

Bunker Hill Superfund Site

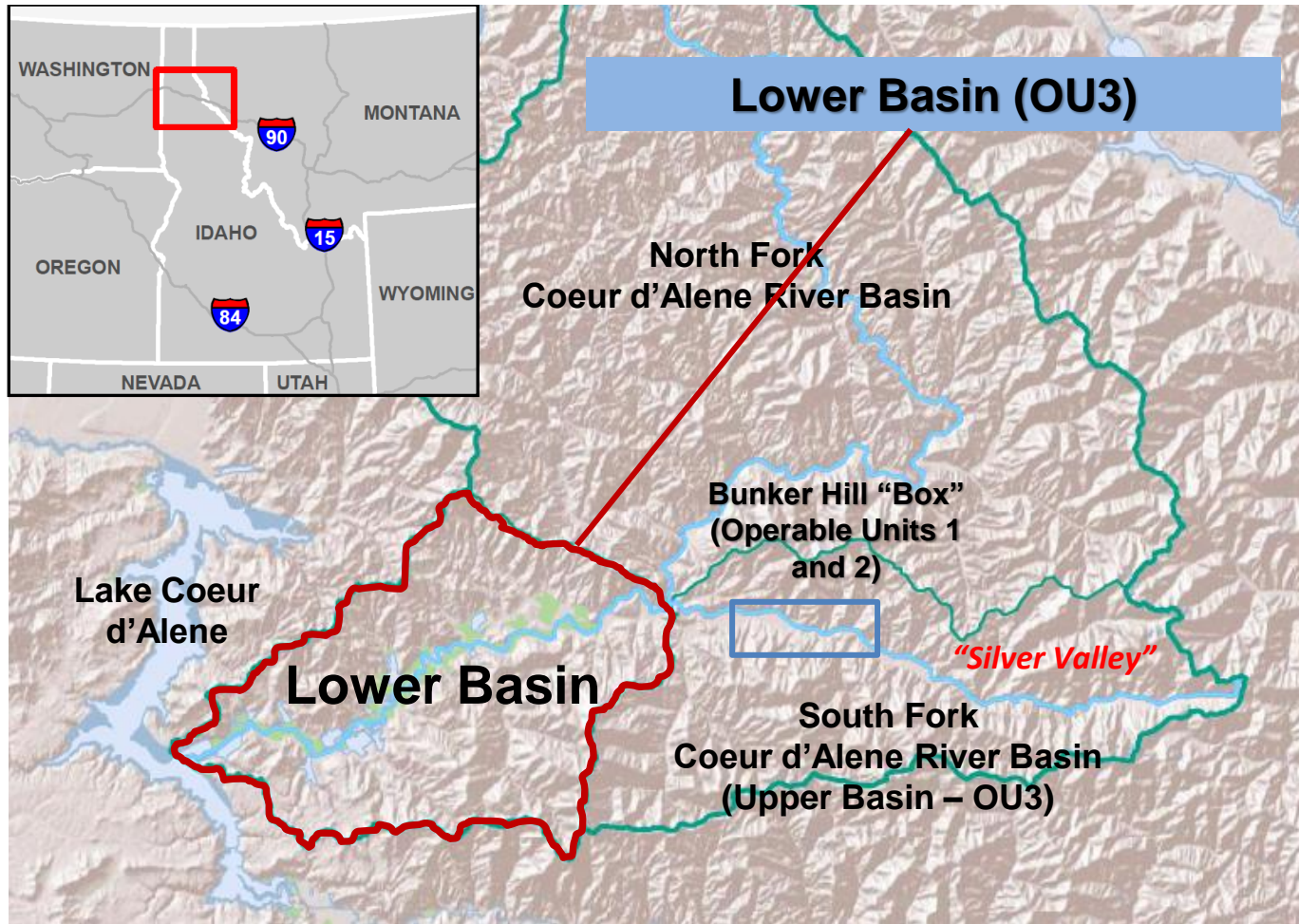
Update on Construction Season

Accomplishments in Upper and Lower
Basin

November 9, 2022



BUNKER HILL SUPERFUND COMPLEX



Topics for Today

- **Basin Property Remediation Program**
- **Recreation Sites**
- **Ninemile Basin**
- **Canyon Creek Basin**
- **Disposal Facilities**
- **Lower Basin Updates**
 - **> Gray's Meadow and Gleasons**
 - **> Cataldo Investigations and Dudley Reach Pilot Project**
 - **> Lower Basin Waste Consolidation Area Updates**
- **Coeur d'Alene Work Trust Budget Update**

BASIN PROPERTY REMEDIATION PROGRAM (BPRP)

BPRP SUBSTANTIALLY COMPLETE

7,167 PROPERTIES CLEANED UP TO DATE

Remaining work in Box and Basin awaits property turnover for previous refusals or non-responsive owners.

2022 ACTIVITIES

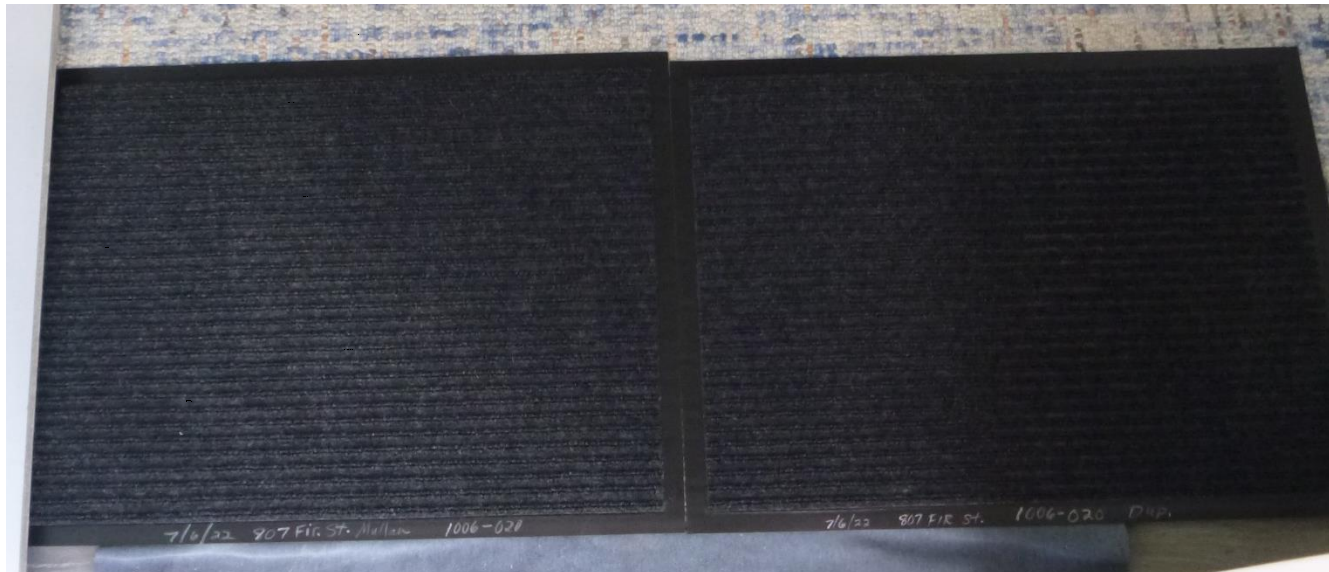
- Remediated 3 properties
- Sampled 5 properties
- Maintained drinking water treatment systems at 6 properties



BPRP: BASIN HOUSE DUST

2022 ACTIVITY SUMMARY BY GEOGRAPHIC AREA

Geographic Area	Target No. for Mat Sampling	No. of Mats Sampled	No. of Vacuum Samples
Burke/Ninemile	39	24	6
Mullan	68	49	13
Osburn	98	91	41
Side Gulches	49	49	12
Silverton	30	30	14
Wallace	64	44	16
Total	348	287	102



