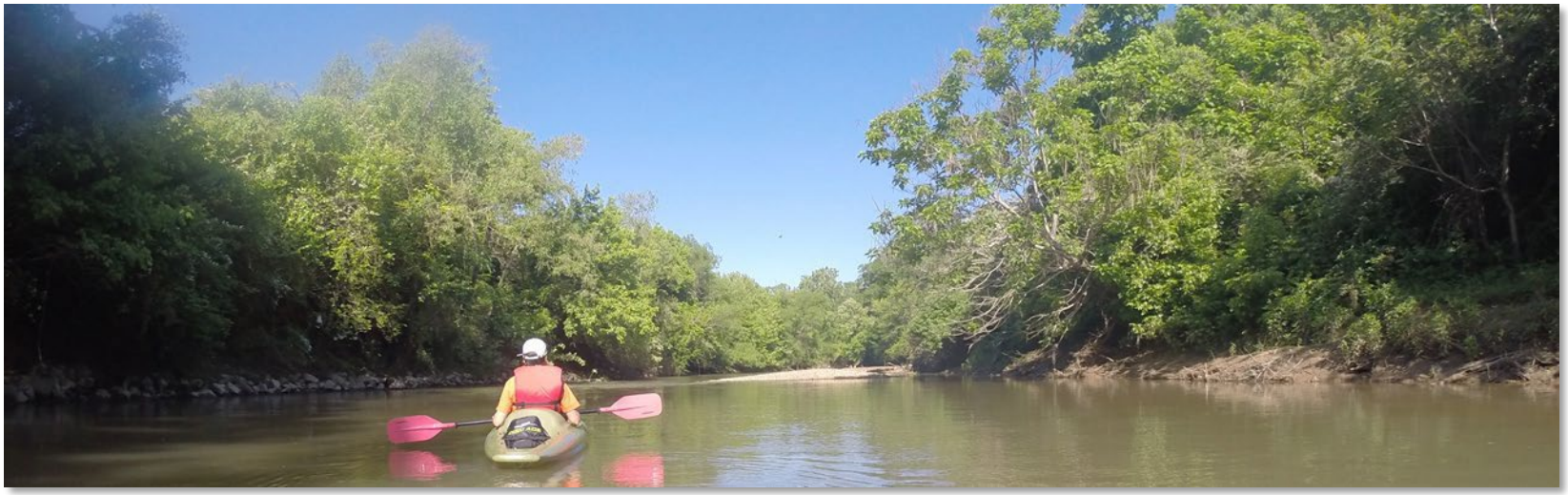
Anniston PCB Site – Operable Unit 4
What Makes a Cleanup Necessary
June 23, 2026

