil
  - Evaporation
  - Dispersion
  - Dissolution
  - Emulsification
  - Sediment interactions
  - Photo oxidation
  - Biodegradation



# Spill Modeling Applications

## Planning and Drills



- Where might the oil end up?
- What's the response time?

## Emergency Response



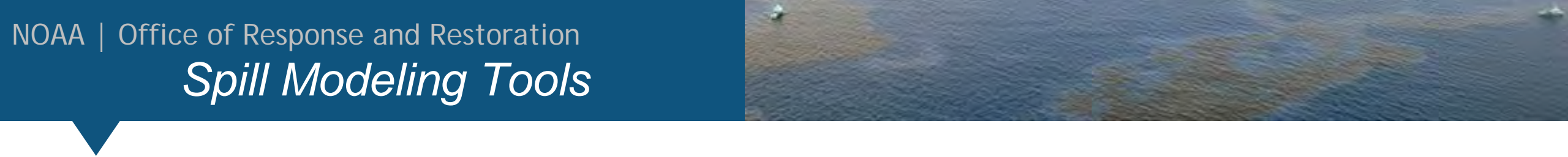
- Where is the bulk of the oil going to go?
- When will it get there?

## Damage Assessment



- What concentrations are organisms exposed to and for how long?



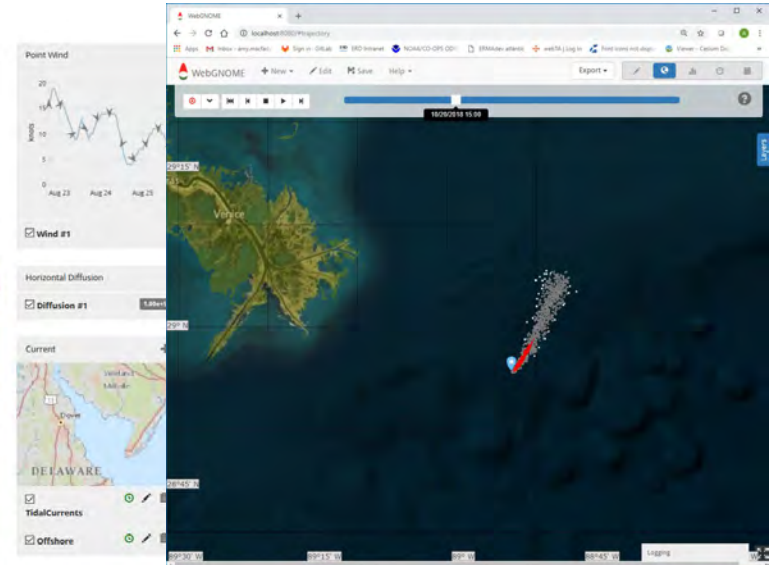
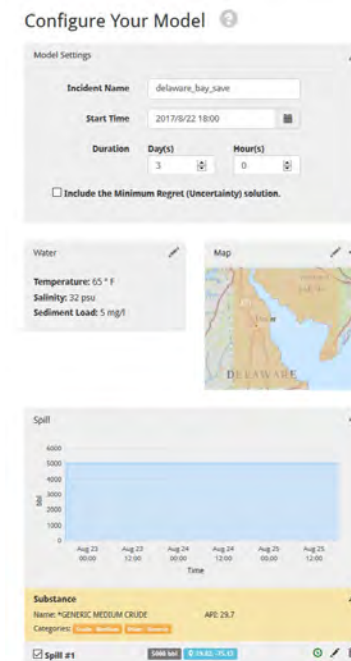
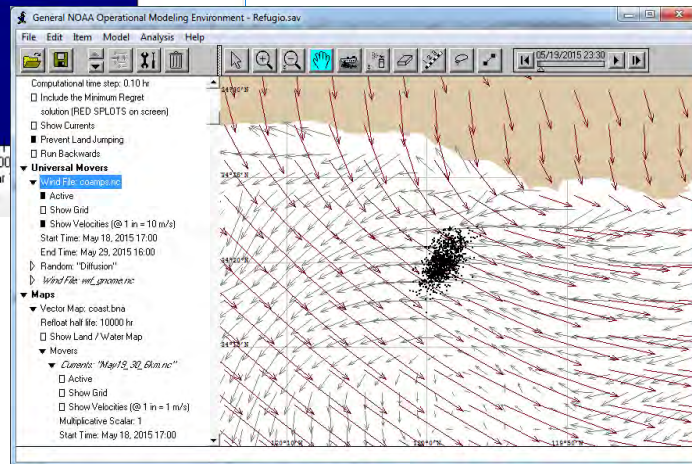
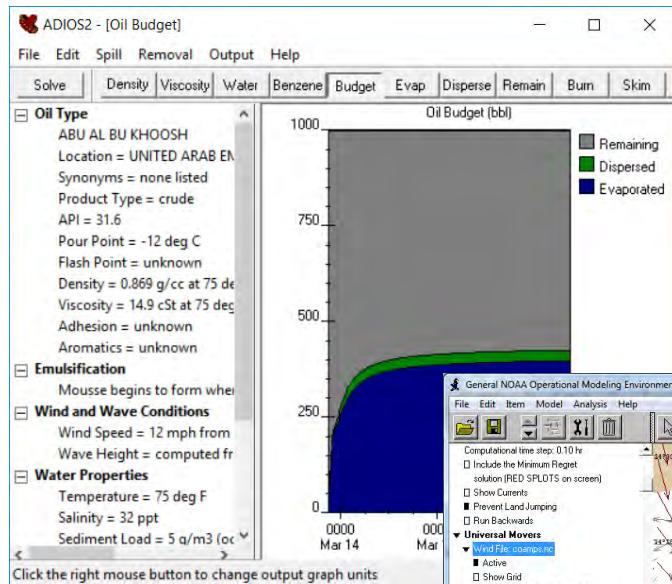


