



Hudson River PCBs Superfund Site Project Update

Community Advisory Group Meeting

Tuesday, May 2, 2023

Virtual Meeting

Agenda



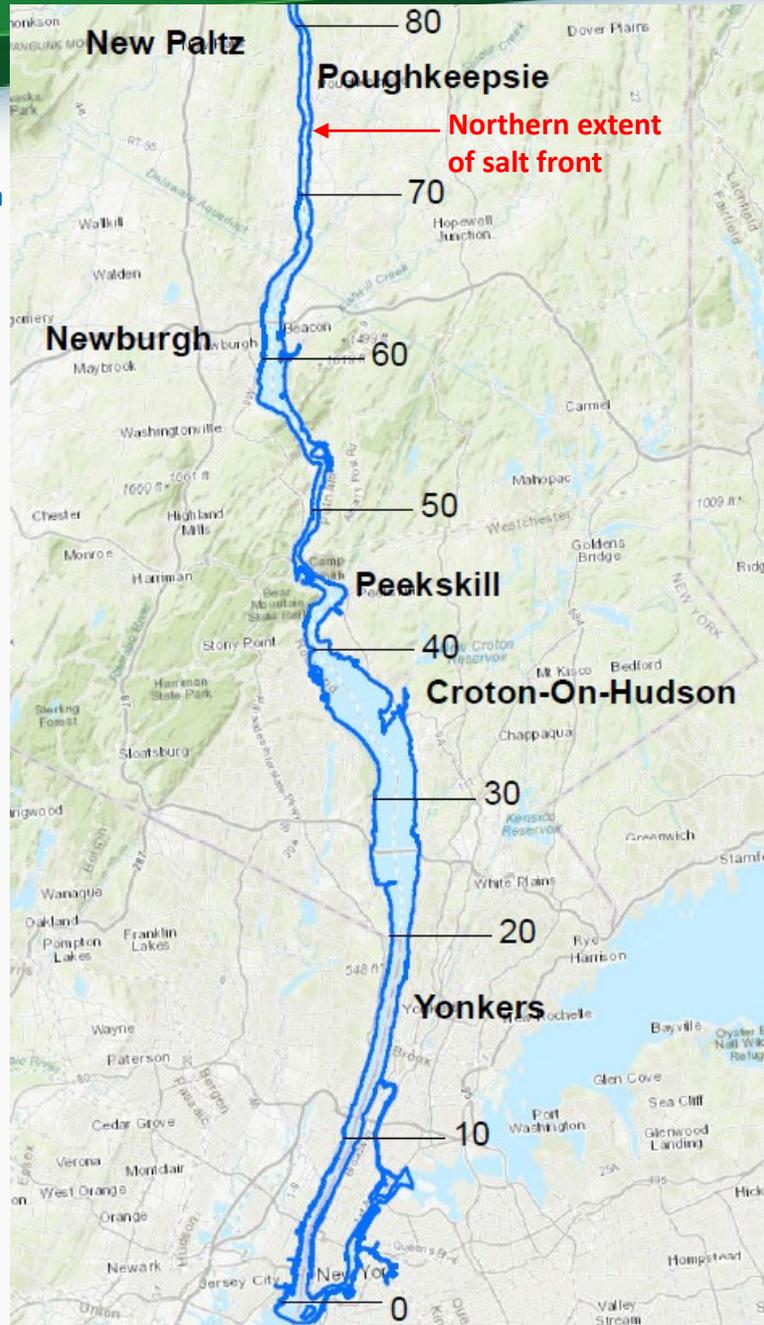
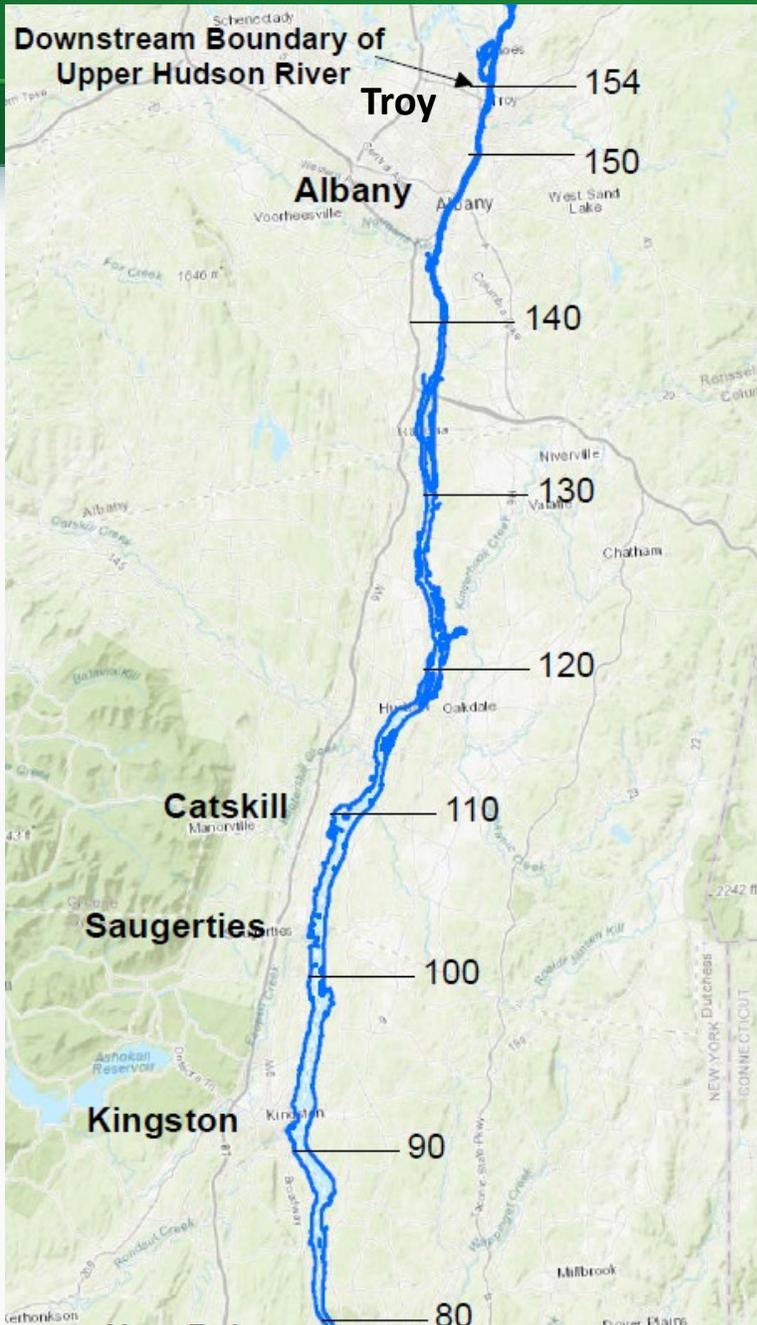
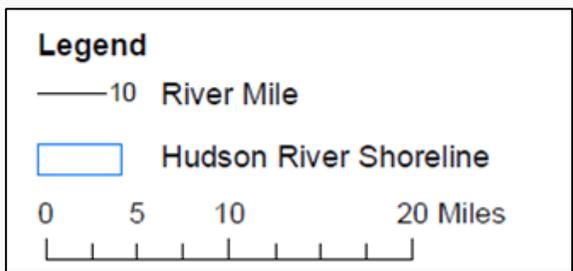
- Lower River
 - Presentation outlining the investigation work
 - Outreach and communication
 - CAG expansion process update
- Five-Year Review status and schedules
- Powerhouse deconstruction progress
- Floodplain status of ongoing work
 - Summary of recent short-term actions
 - Old Champlain Canal summary of work completed to date
- Upper Hudson River long-term monitoring