RECREATIONAL SITES



BH Superfund Site — Upper Basin Update

Cataldo Boat Launch



BH Superfund Site — Upper Basin Update



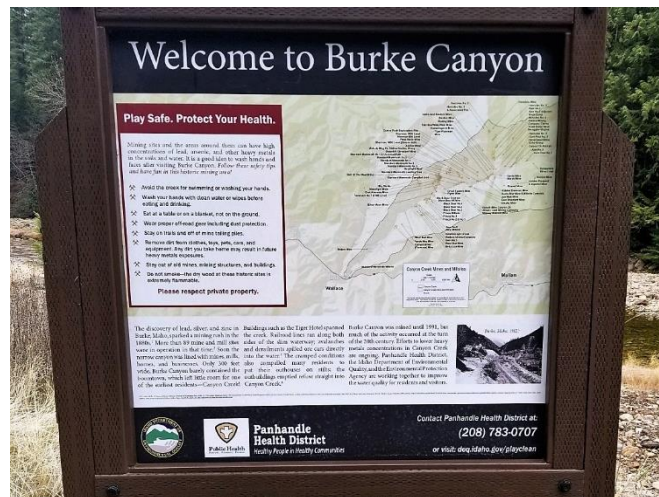
Cataldo Boat Launch



Killarney Lake Peninsula



Medimont Boat Launch

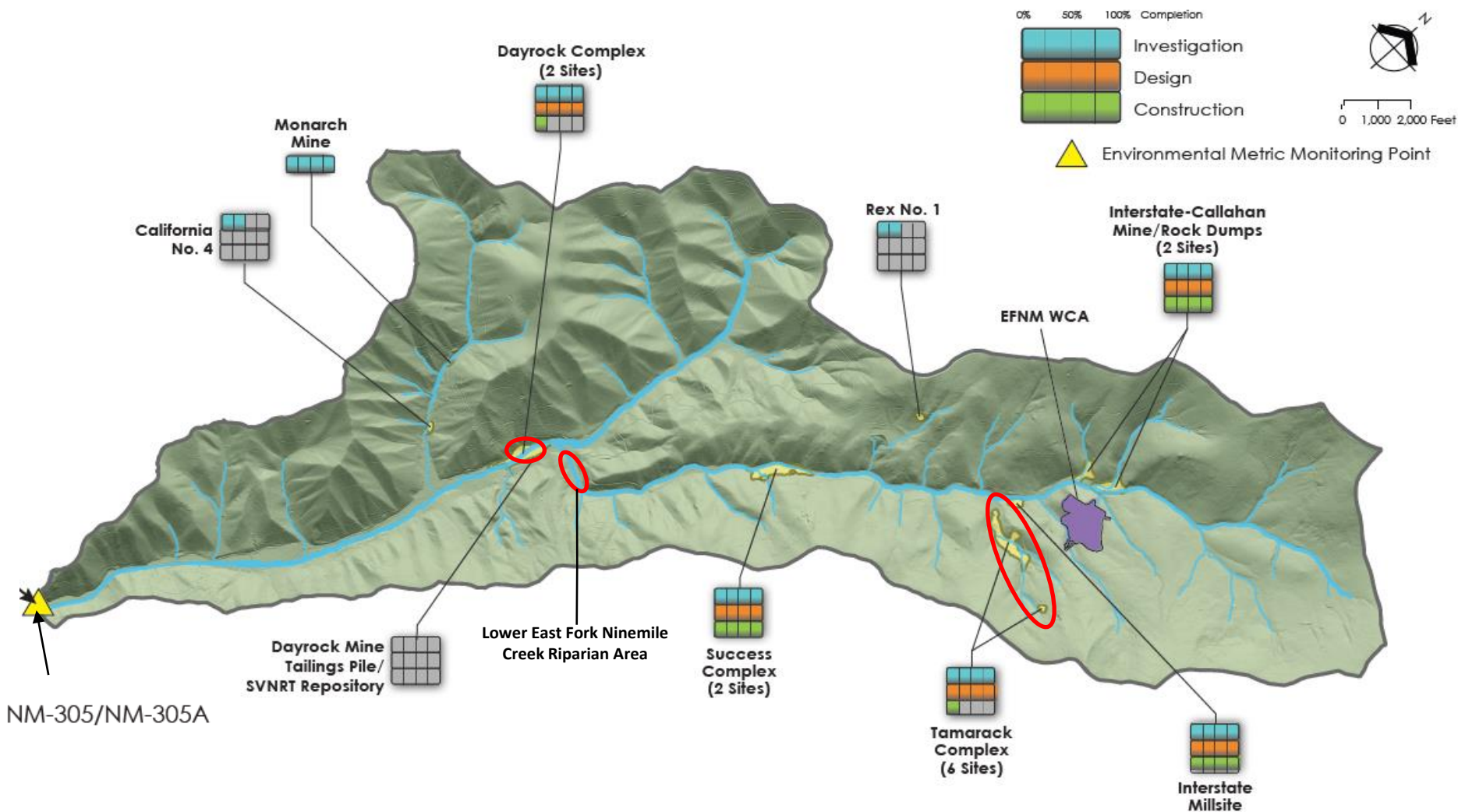


Burke Swimming Hole



NINEMILE BASIN

Upper Basin RODA Source Sites - Ninemile Basin

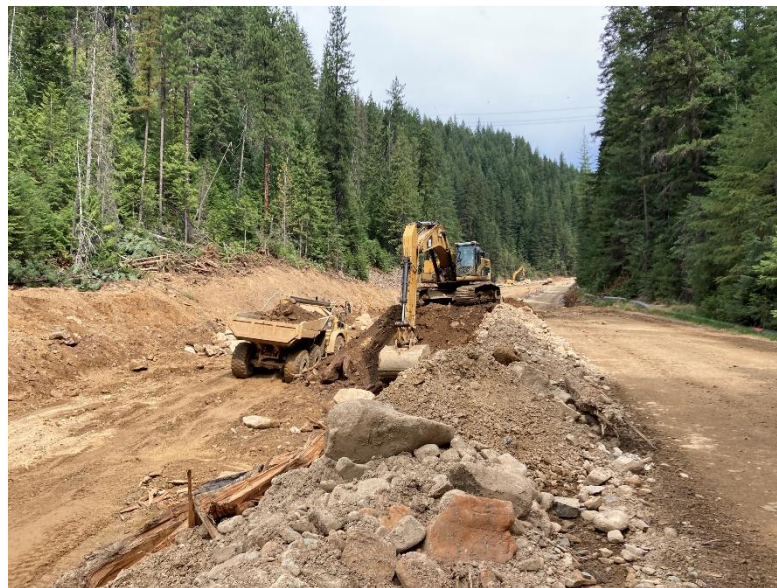


BH Superfund Site — Upper Basin Update

DAYROCK COMPLEX



LOWER EAST FORK NINEMILE CREEK



TAMARACK COMPLEX



Rock Dumps



Area No. 3



Area No. 4



Riparian Area



Area No. 5



Unnamed Adit Area



**Quarrying fill material for
Dayrock + Tamarack**



**Placing waste materials from
Dayrock + Tamarack**



**Layering 1"-minus cushion
material atop liner system.**



**Placing lime-amended soil
atop liner system.**



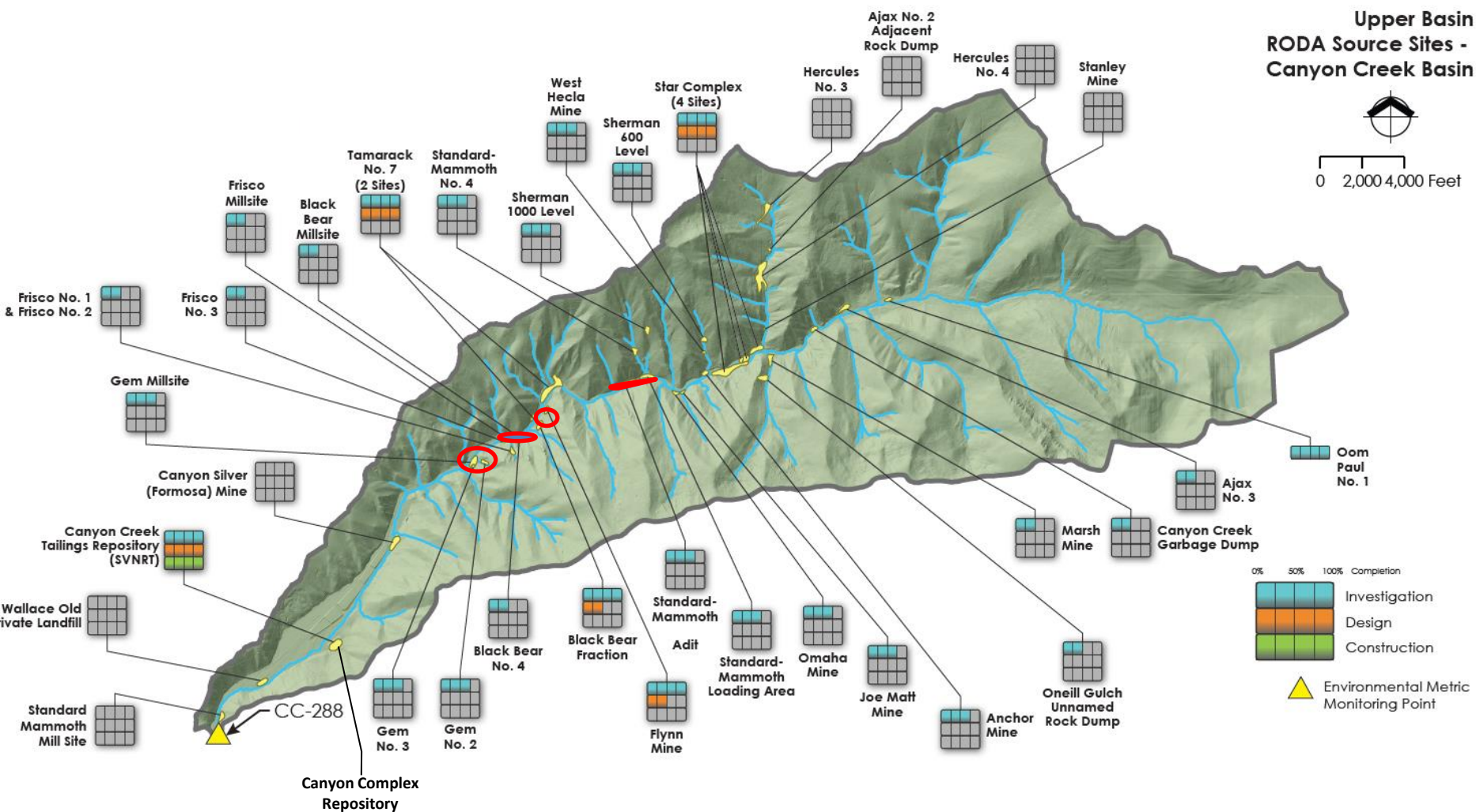
**Applying bonded fabric
material North Slope**



**Clearing slash & brush from
final expansion area.**

CANYON CREEK BASIN

BH Superfund Site — Upper Basin Update



Updated October 2022

CANYON COMPLEX REPOSITORY

WASTE CONSOLIDATION AREA

BH Superfund Site — Upper Basin Update

FRISCO / BLACK BEAR COMPLEX