# NOAA Modeling Tools

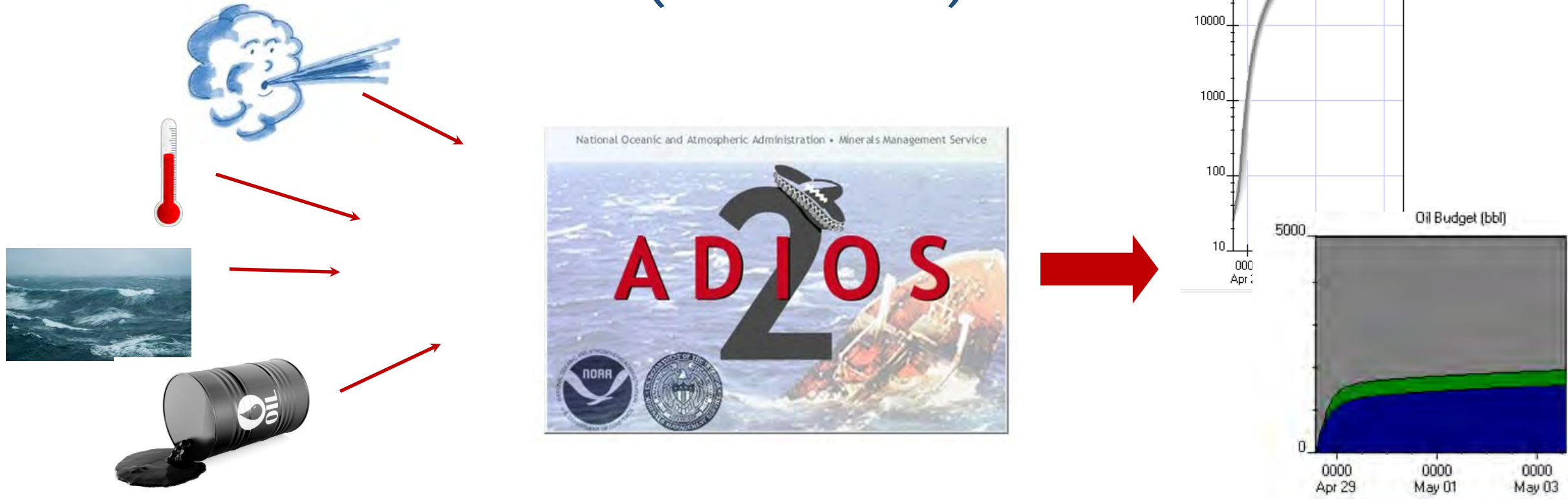
Past



Future



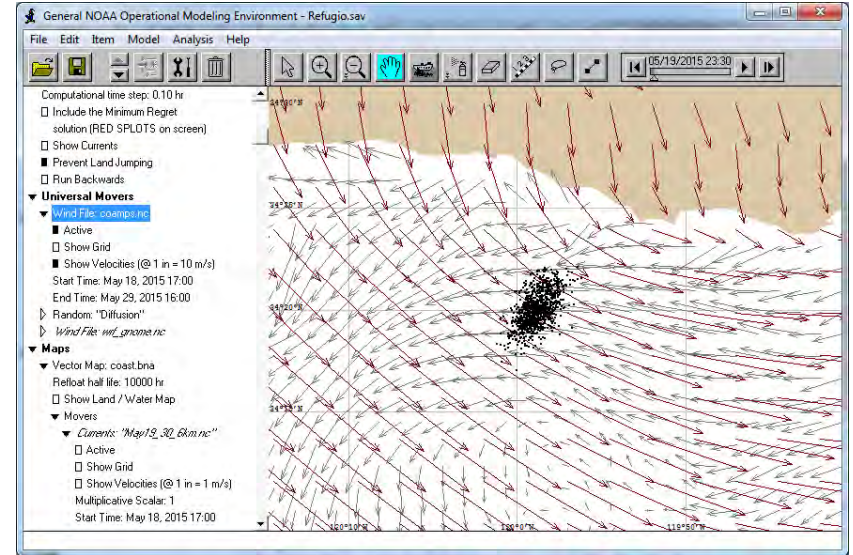
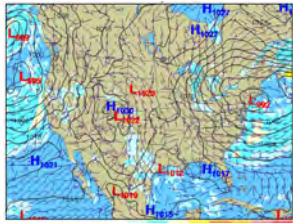
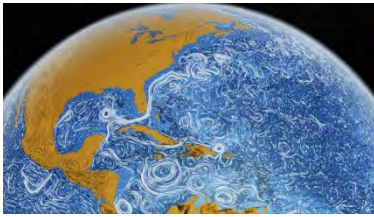
# ADIOS (2000-2016)



- ADIOS (Automated Data Inquiry for Oil Spills) is an oil spill response modeling tool that predicts how different types of oil might weather (undergo physical and chemical changes) in the marine environment under different environmental conditions
  - Includes spreading, evaporation, dispersion, emulsification
- Download: <https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/response-tools/adios.html>



# GNOME (1996 - 2019)



- GNOME (General NOAA Operational Modeling Environment) is a response modeling tool to predict the possible route, or trajectory, a pollutant (such as an oil spill) might follow in or on a body of water
- Download: <https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/response-tools/gnome.html>



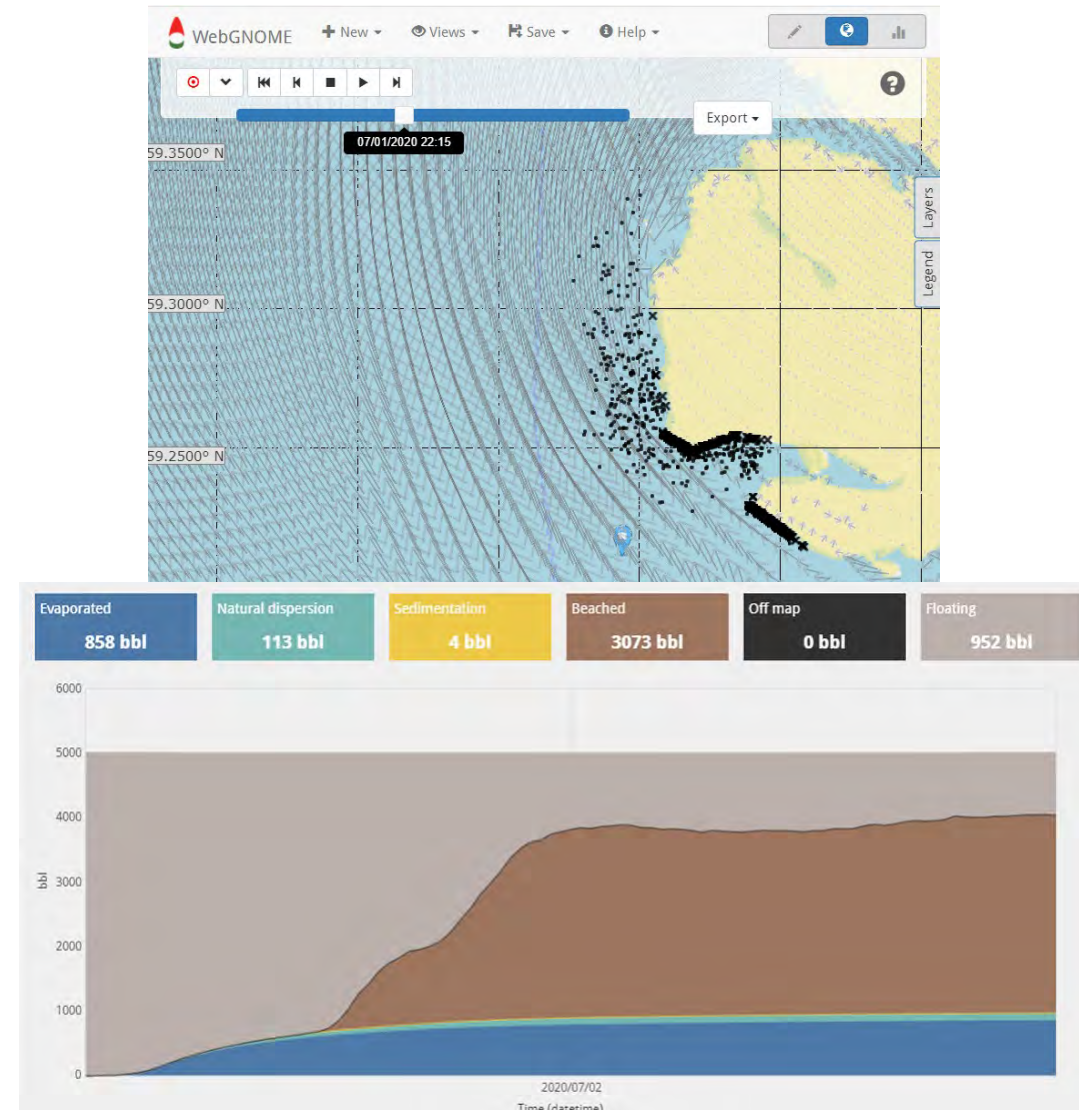
# The GNOME Modeling Suite (2011-Present)

