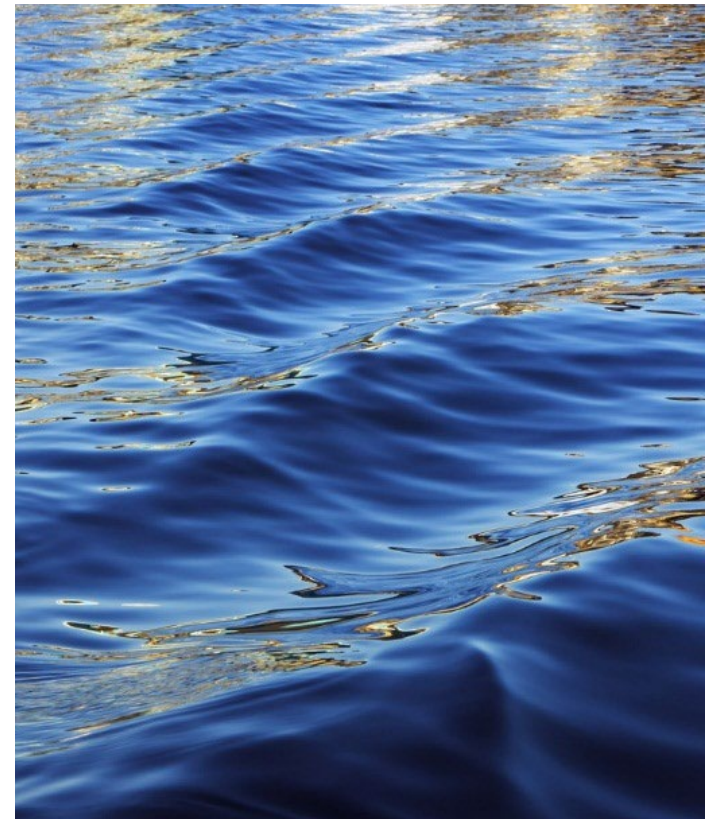




# Citizen Coordinating Council

Lower Basin  
Information Session

April 3, 2024



# Meet Our Team



**BONNIE ARTHUR**  
Remedial Project Manager



**DON CARPENTER**  
Remedial Project Manager



**JOCELYN CARVER**  
Remedial Project Manager



**TYLER CHATRIAND**  
Remedial Project Manager



**JENNIFER CRAWFORD**  
Remedial Project Manager



**EDWARD HAGAN**  
Remedial Project Manager



**TAMARA LANGTON**  
Remedial Project Manager



**ERIC NICOLAI**  
Remedial Project Manager

# Overview

- Lower Basin Background
- Plan for Prioritizing work in the Lower Basin
- Initial List of Priorities
- Questions