BH Superfund Site — Upper Basin Update

GEM COMPLEX



BH Superfund Site — Upper Basin Update

STANDARD MAMMOTH REACH



FLYNN MINE & BLACK BEAR FRACTION



DISPOSAL FACILITIES

Area	Disposal Facility	Volume Received in 2022 (CY)	Volume Projections in 2023 (CY)	Volume Remaining (CY)
Upper Basin	BCR	5,550	2,500	86,300
	BCRA	0*	0*	169,400
	LBCR	6,700	5,000	1,034,700
Lower Basin	EMFR	8,787	3,000	162,900
Box	Page	25,000	40,000**	493,500

*Waste placed at BCR

**Approximation given potential remediation of East Smelterville Flats area



LOWER BASIN UPDATES

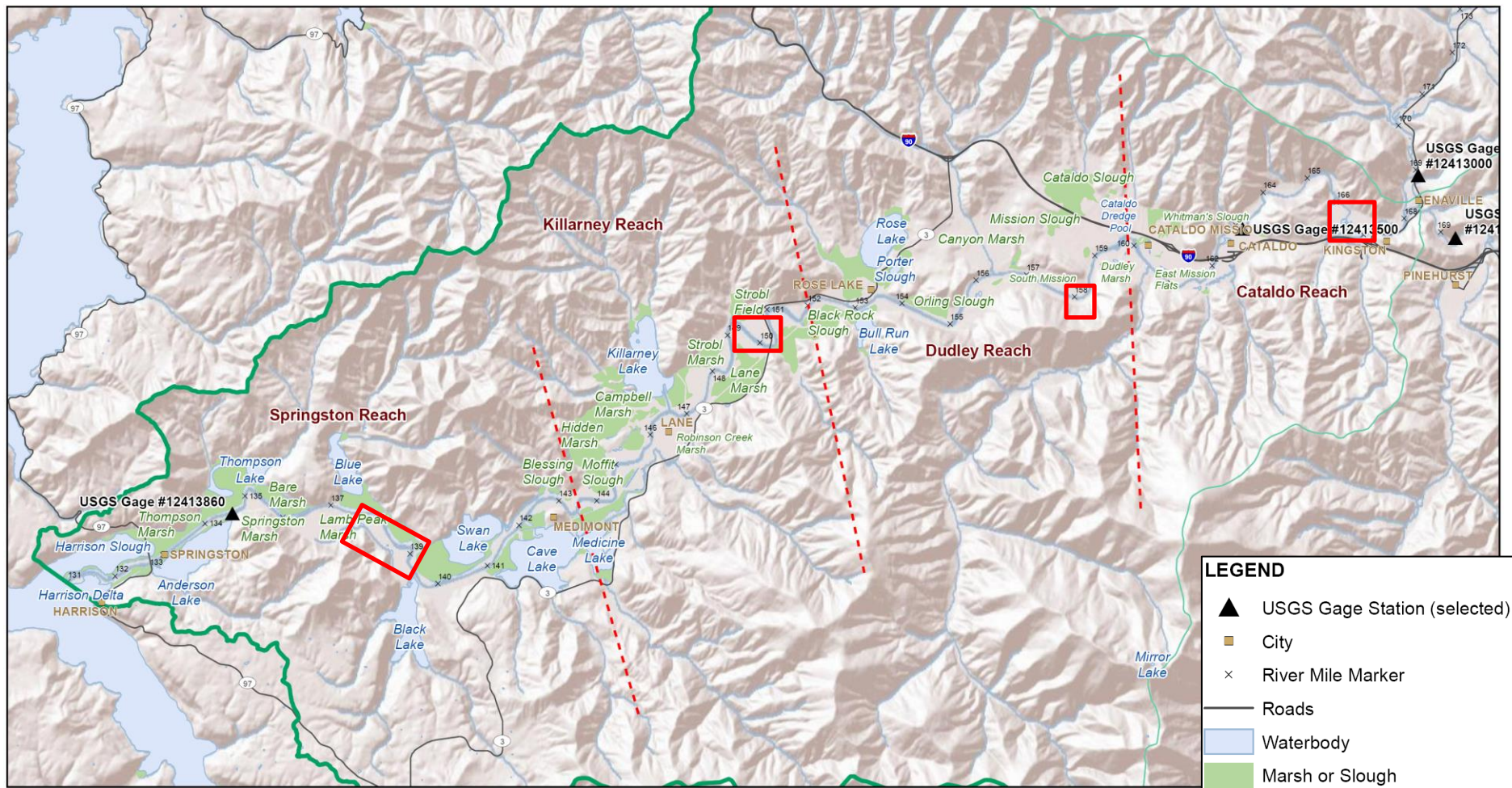
Lower Coeur d'Alene River

*Although the Superfund remediation has reduced metal inputs from the upper basin, the lower basin comprises an immense stockpile of metal-enriched particulates poised for transport to CDA Lake. **Reducing metal inputs in the future will increasingly depend upon controlling the drivers of inputs from the lower basin as remediation progresses.***

National Academies of Sciences, Engineering, and Medicine
2022. *The Future of Water Quality in Coeur d'Alene Lake*.
Washington, DC: The National Academies
Press. <https://doi.org/10.17226/26620>.