Since 2011, the GNOME model has undergone extensive development

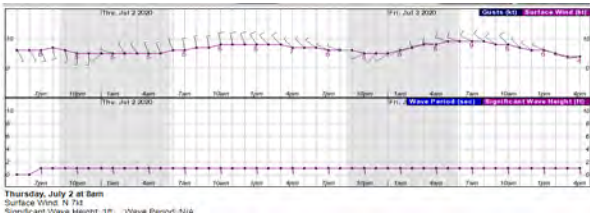
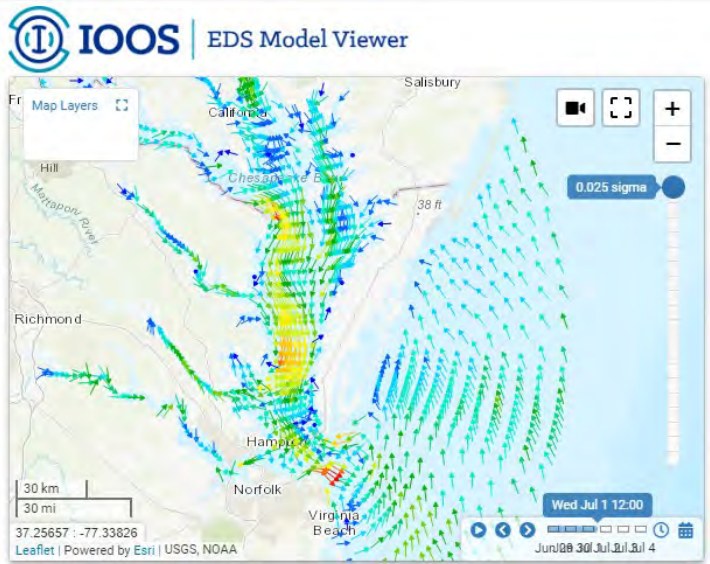
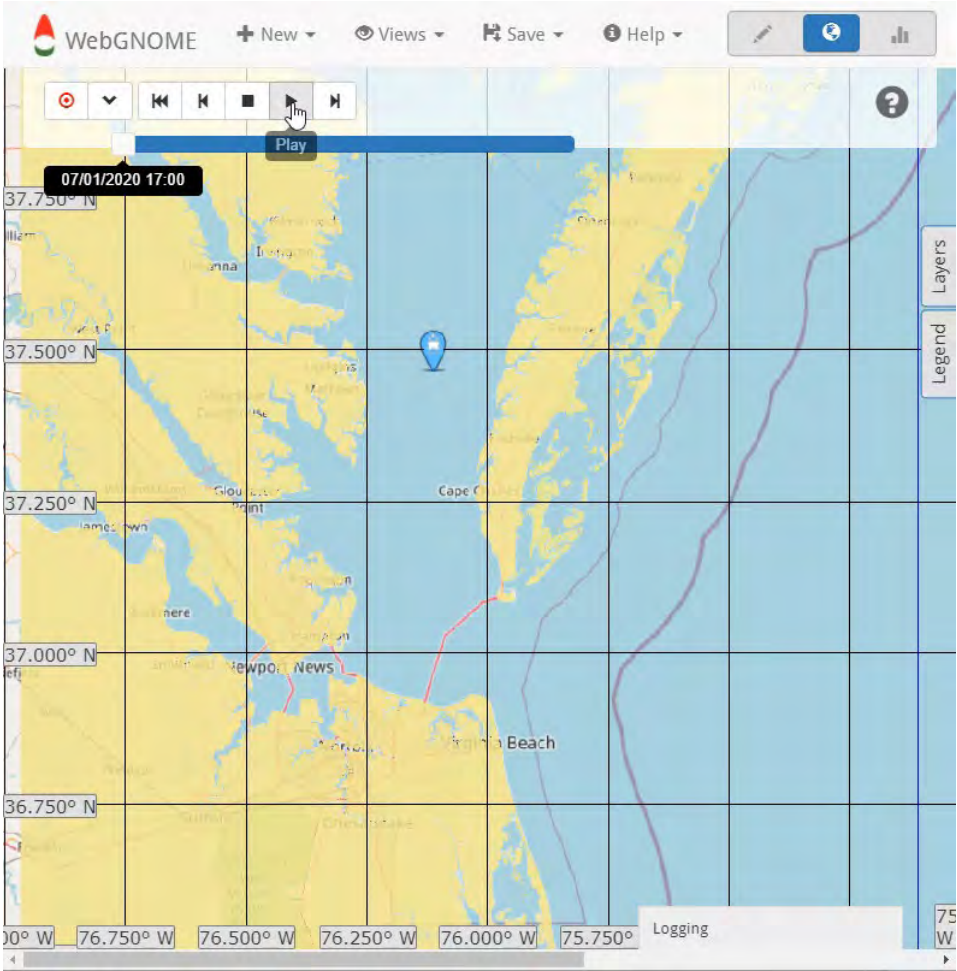
- PyGNOME, the computational core of GNOME is open source on GitHub
- New user interface “WebGNOME” at <https://gnome.orr.noaa.gov>
- Online oil database at <https://adios.orr.noaa.gov>

## Updates

- Integrated oil weathering model
- Improved visualization for results
- More flexibility in input data formats and exports for GIS
- Ingestion of remotely sensed oil detection products for spill initialization
- Integrated access to operational oceanographic and meteorological models
- Algorithms for oil in ice (PyGNOME only)



# Oil Spill Model Inputs





# ADIOS Oil Database

## ADIOS Oil Database

About User Guide Contact

Browse through the list of oils, or query for a particular oil.

API

Type unspecified

GNOME Compatible ☐

Labels unspecified

Total results: 1453

Status	ID	Name	Location	Product Type	API
⚠	EC00501	158 RGN Mistura	Unknown	Crude Oil NOS	29.47
⚠	AD02545	15W40 MOTOR OIL, SHELL		Lube Oil	29.34
✓	NO00108	AASGARD A	Norway	Crude Oil NOS	42.2
✓	EX00001	Aasgard Blend		Crude Oil NOS	52.5
✓	AD02552	AASGARD BLEND, STATOIL	Norway, North Sea	Crude Oil NOS	53.7
✓	NO00138	AASTA HANSTEEN BLEND	NORWAY	Crude Oil NOS	40.26
✓	AD01983	ABOOZAR	Iran	Crude Oil NOS	26.9
⚠	AD00005	ABSORPTION OIL		Refinery Intermediate	15
✓	AD01984	ABU AL BU KHOOSH	United Arab Emirates	Crude Oil NOS	31.6
✓	AD00010	ABU SAFAH, ARAMCO	Saudi Arabia, Ras Tanura	Crude Oil NOS	28.4
✓	EC02234	Access West Blend Winter	Canada, Alberta	Bitumen Blend	21.36
✓	AD01985	ADGO	Canada, Beaufort Sea	Crude Oil NOS	16.8
✓	AD02548	AGBAMI, STATOIL	Nigeria	Crude Oil NOS	47.9
✓	AD01853	AIRILE, BP	Australia	Crude Oil NOS	43.2
✓	AD01866	AL RAYYAN, BP	Qatar	Crude Oil NOS	24.5
✓	EC00506	Alaminos Canyon Block 25	USA, Gulf of Mexico	Crude Oil NOS	30.87
✓	EX00002	Alaska North Slope	USA, Alaska	Crude Oil NOS	32.1
✓	AD01986	ALASKA NORTH SLOPE	USA, Alaska	Crude Oil NOS	26.8
✓	AD00000	ALASKA NORTH SLOPE	USA, Alaska	Crude Oil NOS	24.87

US DOC NOAA NOS NOAA Office of Response & Restoration Disclaimer Privacy Policy Website Survey

## ALASKA NORTH SLOPE

[< Back to List](#) **Status: Warnings**

[Download](#) [Report a Problem](#)

**ID:** AD01986 **Location:** USA, Alaska

**Source ID:** AD01986 **Product Type:** Crude Oil NOS

**API:** 26.8 **Completeness:** 59

**GNOME Compatible:** Yes

**Labels:** Crude Oil Medium Crude

**Alternate Names:** ANS

**Comments:** The data in this record may have been compiled from multiple sources and reflect samples of varying age and composition.

