



Image: BelleDeesse



# Columbia River Basin Restoration Program Toxics Monitoring Subgroup Meeting

SEPTEMBER 26, 2023 | 10:30 – 12:30 PM PACIFIC

# AGENDA

10:30—10:40 AM

WELCOME & INTRODUCTIONS

10:40—10:55 AM

WQX 101

- Brief overview, orientation to online resources

10:55—11:20 AM

CRB TOXICS MONITORING DASHBOARD(S)

- Background and initial ideas, get feedback on utility and potential features

11:20—11:35 AM

ASK THE AUDIENCE

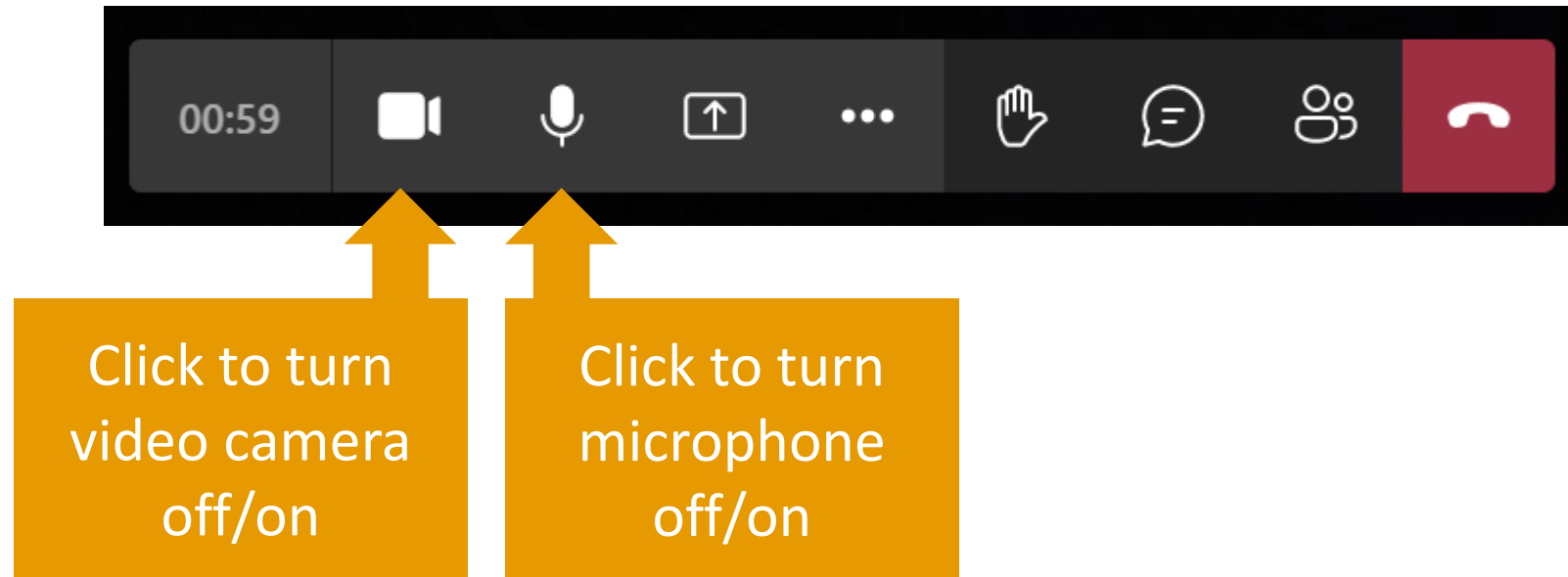
- How best to report on fish tissue toxicity data and criteria to measure it against

11:20—12:20 PM

LIGHTNING TALKS

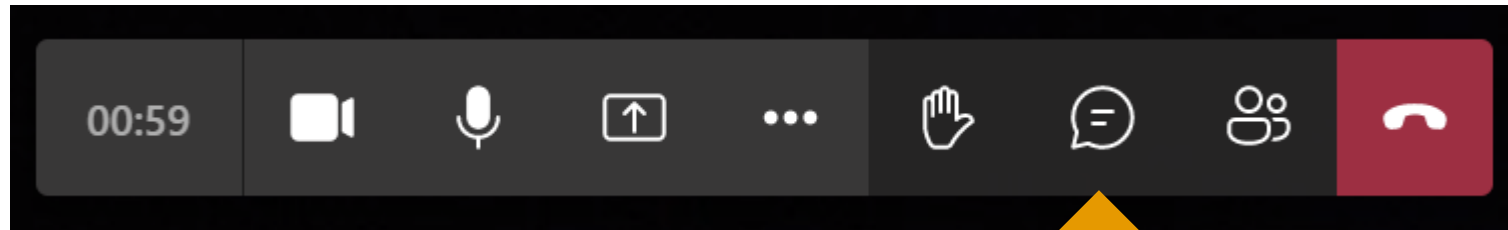
- 3 presentations, Q&A after each

# MS TEAMS TIPS



Please turn camera and mic off when not speaking.

# INTRODUCTIONS



Click chat icon and  
introduce yourself –  
name and affiliation

TYPE QUESTIONS OR COMMENTS IN SLIDO



Join at [slido.com](https://slido.com)  
#ToxMon

## Pumpkin spice - delicious or disgusting?

020

delicious!



disgusting!



## What's the worst Halloween candy?

019

Anything stale and old  
Heath bars  
Smarties Almond Joy  
RAISINS pixie stix  
**candy corn**  
candied apples war heads Marshmallows  
Free pamphelts Candy corn blech  
Black licorice taffy



# Overview of Water Quality Exchange and Water Quality Portal

CRBRP Toxics Monitoring Subgroup

September 26, 2023

Jill Fullagar

EPA R10 Assessment Program and Data Management Coordinator

206-553-2582

[Fullagar.jill@epa.gov](mailto:Fullagar.jill@epa.gov)

Slides courtesy of Adam Griggs, Water Data Integration Branch, EPA  
HQ



# What Is WQX?

It is a  
standardized  
data format  
and  
submission  
database



WQX is a 'standardized' based approach for sharing water quality monitoring data of various types



WQX defines a common data model for communicating water quality data (sample data)



Designed to be automated



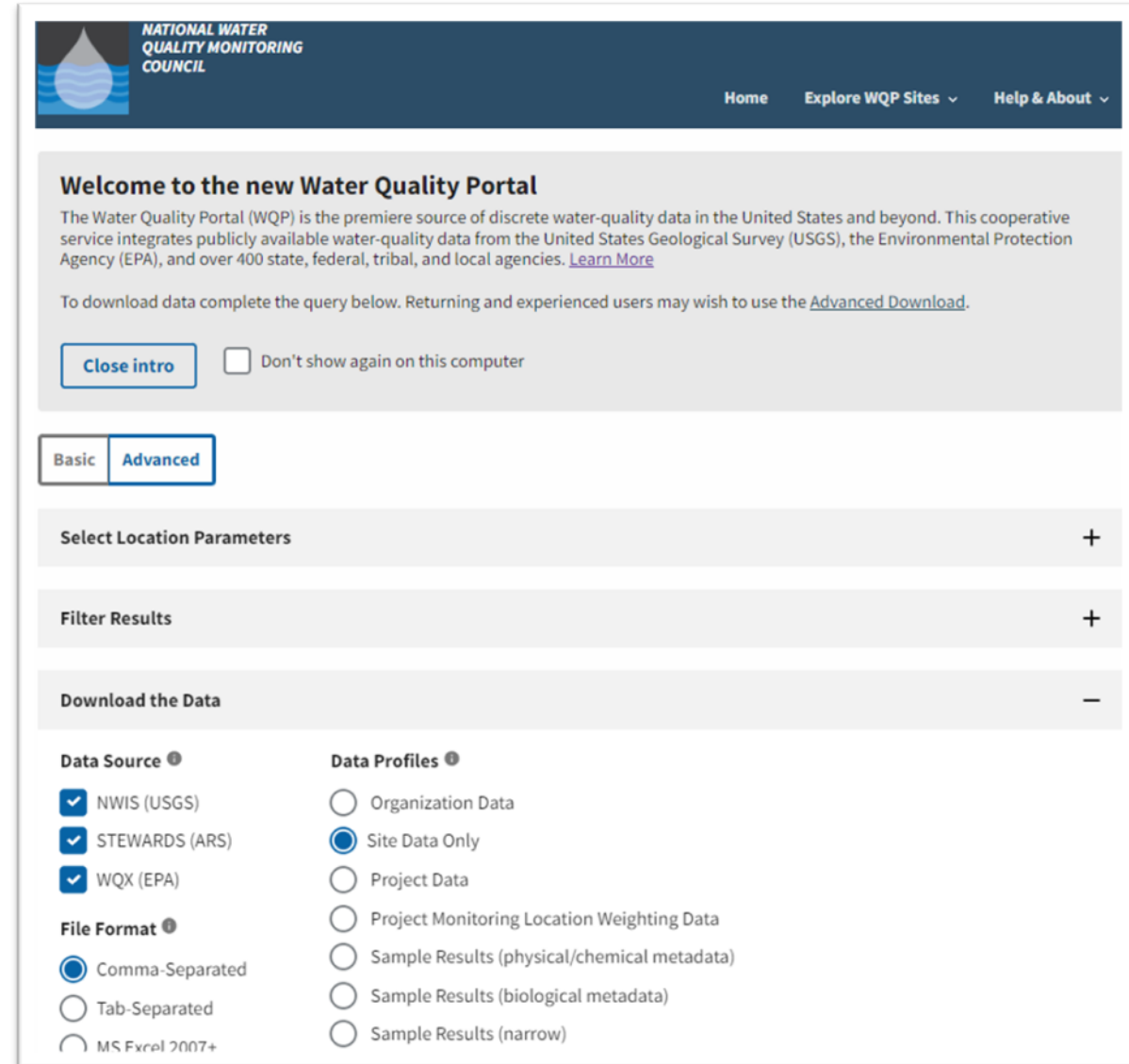
The structure of partner data systems doesn't matter, so long as they can map data to WQX standards



Many ways to prepare and submit data to WQX: including direct submissions, WQXWeb, and 3<sup>rd</sup> party apps

# Water Quality Portal

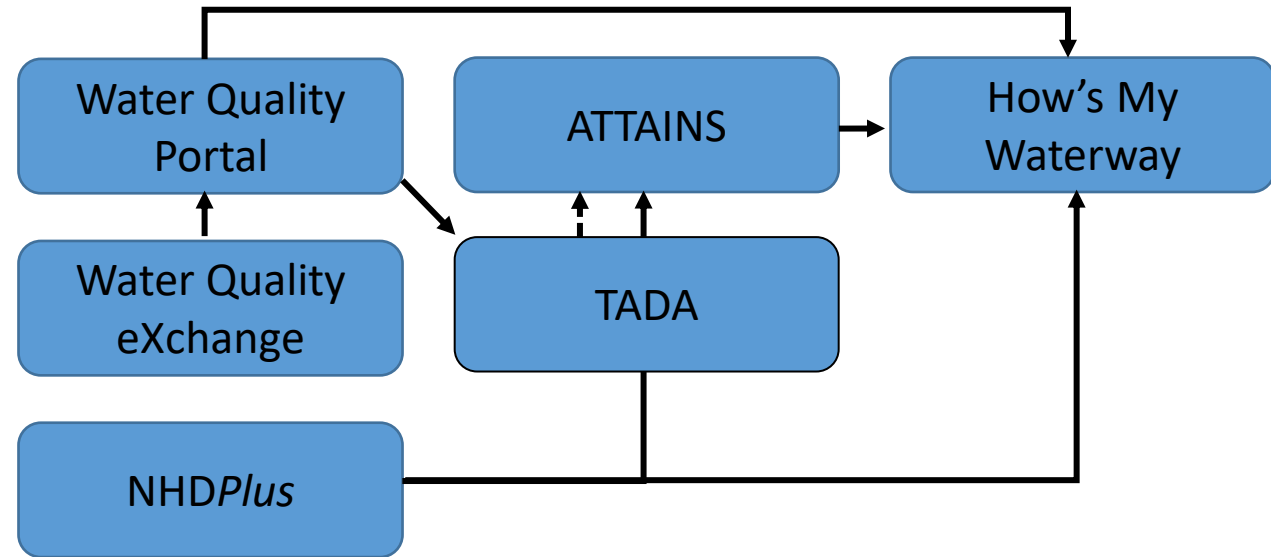
- *Operated under An Interagency Cooperative agreement (USGS & EPA)*
- Serves data from USGS, EPA, USDA, NPS in a standard WQX format
- # WQP: Data from >1,600 organizations
- # WQP: >410m records from >1m sites
- Serves data of all water types
- Includes a Graphical User Interface (GUI) & Web Services
- One of our integrated systems (IOW HUB)
- Data Services can directly power analytics like those in HMW
- Growing number of internal/external tools built on top of this primary data source



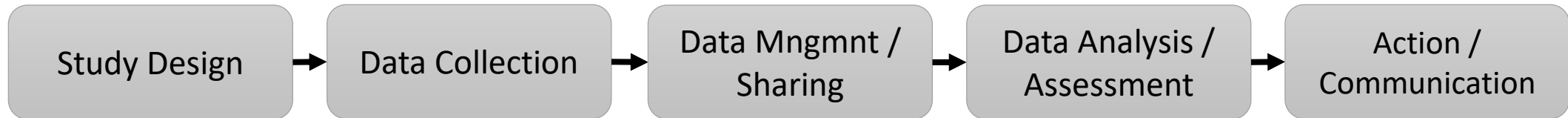
The screenshot displays the Water Quality Portal's user interface. At the top is a dark blue header with the 'NATIONAL WATER QUALITY MONITORING COUNCIL' logo and navigation links for 'Home', 'Explore WQP Sites', and 'Help & About'. Below the header, a light gray box contains a 'Welcome to the new Water Quality Portal' message, explaining its role as a premier source for water-quality data and providing links for 'Learn More' and 'Advanced Download'. A 'Close intro' button and a checkbox for 'Don't show again on this computer' are also present. The main content area features three expandable sections: 'Select Location Parameters' (with a '+' icon), 'Filter Results' (with a '+' icon), and 'Download the Data' (with a '-' icon). The 'Download the Data' section is currently expanded, showing options for 'Data Source' (NWIS (USGS), STEWARDS (ARS), WQX (EPA)), 'File Format' (Comma-Separated, Tab-Separated, MS Excel 2007+), and 'Data Profiles' (Organization Data, Site Data Only, Project Data, Project Monitoring Location Weighting Data, Sample Results (physical/chemical metadata), Sample Results (biological metadata), and Sample Results (narrow)).