2008 Flood event



BH Superfund Site – Lower Basin Update

Project: BH Superfund Site - Lower Basin Update
 Revision: 1.0
 Date: 12/2/2021
 Author: MAUL FOSTER ALONGI
 Project: BH Superfund Site - Lower Basin Update

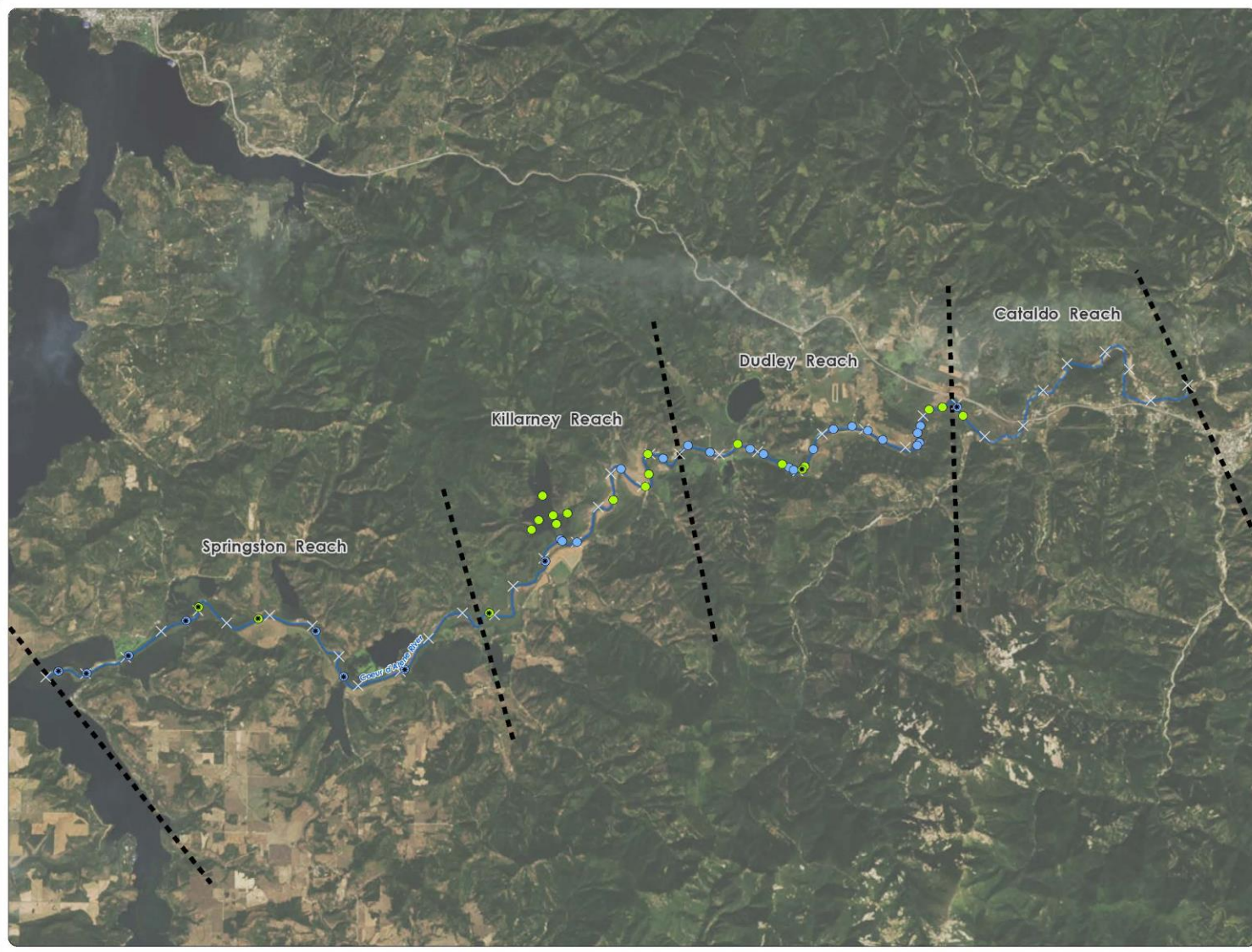


Figure 1-1
Overview Map
 Coeur d'Alene Trust
 Lower Basin Coeur d'Alene
 River Water Monitoring
 Lower Coeur d'Alene Basin,
 Idaho

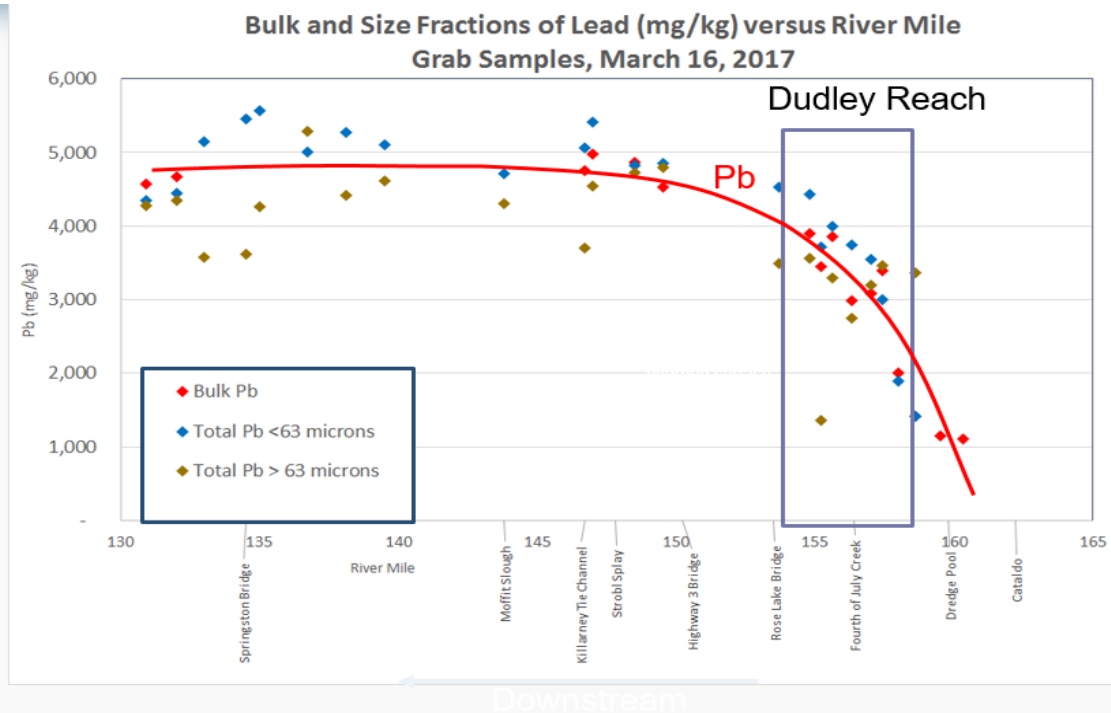
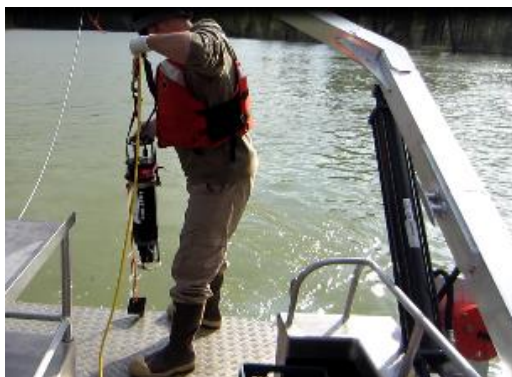
- Legend**
- Dual Depth Grab Sample Location
 - Single Grab Sample Location
 - Fractional Sample
 - x River Mile
 - - - Approximate Reach Limit
 - Creek / River



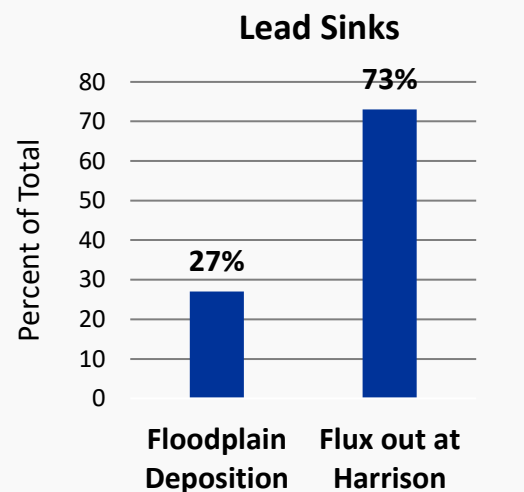
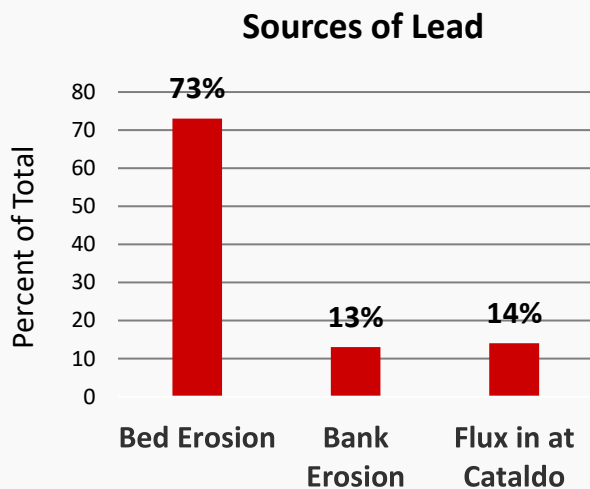
Source: Aerial photograph obtained from Mapbox;
 sample locations obtained from CH2M.