**Reference:**

Jokuty, P., Whiticar, S., Wang, Z., Fingas, M., Fieldhouse, B., Lambert, P., Mullen, J. 1999. Properties of Crude Oils and Oil Products. Manuscript Report EE-165, Environmental Protection Service, Environment Canada, Ottawa, Ontario.

**Reference Year:** 1999 **Sample Received Date:** None

1 issue found:

- W009: Distillation fraction recovered is missing or invalid

Fresh Oil 9.0% Weathered 16.0% Weathered

Physical Properties Distillation Data Compounds Bulk Composition Environmental Behavior Industry Properties Metadata

**Fresh Oil Sample**

**Distillation Type:** volume fraction **Method:** None

**Distillation Cuts:**

Fraction	Vapor Temperature
1 %	42 °C
5 %	98 °C
10 %	127 °C
15 %	147 °C
20 %	172 °C
30 %	216 °C
40 %	238 °C
45 %	247 °C
50 %	258 °C

**Fraction Recovered:** **Terminal Boiling Point:**

**Distillation Graph:**

<https://adios.orr.noaa.gov>





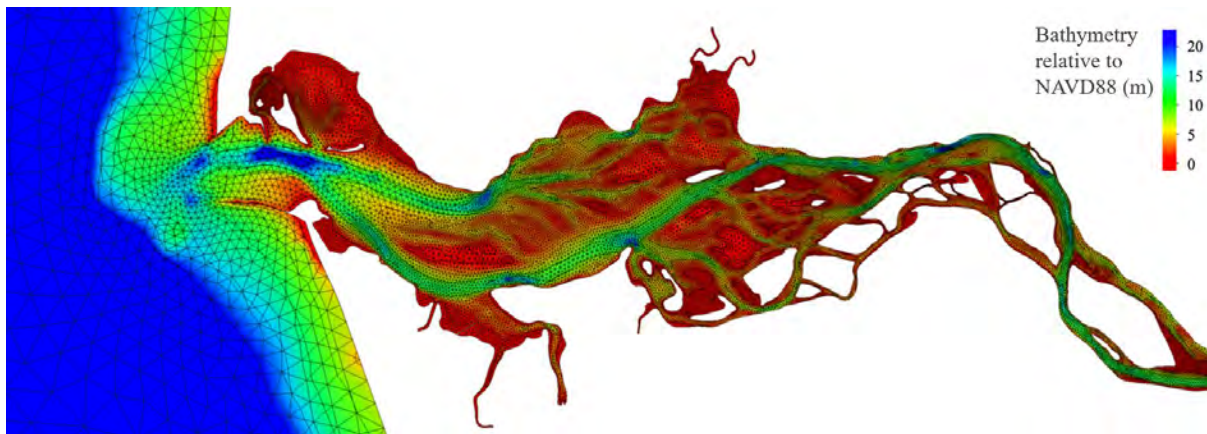
WebGNOME Animation or Demo (<https://gnome.orr.noaa.gov>)



# Coming in August 2024...

## Salish Sea and Columbia River Operational Forecast System (SSCOFS)

- Developed by Pacific Northwest National Laboratory (PNNL) Marine Sciences Lab in collaboration with the Washington State Department of Ecology, with support from the U.S. Environmental Protection Agency
- In transition to NOAA CO-OPS for operationalization

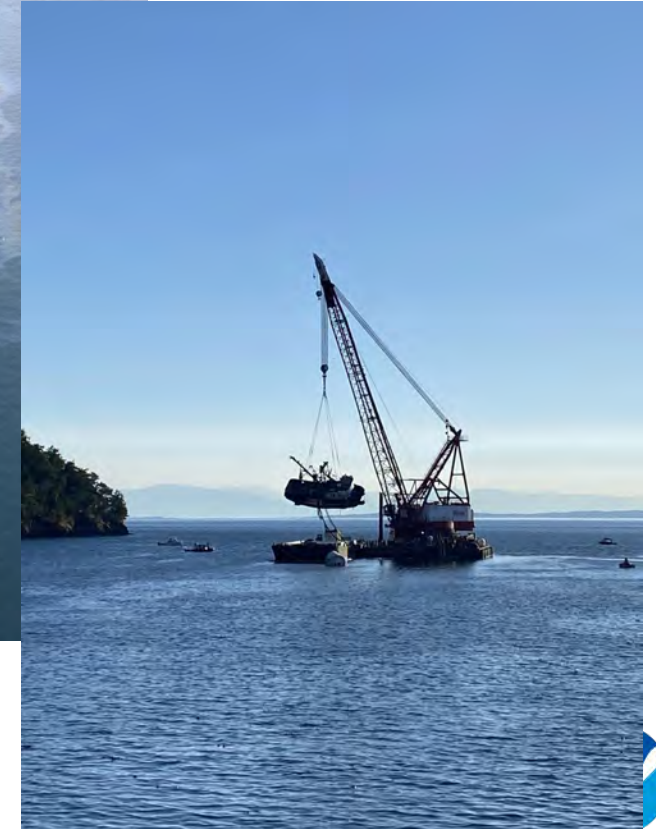
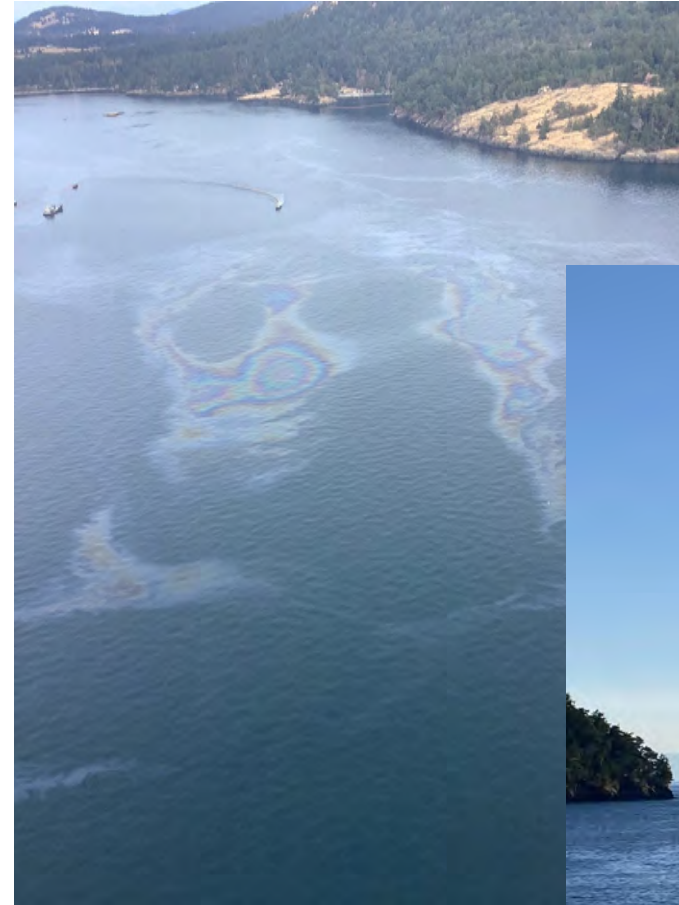