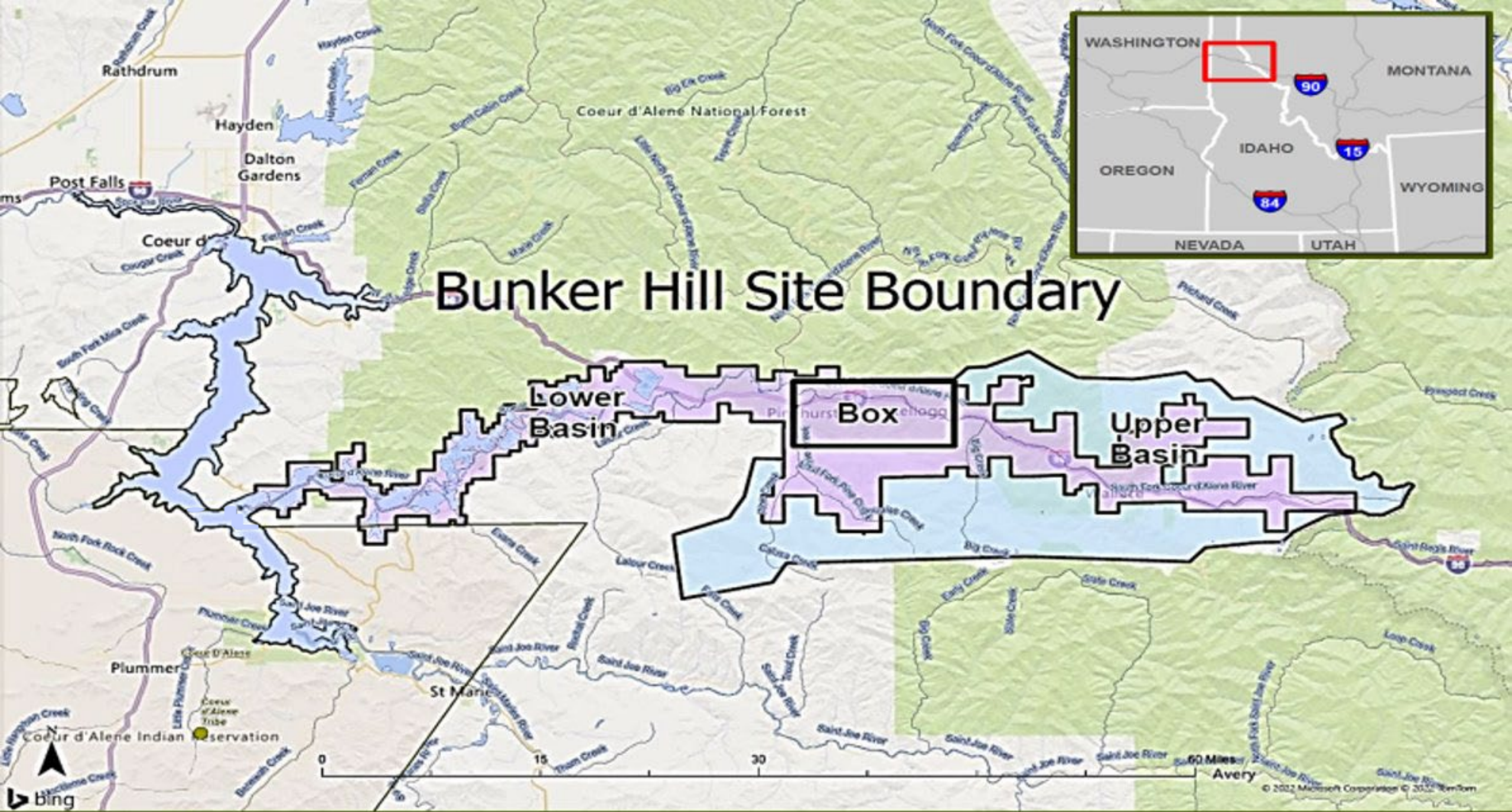


EPA Photo



# Lower Basin Background





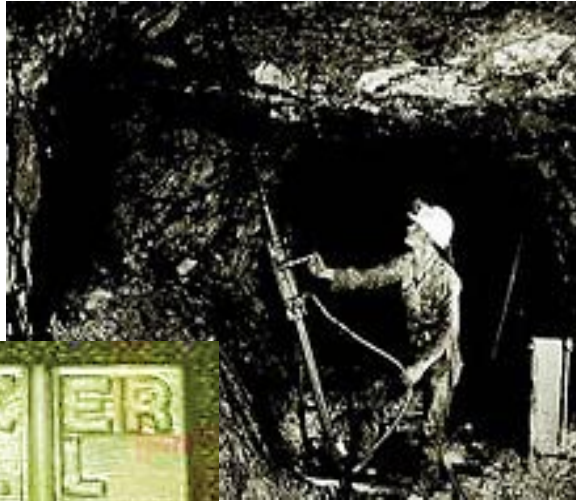
# Bunker Hill Site Boundary

Lower Basin

Box

Upper Basin

# Century of Mining, Milling & Smelting



- **The Upper Basin + Silver Valley**

- ✓ Mining & Milling: 1880s - today
- ✓ Smelter Operations: 1917 – 1981

- **Spoils of Success**

- ✓ One of the world's largest producers of lead, zinc & silver .
- ✓ By 1994, > \$5 billion in silver mined

- **Legacy of Widespread Contamination**

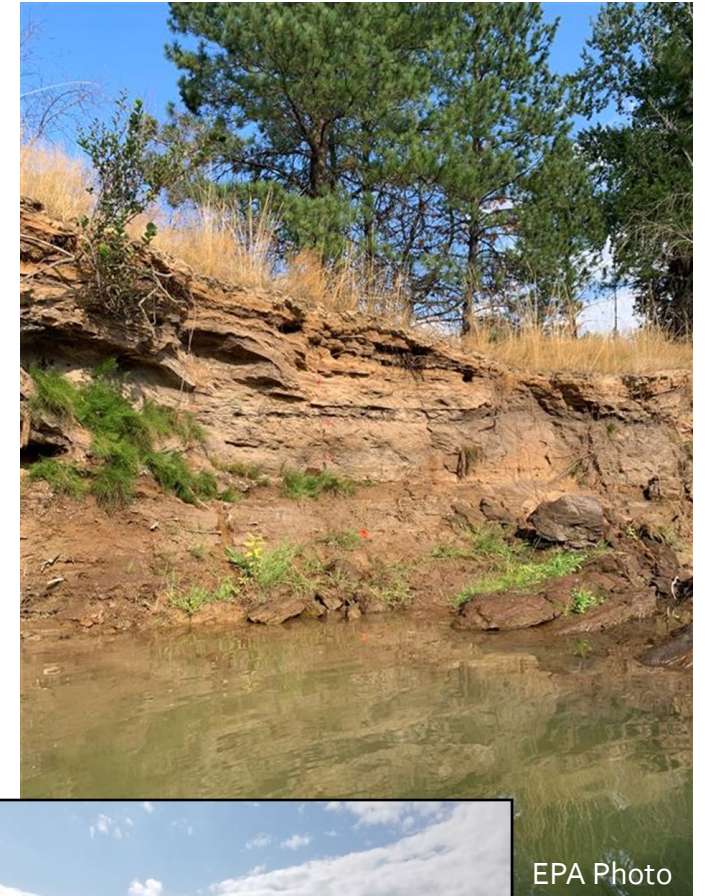
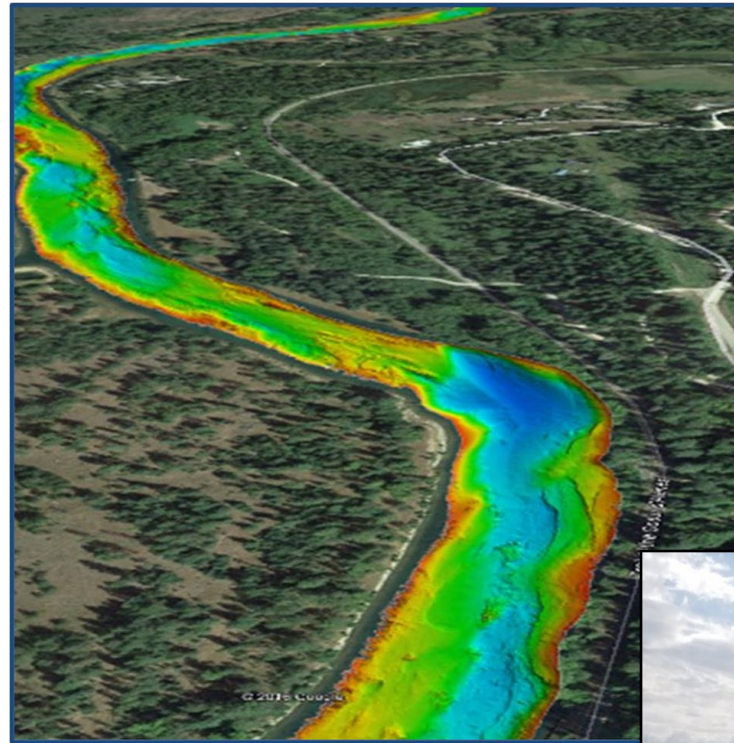
- ✓ Over 100 million tons of mine waste including 2.4 billion pounds of lead spread over thousands of acres.

# Direct Discharge to Creeks & Rivers



# Scope of Work in the Lower Basin

- ROD Defined:
  - Riverbed (2.6 million cy)
  - Riverbanks (33.4 miles)
  - Wetlands (1,169 acres)
  - Lateral Lakes (1,859 acres)
  - Ag to Wetland (1,500 acres)
  - Sediment Traps (4)
  - Recreational Sites (69)