Informational Meeting Series

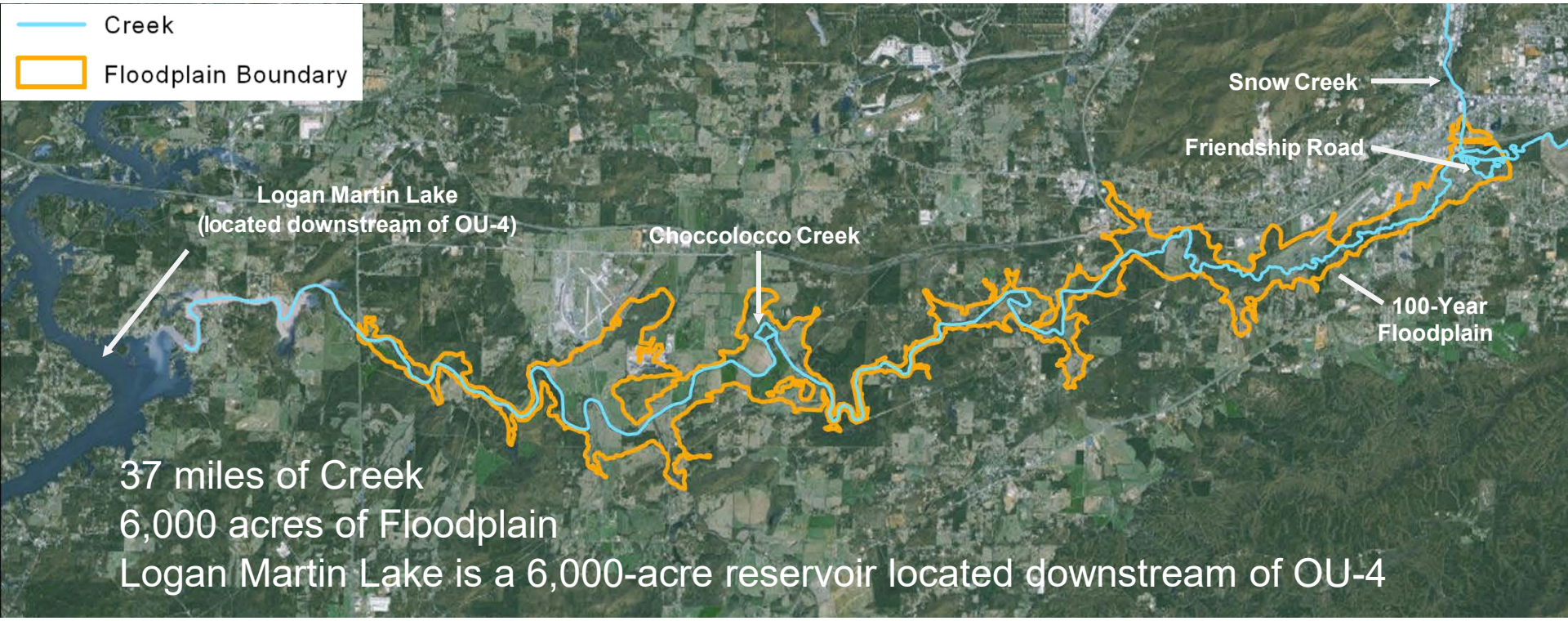
- **Meeting #1 (Today's Meeting)**
  - What Makes a Cleanup Necessary?
- Meeting #2 (July 21, 2026)
  - How Sediment Dredging Works
- Meeting #3 (August 11, 2026)
  - Choccolocco Creek: Where Things Stand Today
- Meeting #4 (September 29, 2026)
  - Understanding Sediment and Surface Water
- Meeting #5 (October 6, 2026)
  - Why Scientists Study Fish
- Meeting #6 (November 3, 2026)
  - Tracking Fish Movement in Logan Martin Lake

Presentation Overview

- Background information for the Anniston PCB Site and the cleanup remedy selected by EPA for Operable Unit No. 4 (OU-4)
- Summary of the baseline ecological risk assessment (BERA) prepared for the OU-4 portion of the Anniston PCB Site
- Summary of the human health risk assessment (HHRA) prepared for the OU-4 portion of the Anniston PCB Site
- Questions



Overview of OU-4



- Snow Creek and its floodplain between Highway 78 and the confluence of Snow Creek and Choccolocco Creek
- Backwater area along Choccolocco Creek at its confluence with Snow Creek (just upstream of Friendship Road)
- Choccolocco Creek and its floodplain from the confluence with Snow Creek downstream to the confluence of the Coosa River

OU-4 Remedy Selected by EPA

- Residential properties
- Operation and Maintenance for previously implemented Interim Measure areas
- **Nonresidential floodplain soils**
- **Select creek bank areas**
- **In-creek sediment**

The Consent Decree for OU-4 remedial design/remedial action (RD/RA) is currently under negotiation with United States Environmental protection Agency (EPA)

The remedy elements in **bold font** are the focus of today's informational meeting

Aquatic-Related Remedial Goals for OU-4

- Remedial action levels (RALs) for sediment are realistic
- Long-term remedial goals for sediment and biota are low concentrations

MEDIA	CONTAMINANT	CLEANUP LEVEL	BASIS
Soil – creek banks	PCBs	NTE 2.6 mg/kg	BERA
Sediment - all	PCBs	NTE/RAL 2.6 mg/kg 95% UCL SWAC 0.1 mg/kg in each reach[1]	BERA HHRA/BERA
Surface Water	PCBs (aquatic life) PCBs (human health)	0.014 µg/L 0.000064 ug/L	ARAR ARAR
Fish	PCB (fillet tissue) upstream Jackson Shoals PCB (fillet tissue) downstream Jackson Shoals PCB (whole body)	0.08 mg/kg ww 0.04 mg/kg ww 1.3 mg/kg dw	HHRA HHRA BERA