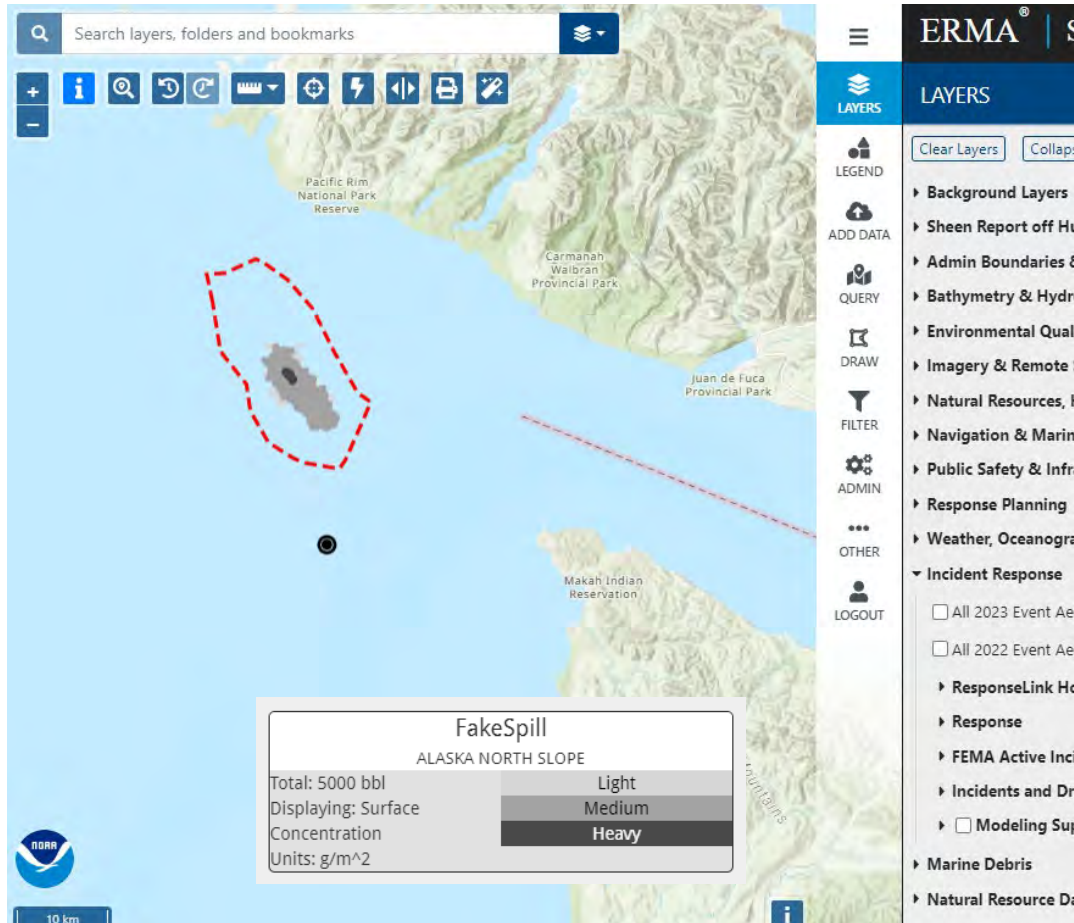


# Response Modeling Approach and Considerations

- Model results must be delivered on timescales that inform operational decisions
- Outputs crafted to convey relevant information to operational questions
- Initial information is typically incomplete and often uncertain or wrong
- Availability and accuracy of environmental predictions (winds and currents) varies by region
- “All models are wrong but some are useful”
- Include some representation of the certainty in the predictions



# Incorporating and communicating uncertainty in oil forecasts



## Best estimate

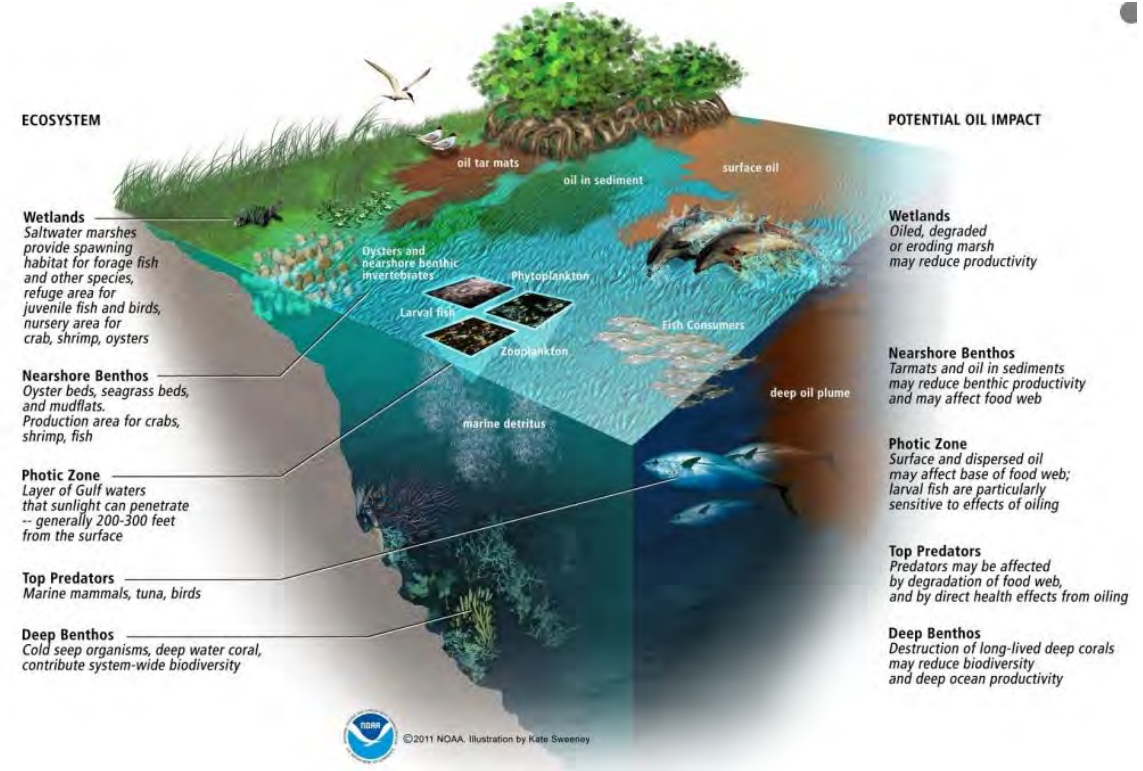
- If oil observations, wind and current forecasts were exactly right

## Description of uncertainty (“minimum regret solution”)

- What if onshore winds are 20% stronger than predicted
- What if spill occurred 6 hours later
- Can incorporate differences among ocean models