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Sources and sinks of sediment and lead



= Flux to the Lake

- About 86% of lead is coming from the riverbed and banks
- Inflow from Upper Basin is relatively minor contributor

GRAY'S MEADOW

Gray's Meadow

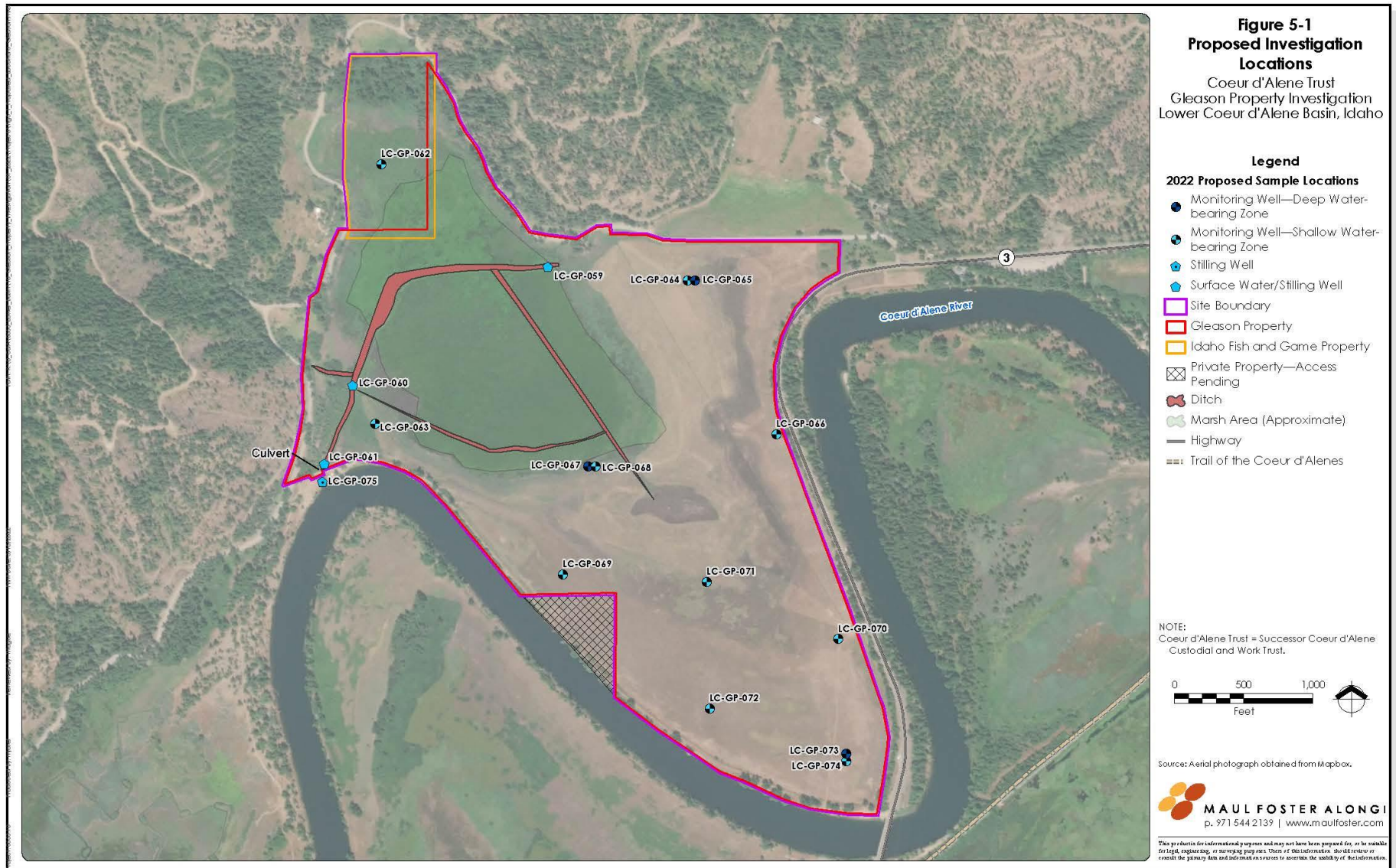
- Partnership between Coeur d'Alene Trust and Restoration Partnership
- 700 acres ag to wetland conversion (Lambs Peak and Cave Lake Wetlands)
- Project Goals:
 - Reduce soil lead concentrations to below cleanup level
 - Restore clean and functional wetlands
 - Minimize recontamination
 - Redirect discharges from Black Lake to Coeur d'Alene River
 - Provide clean recreational, educational, and cultural opportunities