Achievement of the low concentration remedial goals will occur over time through monitored natural recovery (MNR)

Proposed Remediation of OU-4 Floodplain Areas

- Remediation of floodplain soil to addresses ecological risks
- Remove upper 6 inches of soil with PCB concentrations greater than or equal to 6 mg/kg
- Removal based on 5-acre exposure units
- Remediation footprint from the OU-4 Feasibility Study (OU-4 FS) was approximately 70 acres
- Large-scale predesign investigations are planned as part of the RD

Proposed Remediation of Sediment and Select Creek Banks Along Snow and Choccolocco Creeks

- Remediation includes source control combined with MNR
- Creek sediment and eroding creek banks with PCB concentrations greater than 2.6 mg/kg
- Complete removal of sediment from the OU-4 portion of Snow Creek
- Choccolocco Creek sediment removal:
  - Backwater area located upstream of Friendship Road and reach of creek immediately downstream
  - 13 discrete sediment deposits located further downstream
- Large-scale PDI for soil, sediment and creek banks planned as part of the RD

Source Control with MNR are Key Components of OU-4 Remedy

- Source control actions followed by MNR allows for the use of realistic RALs
- Long-term PCB remedial goals for biota and sediment to be achieved in 20 to 40 years after remedy implementation

Fish consumption is a remedy-driver for human heath and ecological risks

What are Risk Assessments?

- A scientific-based process to determine if human health or the environment could be adversely affected by exposure to site-related chemicals

Separate risk assessments are prepared to evaluate potential risks human health and ecological receptors (i.e., “the environment”)

Risk assessments are precautionary in nature and follow EPA Regulatory Guidance

Ecological risk assessment for OU-4 was prepared in collaboration with USEPA

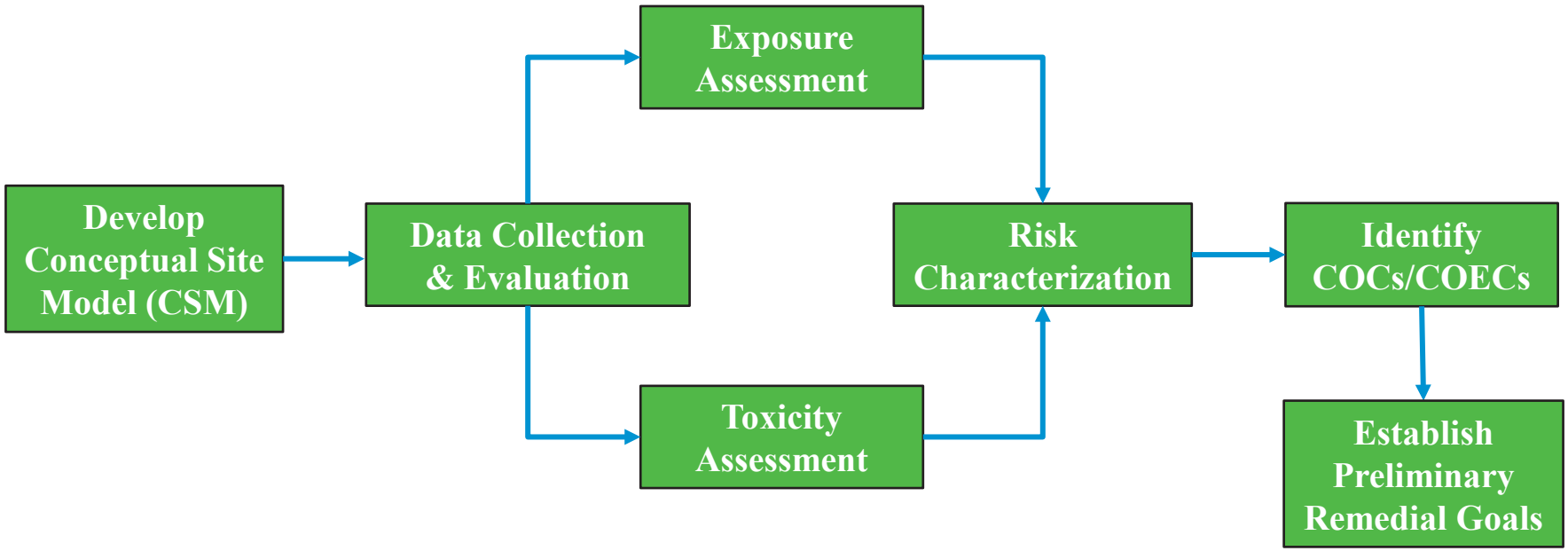
Human health risk assessment for OU-4 was prepared by EPA