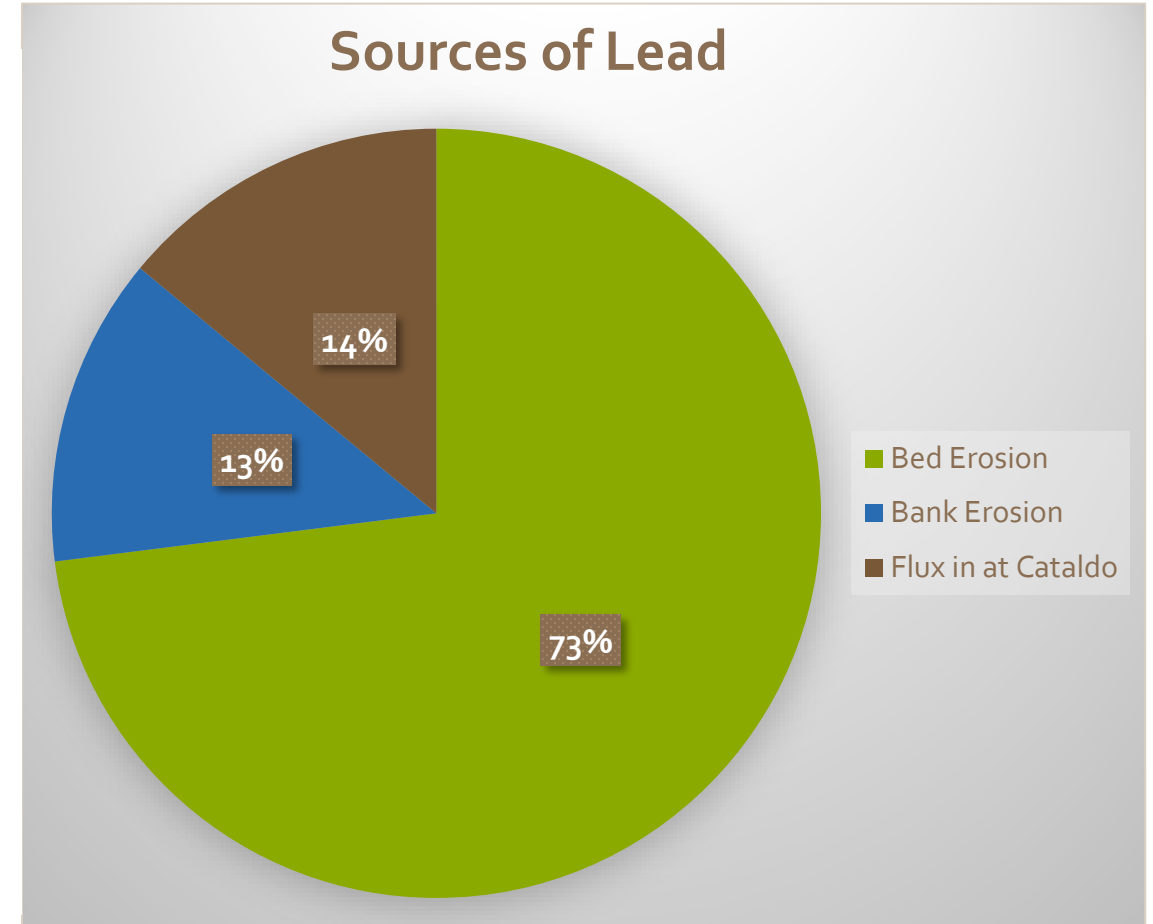
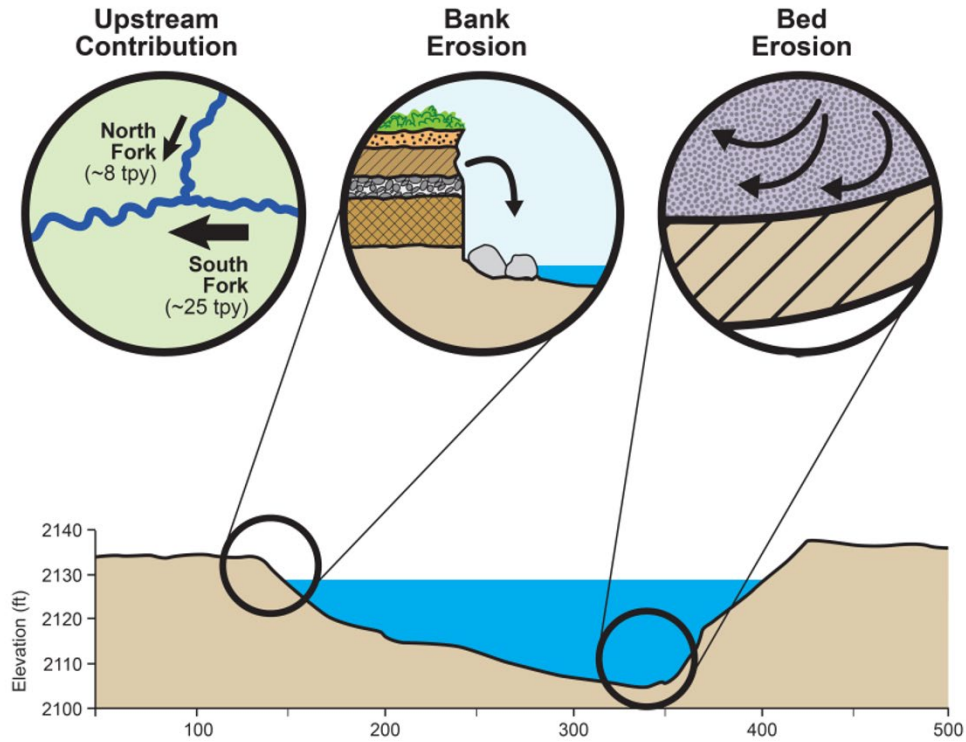
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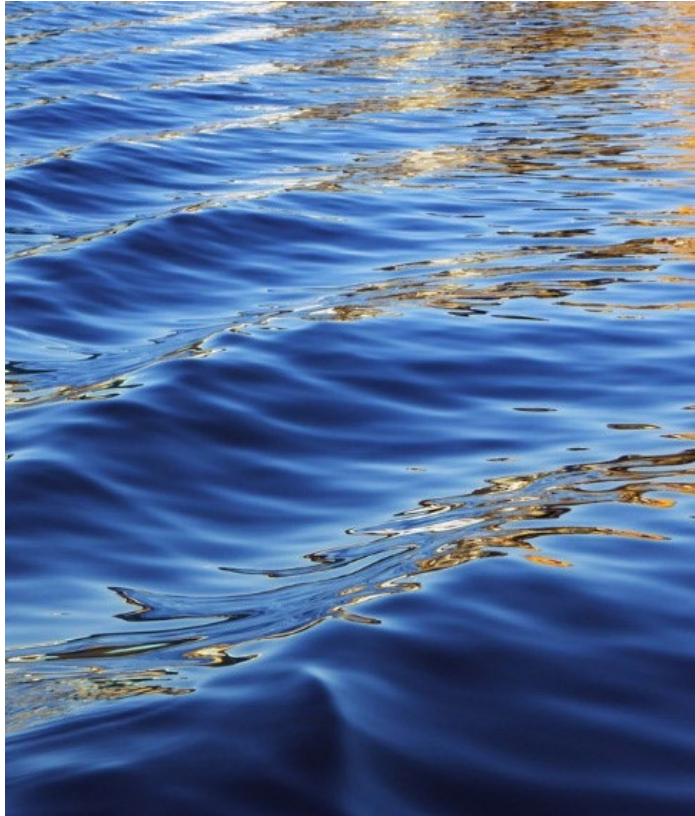
# Sources of Lead in Lower Basin



- About  $\frac{3}{4}$  of lead is coming from the riverbed
- Inflow and bank erosion are relatively minor contributors