Lower Hudson River (LHR) Update



Lower Hudson River

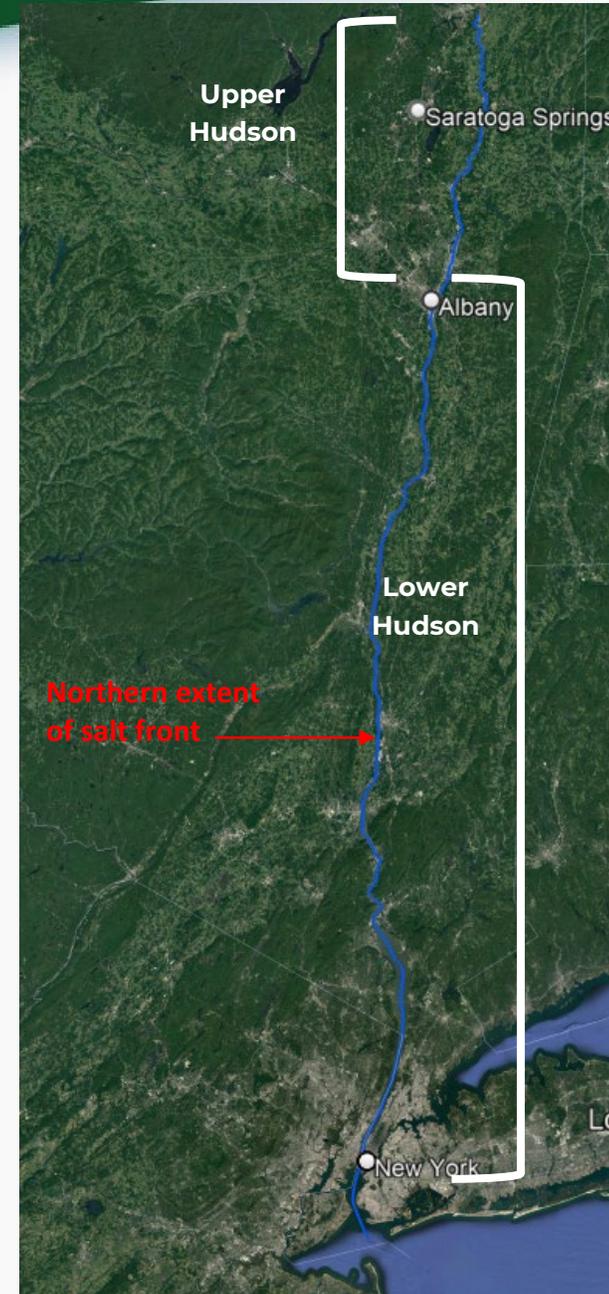
Lower River extends south from the Federal Dam at Troy, RM 154, to the Battery (southern tip of Manhattan), at RM 0



Lower Hudson River vs. Upper Hudson River



- The Upper Hudson River (UHR) is freshwater, non-tidal, dams/locks and flows into the Lower Hudson River
- The entire Lower River is a tidal estuary, which means it is under the influence of ocean tides
- Because the Lower River is tidal, it has distinctly different characteristics, water flows, and ecological communities



Lower Hudson River Sampling and Investigations



- The Lower Hudson River Sampling and Analysis Plan/Quality Assurance Project Plan was approved on March 17, 2023.
- Extensive water, sediment and fish sampling began this spring.
- GE is performing the work under agreement with EPA. PCBs will be a focus of the data collection. However, other contaminants will be evaluated as well.
- The results of the sampling will be used to improve EPA's understanding of the Lower River and inform subsequent investigations.