# Lifecycle of Data and WDIB Data Systems

Online CWA  
Data Systems



Lifecycle of  
Data



# How's My Waterway

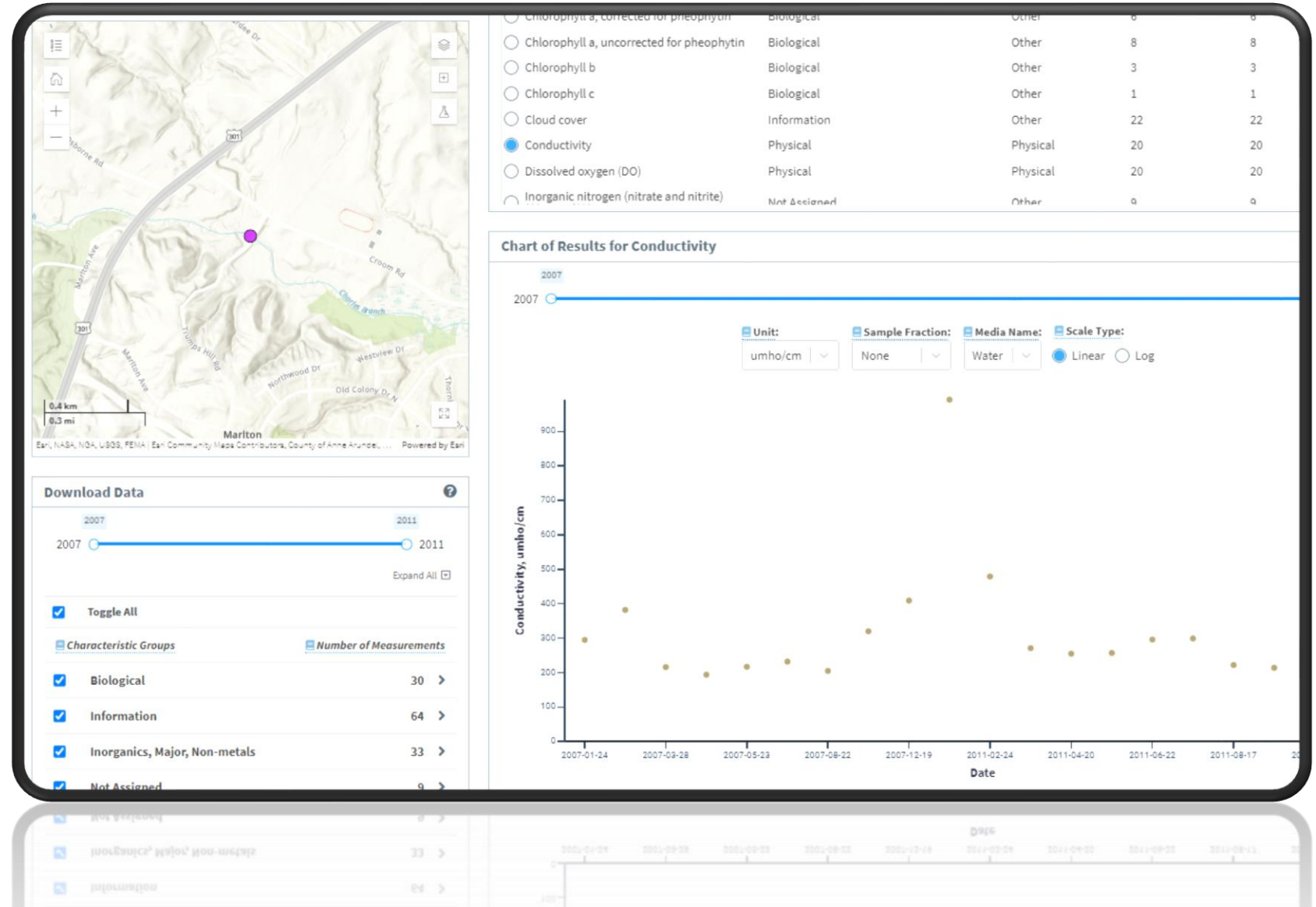
## Serving Public Information

*Powered by open data and web services*

*Accesses, interprets, and displays data from over a dozen sources*

*Including ATTAINS, and the WQP among many others*

<https://mywaterway.epa.gov>





How's My Waterway

The image is a conceptual diagram using an iceberg metaphor. The visible tip of the iceberg represents the 'How's My Waterway' program. The much larger submerged portion represents foundational components. The submerged components are organized into two columns: a left column containing 'Shared Components (Glossary, Ontologies, Identity Proofing, Hydrographic Frameworks)', 'Common Cataloging Approaches / Geospatial Referencing', and 'Shared Governance and Design'; and a right column containing 'Geospatial Integration and Open Data', 'Open APIs (WQP, ATTAINS, ECHO, SDWIS, etc.)', 'Electronic Reporting (ATTAINS)', and 'Data Standards (i.e. WQX)'.

Shared Components (Glossary,  
Ontologies, Identity Proofing,  
Hydrographic Frameworks)

Geospatial Integration and  
Open Data

Open APIs (WQP, ATTAINS,  
ECHO, SDWIS, etc.)

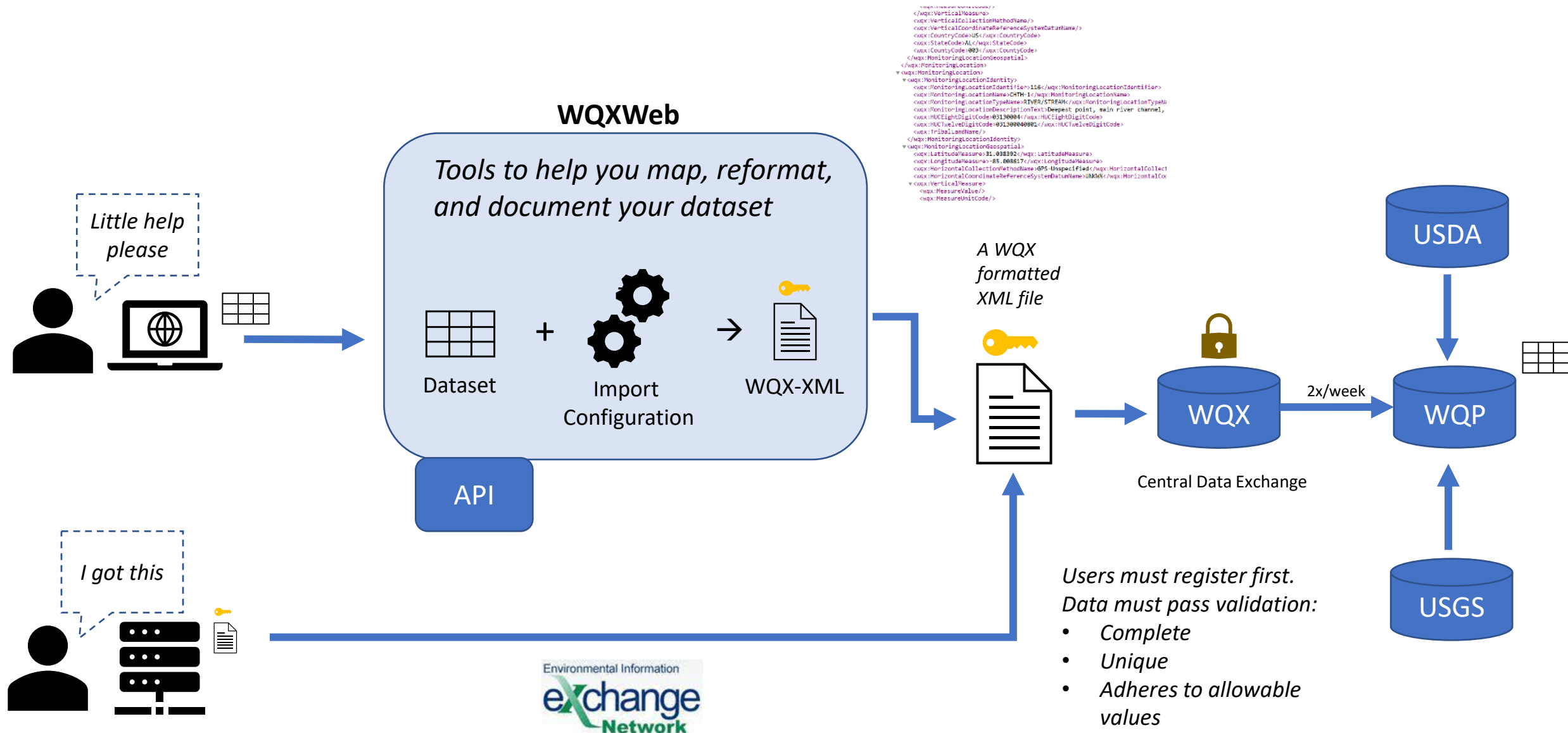
Common Cataloging  
Approaches / Geospatial  
Referencing

Electronic Reporting  
(ATTAINS)

Shared Governance and  
Design

Data Standards (i.e. WQX)