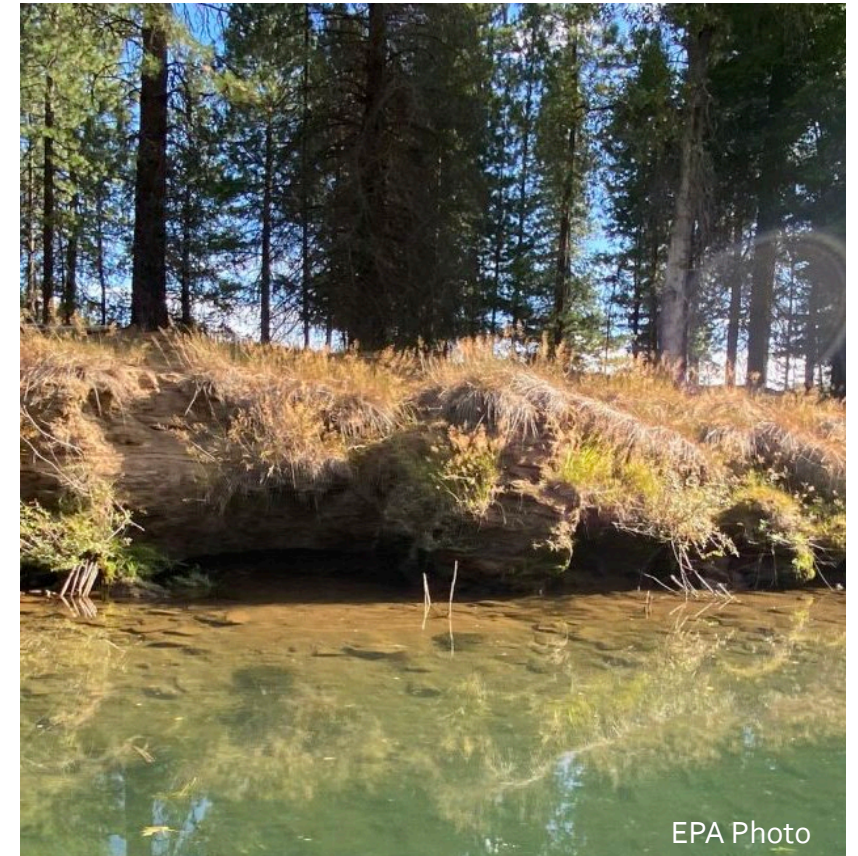


**How do we  
prioritize work in  
the Lower Basin?**



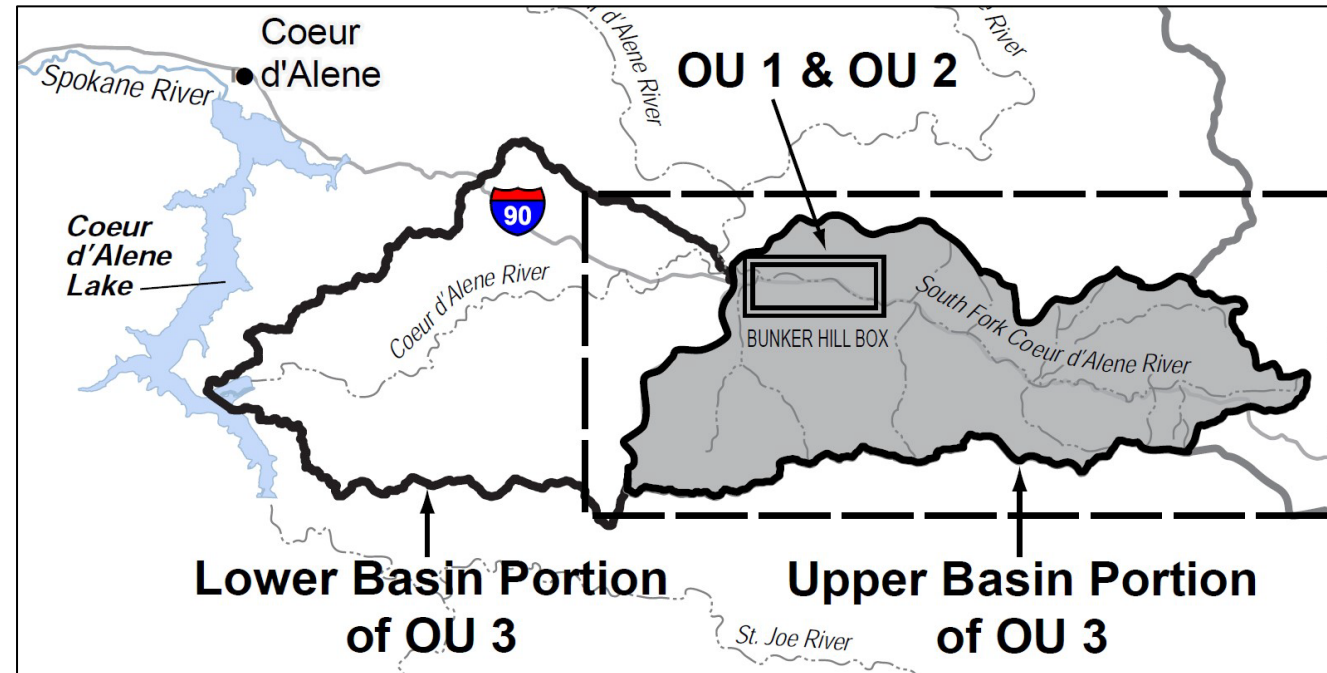
# We developed the Lower Basin Prioritization Plan!

- Provides an initial approach towards prioritizing remedial actions and related data gap investigations
- Helps select pilot projects
- Applies an adaptive framework to guide pilot projects and remedial actions
- Divided into Remedial Action Site Categories:
  - Riverbeds and banks
  - Wetlands and lateral lakes
  - Recreational sites