Lower Hudson River Sampling and Investigations



Picture source: <https://hudsonriveranchorage.org>, dated August 24, 2017

- GE remains legally responsible for its PCBs in the Lower Hudson River. EPA is continuing to evaluate other parties that may also be liable for PCBs or other contaminants in the Lower Hudson.
- New fish, water, and sediment data will supplement the results of EPA's investigation of the Lower Hudson River in the 1990s and GE's ongoing periodic monitoring of Lower Hudson River fish and water under EPA oversight since 2004.
- EPA has also been coordinating with New York State (DEC/DOH) and other project stakeholders since 2019 to gather additional information and data about the Lower River in support of these efforts.

Why are Additional Studies Necessary for the Lower Hudson River?



- The Lower River has been designated as OU5
- Post-dredging, transport of PCBs from the Upper River downstream to the Lower River has been substantially reduced
- Limited data are available for the Lower River, and are insufficient to determine recovery
- Lower River monitoring includes fish and water associated with UHR remedy
- Consumption advisories, as identified by NYSDOH, remain in place throughout the Lower River

 Locations & Tributaries	 Fish	 Men 15 and Over & Women 50 and Over	 Women Under 50 & Children Under 15	Chemical of Concern
All other waters NOT listed (Mid Hudson Region)	All fish	Up to 4 meals/month	Up to 4 meals/month	
Hudson River, Federal Dam at Troy to Rip Van Winkle Bridge at Catskill	Alewife, Blueback herring, Rock bass, Yellow perch	Up to 1 meal/month	DON'T EAT	PCBs
	All other fish (including Striped bass and Walleye)	DON'T EAT	DON'T EAT	PCBs
Hudson River, Rip Van Winkle Bridge at Catskill to NYC Battery	Crab or lobster tomalley (hepatopancreas, mustard) and cooking liquid	DON'T EAT	DON'T EAT	PCBs, Dioxin, Cadmium
	Channel catfish, Gizzard shad, Walleye, White catfish	DON'T EAT	DON'T EAT	PCBs
	Blue crab meat	Up to 4 meals/month (six crabs per meal)	DON'T EAT	PCBs, Cadmium
	Atlantic needlefish, Bluefish, Brown bullhead, Carp, Goldfish, Largemouth bass, Rainbow smelt, Smallmouth bass, Striped bass, White perch	Up to 1 meal/month	DON'T EAT	PCBs
	All other fish	Up to 4 meals/month	DON'T EAT	PCBs

Source: <https://www.health.ny.gov/publications/6545.pdf>

Sampling and Investigations

Water Column



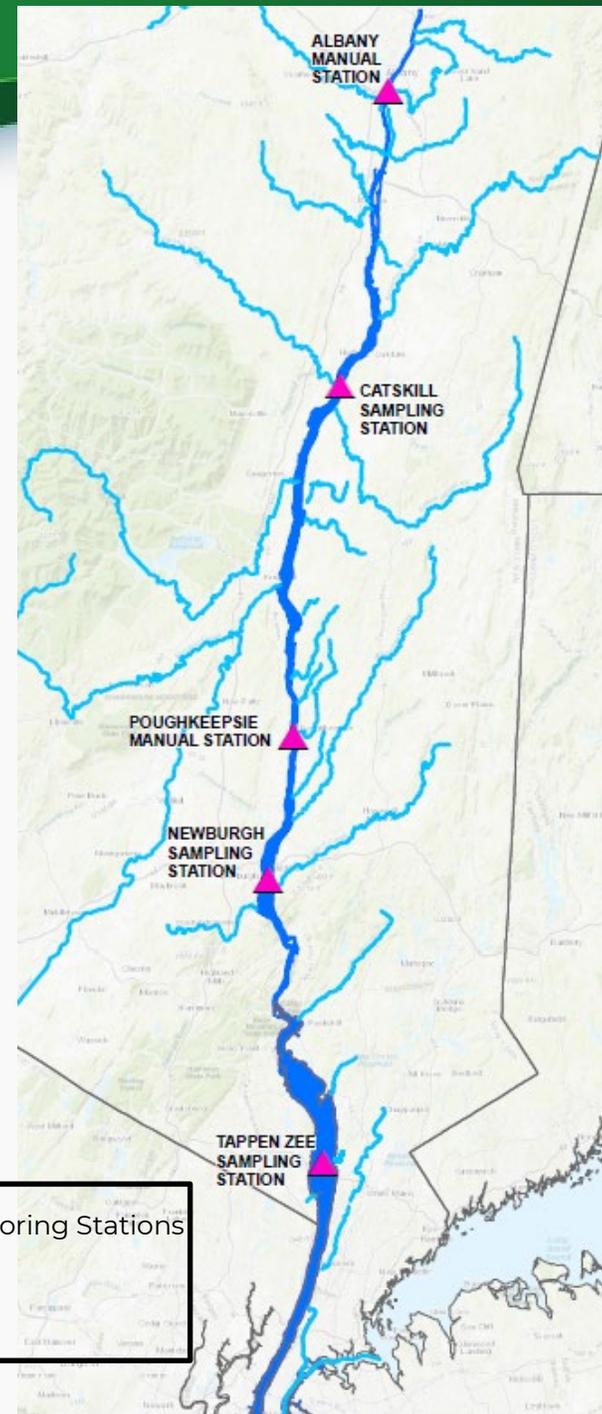
Purpose:

- Evaluate PCBs and other water quality parameters throughout the Lower River
- Inform EPA's understanding of the relationships among water, fish and sediment

Scope:

- Monitor five stations monthly for PCBs (Albany/Troy, Catskill, Poughkeepsie, Newburgh and Tappan Zee)
 - Consider effects of tributaries
 - Target three freshwater stations and two brackish water (fresh water is mixed with salt water) stations
- Evaluate data (1 year) and determine optimal approach (frequency and location) for future water column sampling

Lower Hudson River Water Column Monitoring Stations



-  GE Water Column Monitoring Stations
-  Lower Hudson River
-  Tributaries

Sampling and Investigations

Fish Monitoring Program



Purpose:

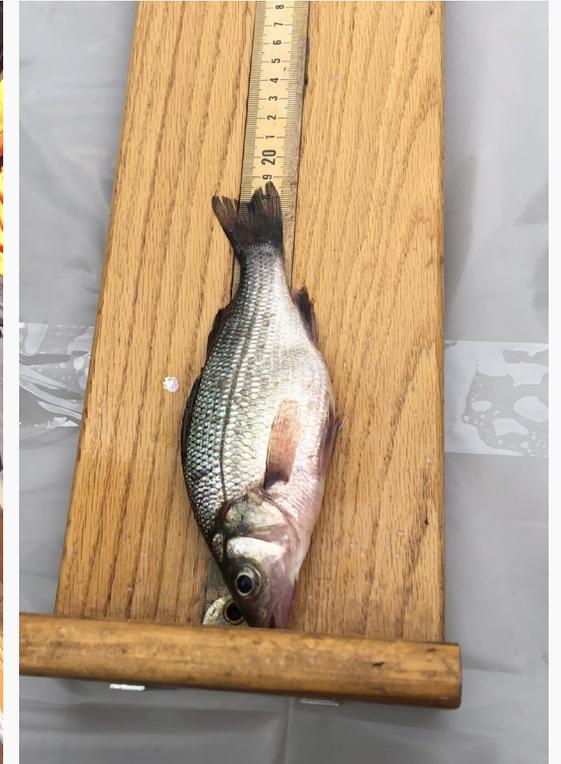
- Collect data to assess PCB contamination among various fish species in the Lower River
- Provide sufficient fish data throughout the main ecological segments of the Lower River, spanning the various turbidity and salinity conditions that occur throughout the estuary
- Obtain data to better understand potential human and ecological risks associated with fish consumption

Scope:

- Collect fish and crab from five primary monitoring stations throughout the Lower River
 - 11 total fish species and crab
 - Primary stations are approximately 30 miles apart
 - Blue crabs - two of the monitoring stations located closer to New York Harbor
- Evaluate data after one year and determine if sampling at secondary locations is necessary
 - Pumpkinseed or local forage fish species with smaller local home ranges
 - Alternative locations for the sport fish species in the event primary stations do not produce sufficient numbers



Sampling and Investigations Fish Monitoring Program



Sampling and Investigations

Fish Collection



Sampling and Investigations

Fish Collection



Fish Monitoring Program Summary



Stations

Primary Stations

- Albany/Troy (RM 145/152)
- Catskill (RM 112)
- Tappan Zee (RM 22)
- Poughkeepsie (RM 75)
- George Washington Bridge (RM 13)

Secondary Stations

- Coeymans (RM 131)
- Red Hook (RM 98)
- Newburgh (RM 60)
- Hudson Highlands (RM 45)
- NY Harbor (RM 5)

Collect 20 samples per species for sport fish and pumpkinseed, and 10 composite samples for forage fish

Target Species

- Striped Bass*
- Smallmouth Bass*
- Ictalurids (Channel Catfish and Bullhead)*
- White Perch*
- Bluefish
- Hogchoker
- Carp
- American Eel
- Forage Species (spottail shiner, silverside)*
- Blue Crab
- Pumpkinseed*
- Walleye