# Damage Assessment Modeling Approach and Considerations

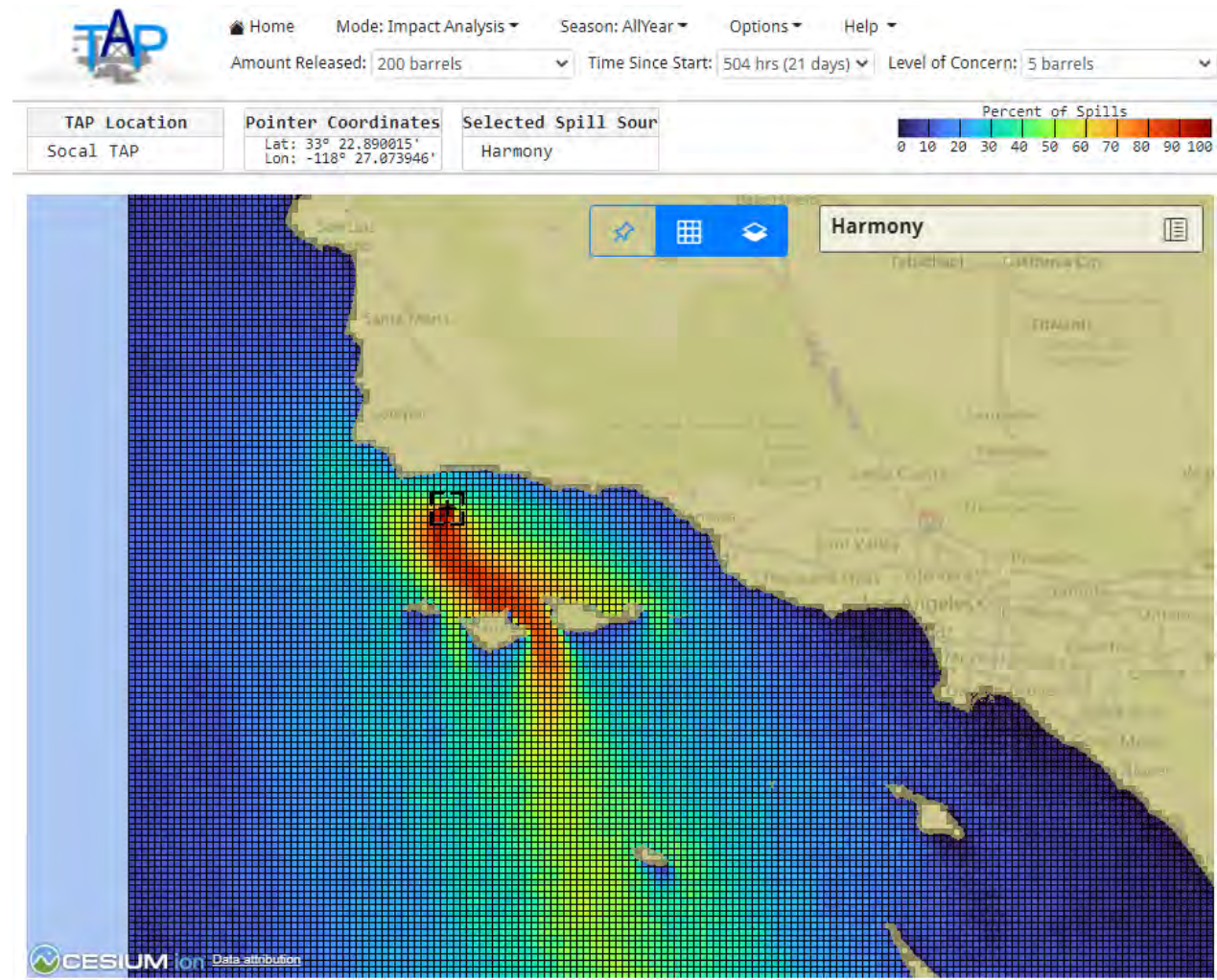
- Modeling is done post-spill incorporating best available information
  - Hindcast vs forecast
- Questions require more sophisticated models
  - What concentrations of substances are organisms exposed to and for how long
- Defensible within the legal framework of NRDA





# Planning Modeling Approach and Considerations

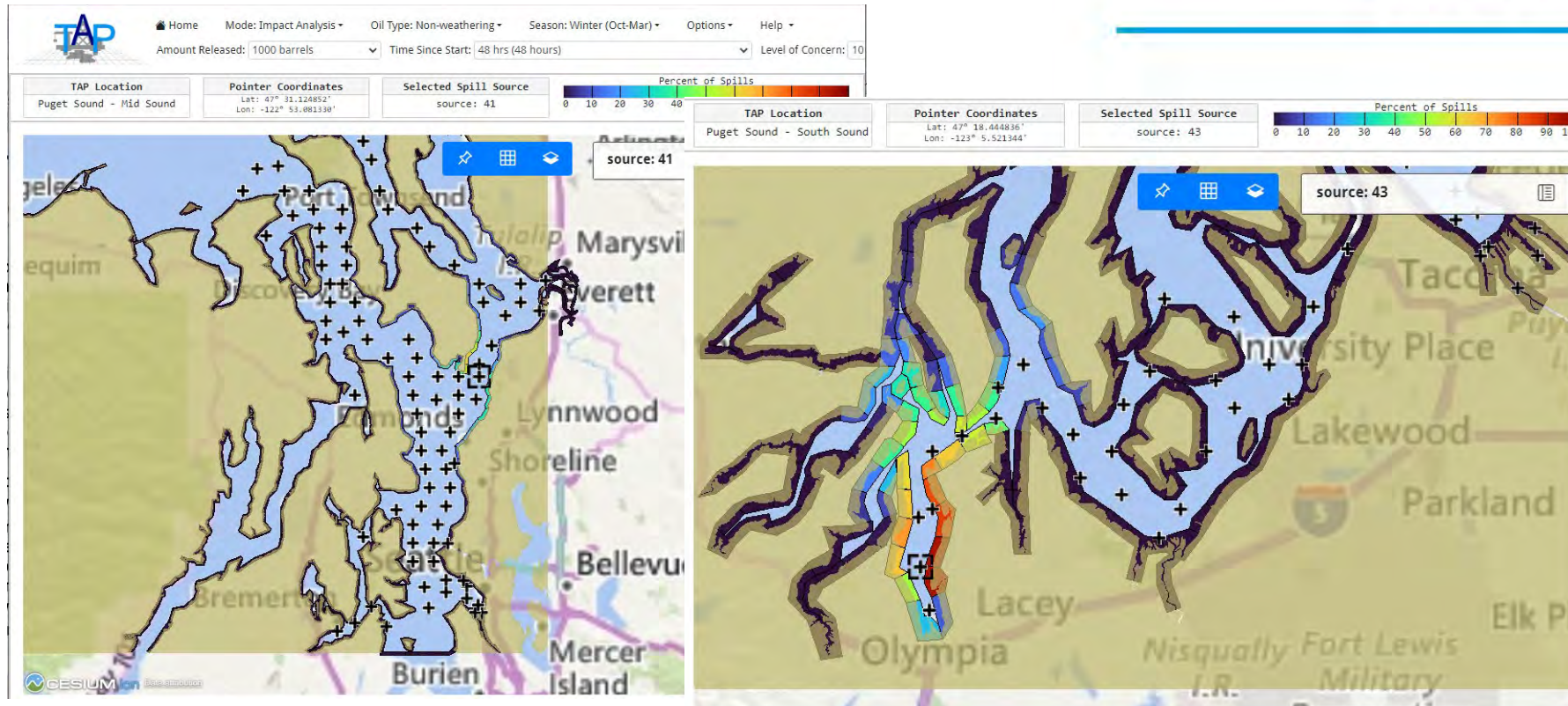
- A probabilistic analysis from an ensemble solution - for selected spill sites, GNOME is run hundreds of times with randomized start times
- Requires a long time-series of environmental input (winds/currents) to capture variability on scales ranging from seasonal to interannual
- Statistics are compiled to inform:
  - What locations might be impacted above a specific Level of Concern? Which locations are most likely to be impacted?
  - What is the shortest response time for a specific location?