# Why do we need a Prioritization Plan?

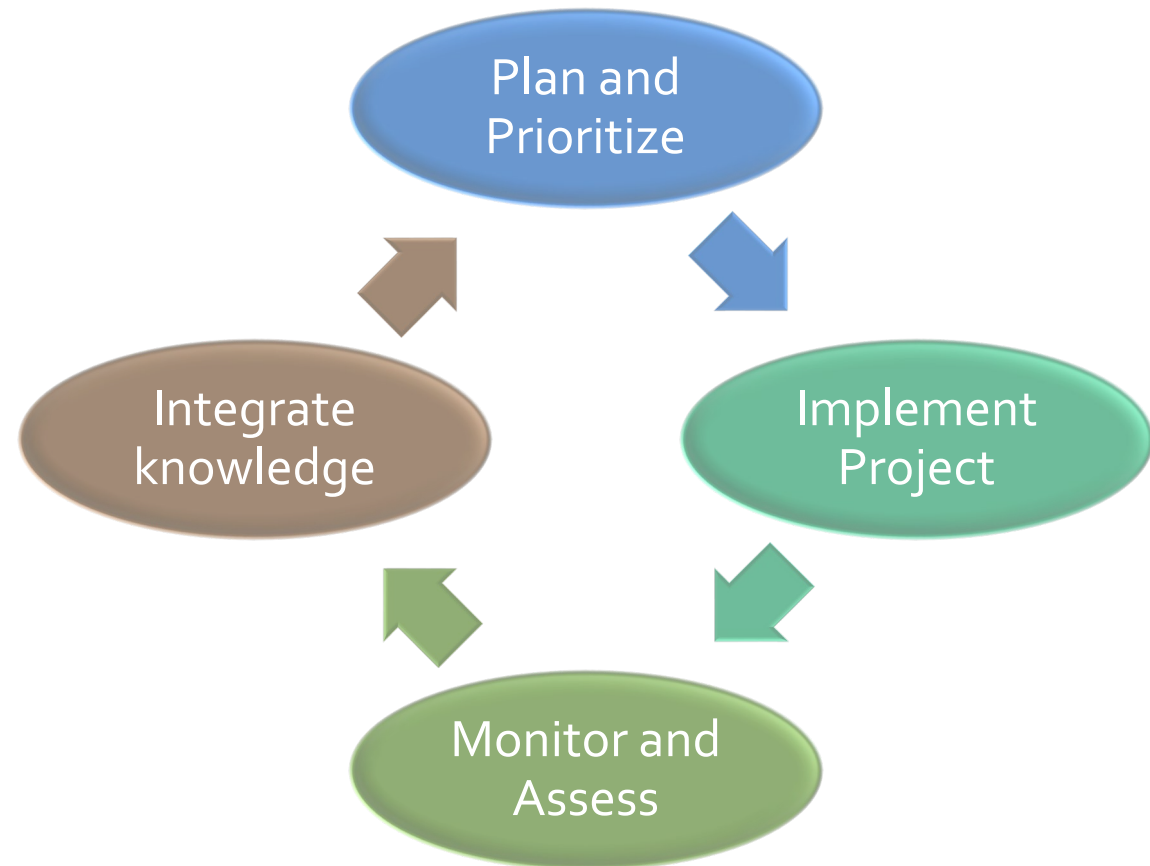
- Lots of work to do!
- Tackle the biggest sources of contamination
- Flexibility
- Must be balanced with Upper Basin work:
  - Mine and mill sites, repositories, Basin Property Remediation Program, and recreational sites



# How will this Prioritization Plan be used?

- Process
  - Create initial prioritization
  - Revisit it annually
  - Create a 10-year plan
  - Balance work between Upper Basin and Lower Basin
  - Work within the Trust's annual budget (\$30m per year)

## Adaptive Management





# Initial Priorities

Riverbeds and Banks

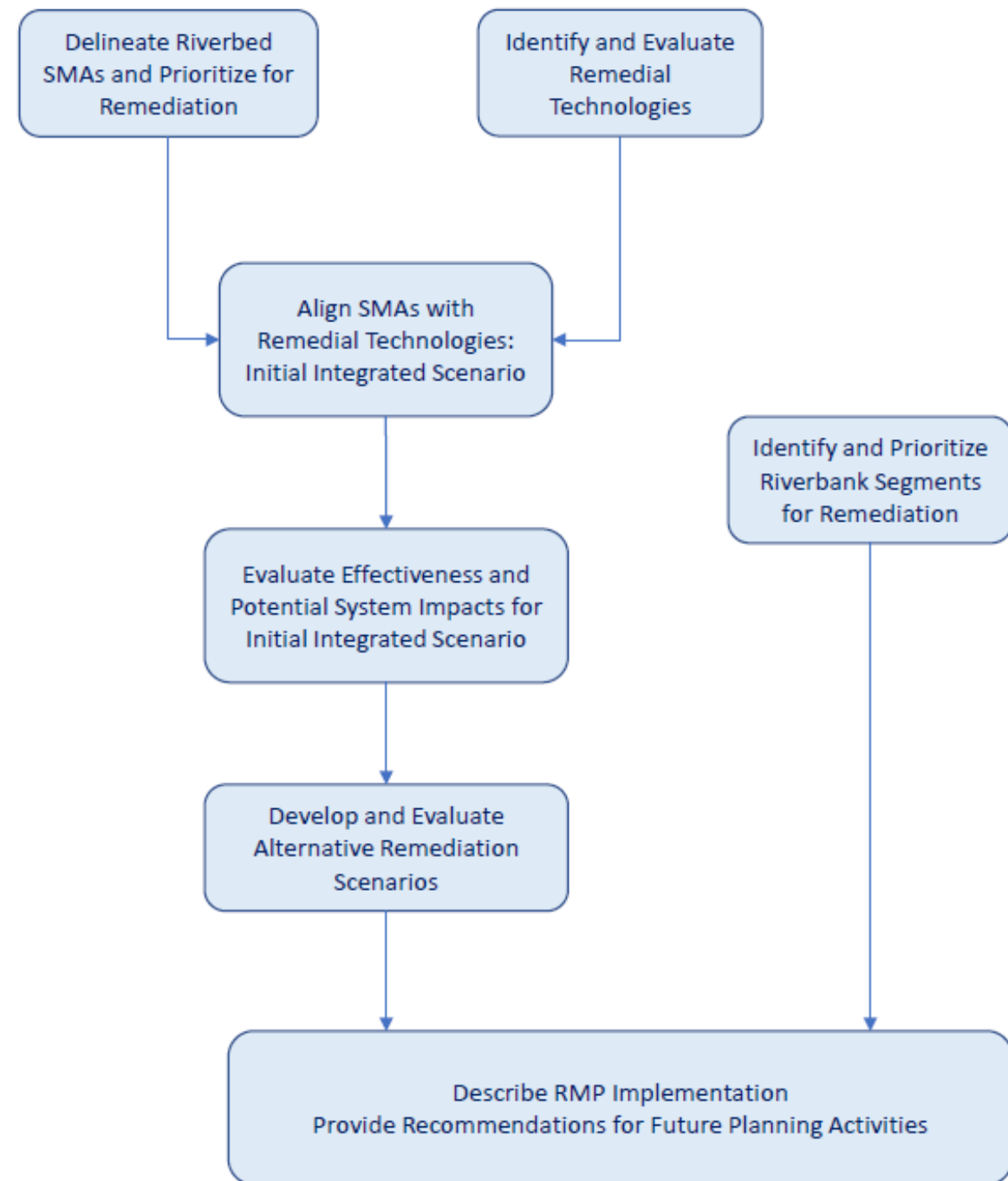
Wetlands and Lateral Lakes

Recreational Sites with Risks to People's Health



# Riverbed Management Plan

- Purpose - "to guide implementation of the interim remedy for the Lower Basin riverbed and banks by providing information and analyses for selected remediation scenarios..."
- Approach
  - Identify and Assess various remedial technologies for effectiveness and system responses (i.e., water surface elevation changes) using several modeling tools.