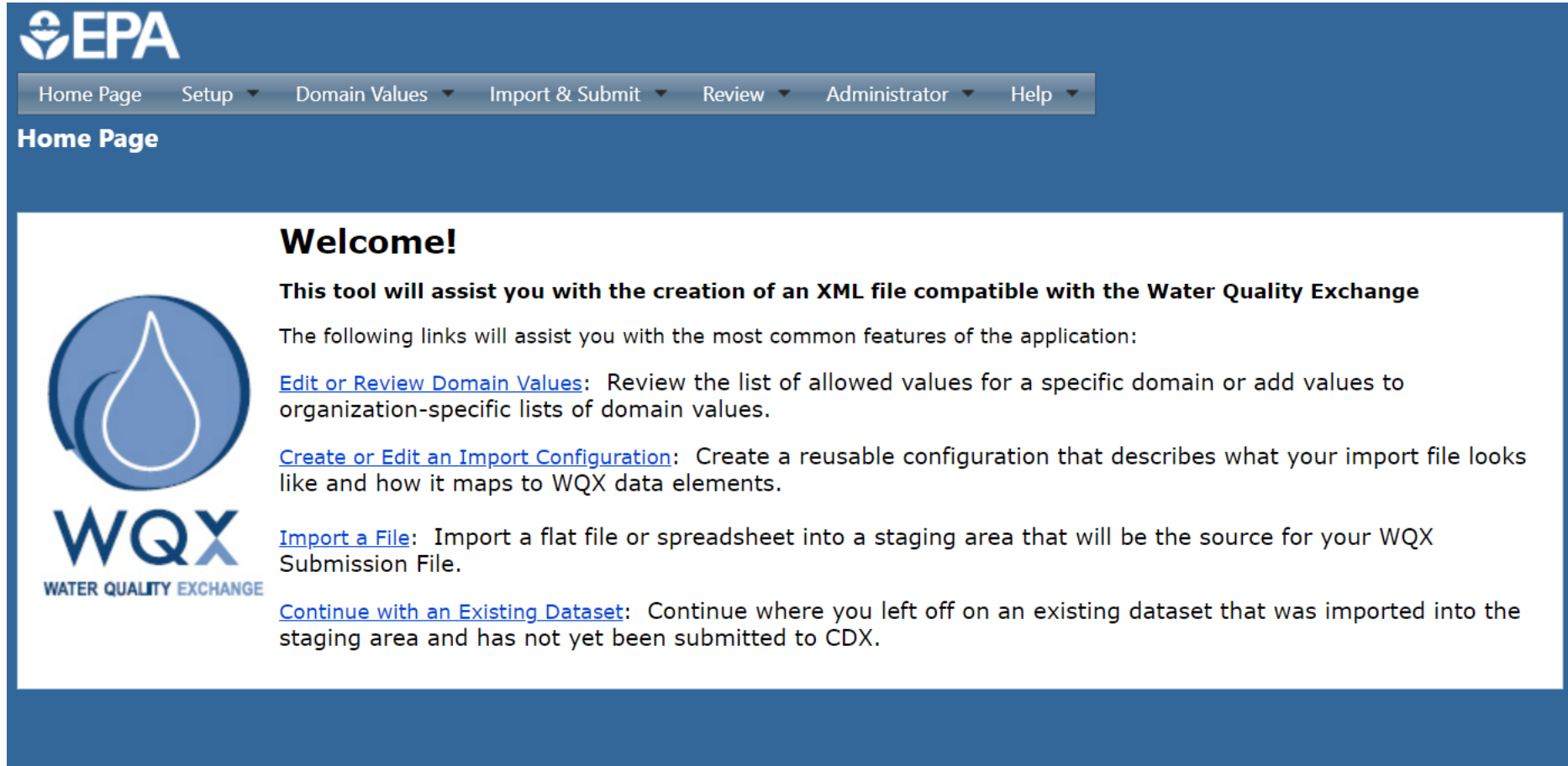
# Pathways to WQX and the Portal





# What is WQXWeb?

WQXWeb is the web application that allows users to import, manipulate, validate, and upload their datasets to WQX.



The screenshot shows the WQXWeb application interface. At the top is the EPA logo. Below it is a navigation bar with links: Home Page, Setup, Domain Values, Import & Submit, Review, Administrator, and Help. The main content area has a blue header with 'Home Page'. On the left is the WQX logo, which features a blue circle with a white water drop and the text 'WQX WATER QUALITY EXCHANGE' below it. To the right of the logo, the text reads: 'Welcome! This tool will assist you with the creation of an XML file compatible with the Water Quality Exchange'. Below this, it says 'The following links will assist you with the most common features of the application:'. There are three links: 'Edit or Review Domain Values' (with a description), 'Create or Edit an Import Configuration' (with a description), and 'Import a File' (with a description). The last link is 'Continue with an Existing Dataset' (with a description).

**EPA**

Home Page Setup Domain Values Import & Submit Review Administrator Help

**Home Page**

**WQX**  
WATER QUALITY EXCHANGE

**Welcome!**

**This tool will assist you with the creation of an XML file compatible with the Water Quality Exchange**

The following links will assist you with the most common features of the application:

[Edit or Review Domain Values](#): Review the list of allowed values for a specific domain or add values to organization-specific lists of domain values.

[Create or Edit an Import Configuration](#): Create a reusable configuration that describes what your import file looks like and how it maps to WQX data elements.

[Import a File](#): Import a flat file or spreadsheet into a staging area that will be the source for your WQX Submission File.

[Continue with an Existing Dataset](#): Continue where you left off on an existing dataset that was imported into the staging area and has not yet been submitted to CDX.



# How is data Organized in the WQX Schema?

It can be helpful to think of the data as being stored in levels

...or related tables of information

*\*Table 1*

*All Project Info*

Prjct ID	Project Name
001	Cyano Monitoring
002	Probabalistic mon
003	Trends Program

Org ID	Org Name
001	Minnesota Depart
002	Kentucky Departm
003	University of Was

*\*When you register*

*Your WQX  
Organizational  
Account*

*\*Table 2*

*Unique Locations*

Loc ID	Location Name
001	Deep Blue Lake
002	Muddy Run
003	Fishing Creek

*\*Table 3*

*All Activities and  
Results*

Activity ID	Prjct ID*	Loc ID	Sample Date	Activity Type	Characteristic	Value	Unit	Sample Collection Method
001	002	003	4/23/2020	Sample-Routine	TSS	7.6	SU	Grab Sample Method
002	002	003	4/23/2020	Field Msr/Obs	Temperature	19.1	Deg C	Field Probe Method
002	002	003	4/23/2020	Field Msr/Obs	Conductivity	236	µS/cm	Field Probe Method

# Step 1. Register for a WQX Account

How to Sign up for a CDX/WQXWeb account

1. Email the WQX team to Request a WQX Web account

The email address is: [wxq@epa.gov](mailto:wqx@epa.gov)

First name

Middle name

Last name

Prefix (Mr./Mrs./Ms)

WQX Organization ID

WQX Organization Name

Mailing Address 1

Mailing Address 2

City

State

Zip/Postal Code

E-mail Address

Phone Number



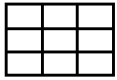
The screenshot shows the EPA website's 'WQX Web Account Registration' page. At the top is the EPA logo and a search bar. A blue navigation bar contains links for 'Environmental Topics', 'Laws & Regulations', 'Report a Violation', and 'About EPA'. Below this, a 'Related Topics' section links to 'Water Data and Tools', and a 'CONTACT US' link is on the right. The main heading is 'WQX Web Account Registration', followed by the subheading 'How to Gain Access to WQX Web'. A paragraph explains that access is through EPA's portal for environmental data, the Central Data Exchange (CDX), and involves registering two accounts: one with CDX to verify identity and another with the WQX team to submit data. It notes that after registration, accessing WQX web through CDX is seamless and requires only one login step. The 'Registration Steps for CDX and WQX Web' section begins with '1. Email the WQX team to Request a WQX Web account', stating that users must provide information in an email to the WQX Team at [wxq@epa.gov](mailto:wqx@epa.gov). A bulleted list of required information includes: First name, Middle name, Last name, Prefix (Mr./Mrs./Ms), WQX Organization ID, WQX Organization Name, Mailing Address 1, Mailing Address 2, City, State, Zip/Postal Code, E-mail Address, and Phone Number. A section titled 'Does my Organization have an ID registered with WQX?' explains that all organizations submitting data through WQX Web require a unique WQX Organization ID, distinct from previous STORET IDs. It emphasizes the importance of maintaining consistency and reducing data duplication or deletion. If unsure of an organization's WQX ID, it suggests searching the 'Water Quality Portal' under the 'Organization ID' field, referencing a video tutorial and a 'Coming Soon' announcement. For those needing to set up a WQX Organization ID, it directs them to contact the WQX help desk via email at [wxq@epa.gov](mailto:wqx@epa.gov), listing the required information: WQX Organization ID (up to 30 characters), WQX Organization Name, and contact information as outlined above.

How to Register Page: <https://www.epa.gov/waterdata/wqx-web-account-registration>

# Step 2. Choose Your Path



## WQX Web Templates

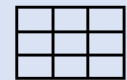


### Full adoption of the WQX standard

- 'Stacked' format
- WQX fields
- WQX allowable values
- Simple 1:1 import configuration w/ no edits necessary

## WQXWeb

*Tools to help you map, reformat, and document your dataset*



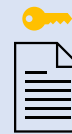
Dataset

+



Import  
Configuration

→



WQX-XML

## Import Configurations



### Lean on the import configuration to transform your data

- Work with a stacked or matrix style data format
- Add your missing metadata elements through the IC
- Apply transformations to your dataset to achieve the standard

# Step 3. Assemble Your Data / Understand What's Needed

When you submit data to WQXWeb, you submit three tables, one each for Projects, Locations, and Activities/Results.

*All Project Info*

Prjct ID	Project Name
001	Cyano Monitoring
002	Probabalistic mon
003	Trends Program

Project ID  
Project Name  
Project Description

*All Location Info*

Loc ID	Location Name
001	Deep Blue Lake
002	Muddy Run
003	Fishing Creek

Location ID  
Location Name  
Location Type  
Coordinates  
Location Method

*All Result-level Info and metadata*

Activity ID	Sample Date	Characteristic	Value	Unit
003	5/3/2012	pH	7.6	SU
003	5/3/2012	Temperature	19.1	Deg C
003	5/3/2012	Conductivity	236	µS/cm

Sample Media	Result Value
Start Date	Result Unit
Collection Method	Result Status
Collection Equipment	Analytical Methods
Characteristic Name	Result Value Type
*Other reqmnts	

# What are the Data Requirements for WQX?

## Available Fields

- The “[Data Exchange Template](#)”
- Web Templates – “All ResultElements”
- Within the Import Config Module

## Allowable Values

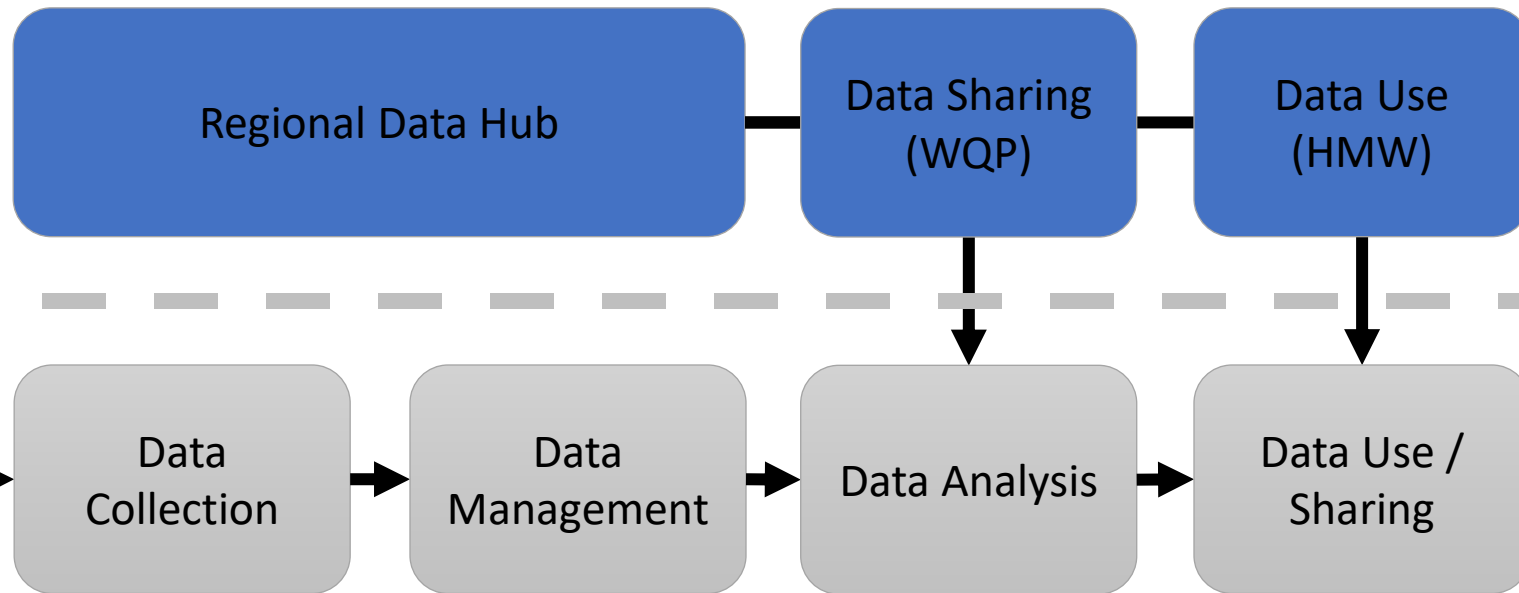
- [The WQX Domain List / Service](#)
- The WQXWeb application
- Built into the Excel templates

## Rules & Requirements

- [Business Rules](#)
- Required Fields
- [Flow Configuration Document](#)

# How can partnerships, technology, and the internet help us solve these challenges?

*Doesn't require a database, simply organize and share the data to WQX, and let WQP web services power your data displays*