Note: Not all fish are targeted for collection at all stations

* Indicates the fish are also collected as part of the UHR program

Sampling Techniques

Freshwater Locations

- Electroshocking
- Netting
- Trapping
- Seining
- Angling

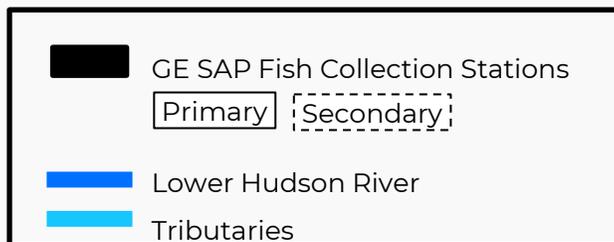
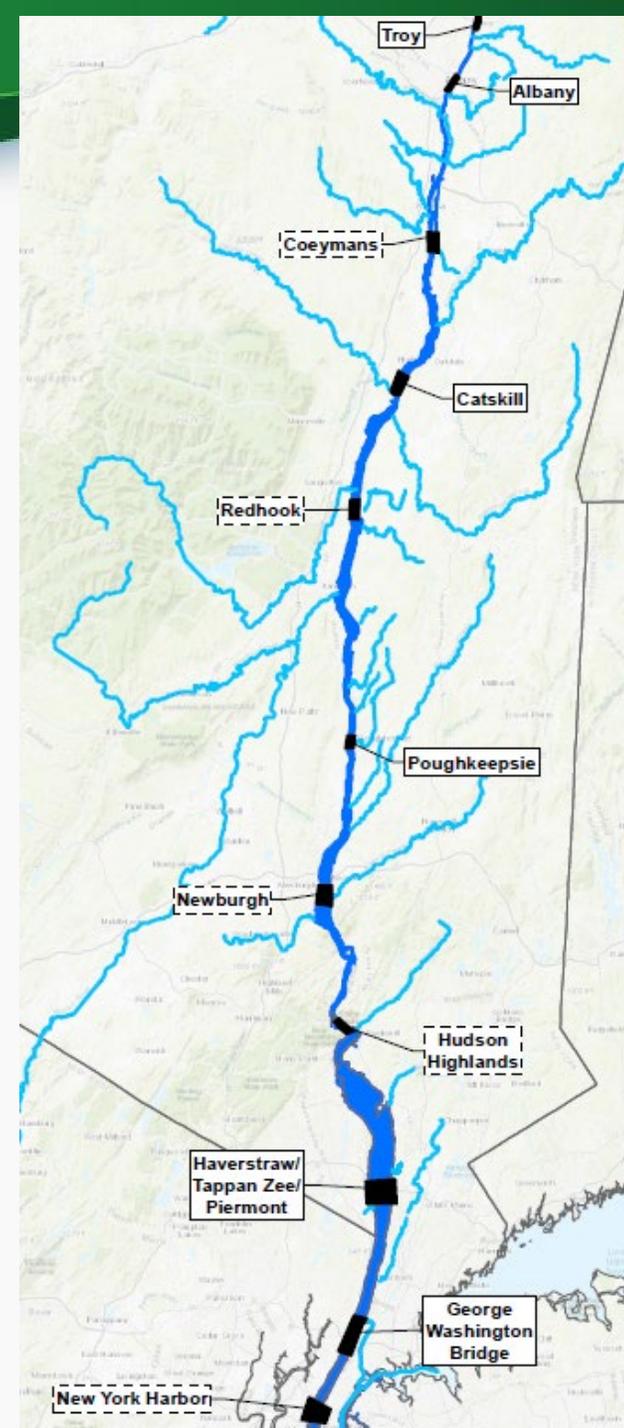
Brackish water locations

- Angling
- Seines
- Traps or pots
- Gill nets

Eel pots may be used to collect American eels at Poughkeepsie and Tappan Zee, and traps will be used to target blue crab

*Sampling techniques are designed to minimize the potential to encounter sturgeon. Close coordination with DEC.

Lower Hudson River Fish Monitoring Stations



Sampling and Investigations

Sediment Sampling Programs



- Three different sediment sampling programs
 - Recently deposited sediment
 - Supplemental sediment monitoring
 - High resolution coring
 - GE will collect samples from a different range of depths of the river bottom. Collecting sediment at various depths and locations allows EPA to better understand where contamination is present and has deposited over time.
- Phased Approach
 - GE will implement the first (recently deposited) of three sediment programs in 2023
 - The second and third programs, which includes collecting deeper sediment samples and high resolution coring will occur in 2024