Risk Assessments Provide a Technical Basis for Clean Up Goals

Risk Assessment Process

Remedial Investigation → **Feasibility Study**

Risk Assessment



Definitions

COC = chemical of concern
COEC = chemical of ecological concern
CSM = conceptual site model

Summary of the Ecological Risk Assessment Prepared for OU-4

Why Conduct an Ecological Risk Assessment?

Evaluate the likelihood that adverse ecological effects are occurring for local receptor populations as a result of exposure to a "stressor"

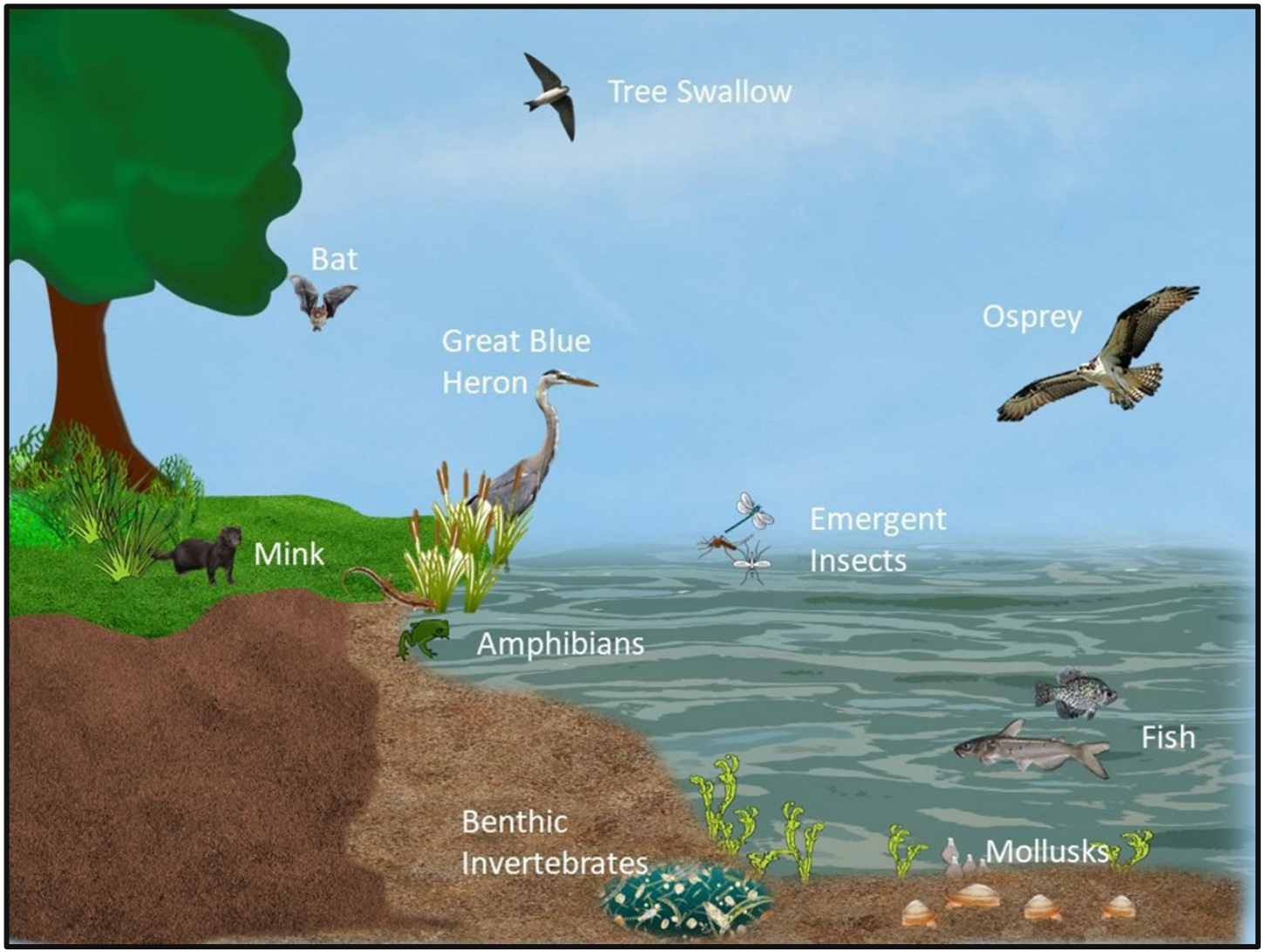
Specific questions to answer:

1. Are the resident biological communities at risk of being adversely impacted by PCBs and/or other chemicals?
2. If yes, what is causing the unacceptable risk of adverse effects?
3. Which receptors may be impacted?
4. Where are the receptors with the highest risk levels located?

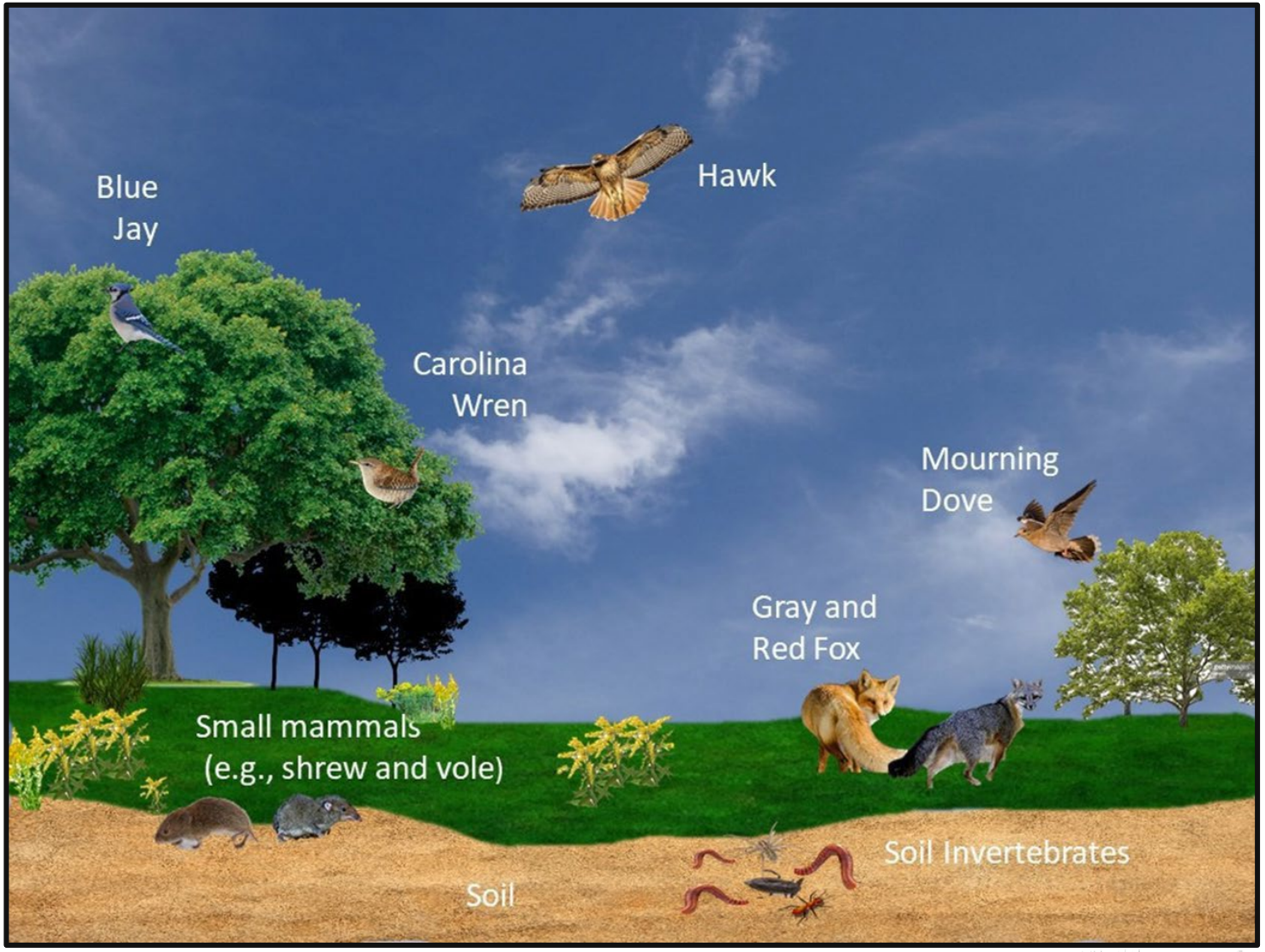
Ecological Risk Assessment Process

- Considers representative species (receptors) that could be exposed to chemicals at the Site
- Calculated risks are characterized as ranging from acceptable to highly unacceptable