# WQX Basic Resources

<u>Topic Area</u>	<b>Resource Links</b>
Open Water Data Resources / Links	<a href="#">Water Quality Exchange</a> (WQX) [Data In] <a href="#">The Water Quality Portal</a> (WQP) [Data Out] <a href="#">How's My Waterway</a> (HMW) [Info Out] <a href="#">Central Data Exchange</a> (CDX) [Data Held] <a href="#">Exchange Network</a> (Node Submissions to CDX)
WQX Nuts and Bolts	<a href="#">Upload Resources Page</a> <a href="#">Glossary of Terms</a> <a href="#">Business Rules</a> <a href="#">Data Exchange Template</a> (List of Available Elements) <a href="#">Domain Service</a> (Acceptable Values)
Using WQX – Getting Started	<a href="#">Introduction to WQX, WQX Web, and WQP</a> (5 min video) <a href="#">Quick WQX Web User Guide</a> (PDF Guide) <a href="#">User Guide Version 3.0 for Water Quality Exchange Web</a> <a href="#">Getting Started with WQX Web: How to Gain Access</a> <a href="#">WQX Web Basics – Two-part session--Day 1</a> <a href="#">WQX Web Basics – Two-part session--Day 2</a>
Using WQX – Templates	<a href="#">Water Quality Exchange Web Template User Guide   US EPA</a> <a href="#">Link to Web Templates</a> <a href="#">Web Templates Overview Video</a>
Using WQX – Import Configurations	<a href="#">WQX Web Import Configuration Options</a> <a href="#">Translations via Expert Mode</a>
Using WQX – Best Practices	<a href="#">Best Practices for Sharing Benthics Data</a> <a href="#">WQX Metals Best Practices Guide</a> <a href="#">WQX Nutrients Best Practices Guide</a>
Using WQX - Other	<a href="#">Water Quality eXchange Factsheet</a> <a href="#">Common Errors Resolution</a> <a href="#">WQX Program Information</a>



## Helpdesk/Support/Training

- The helpdesk can be reached at [WQX@epa.gov](mailto:WQX@epa.gov) M-F 8am-5pm Eastern
- You can also call 1-800-424-9067 to leave a voicemail
- Monthly User Call
- Several user guides
- Best-practice manuals
- Instructional videos on Youtube
- Access one-on-one support from WQX contractors
- Contact Jill Fullagar for additional assistance at [Fullagar.jill@epa.gov](mailto:Fullagar.jill@epa.gov) or 206-553-2582

# EPA Columbia River Basin Restoration Program

**Toxics Monitoring Subgroup  
Quarterly Meeting  
September 26, 2023**

Ashley Zanolli and Katia Rar  
US EPA Region 10





# Columbia River Basin Restoration Program Vision Statement

***“The EPA Columbia River Basin Restoration Program –through the implementation of CWA Section 123 –will be a catalyst for basin wide toxics reduction work efforts; enabling communities to access unimpaired watersheds with healthy fish and wildlife and quantifiable toxics reductions in fish, wildlife and water.”***



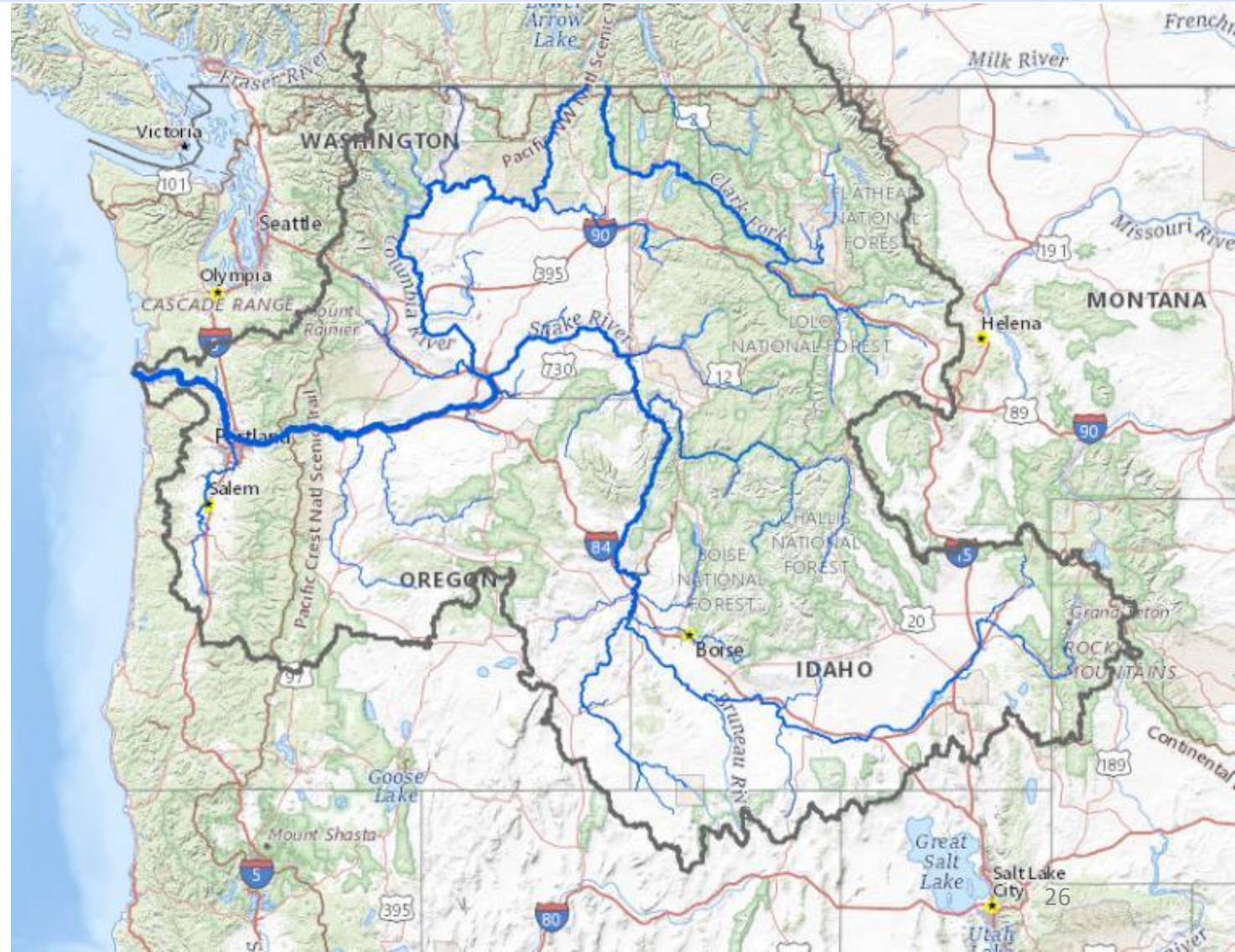
# COLUMBIA RIVER BASIN RESTORATION ACT



COLUMBIA RIVER BASIN  
RESTORATION PROGRAM

Congress passed the **Columbia River Basin Restoration Act** in 2016, which amended the Clean Water Act by creating **Section 123** and directed EPA to:

1. establish a **Working Group** representative of states, tribal governments, and other entities in the Basin; and
2. establish a **Columbia River Basin Restoration Grant Program** to support voluntary actions to reduce and assess toxics throughout the Basin.





# FUNDING ASSISTANCE



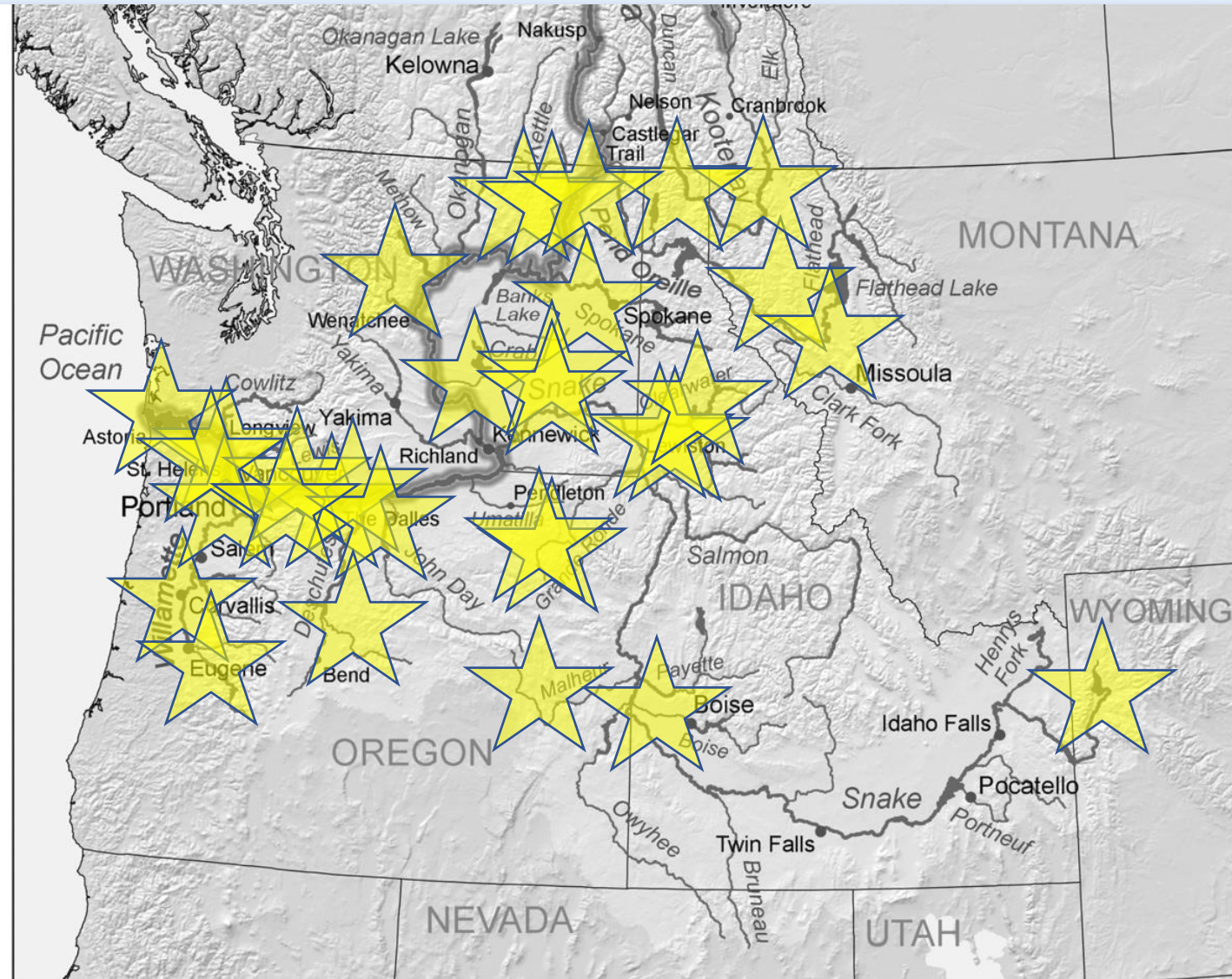
COLUMBIA RIVER BASIN  
RESTORATION PROGRAM

**2020: \$2.1M for 14 awards**

**2022: \$6.9M for 25 awards**

**2023:**

- **\$14.5M for tribal program implementation grants**
- **\$56.5M for toxics reduction lead grants**
- **TBD for Monitoring RFA**



# PROJECT CATEGORIES AND FUNDING PRIORITIES



## Project Categories (CWA Section 123)

1. Eliminating or reducing pollution
2. Cleaning up contaminated sites
3. Improving water quality
4. Monitoring to evaluate trends
5. Reducing runoff
6. Protecting habitat
7. Promoting citizen engagement or knowledge

## Program Funding Priorities

1. Agriculture best practices
2. Green infrastructure
3. Pollution prevention
4. Clean-up actions
5. Community education and outreach
6. Monitoring and assessment



# TOXICS MONITORING SUBGROUP ([link](#))



COLUMBIA RIVER BASIN  
RESTORATION PROGRAM

**Purpose:** A community of practice to share information on monitoring and leverage activities within and outside of EPA funded grants