# Dudley Reach Scour Hole Pilot Project

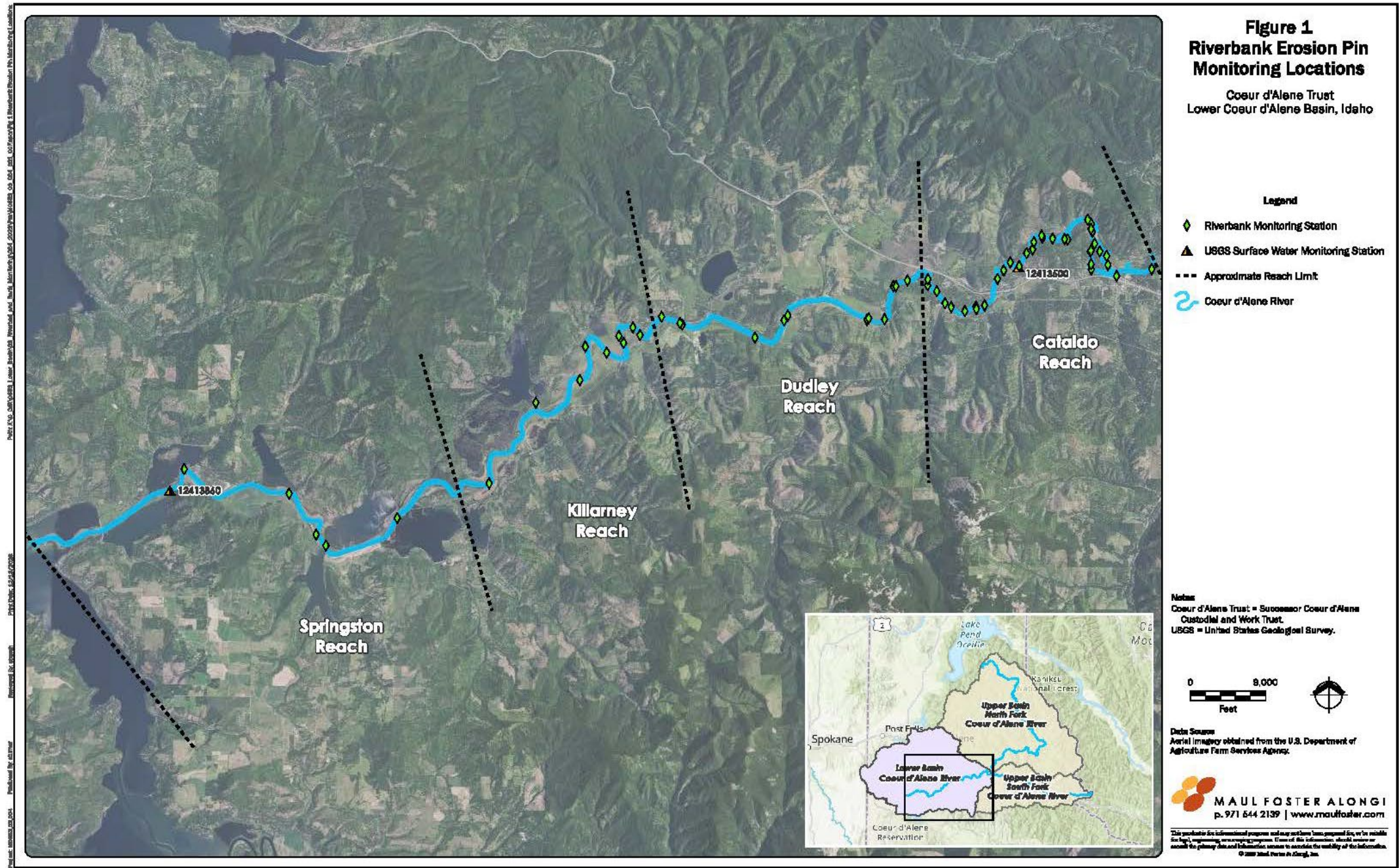


## Pilot Project Goals

- Reduce downstream migration of particulate lead from the riverbed and banks while minimizing adverse system responses.
- Develop means and methods for technology applications elsewhere in the Lower Basin
- Establish monitoring methods for assessing remedy performance.