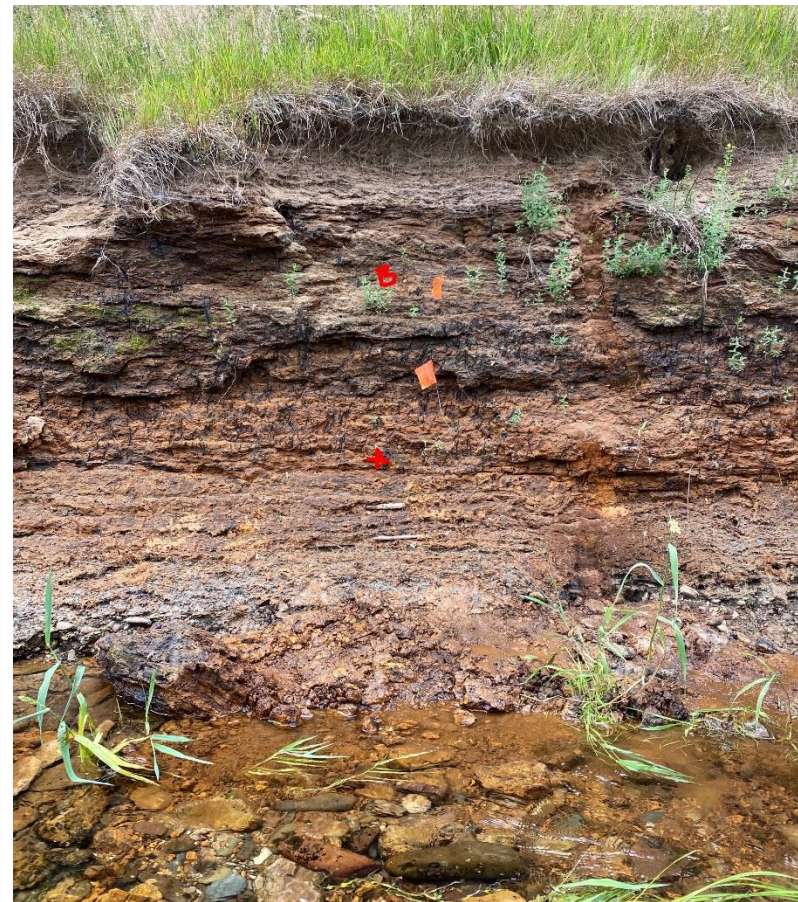


BH Superfund Site – Lower Basin Update

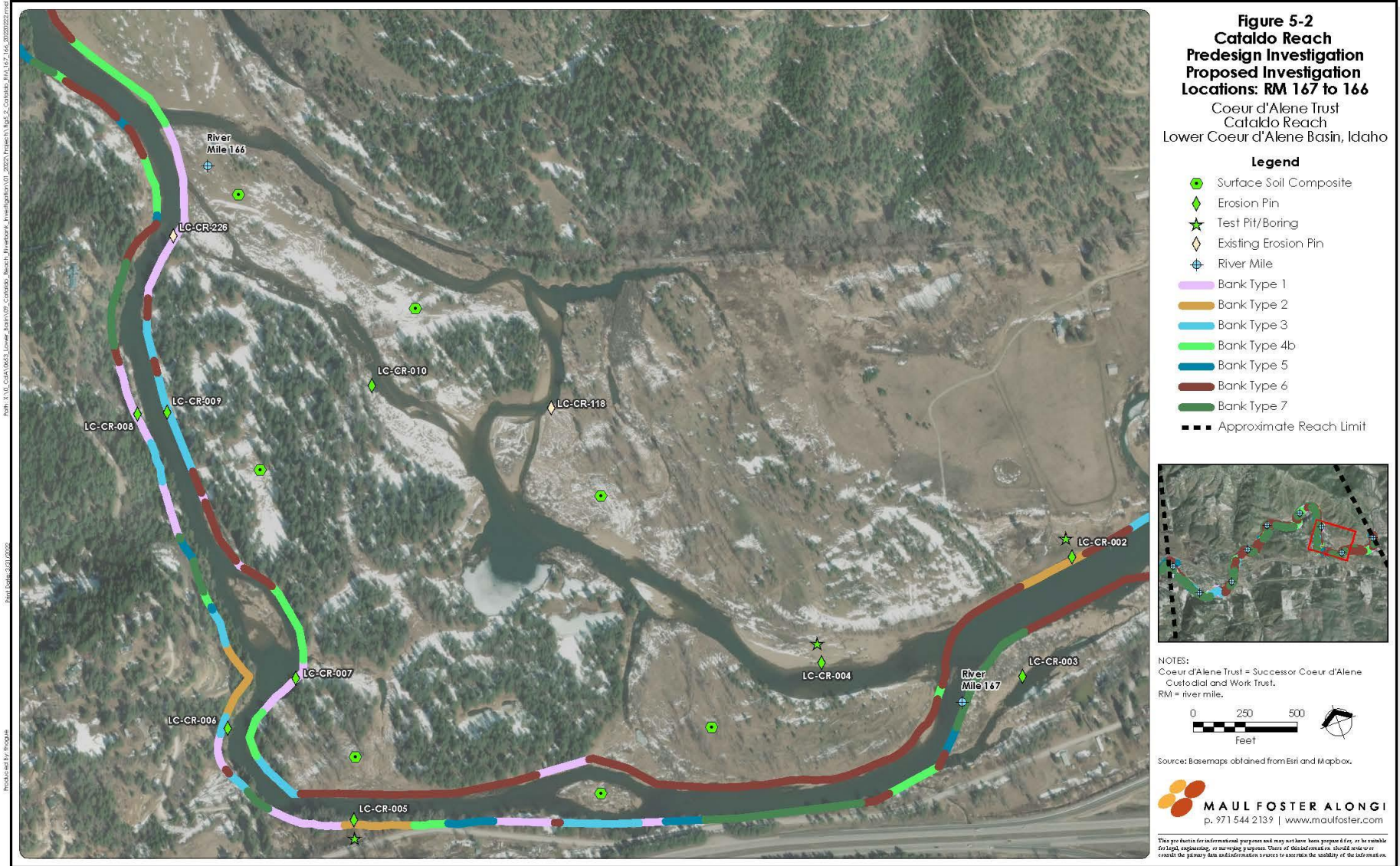
GRAY'S MEADOW







CATALDO REACH



Dudley Reach Scour Hole Pilot Project



- Combination of dredge and cap from river mile 158.6 through 158.2
- Project Goals:
 - Reduce particulate lead loading to river through combination of dredging and capping
 - Stabilize unarmored and unstable riverbanks
 - Minimize changes to river hydraulics
 - Evaluate construction means and methods.
- Earliest potential schedule:
 - Characterization completed by 2022/23
 - Design completed 2025
 - Construction completed in 2027 and 2028

Project: BH Superfund Site - Lower Basin Update
 Project Number: 2022-0001
 Project Name: Dudley Reach
 Project Location: Lower Coeur d'Alene Basin, Idaho
 Project Date: 12/22/2022
 Project Status: Approved for use
 Project Manager: MAUL FOSTER ALONGI
 Project Engineer: MAUL FOSTER ALONGI

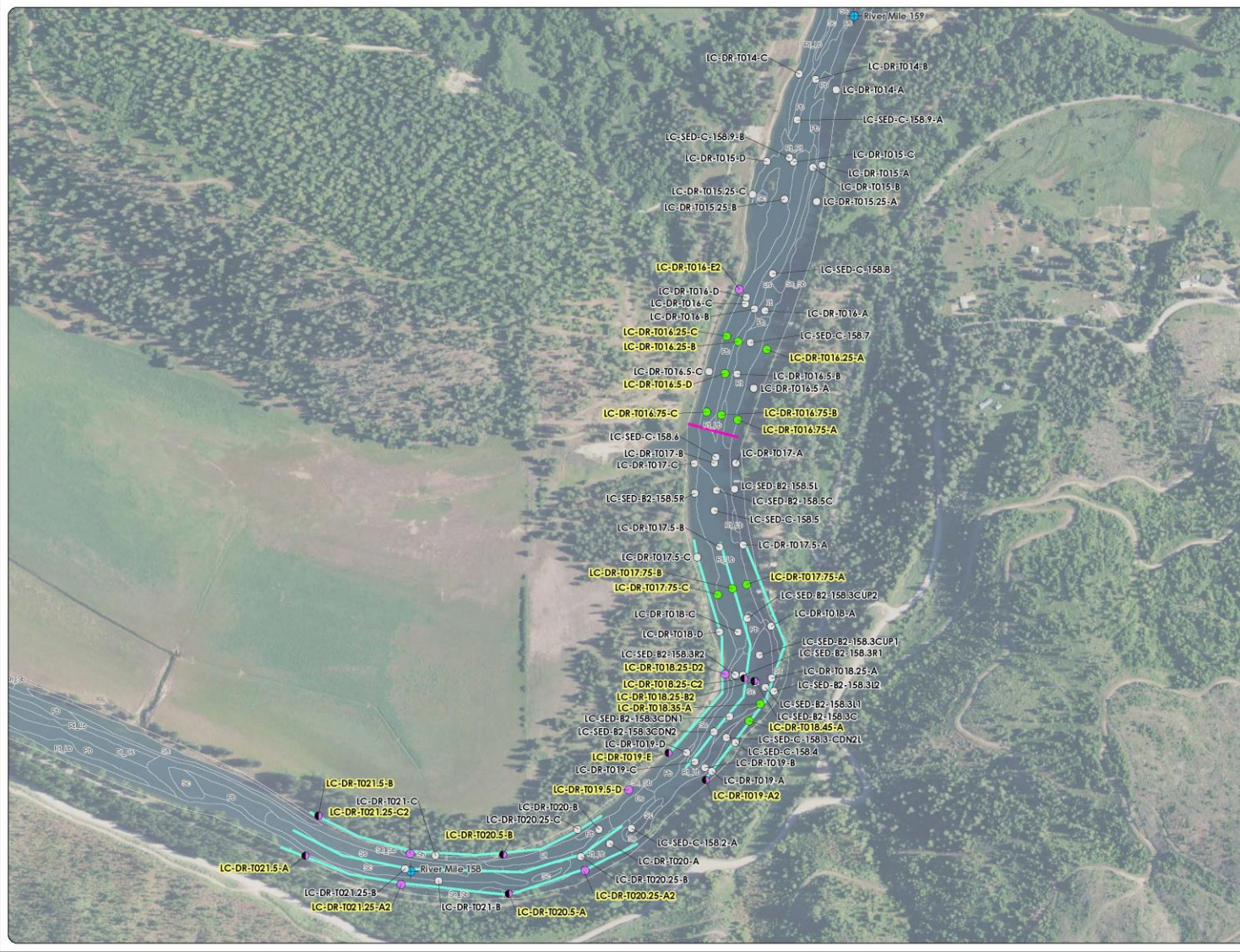


Figure 2022 Data Gap Investigation Locations

Dudley Reach Investigation
Coeur d'Alene Trust
Lower Coeur d'Alene Basin, Idaho

Legend

- Proposed Environmental Boring
- Proposed FVST
- Proposed FVST and CPT
- Previous Sediment Sample
- River Mile Marker
- Bed Unit Boundary
- Electric Line
- MASW and ERI Survey Alignment

Bed Unit

Short Code	Bed Unit Name
Sc	Scour hole—bottom
Ss	Scour hole side slopes
Sh	Beach/Shell
Pb	Planar bed—mobile sediment
DI	Large dunes
Ds	Small dunes
Lb	Buried logs
R1	Rough-textured bed
Sn	Bank side slope with no bathymetry
Sb	Bank side slope with bathymetric data

Notes:
 The FVST and CPT locations include other geotechnical sampling methods as defined in the site-specific sampling and analysis plan SSAP-2022-15.
 CoA Trust = Successor Coeur d'Alene Custodial and Work Trust.
 CPT = cone penetration testing.
 ERI = electric resistivity imaging.
 FVST = field vane shear testing.
 MASW = multichannel analysis of surface waves.