# TOP MANAGEMENT OR SCIENCE QUESTIONS



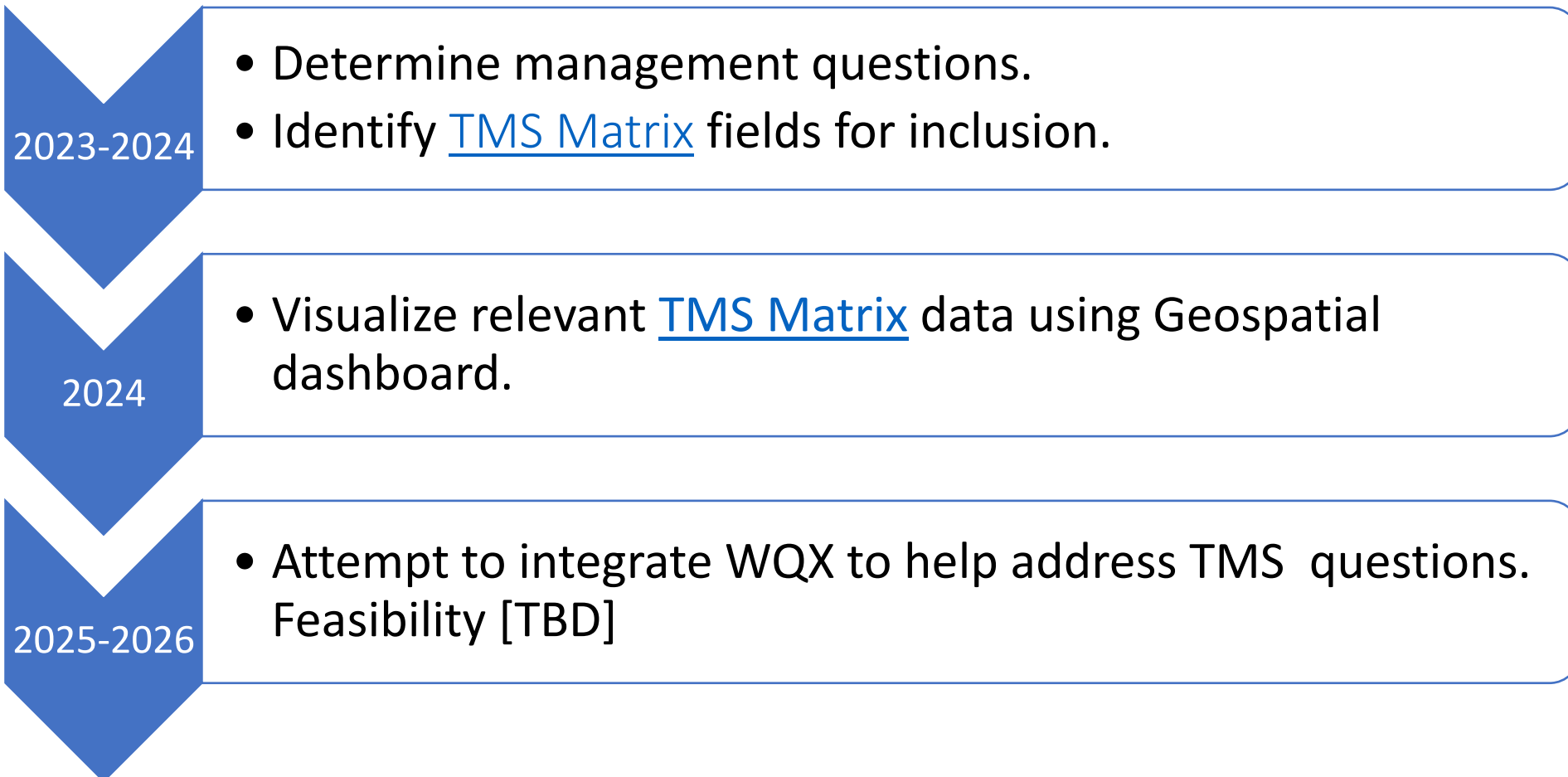
## **April 28, 2022 TMS Feedback on top questions for a CRB Toxics Data Dashboard:**

- Spatial map to identify regions of concern, areas of low probability of adverse impacts from toxics, areas of inconclusive data
- Spatial and temporal trends – e.g., are concentrations of an analyte increasing or decreasing through time at a particular location?
- What are the data gaps (by parameter, location, analyses)?
- Are the values comparable
- Is this an area of concern that needs extra monitoring?
- Is this a potential contaminant source area?
- What are toxics contaminants above aquatic life and human health benchmarks?
- What are the hazard quotients or potential health risks?
- Who has done similar monitoring that I can seek out for advice before I start my project?

# MONITORING DASHBOARD(S)



**Audience:** Monitoring experts and implementers who want results from toxics monitoring



# MONITORING DASHBOARD(S)

## Possible path forward?

### **TMS Monitoring Projects Dashboard**

Timeline: 2023-2024

Purpose:

- Visualize TMS Matrix data

### **CRB Monitoring Data Dashboard\*\***

Timeline: 2025-2026

Purpose:

- Attempt to integrate WQX data with filters that help address TMS questions

\*\*Potential to combine dashboards in the future. Feasibility TBD.

# EXAMPLES OF MATRIX DATA FOR POTENTIAL INCLUSION IN A MONITORING DASHBOARD



COLUMBIA RIVER BASIN  
RESTORATION PROGRAM



- **Monitoring location** (county/state, mainstem or tributary, location description)
- **Lead** (entity type, funder, grant ID, and principal investigator contact info)
- **Project title and purpose**
- **Parameters monitored** (ex. Hg – metal – tier 1 EPA prioritization – not a persistent organic pollutant)
- **Media sampled** (ex. surface water, sediment, crayfish, fish tissue, etc.)
- **Sampling information** (frequency, number of sites, method, start/end date)
- **Reference value** for chemical concentration data comparison
- **Primary source pathway** being investigated
- **Potential mitigation solution**

**Should we pursue building a dashboard to access and display toxics monitoring project information or is the matrix spreadsheet sufficient?**

0 1 5

A dashboard would be useful



80 %

The matrix spreadsheet is sufficient



13 %

Not sure



7 %

**If we were to build an interactive dashboard to access and display toxics data from WQX, would you use it?**

0 1 4

Yes, often!

 0 %

Yes, occasionally.

 57 %

No

 14 %

Not sure

 29 %



COLUMBIA RIVER BASIN  
RESTORATION PROGRAM

# Discussion

Raise your hand or type  
questions/comments in **Slido Q&A** -  
go to [slido.com](https://slido.com), enter code [ToxMon](#)

What other questions would you want to use a dashboard to address?

What would you want to get out of a geospatial tool that visualizes matrix data?

What other feedback would you like to share?



# TOP MANAGEMENT OR SCIENCE QUESTIONS



## **April 28, 2022 TMS Feedback on top questions for a CRB Toxics Data Dashboard:**

- Spatial map to identify regions of concern, areas of low probability of adverse impacts from toxics, areas of inconclusive data
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# “ASK THE AUDIENCE”

What's the best way to report fish tissue toxicity data?

What criteria would you measure fish tissue toxicity data against?

**Are you currently collecting fish tissue toxicity data?**

018

Yes



Not now, but I have in the past



I haven't before, but I might in the future



No, and I have no plans to in the future



# “ASK THE AUDIENCE”

What’s the best way to report fish tissue toxicity data?

What criteria would you measure fish tissue toxicity data against?

Raise your hand or  
put questions/comments/links to resources in **Slido Q&A** -  
go to [slido.com](https://slido.com), enter code [ToxMon](#)

**Do you want to discuss this topic further?**

0 1 1

No

☐ 0 %

Yes, let's talk about this at the December workshop

☒ 45 %

Yes, but December is too late for my needs

☐ 0 %

Yes, but it can wait until the spring

☒ 55 %

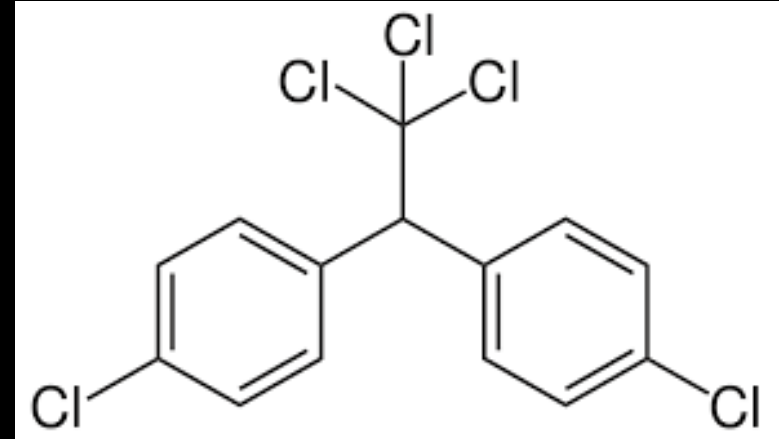
# LIGHTNING TALKS

A horizontal lightning bolt with a bright yellow-orange core and a jagged, branching structure, set against a dark, stormy background with faint, wispy clouds.

1. Lake Chelan DDT Conceptual Site Model, Clay Patmont (Anchor QEA)
2. PFAS Monitoring at Public Water Systems in Washington State, Stan Hoffman (WA DOH, Office of Drinking Water)
3. [POSTPONED] Development of Tools to Site-specifically Monitor Exposure and Effects of Lead in the Tundra Swan, Mark Jankowski (US EPA)

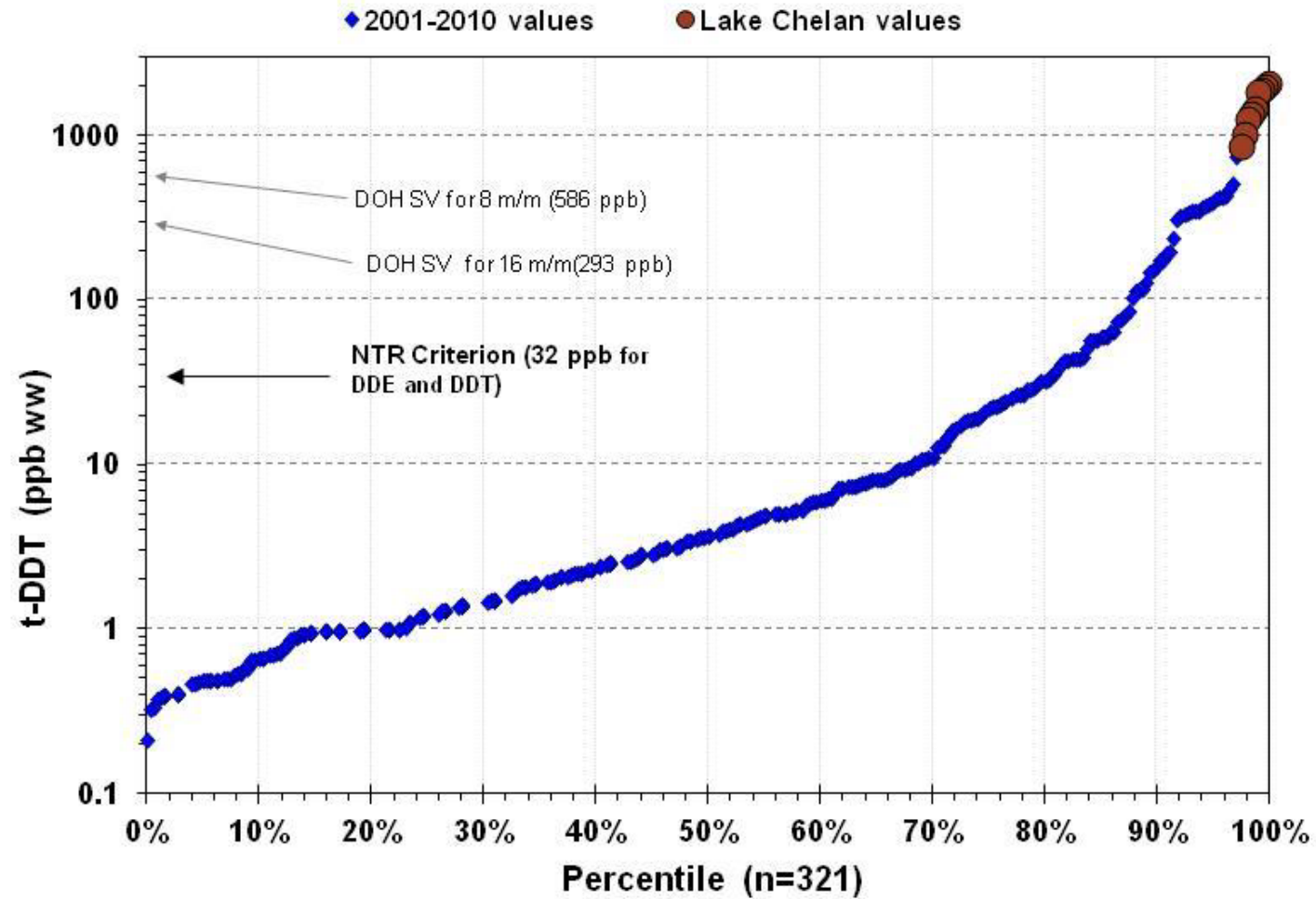
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# Lake Chelan DDT Conceptual Site Model