Sampling and Investigations

Sediment Sampling Programs



Sampling and Investigations

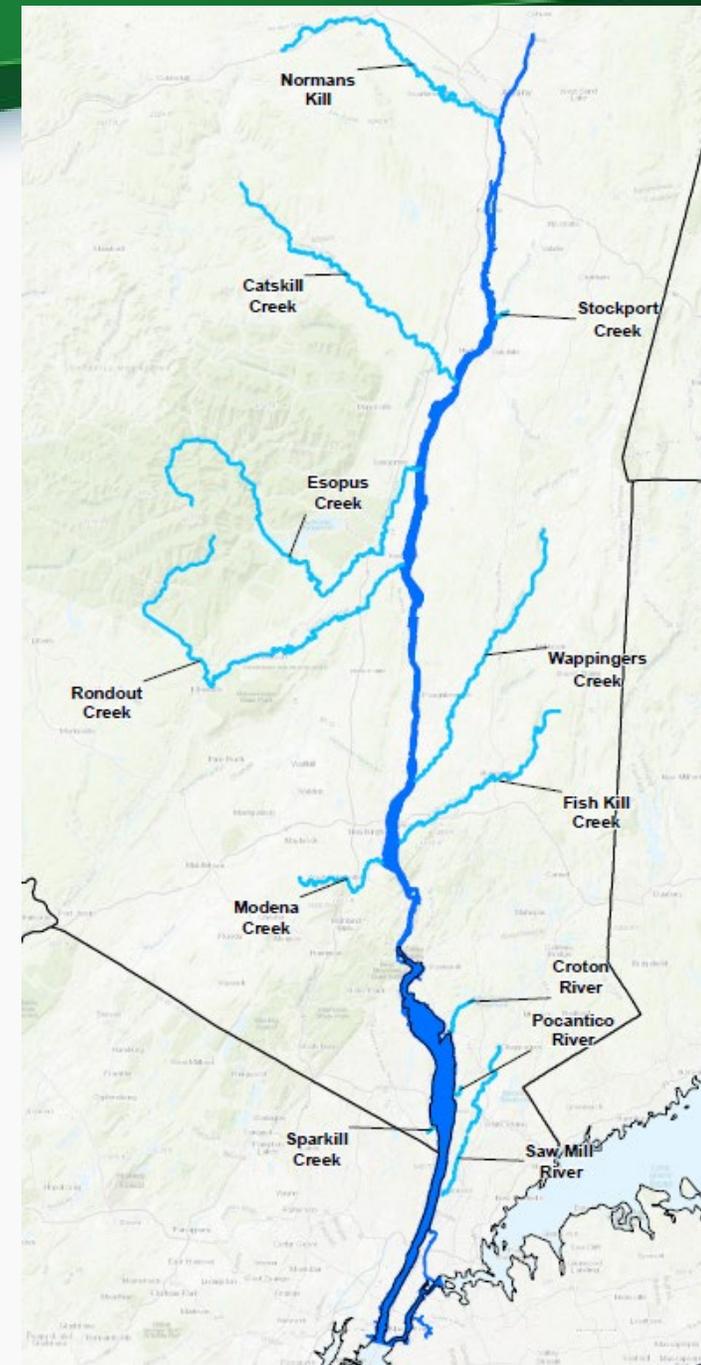
Recently Deposited Sediment

Purpose:

- Evaluate PCB concentrations in recently suspended and actively depositing sediment in the Lower River
- Evaluate the recovery of the Lower River over time using the concentration of PCBs in recently deposited sediment
- Investigate main stem and 12 major tributaries

Scope:

- Analyze all samples for the radionuclide Beryllium-7 (Be-7)
- Target 150 locations in the main stem (approximately every 3 to 5 miles)
 - Anticipate 30 to 50 samples containing Be-7 bearing sediment will also be analyzed for PCBs
- Target 100 locations from 12 major tributaries
 - Anticipate approximately three samples per tributary containing Be-7 bearing sediment will also be analyzed for PCBs congeners (via Method 1668)
- Planned for 2023



Supplemental Sediment Monitoring and High Resolution Sediment Coring



Based on results of the fish, water and Be-7 studies, additional studies will be conducted in 2024:

- Supplemental sediment monitoring
- High resolution coring
 - Deeper samples to evaluate sediment deposition over time
 - Locations will be determined based on all available sediment data
- Data will inform EPA decision making