0 250 500
Feet

Data Source:
Aerial photograph obtained from the University of Idaho.

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We Welcome Your Input by September 30, 2020: Siting New Waste Consolidation Areas in the Lower Basin

The Coeur d'Alene Trust is starting to look for new places to site Waste Consolidation Areas, under EPA's direction. Your input is welcome. Please send your input on the community criteria below to Debra Sherbina, sherbina.debra@epa.gov by September 30, 2020.

New Waste Consolidation Areas Will Protect Health and Environment

More cleanup projects are coming to the Lower Basin. The cleanup projects will help protect people's health by removing soil and sediment contaminated with heavy metals like lead and arsenic. We are still evaluating cleanup approaches. Waste volumes from cleanup actions will depend upon the approach selected for each project. Several WCAs are needed to safely store the contaminated materials. EPA's goal is to have one or more Lower Basin locations ready to accept waste by 2024.

Instead of larger waste repositories, these smaller WCAs will be used. The WCAs will be placed close to cleanup projects, to reduce cost and roadway congestion. Each will be designed to take in waste from one or more cleanup projects in a specific area. This will allow the WCA to be tailored to the cleanup approach selected for each project. Unlike larger waste repositories, WCAs do not accept waste from Institutional Controls Program activities.

Inside

- Call for Input: New Lower Basin WCAs Criteria1
- Update to CDA Basin Fish Consumption Advisory3
- Gray's Meadow Investigation4
- CIP Project Milestones4

And much more!

What is a Waste Consolidation Area?

Waste Consolidation Areas are called WCAs, for short. WCAs are places where contaminated waste material – mostly soil and sediment – is stored. The waste material mostly comes from scraping up contaminated soils and sediments from nearby cleanup sites. The material is then secured in this smaller, managed place. When the WCAs are full, they are capped over with clean material. WCAs are necessary and they make sense for a cleanup as large as the Coeur d'Alene Basin. WCAs are engineered and managed to contain the contamination safely over time. This reduces exposure and helps protect people and wildlife.

Where is the Lower Basin?

The Lower Basin refers to the downstream end of the Lower Coeur d'Alene River Basin. It is the area along the Coeur d'Alene River valley, stretching from Inco to Harrison. The Lower Basin includes about 37 Coeur d'Alene River miles, and nearby wetlands, marshes, and lakes. Cleanups of metal contamination will take place in select areas here over the next many years.

Community Priorities for Siting WCAs: What Do You Think?

In 2009, EPA and the Idaho Department of Environmental Quality worked with local communities to develop criteria for selecting waste repository locations. The criteria are like a checklist of important things to consider when choosing locations.

Continued ➤

Basin Bulletin

www.epa.gov/superfund/bunker-hill

July 2020

➤ Continued

New Waste Consolidation Areas – Community Priorities

The Community criteria are below.

- Impacts to wetlands
- Impacts to surface water, fish, and wildlife
- Impacts on floodplain
- Proximity to faults and landslide areas
- Impacts to people living or working nearby (residences and schools along truck haul routes)
- Impacts to businesses along truck haul routes
- Trucking costs
- Potential for economic redevelopment once repository construction is complete
- Storage capacity



We want to check in with you to make sure this is still the right list. What do you think? Are these considerations still relevant? Are there other issues to consider when looking for places to put WCAs? Please send your input on these community criteria to Debra Sherbina, sherbina.debra@epa.gov, by September 30, 2020. We will provide an update on any input we receive, and any changes we make to the criteria based on that input. We will also keep the community informed as we make progress on our WCA siting effort.

Draft Technical Criteria for Siting Waste Consolidation Areas

Siting WCAs can be a complicated task. In addition to looking at what is important to the community, there is also much to consider from a technical standpoint. EPA will give full consideration to community criteria when siting these WCAs. However, it may not be possible to meet all community criteria due to technical criteria, property availability, and other limitations.

The Coeur d'Alene Trust has developed its own draft criteria for siting WCAs in the Lower Basin. These are technical considerations based on the criteria set up in 2008/2009 for siting repositories. The Coeur d'Alene Trust recently modified the technical criteria and assumptions to apply to these new smaller WCAs. Many of these technical criteria line up with the community criteria.

Key Assumptions

- The WCAs will be sited in the Lower Basin of the Coeur d'Alene River.
- The WCAs will be designed and sited for specific remedial action(s).
- Using standard engineering practices, the WCAs will be designed to minimize potential for metals leaching to groundwater and surface water.
- During operations and after closure, the WCAs must be able to be secured and maintained to prevent off-site migration of contaminated soils.
- WCAs will only be sited within the 100-year floodplain if the contaminant release assumption stated above is met.
- The sites must be reasonably flat.
- The sites must be accessible from existing roads or the river.

Draft Technical Criteria for WCA Siting:

EPA and the Coeur d'Alene Trust will evaluate the following criteria for each proposed WCA site:

- Minimize potential for impact to wetlands and related wildlife
- Minimize potential for impact to surface waters and fish and wildlife
- Minimize potential for impact to groundwater
- Minimize potential for impact to base flood elevation

Continued ➤

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➤ Continued

New Waste Consolidation Areas – Draft Technical Criteria

- Site is not near a mapped fault or likely to be affected by a landslide
- Site not likely to result in impacts to persons living or working near the repository (residences, schools, urban areas)
- Truck route along State Highway 3 to the WCAs not likely to affect existing persons or businesses
- Minimize trucking costs by locating WCAs close to cleanup areas
- Development of WCAs generates clean soil or rock for remedial action construction and caps
- Capacity of WCAs is sufficient for the planned remedial actions in the vicinity of the WCAs

For More Information, Contact

Patrick Hickey, EPA, hickey.patrick@epa.gov • 206-553-6295 • 800-424-4372, ext. 6295.
Debra Sherbina, EPA, sherbina.debra@epa.gov • 206-553-0247 • 800-424-4372, ext. 0247.

Cancelled:

Panhandle Health District's annual blood lead screening event will not take place this year.
For more information please call 208-783-0707.

Updates to CDA Basin Fish Consumption Advisory

The Idaho Department of Health and Welfare and the Coeur d'Alene Tribe, in coordination with the Idaho Fish Consumption Advisory Program, updated the fish consumption advisory for water bodies in the Coeur d'Alene Basin. The advisory was updated because recent testing showed high levels of mercury in some species of fish. Mercury levels were similar to other advisories issued in Idaho. Consuming high levels of mercury can harm the brain and nervous system, especially in children. The IDHW and CDA Tribe recognize the health benefits of eating fish and are providing this advisory to encourage its safe consumption.

Fish sampling was completed in 2016. This effort updates and expands the 2003 fish consumption advisory for Coeur d'Alene Lake into additional areas of the Coeur d'Alene River, Chain Lakes, and the Spokane River above the Post Falls dam. The Chain Lakes advisory includes Thompson Lake, Anderson Lake, Blue Lake, Black Lake, Swan Lake, Cave Lake, Medicine Lake, Killarney Lake, and Bull Run Lake. Species collected included bass, panfish, bullhead, northern pike, kokanee, and trout.



IDHW analyzed concentrations of mercury, lead, arsenic, and cadmium in fish tissue to determine the number of meals per month that are safe to eat. Levels of cadmium, arsenic, and lead found in the fish tissue are not expected to harm people's health when following meal recommendations. Lead exposure from eating fish is not expected to be harmful for children. Preventing exposure to lead contaminated soils would reduce potential health risks more than avoiding eating fish. Bass had the highest concentrations of mercury across all of the waterbodies, and the updated advisory is generally consistent with the statewide bass advisory and other Idaho consumption advisories.

This updated advisory provides location and fish-specific recommendations for adults, pregnant women (including women planning to become pregnant and nursing mothers), and children under the age of 6. IDHW recommends that fish consumers, especially those from sensitive populations, follow recommended meal limits to reduce potential health risks from exposure to mercury.

To review the "2020 Updated Fish Consumption Advisory for the Coeur d'Alene Basin" and the "Coeur d'Alene Basin Fish Tissue Analysis and Consumption Advisory Full Report," please visit: <http://fishadvisory.dhw.idaho.gov>. View the documents by expanding the information under the question: What is the Fish Consumption Advisory for Idaho? For questions, please call 1-866-240-3553.