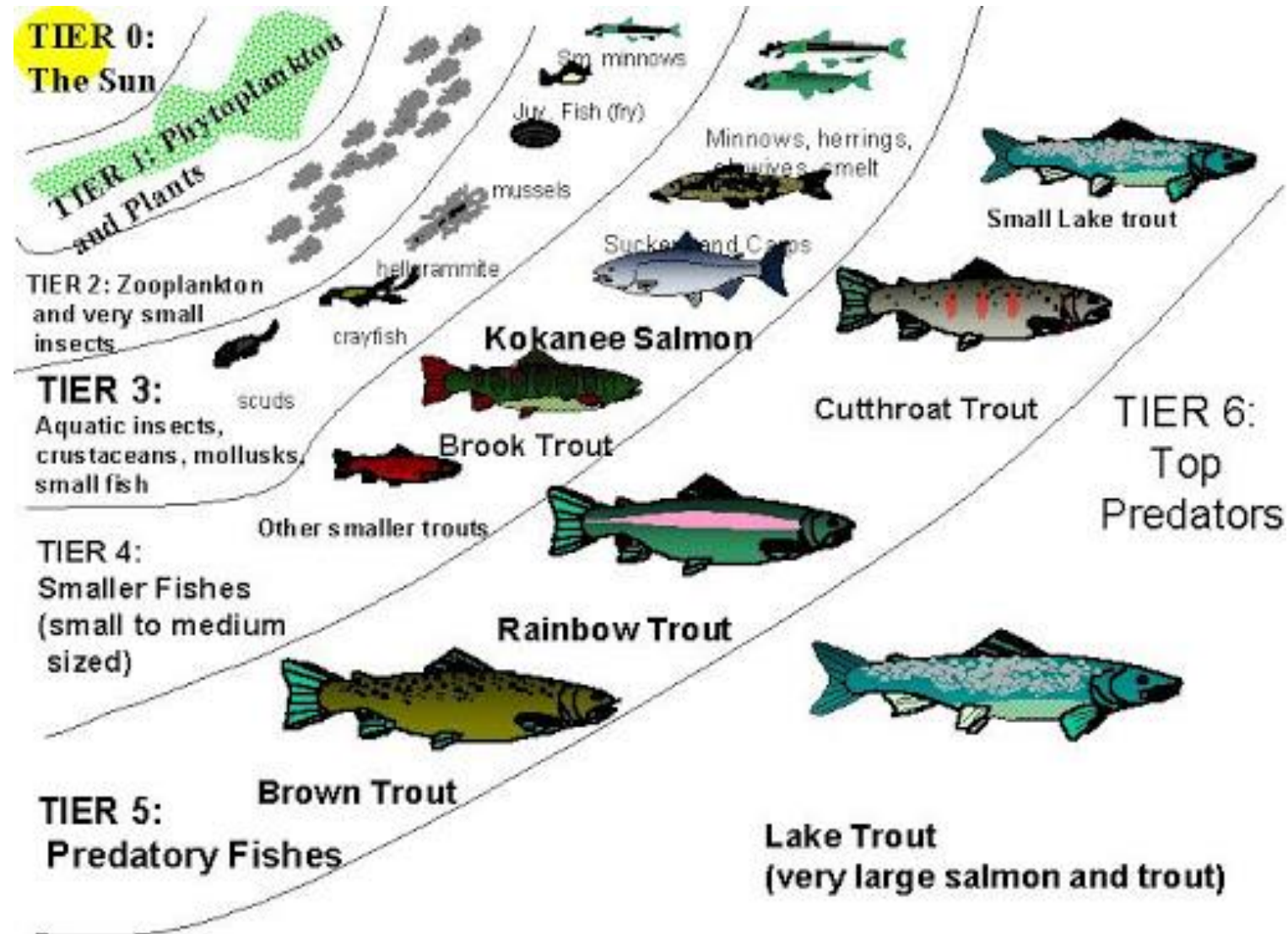




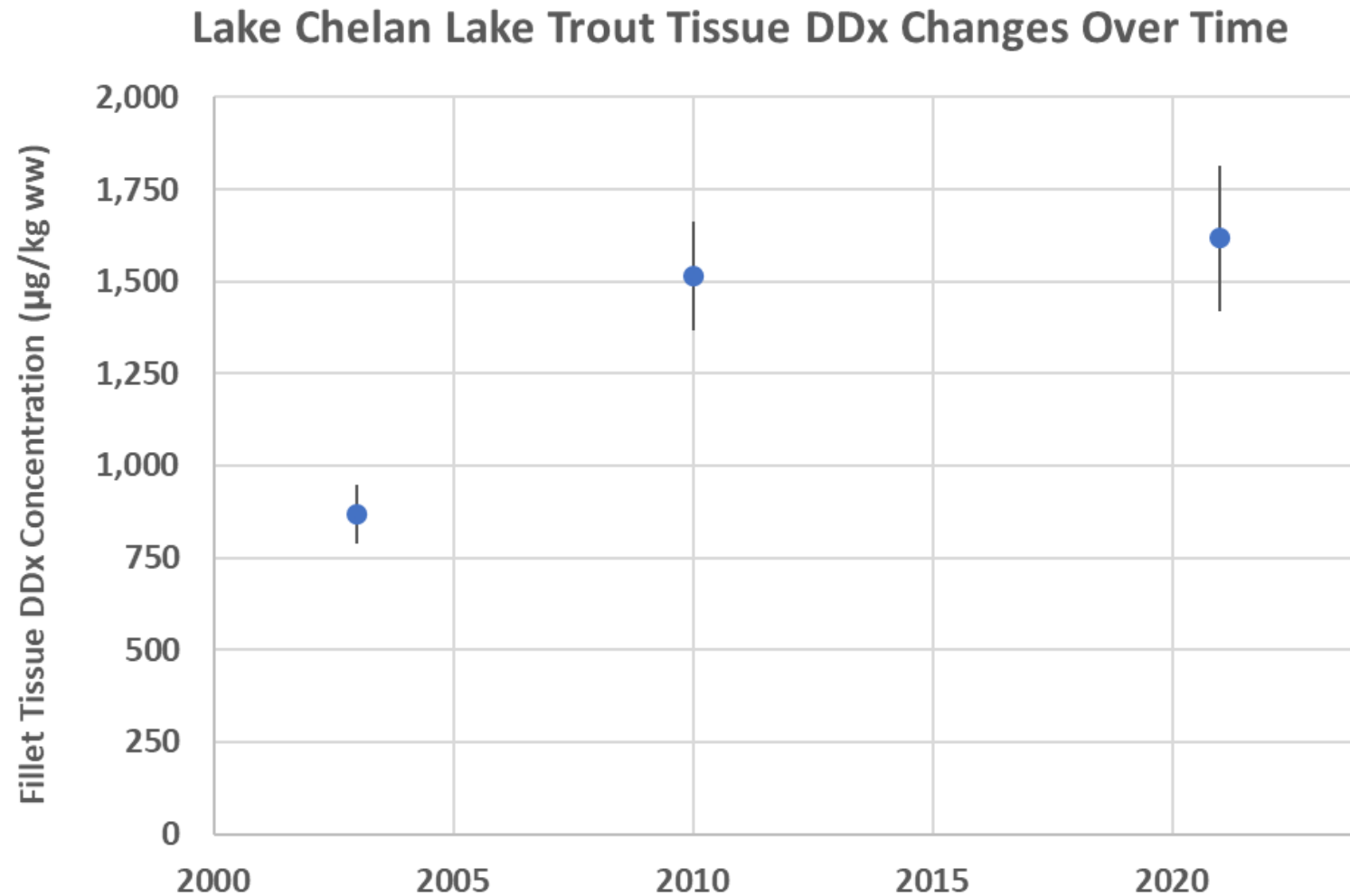
# Relatively High DDT Levels in Chelan Lake Trout



# DDT Trophic Biomagnification



# Lake Trout DDT Levels Not Declining



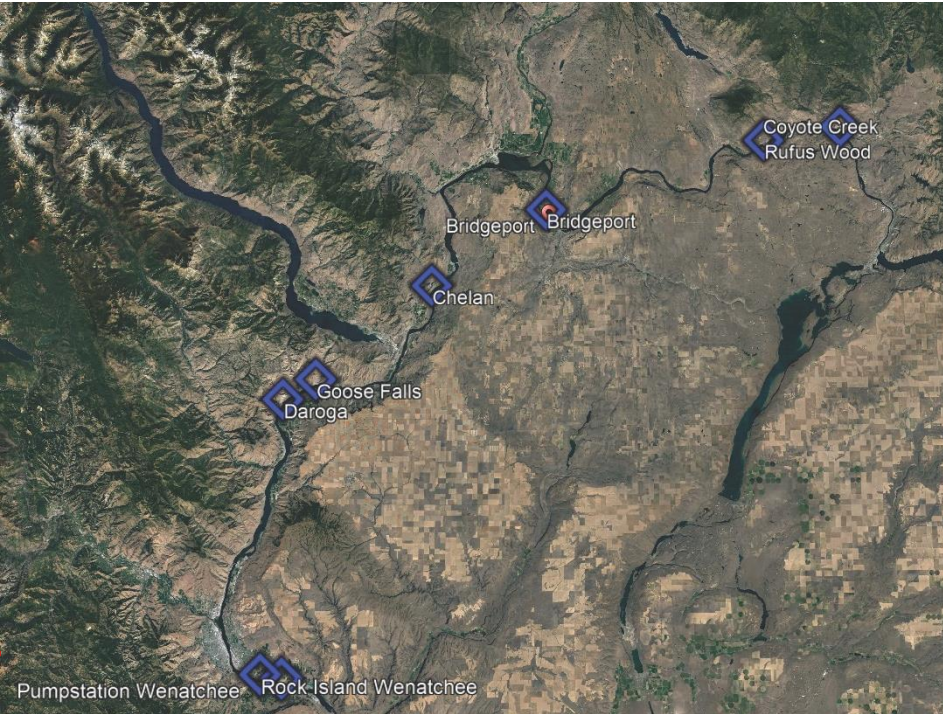
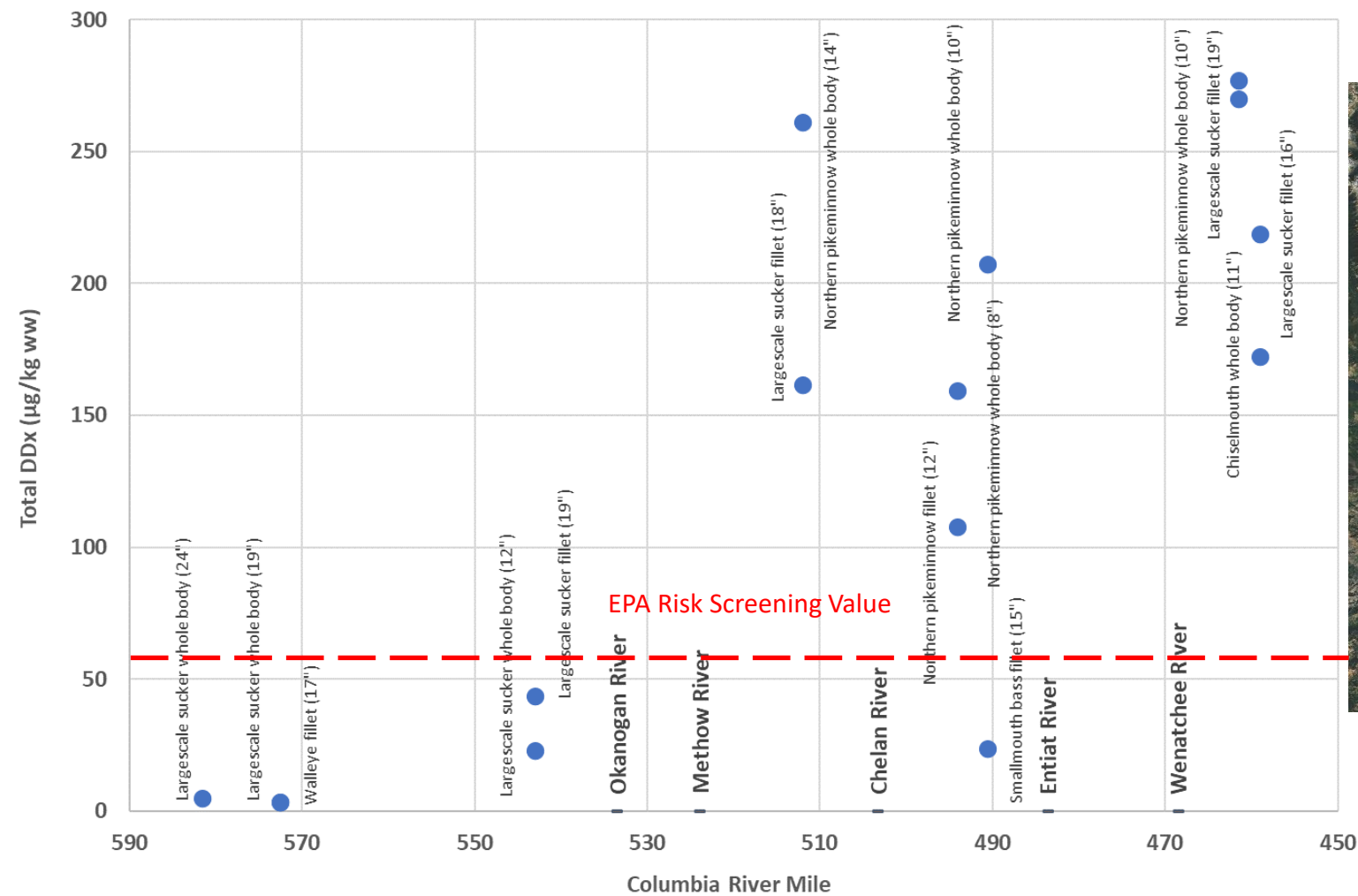
- No measurable decline over past 20 years