Sampling and Investigations

Supplemental Sediment Monitoring

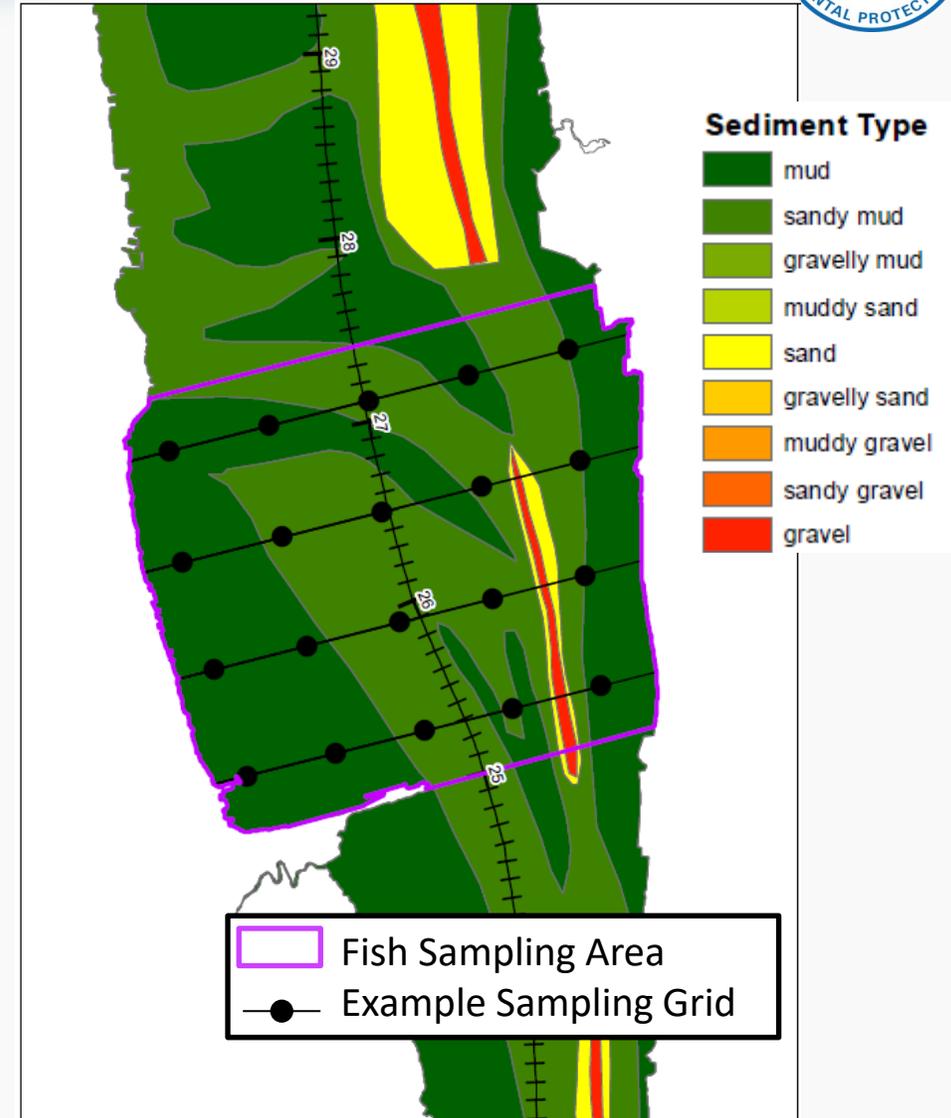


Purpose:

- Examine local and river-wide PCB concentrations and other contaminants in sediments
- Provide information about the relationships among fish, water and sediment

Scope:

- Target samples from 10 sampling grids of 20 cores for each station at the primary and secondary fish sampling stations (200 samples)
- Collect to a depth of three feet
 - Top 0-6 in segment analyzed for PCB congeners
 - 6-12 in and bottom 2 ft segments will be archived for possible future analysis



Sampling and Investigations

High Resolution Sediment Coring



Purpose:

- Provide data necessary to further evaluate the history of PCB sediment deposition in the Lower River
- Evaluate recovery rates of the Lower River sediment over time with respect to PCBs

Scope:

- Target six initial core locations
 - GE will collect core samples from six initial locations spread throughout the Lower Hudson
 - Four of the six cores will be collected at the same locations where high-resolution cores were collected in 1992
 - Sediment cores will be collected by Vibracore, or by weight-driven direct push methods where possible
 - Cores will be collected to a depth of 4-8 ft below the river bottom. PCBs will be analyzed along the length of the core
 - After EPA evaluates the data from the initial six locations, the agency will decide whether additional cores are needed