Ecological Aquatic Conceptual Site Model



Ecological Terrestrial Conceptual Site Model



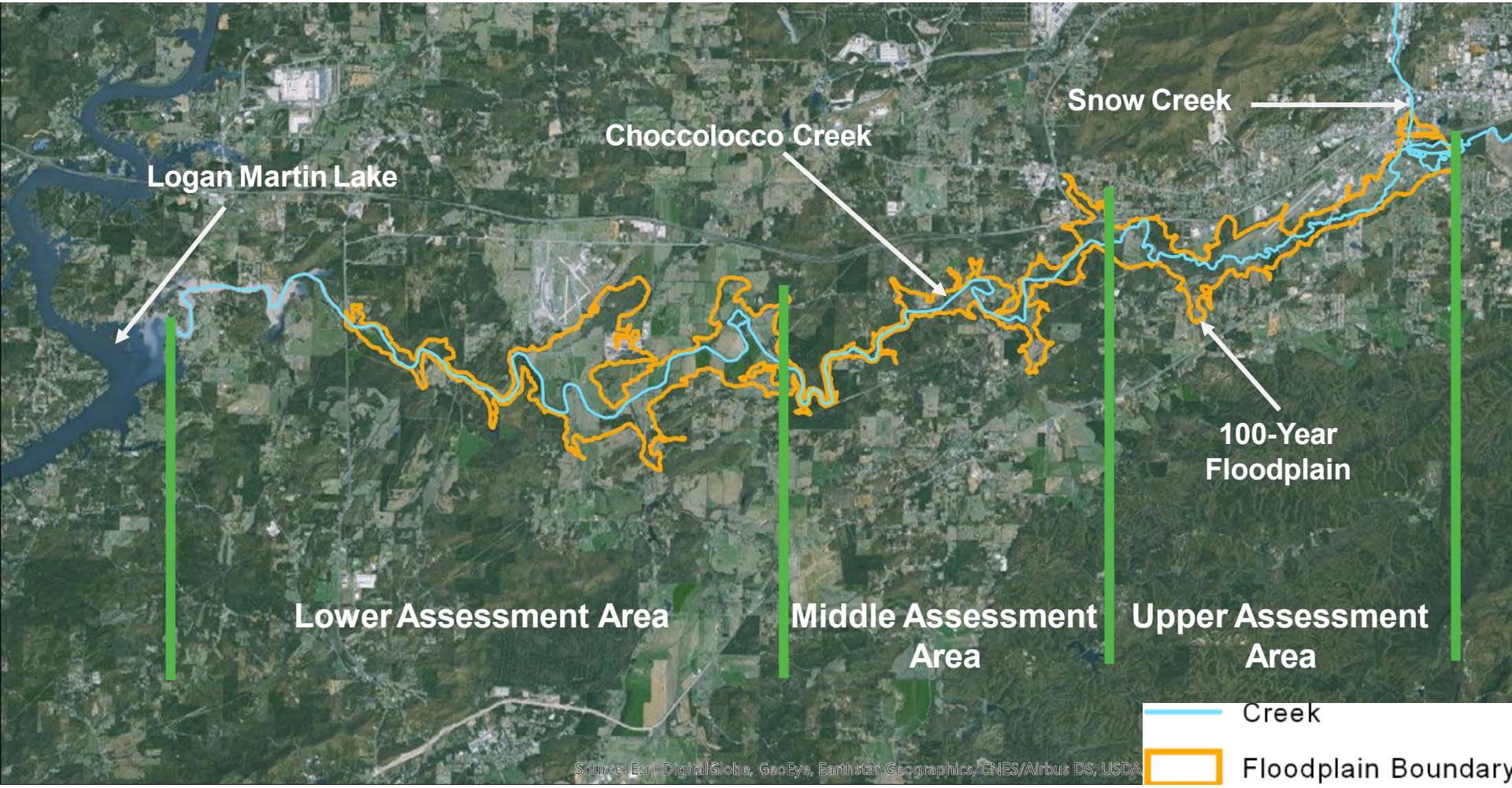
Data Used for Choccolocco Creek and Floodplain to Support the BERA