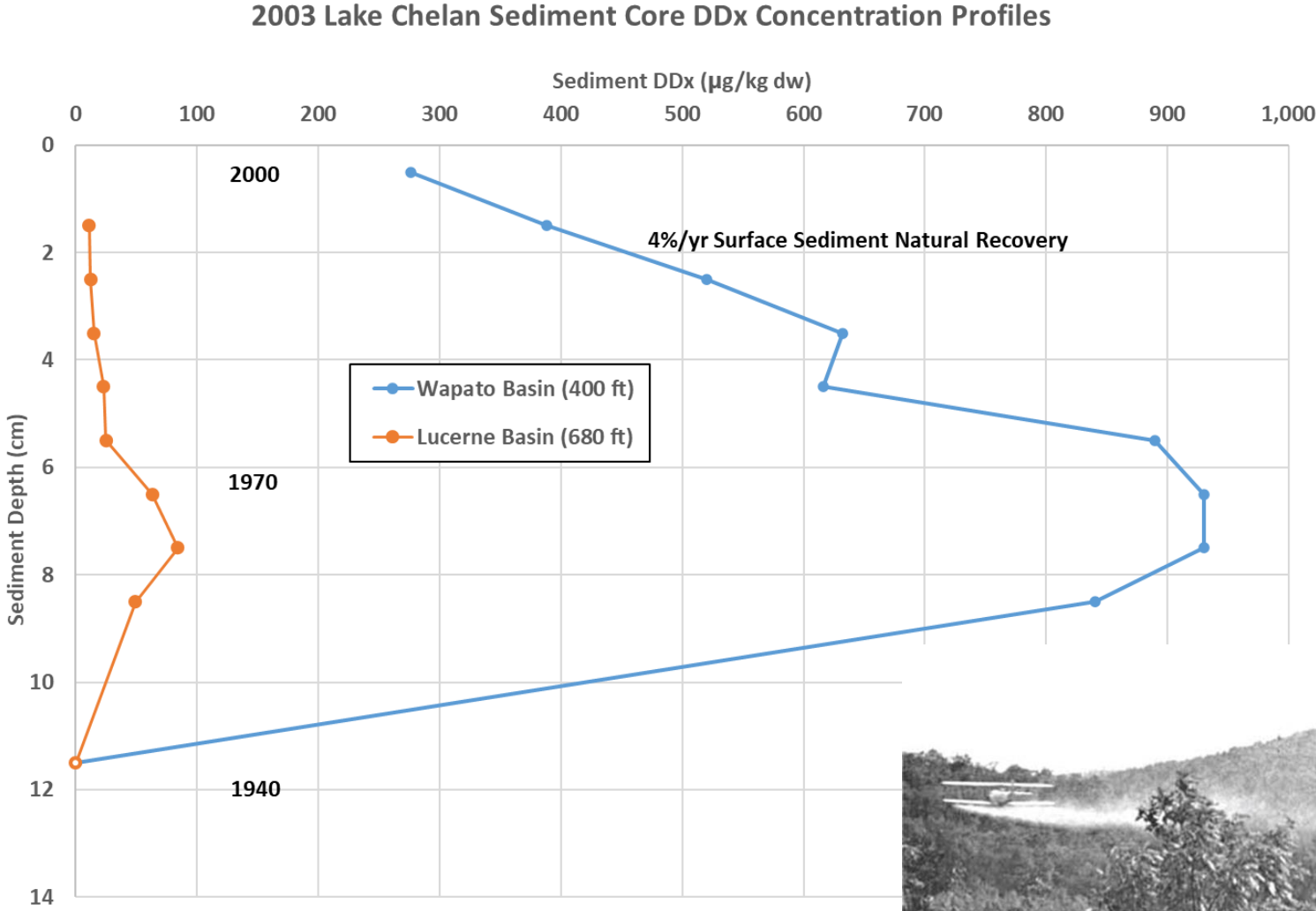


# Fish Tissue DDT Profile in Columbia River

Mid-Columbia River Fish Tissue DDx Concentration Profile  
July 2008 Sampling (whole body and fillet samples)

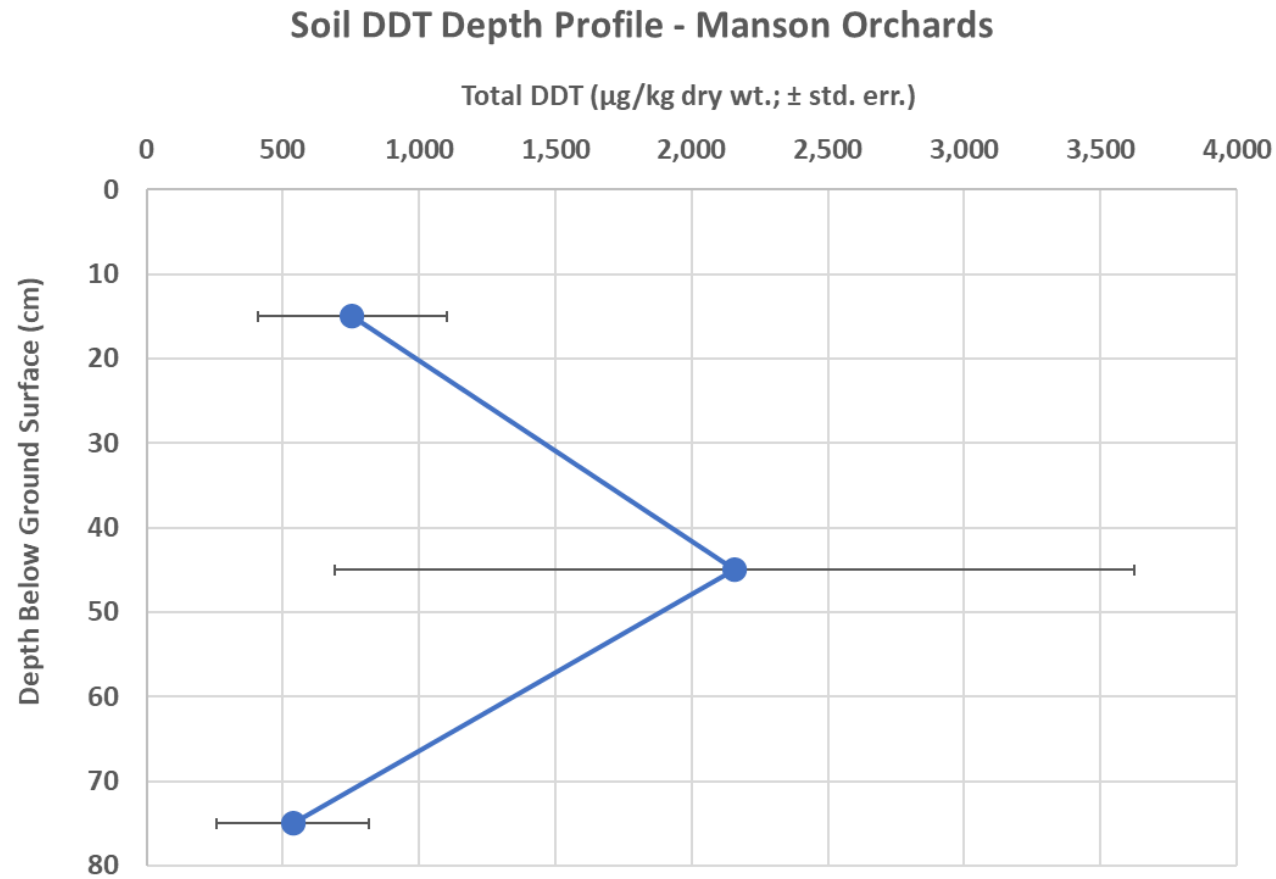


# DDT Applied to ~12,000 Acres of Orchards from Roughly 1943 to 1973



# ~80,000 kg of DDT Remain in Orchard Soils

(~2,000 kg DDT remain in Lake Chelan sediments)

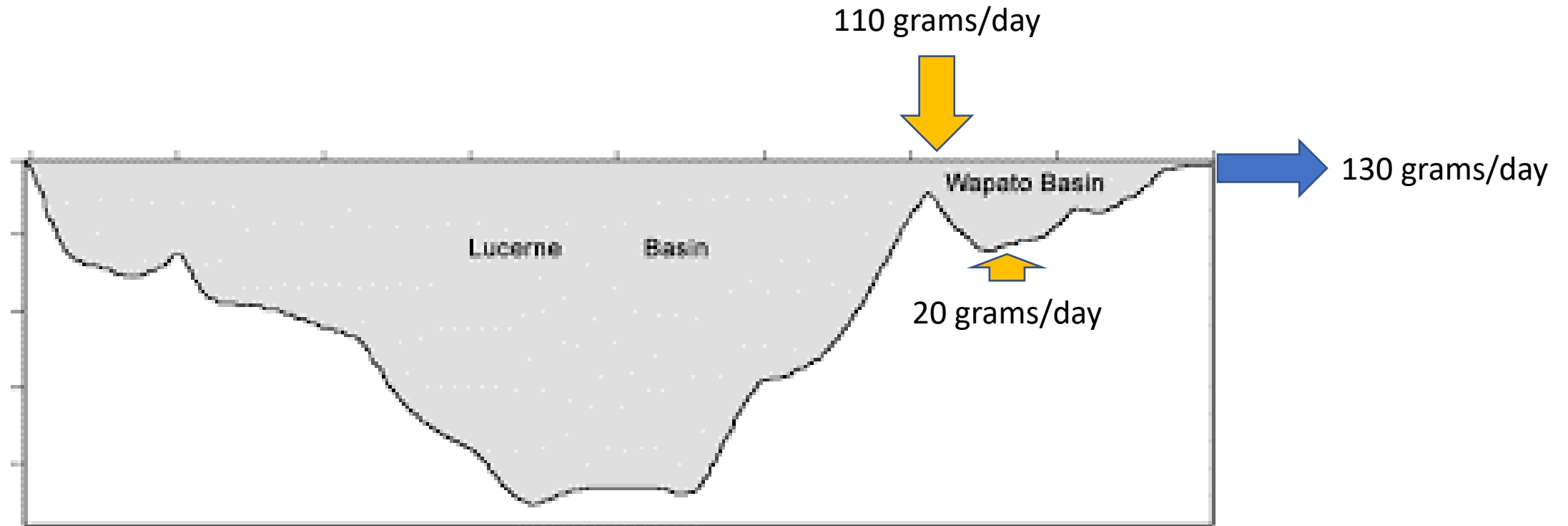


- Ongoing leaching source via drains

# Lake Chelan DDT Mass Balance (2002 – 2006)

Two DDT sources to surface water (and fish):