Screenshot from "WebTAP" viewer (at <https://tap.orr.noaa.gov>)

# Puget Sound TAP

## Puget Sound Trajectory Analysis Planner (TAP) User's Guide



<https://tap.orr.noaa.gov>



Washington Department of Ecology  
March 2002

Publication #02-08-002





# Future modeling project

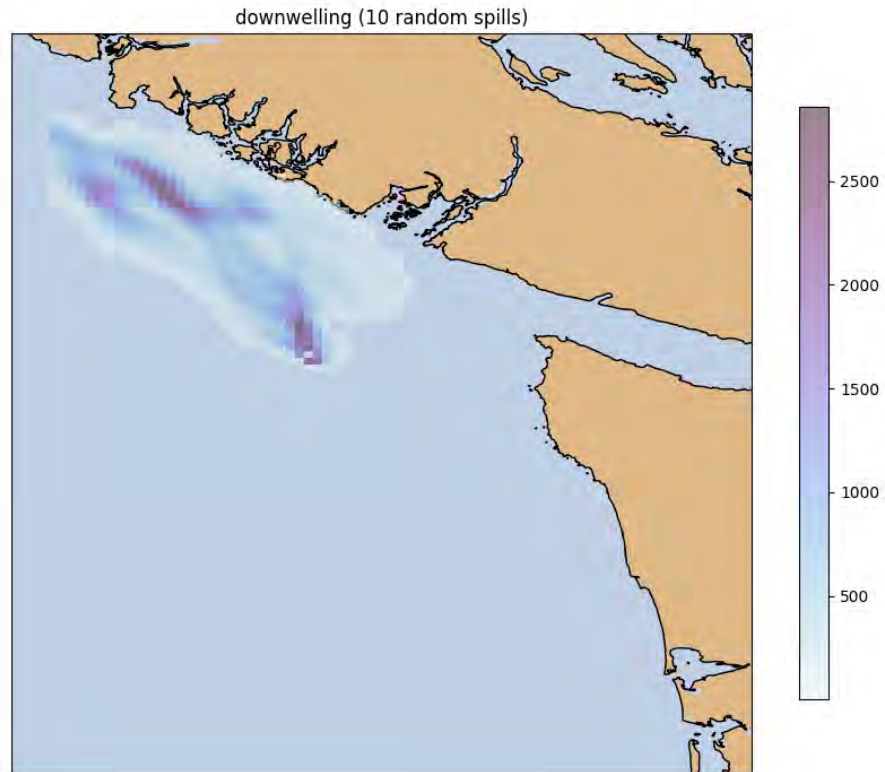
- The SS Coast Trader, which was sunk in 1942 by a Japanese torpedo strike approximately 38 miles off Cape Flattery, was identified as a potentially polluting wreck by the RULET (Remediation of Underwater Legacy Environmental Threats) project completed in 2013
- In 2010 the CCGS detected a previously uncharted wreck in CA waters at the entrance to the Strait of Juan De Fuca. A survey in 2016 was able to positively identify the wreckage
- Subsequent surveys have visualized the vessel which is on flat bottom with many of the fuel tanks looking intact.
- There is also evidence of substantial interaction with fishing gear (water depth is ~165 meters). CCGG report from 2023 survey is forthcoming.
- Partnering with Department of Fisheries and Oceans Canada on modeling the transport from a potential spill at this location.

## Screening Level Risk Assessment Package *Coast Trader*

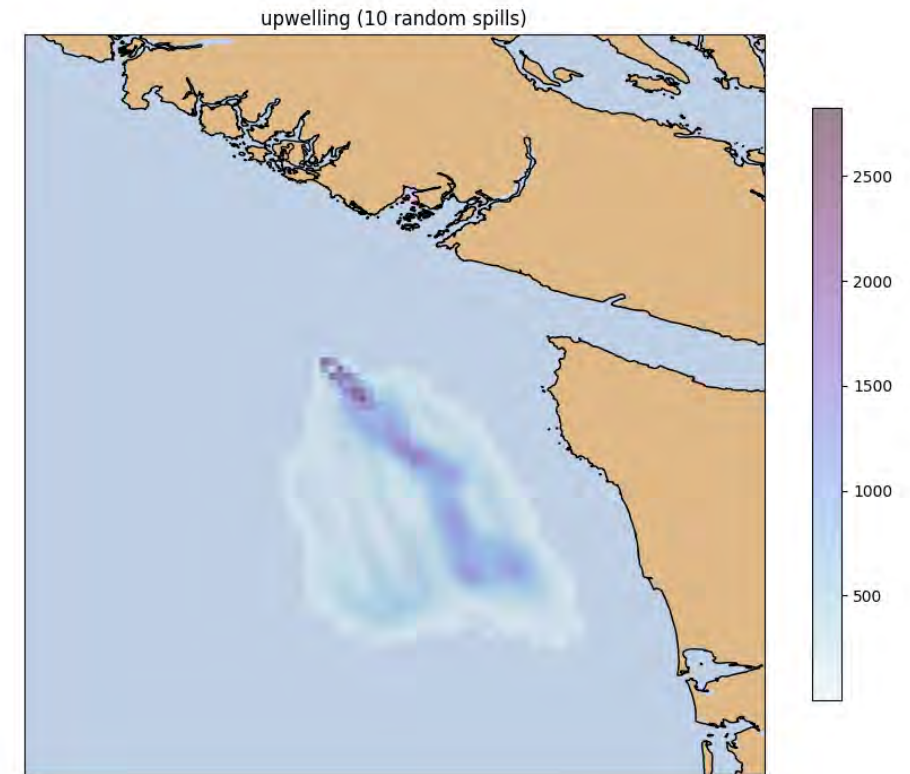




# (Very) preliminary modeling results



Downwelling conditions (January)



Upwelling conditions (June)



# Thank you for your attention!

Questions?

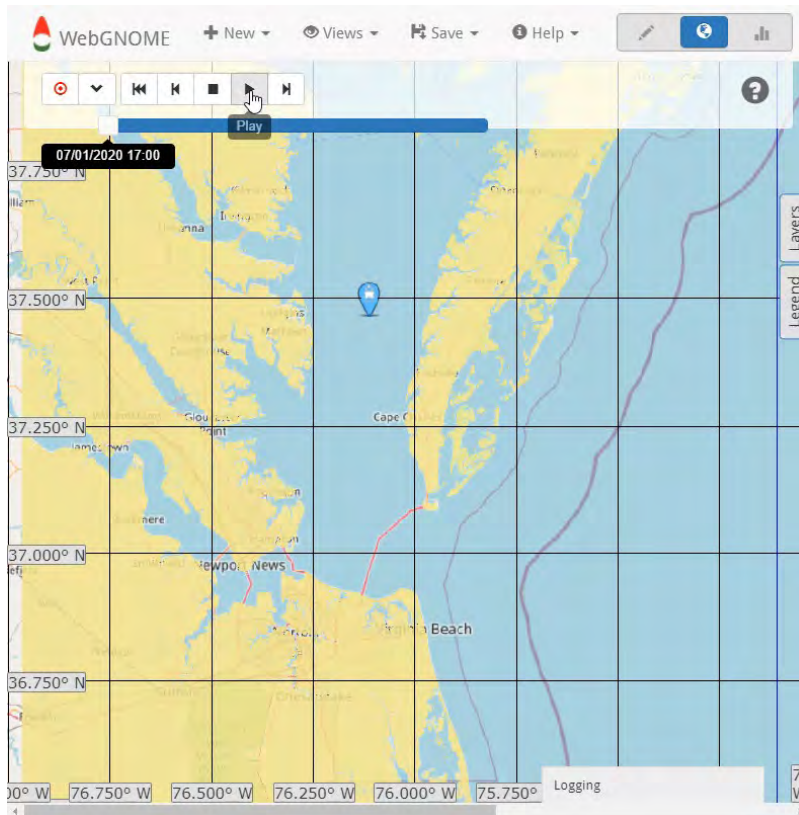
- [orr.gnome@noaa.gov](mailto:orr.gnome@noaa.gov)
- [webgnome.help@noaa.gov](mailto:webgnome.help@noaa.gov)
- [Amy.MacFadyen@noaa.gov](mailto:Amy.MacFadyen@noaa.gov)