**ROD Benchmark** – 50% reduction in particulate lead loading during high flow events





# Riverbank Monitoring

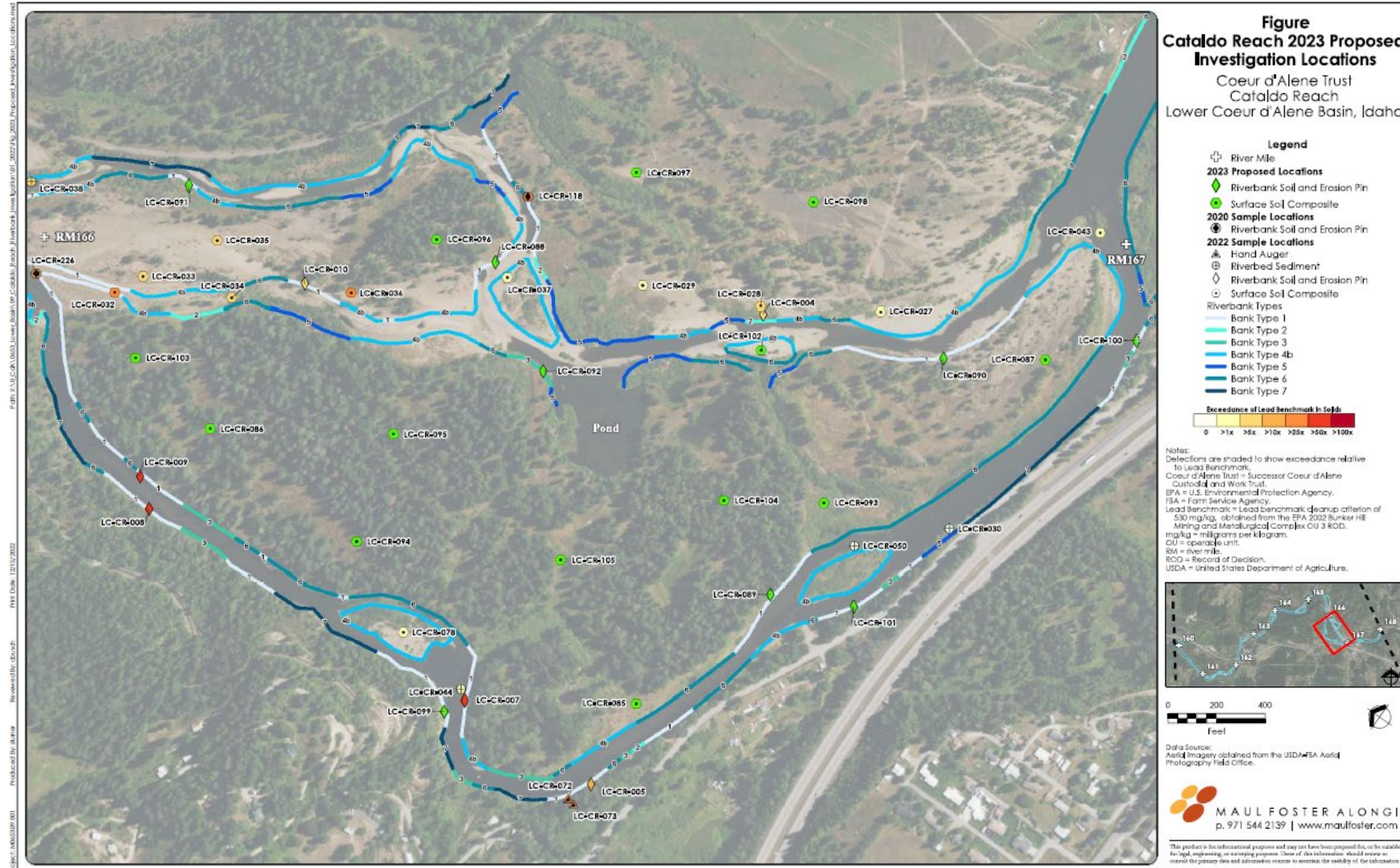
- Monitoring Goals
  - Understand location and extent of riverbank types
  - Understand nature and extent of metals concentration
  - Evidence of recreational use
  - Understand bank erosion rates and lead loading
- How do we achieve these goals?
  - Riverbank Inventory
  - Erosion pins
  - Sediment samples
  - Riverbank wedge sampling
  - Stratigraphy



Photo courtesy of CDA Trust

# Cataldo Reach

- 35 monitoring stations
- To- date , 4 banks have had one or more pins completely erode out
- In 2023, highest erosion rate was observed in Cataldo
- For 2024, focusing on bank types 1-3 (highly erodible) and the island between RM 166-167.

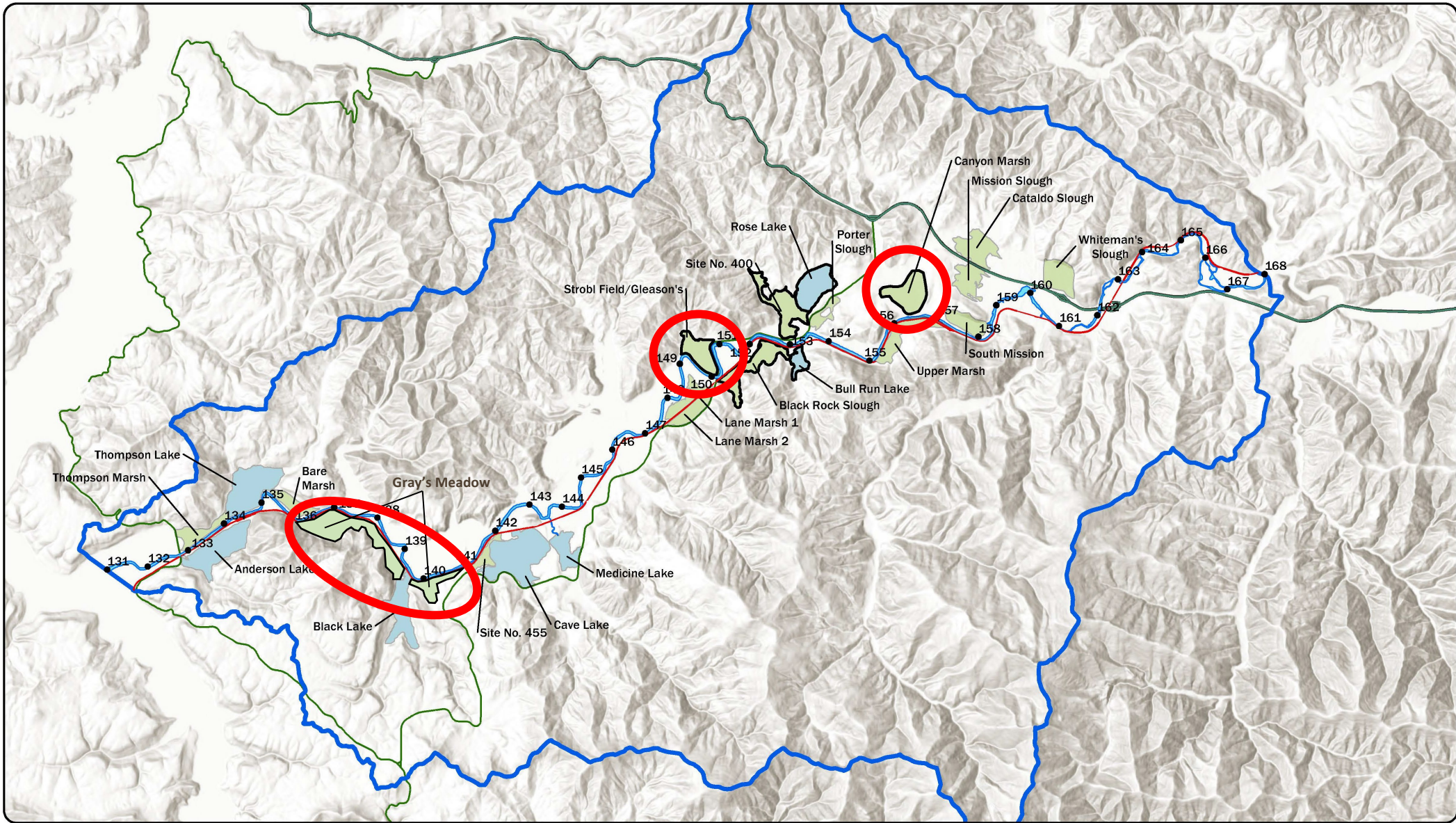


# Wetlands and Lateral Lakes

- Gray's Meadow (695 acres)
  - Ag-to-wetland conversion
  - Under construction until December 2024
  - O&M starts in 2025
- Gleason Wetland (270 acres)
  - Ag-to-wetland conversion
  - Pre-Design Investigation began in 2022
  - Design to begin in 2026
- Canyon Marsh (349 acres)
  - Existing mix of wetland and ag-land
  - Pre-Design Investigation to begin in 2028
  - Design to begin in 2032