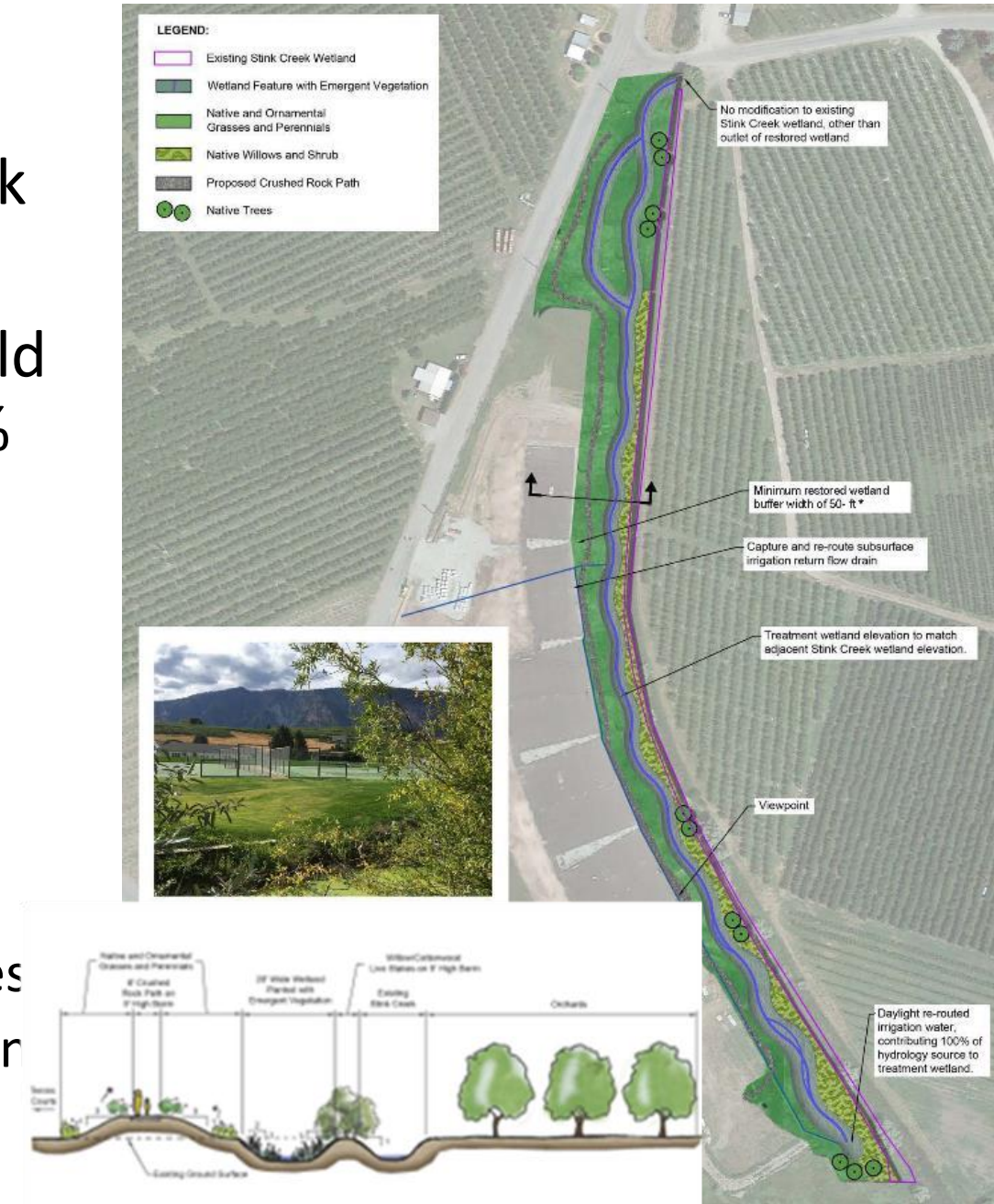
1. Ongoing orchard drain, groundwater, and creek discharges (~85%; likely not declining)
2. Surface sediment release (~15%; declining ~4%/year due to lake sedimentation)





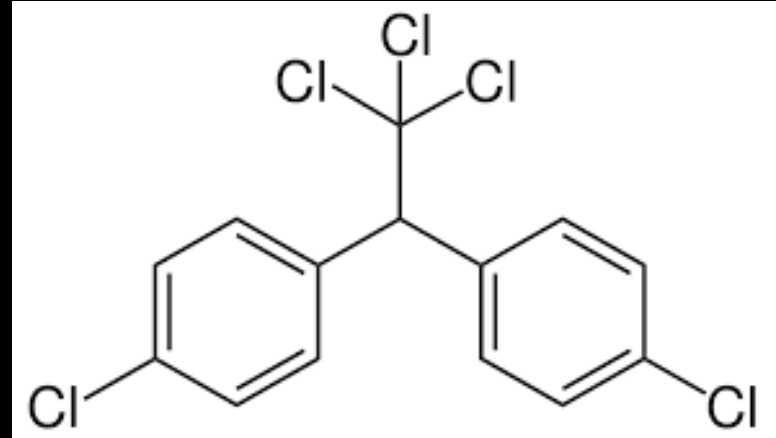
# Potential DDT Controls

- Natural recovery will likely not achieve risk reduction goals for >100 years
- Directing drainage through wetlands would sustainably reduce DDT loading 70 to 95%
- Potential DDT treatment demonstration pilot
  - Possible CRBRP funding through Ecology
  - Year 1: Characterize current DDT loading
  - Year 2: Construct 1 to 2-acre prototype wetland
  - Years 3 to 4: Monitor wetland effectiveness
  - Year 5: Expand wetland treatment in basin



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# Questions?







# PFAS MONITORING AT PUBLIC WATER SYSTEMS

Office of Drinking Water

# PFAS Pronunciation

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- PFAS – is the umbrella term for PFOS, PFOA, PFHxS, PFNA, PFBS.
- PFAS are per- and polyfluoroalkyl substances.
- PFAS sounds like “PEA-fass”.
- PFOS is perfluorooctane sulfonic acid, a kind of PFAS.
- PFOS sounds like “PEA-foss”.

# What is Required of Public Water Systems

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- All Public Water Systems will monitor for PFAS between 2023 and 2025.
  - Except most Transient Non-Community Systems.
- Samples are collected after all treatment but before entry to distribution.
- EPA Methods 533 or 537.1 are both allowed – water systems pick.
- UCMR 5 Systems can use UCMR data.
- Detections require follow-up monitoring.
- Tier 2 public notification for confirmed State Action Level exceedances.

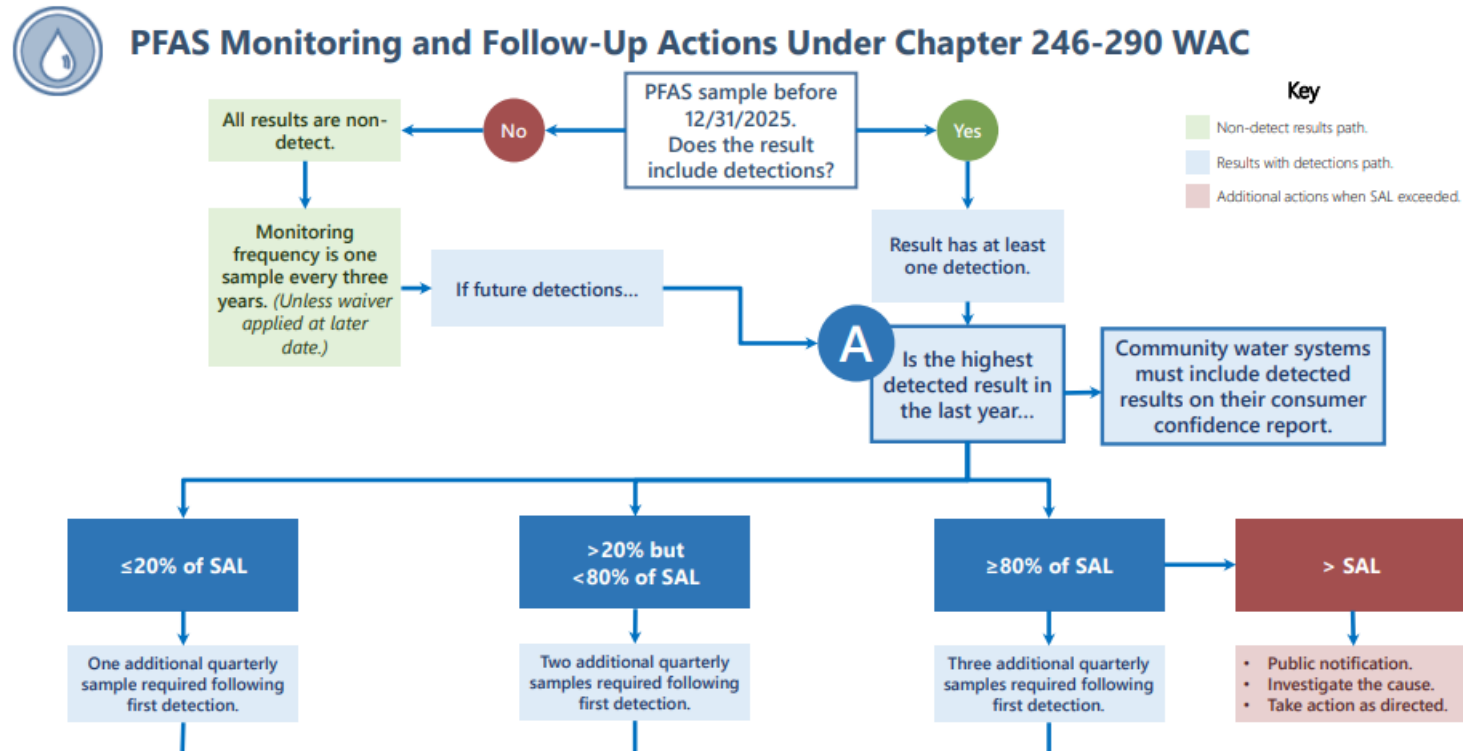
# PFAS State Action Levels

## State Action Levels

The SALs represent the maximum level in tap water that DOH considers to be without health concern for long-term consumption in daily drinking water, including by sensitive groups.

Specific PFAS Contaminant	State Action Level (parts per trillion)
PFOA	10
PFOS	15
PFNA	9
PFHxS	65
PFBS	345

# PFAS Sampling: Follow-up Actions





# What Sampling Shows

## PFAS Testing Results Dashboard

first time, a second confirmation sample is required. The initial and confirmation sample results are averaged to determine if a SAL exceedance has occurred, this averaging of tests are not shown on this map or table.

[View State Action Levels](#)

[Click to learn more about PFAS water testing data in Washington](#)

[Click to watch a video about how to use this dashboard](#)

**MAP LEGEND** Selections made determine which water source data are included on the map.

- ☒ Map the most recent PFAS test result for each water source
- ☐ Map the highest PFAS test result for each water source



Not Tested



No PFAS detected



PFAS detected at levels below State Action Level (SAL)



PFAS detected at levels exceeding State Action Level (SAL)



Indicates action is or has been taken to remove or reduce PFAS exposure

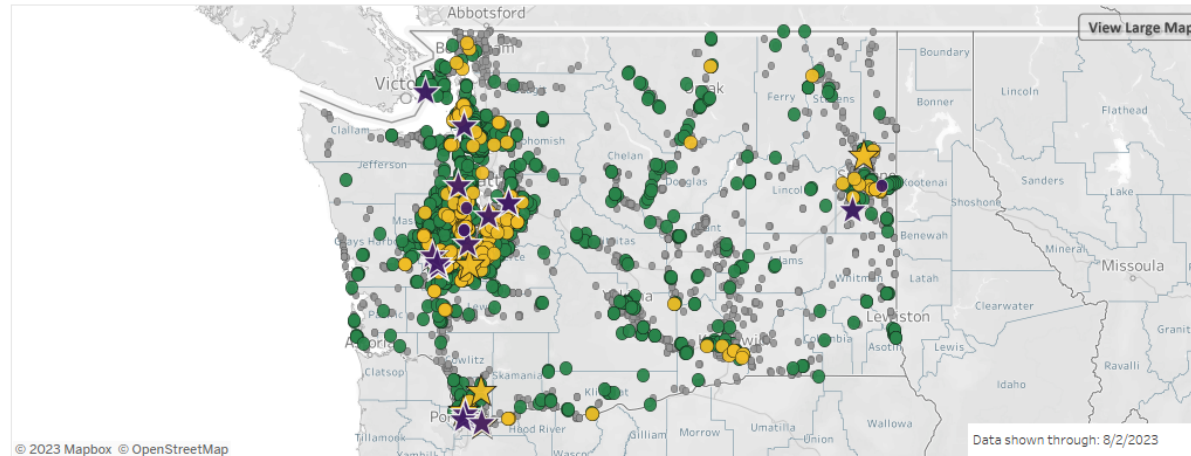
Include

Include

Include

Include

Include



# Summary Data



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## PFAS Testing Results Dashboard

### Summary of PFAS Water Testing Data

[Click here to return to the PFAS water testing map and data table](#)

Under state regulations, there are 2,422 water systems and 3,966 water system sources required to sample for PFAS in drinking water. A single water system can have multiple sources of water that supply the system. The questions below are commonly asked about PFAS water testing. Use the filter to see summary statistics for all counties, or the counties you are interested in.

Select County:

How many water systems and how many water sources have tested for PFAS under Washington rule?

**905 water systems, and 1,613 water sources have reported at least one water sample test for PFAS.**

How many water systems and how many water sources have detected PFAS?

**177 water systems, and 307 water sources have reported at least one sample test detecting PFAS.**

How many water systems and how many water sources have detected PFAS above a state action level?

**19 water systems, and 29 water sources have reported at least one water sample test above a state action level.**



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# WINTER WORKSHOP



December 5, 2023

9:00 AM – 4:30 PM PT

Portland, OR / Virtual

## Workshop Focus

Task 1. Identify data gaps and areas of synergy for sampling and data management

Task 2. Develop recommendations for common collection and analytical methods to enable cross-project data comparisons





# THANKS FOR JOINING US!

Questions? Want to join the TMS distribution list?  
Email us at [gs-crbtoxmon@usgs.gov](mailto:gs-crbtoxmon@usgs.gov)