1. Surface soil and sediment
2. Surface water
3. Biotic tissues (i.e., plant, invertebrate, mammal, reptile/amphibian, and fish)
4. Site-specific sediment toxicity testing
5. Site-specific community studies
6. Habitat and Land Use Information

Snow Creek Assessment Areas

- Snow Creek between Highway 78 and Interstate 20 (I-20)
- Snow Creek between 1-20 and confluence with Choccolocco Creek

Choccolocco Creek Assessment Areas



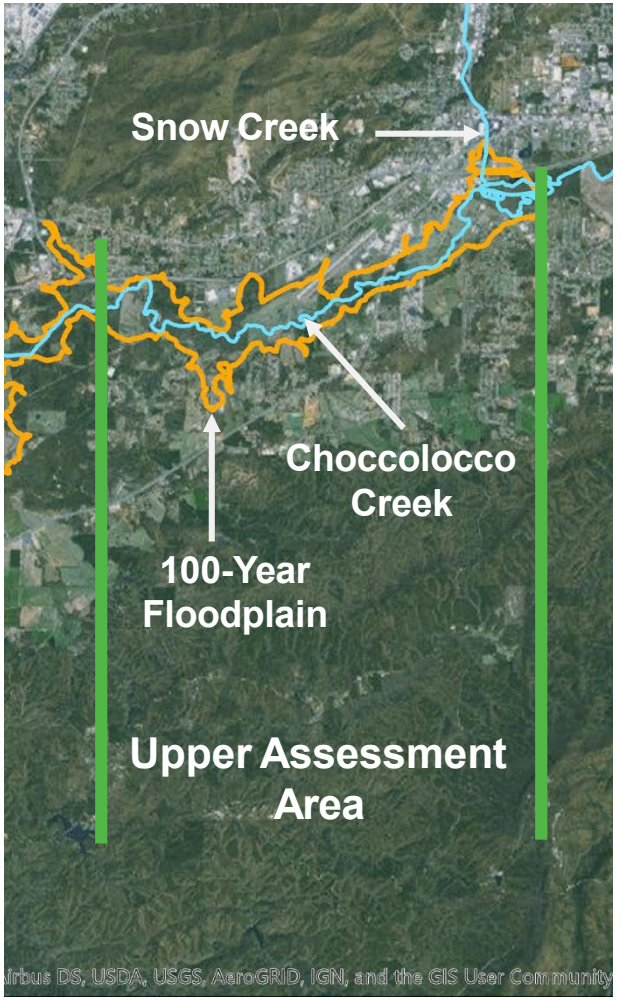
Summary of Risk Findings

1. Are the resident biological communities at risk of being adversely impacted by PCBs and/or other chemical?
   - Yes, several communities are at risk including aquatic and terrestrial receptors
2. If yes, what is causing the unacceptable risk of adverse effects?
   - PCBs are the primary driver of risks to ecological receptors

Summary of Risk Findings (continued)

3. Which receptors may be impacted?
   - Fish-eating receptors (birds/mammals) are considered most at-risk receptors
   - Birds and mammals consuming other terrestrial and aquatic prey exhibit localized risk
   - Resident fish are at risk

4. Where are the receptors with the highest risk levels located?
   - Lower portion of Snow Creek
   - Upper portion of Choccolocco Creek with risks decreasing moving downstream
   - Mink, otter and fish are at risk along entire creek



Summary of the Human Health Risk Assessment Prepared for OU-4

OU-4 Conceptual Site Model

EXPOSURE MEDIA

- **SURFACE WATER / SEDIMENT** (Choccolocco Creek)
- **FISH** (From Creek)
- **PRODUCE** (Homegrown/Garden)
- **LIVESTOCK** (Beef, Poultry)
- **SOIL** (Floodplain Soil)

EXPOSURE PATHWAYS

- **INGESTION** (Fish Consumption)
- **INGESTION** (Produce Consumption)
- **INGESTION** (Livestock Consumption)
- **INGESTION** (Soil)
- **DERMAL CONTACT** (Soil)

HUMAN RECEPTORS

- **FISHERMEN**
  - Consume fish
- **FARMERS**
  - Consume produce
  - Consume livestock (beef, poultry)
  - Incidental contact with soil
- **RECREATORS**
  - Incidental contact with soil
  - May ingest soil
  - May generate/ inhale dust
- **UTILITY WORKERS**
  - Work in floodplain soil
  - Incidental contact with soil
  - May ingest soil
  - May generate/ inhale dust

Notes:

Arrows indicate potentially complete exposure pathways.