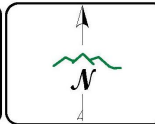


Photo courtesy of Inland Northwest Land Conservancy



**LEGEND**

SITES WITH LOW RECONTAMINATION POTENTIAL	RIVER MILES	STATE HIGHWAY
LOWER BASIN LAKE/POND	COEUR D'ALENE LOWER BASIN HYDROLOGIC BOUNDARY	
LOWER BASIN SWAMP/MARSH	COEUR D'ALENE RIVER	
TRAIL OF THE COEUR D'ALENES	INTERSTATE	



DISPLAYED AS:  
 PROJECTION/ZONE: IDAHO STATE PLANE WEST  
 DATUM: NAD 1983  
 UNITS: US FEET  
 SOURCE: ESRI/PIONEER

Miles

**FIGURE 4-2**  
**INITIAL PRIORITIZED WETLANDS AND LATERAL LAKE SITES**

DATE: 4/26/2022

# Gray's Meadow Remedial Action and Restoration



Photos courtesy of Pioneer Technical Services, Inc.



Photos courtesy of Pioneer Technical Services, Inc.

# Recreational Sites

- Goal - To reduce people's exposure to lead and other metals in areas used regularly for recreational purposes
- Challenges:
  - Recontamination from high water events
  - Remote, continuously changing
- Examples of work:
  - Capping
  - Hard landscaping
  - Signage
  - Revegetation
  - Education
  - Cleanup

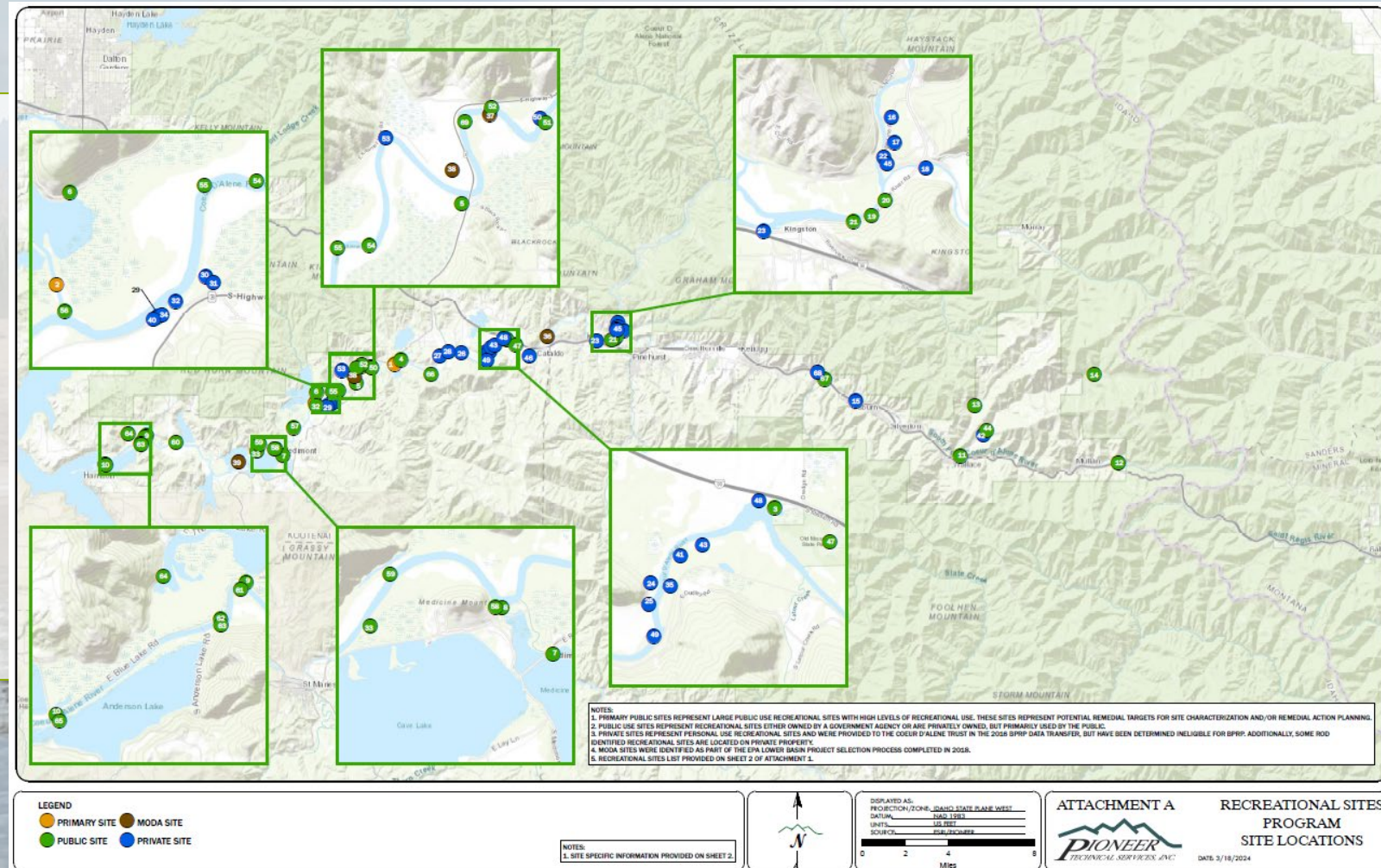


Hwy 3 bridge remediation complete : Photo courtesy of BEIPC



# Recreational Site Categories

- Primary Public Sites (2)
- Public Sites (35)
- MODA Sites (4)
- Private Sites (28)



Killarney Beach Peninsula: Primary Public Site. Photo & Map courtesy of Pioneer.

# Other Work in the Lower Basin

- Basin Environmental Monitoring Program (BEMP)
  - Groundwater, Surface Water, Soil, Sediment, and Biological Monitoring
  - 3-Tier Structure:
    1. Site-Specific
    2. Area-Wide
    3. Site-Wide
- Waterfowl Research
  - Tundra Swan Study
  - Wood Duck Study



Photo by Nick Korzen, USGS



Photos courtesy of IDFG and USFWS

# Ways to Continue Communication

- **Basin Commission Website:**  
<https://www.basincommission.com/>
- **Join our mailing list:**  
<https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=1000195>
- **Follow the Coeur d'Alene Facebook page:**  
<https://www.facebook.com/CDAbasin/>
- **Contact EPA's Community Involvement Coordination team:**
  - Rafi Ronquillo (206)-603-6358, [Ronquillo.Rafi@epa.gov](mailto:Ronquillo.Rafi@epa.gov)
  - Deb Sherbina (206)-679-9667, [Sherbina.Deb@epa.gov](mailto:Sherbina.Deb@epa.gov)



**Thank you!**

**Questions?**