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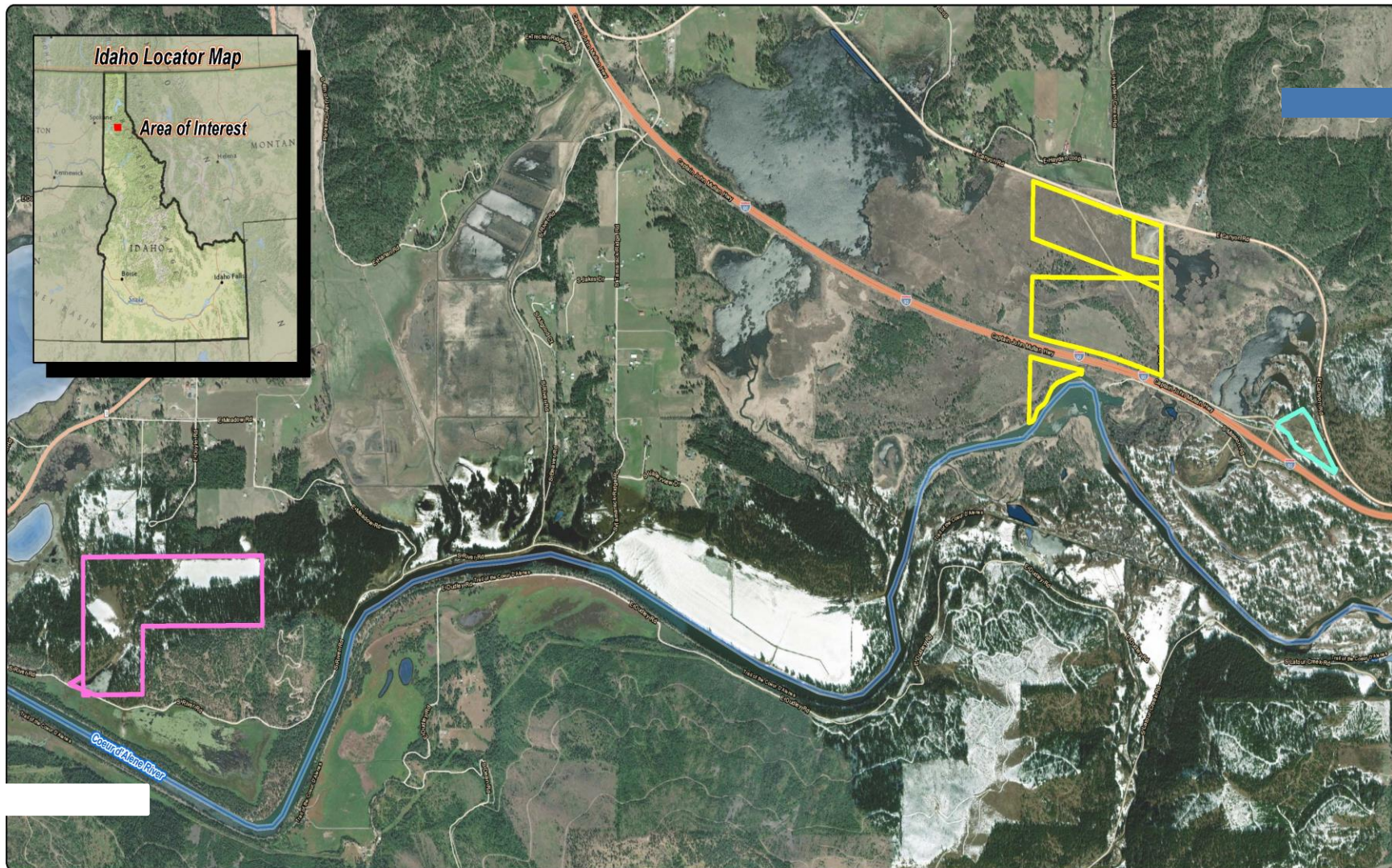


Figure 3
Site Location

Overview of Potential WCA Sites
Kootenai County, Idaho

Sources: USGS aerial photography and National Geographic base map and via Esri Web Mapping Service.

Lower Basin WCA Siting Evaluation - Roles

- **Project focus team** provides input to EPA in identifying and evaluating feasible locations for the WCA
- **Public** has vetted criteria
- **Other agencies and landowners** have lands that they may provide for siting
- **Various partners** offer ⁴¹expertise and/or resources
- **Facilitators** are third parties to guide MODA process and group discussions
- **EPA** has final decision-making authority for WCA siting



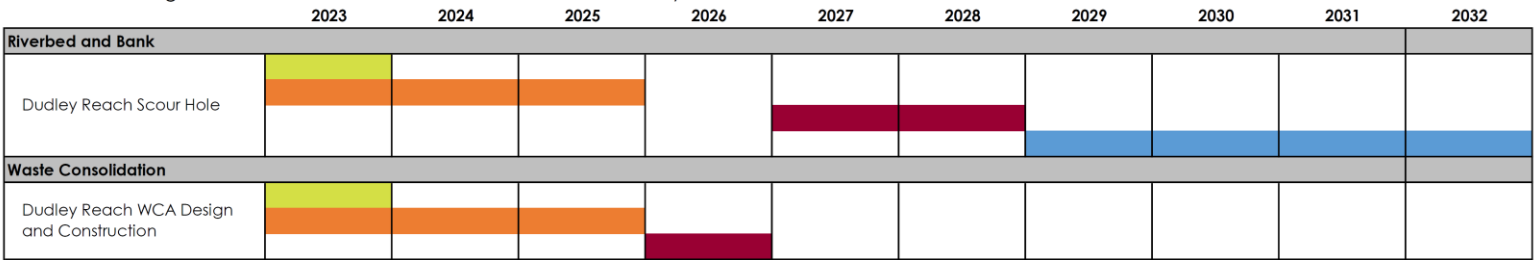
- Coeur d'Alene Basin Commission
- State of Idaho and Washington
- Coeur d'Alene Tribe
- Kootenai County
- Eastside Highway District
- Land managers – IDFG, USFS
- Natural Resource Trustees → Restoration Partnership



US Forest
Service

Schedule Comparison

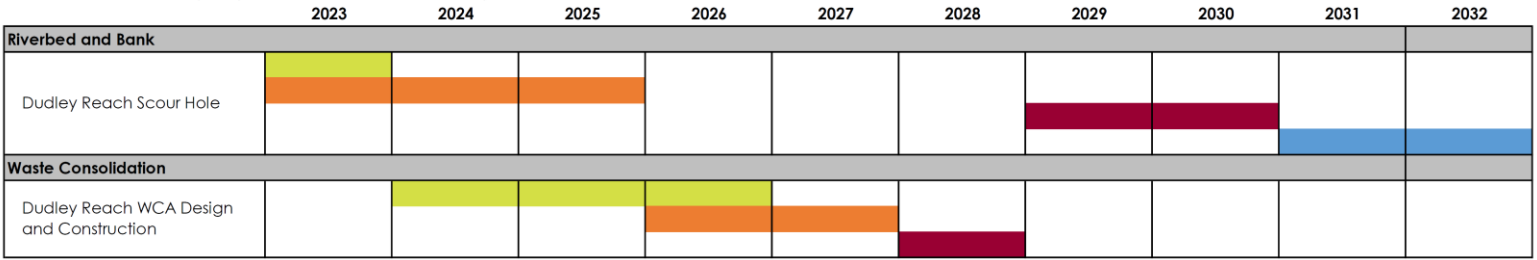
Scenario 1: Dredge Road or South River Road Selected for WCA in Early Q3 2023



Legend

- Characterization
- Design
- Construction
- O&M
- Monitoring

Scenario 2: New Property Selected for WCA in Early Q3 2023



Notes

O&M = Operations & Maintenance.
WCA = Waste Consolidation Area.

COEUR D'ALENE WORK TRUST

2009 ASARCO BANKRUPTCY SETTLEMENT

\$437m initially deposited into Trust Account (9/30/2022: \$520m)

Annual workplan of \$30m (upper and lower basin)

USES OF CDA WORK TRUST FUNDS

- Can only be used to fund Record of Decision-selected Basin cleanup actions
- Cannot be used to fund Box cleanup actions.
- Cannot be used to fund oversight of the CDA Trust
- Cannot be used to fund State, Tribe, local governments or other Federal agencies work in the Box or Basin.