Exposure pathways / media requiring the development of remedial goals based on the human health risk assessment.

Data Used for Choccolocco Creek and Floodplain to Support the HHRA

1. Surface Soil
2. Subsurface Soil
3. Surface Water
4. Fish Tissue
5. Land Use Information

HHRA Exposure Scenarios

1. Directly contacting floodplain soil (ingestion, dermal contact, and inhalation of particulates)
   - Recreational User (child, adolescent, adult)
   - Utility Worker (adult)
   - Farmer (adult)

   ** *Residents / residential properties were addressed under the Removal Action Agreement (soils exceeding 1 mg/kg PCBs were removed)*

2. Ingesting fish caught in Choccolocco Creek in the absence a fish consumption advisory
   - Fisherman (child, adult)

3. Ingesting agricultural products (vegetables, meat, eggs, and dairy products) grown in certain areas of the floodplain
   - Farmer (child, adult)
   - The HHRA used protective default uptake factors to estimate transfer of COPCs from floodplain soil into plants and livestock eaten by people

Other potential exposure pathways were screened-out based on the pathway being incomplete or low risk

Toxicity Assessment

Human health risk assessments consider two broad categories of health effects

- Cancer
  - Only applicable to a subset of chemicals associated with an increase in the occurrence of cancer in animals or humans
  - EPA assumes any exposure results in some increase in cancer incidence (i.e., no threshold)
  - Evaluated using a Cancer Slope Factor (CSF)
- Non-Carcinogenic Effects
  - Everything else (e.g., toxicity to liver, immune system, etc.)
  - Assumed to have a “threshold” below which no adverse effects occur
  - Reference Dose (RfD) – “safe daily dose”

How EPA Uses Cancer Risk Information to Protect the Community

- Cancer Risk
  - Multiply estimated exposure for each scenario by Cancer Slope Factor (CSF)
- Background risk in U.S. population (all organs):
  - ~4 in every 10 people (40% = 0.4 = 4×10^{-1})
- EPA's acceptable cancer risk range:

1 <u>additional</u> cancer in 10,000 exposed people ($0.0001 = 1 \times 10^{-4}$)	to	1 <u>additional</u> cancer in 1,000,000 exposed people ($0.000001 = 1 \times 10^{-6}$)

Cleanup actions are generally required if the calculated cancer risk exceeds 1 additional cancer in 10,000 people similarly exposed to a particular chemical

How EPA Uses Non-Cancer Risk Information to Protect the Community

- Risk of injury or disease other than cancer:
  - Divide estimated exposure (dose) to the Reference Dose (RfD) (i.e., "safe" daily dose)

$$\text{Hazard Quotient (HQ)} = \frac{\text{Estimated Dose}}{\text{RfD}}$$

  - HQ below 1 indicates that adverse health effects are not expected

Cleanup actions may be required if the estimated dose exceeds safe intake (HQ > 1)

HHRA Results:
Direct Contact with Floodplain Soil

Exposure Scenarios:

1. Recreational User - Surface soil
2. Utility Worker – Surface/subsurface soil
3. Farmer – Surface soil

Key Finding

- No unacceptable risks associated with contacting nonresidential floodplain soil

HHRA Results:
Consumption of Fish from Choccolocco Creek

Exposure Scenario:

- Recreational Fisherman

Key Findings

- Fish consumption poses an unacceptable risk to people who regularly consume fish from Choccolocco Creek with PCB tissue concentrations ranging from 2 to 7 mg/kg
- PCBs contribute 60-92% to the unacceptable cancer risks (across species groups/locations)
- PCBs contribute 80-96% to the unacceptable noncancer HQs (across species groups/locations)

Questions