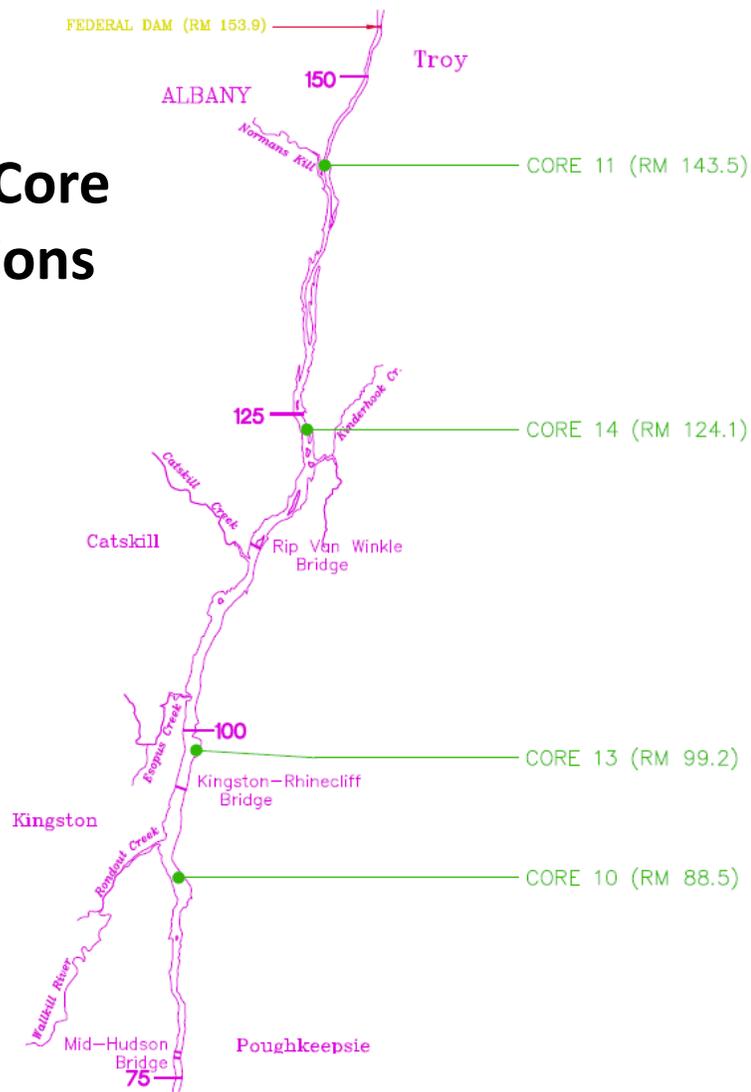


Sampling and Investigations

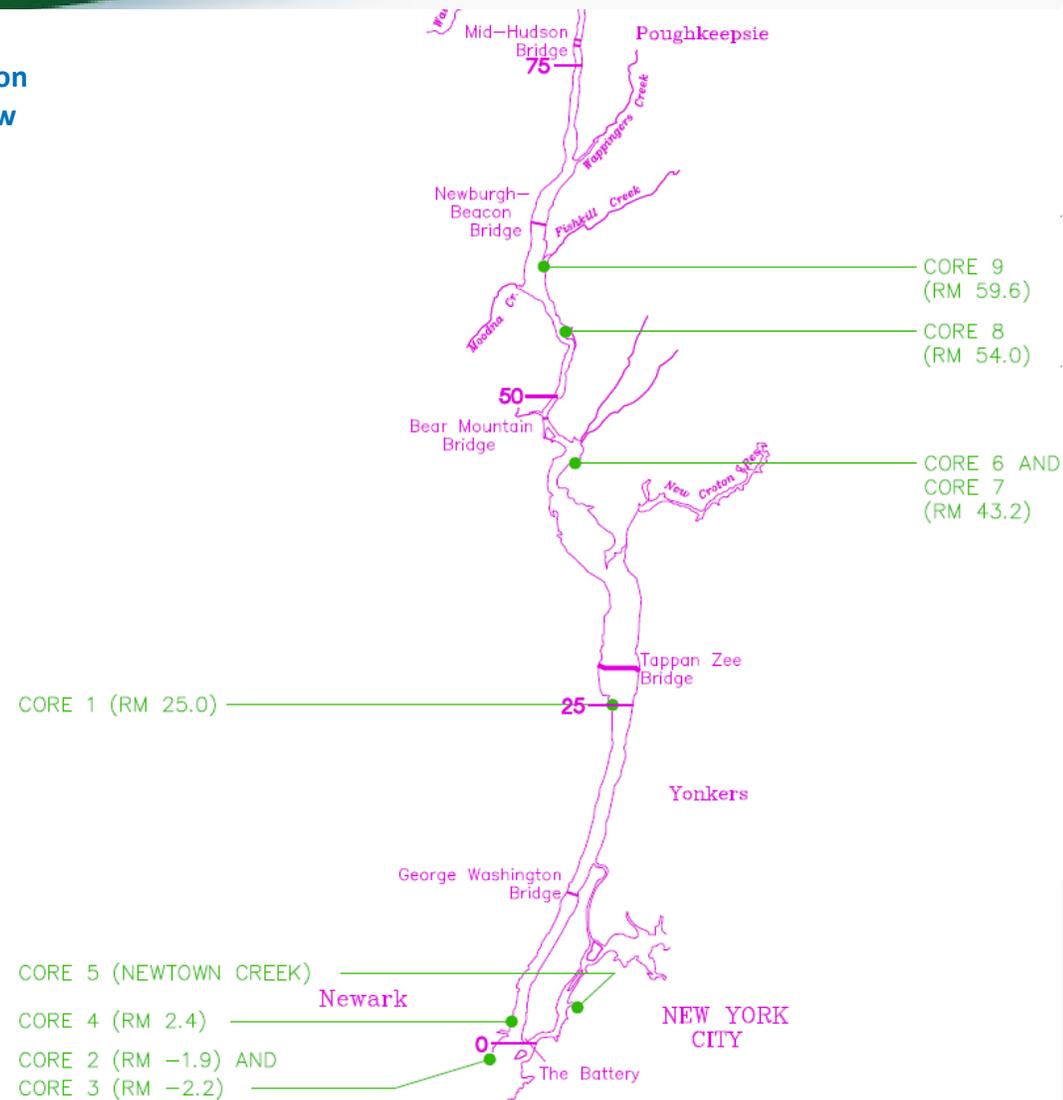
High Resolution Sediment Coring



1992 Core Locations



Direction of Flow



Sampling and Investigations Schedule



2023

- Water sampling
- Fish sampling – based on availability of species
 - Salt and freshwater species
 - Migratory, local and forage fish
 - Blue crab and eel
- Sediment collection – (Be-7) recently deposited
- Data evaluation



2024

- Monthly water column sampling continued
- Fish sampling continued
- Sediment collection
 - Supplemental sediment sampling
 - High resolution coring
- Data evaluation



2025

- Collect additional samples as necessary to support the objectives and purpose of the sampling work
- Develop next steps
- Data evaluation

Summary



- This sampling, along with other information, is key to better understanding contamination in the Lower Hudson River
- We need this information to develop the scope of work for potential future studies and additional sampling, including prioritizing investigations in each portion of the Lower Hudson
- The data and information collected will inform EPA decision-making and next steps, including whether and how to approach additional investigations
- We took this approach with a focus on getting into the Lower Hudson River and collecting data as soon as possible
- GE remains legally responsible for its PCBs that migrated to this area
- EPA is continuing to evaluate whether other parties may also be liable for PCBs, as well as other contamination





- EPA news release on September 13, 2022 announcing Administrative Agreement with GE to perform sampling and investigations in the lower river
- Public Information Meeting (virtual) planned for May 24 to present information about the Superfund site and upcoming lower river field work
- A recorded version of the slide presentation will be posted on the site webpage: www.epa.gov/hudsonriverpcbs
- A Community Update fact sheet is being developed which discusses the details of the work this season; Spanish version will also be available
- Individual conversations and meetings with lower river groups and other interested parties (ongoing)