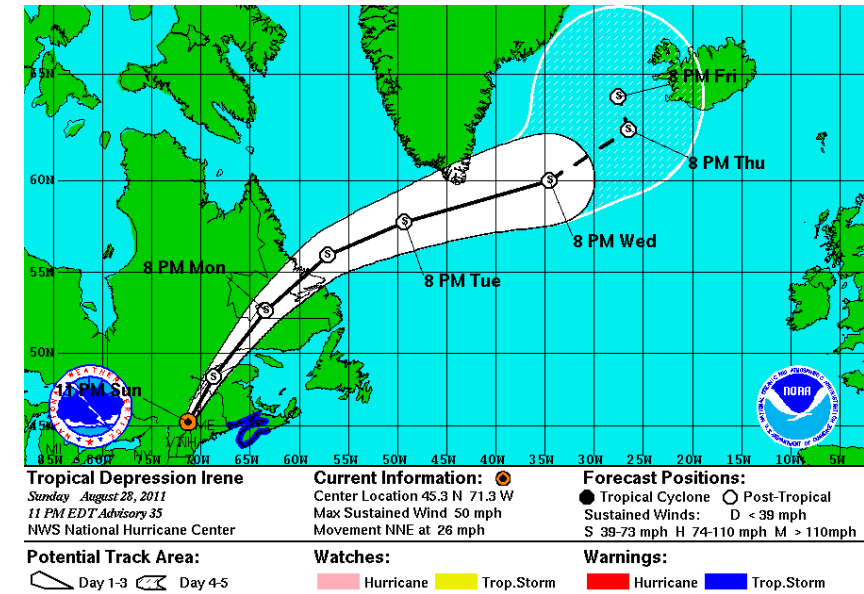
# Why do we need an oil spill model?



- A model is a *simplified* representation of a system or phenomenon
- “All models are wrong but some are useful”
- Increased complexity does not guarantee more accuracy
- A model may be used to:
  - explain a system
  - to study the effects of different components
  - to make predictions about behavior

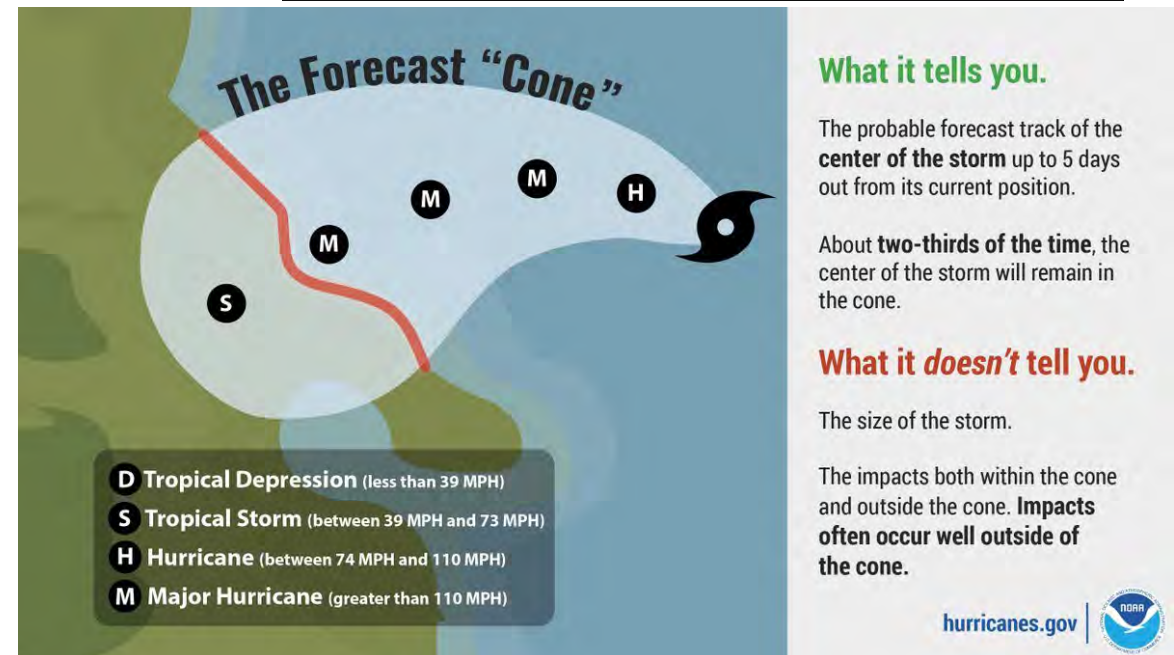
# Probabilistic forecasts

- An extremely practical and useful way to do this is with **ensemble forecasts** a essentially a bunch of different model forecasts with slight variations in initial conditions, parameters, inputs, and/or underlying models
- Probabilistic forecasts may be prone to errors of interpretation and communication



Tomorrow's forecast calls for a "20 percent chance of rain."  
 Which of the options below do you think best describes what that means?

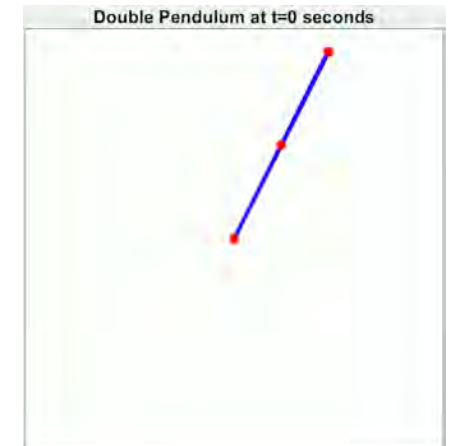
- ☐ A.) It will rain tomorrow in 20 percent of the region.
- ☐ B.) It will rain tomorrow for 20 percent of the time.
- ☐ C.) It will rain on 20 percent of the days like tomorrow.
- ☐ D.) Twenty percent of weather forecasters believe that it will rain tomorrow.





## “All models are wrong”

- A **deterministic forecast** is a forecast that doesn't show any uncertainty. While people tend to like this approach it can be problematic for decision making.
- Uncertainty in oil spill model predictions may be a result of:
  - Mathematical structure of model
  - Parameter values
  - Accuracy of input data
- Important to remember there is uncertainty in EVERY forecast and our atmosphere and ocean are *chaotic* systems
- **Probabilistic forecasts** incorporating uncertainty are common in forecasting environmental information





## Summary: A Consumers Guide to Oil Spill Models

- Important to consider both transport and weathering
- Accuracy depends on availability and quality of inputs
- Modeling approach is determined by questions and when answers are needed
- Forecasts must consider uncertainty
- The output is crafted to the audience

