Upper Hudson River Update – Special Studies

EPA

Hudson River
PCBs SUPERFUND SITE

Special Studies – Why We Need Them

- The latest Five-Year Review Report identified several uneven patterns of recovery. To understand these patterns better, the report contains a series of recommendations and follow up items, which include carrying out special studies to take a closer look at water, fish and sediment in specific areas of the river.
- These studies will help the EPA better understand how the river is recovering and guide the Agency's next steps.

Issues/Recommendations (Section 6.1)

- Additional information needed – more years of fish data
  - Same conclusions as last Five-Year Review
  - Work plans in-place and data is being collected
- Potential differences in fish recovery studies
  - Considerations (age, length, weight, scales, ear bone, male or female)
  - Some of these relationships were analyzed in the past
  - Further discussion of scopes of work needed with experts (within agencies, consultants, etc.)
- Localized areas of elevated PCBs remaining in sediment - Potential impact on fish and water recovery studies
  - Overall focus will be on areas linked to possible delay or unevenness in fish recovery
  - Areas that could not be dredged (engineering, safety and cultural resource offsets) will be considered
  - Floodplain soils that are river bottom a significant amount of the year will be considered
  - EPA will meet with NYSDEC staff to discuss approach

Issues/Recommendations (continued)

- Supplemental fish collection to inform fish advisories
  - Initial work plans in-place (listed in Cleanup Phase 2 agreement)
  - NYSDEC/NYSDOH have provided input to EPA
  - Further discussion needed between EPA and NYSDEC/NYSDOH to confirm scope and timing of work
- Institutional Controls – continued funding to support fish advisories
  - Discussions with NYSDEC/NYSDOH underway
  - Scope of future program being discussed
  - EPA anticipates funding to be extended
- Ecological Risk – collection of ecological risk target species – whole body fish collection
  - This work is in existing scope but timing is not defined
  - EPA understands and agrees with NYSDEC/NYSDOH request regarding this work
  - Further coordination and discussion needed to better define scope and timing

Other Findings (Section 6.2)

- Integrated Risk Information System (IRIS) - PCB Risk Info
  - Review new or updated information in IRIS (Integrated Risk Information System)
  - EPA risk assessor is following up
- Capping Institutional Controls
  - Monitoring plans in place
  - Coordinate with NYSDEC and NYSCC – awareness of caps to limit potential disturbance
- Monitoring to Support the Operation, Maintenance & Monitoring Program
  - Work plans are in-place that include an adaptive approach to adjust the work scope
  - Ongoing evaluation of data (including variability of data) so scope can be adjusted

Other Findings (Section 6.2)

- Rogers Island High-Flow Water Sampling Study
  - EPA would like to better understand PCB transport during high flow in this area
  - Scope of work under development and future sampling planned
- Mohawk River Water Sampling Study
  - Ongoing regular sampling to continue
  - Frequency and scope need further technical consideration
- Passive Sampler Water Column Study
  - Scope developed and sampling complete
  - Data being evaluated – report to CAG in future meeting
  - Assist with evaluating water concentration variations
  - May assist with assessing fish recovery and identifying areas of elevated sediment

Other Findings (continued)

- Dissolved Phase and Particulate Organic Carbon Water Column Study
  - Improve understanding of PCB transport
- Lipid Normalization and Recovery Trends
  - Complex topic - Detailed analysis underway
  - Important in terms of considering fish recovery
  - Does not represent what is potentially consumed by people and wildlife
- Recently Deposited Be-7 Bearing Sediments
  - Sampling completed
  - Analysis of data underway – Important consideration in terms of recovery of surface sediment
  - Future presentation to CAG planned
- Sampling of Cap Isolation Layer Material
  - Work plans in-place – method for sampling being discussed

Follow-up Items

- Impacts of Dredging on Fish and Recovery (Fish Aging)
  - Evaluate if age is contributing to the observed different recovery rates among fish species
- Current Fish Diet (Gut Content)
  - Obtain a better understanding of the current fish diet, how it may vary by location and how it could be impacting observed recovery rates
- Changes in Fish Diet Through Time (Under Consideration)
  - Evaluate if the Nitrogen and Carbon stable isotopes in fish have changed during the post-dredging years indicating a shift in diet
- Understanding Fish Exposure Areas
  - Gain a better understanding of where fish live and how that may impact recovery and/or fish concentrations

Follow-up Items (continued)

- Localized Fish Exposure Evaluation (Water Column, Sediment, Porewater)
  - Gain a better understanding of fish exposure (pore water, water column, and sediment concentrations) at locations where there are questions about the recovery and/or fish concentrations
- Upstream PCB Inputs Under High Flows (Rogers Island High Flow)
  - Evaluate PCB concentrations entering the system during high flow events
- Potential Changes in Partitioning (Dissolved Phase & Particulate Organic Carbon)
  - Evaluate the relationship between organic matter that is dissolved in the water and organic matter bound to particles in the water column in routine surface water samples
- Impacts of PCBs from the Mohawk River on Upper Hudson River
  - Reassess the level of PCB concentrations entering the Hudson River from the Mohawk River

Follow-up Items (continued)

- Fish Collection for Adjustments to NYS Fish Advisories/Restrictions
  - Provide PCB fish data to NYSDOH to evaluate whether existing fish consumption advisories should be modified
- Address Data Gap for Ecological Risk Remedial Action Objective (RAO) Assessment (Whole-body Bass)
  - Provide information on PCB concentrations in fish that are representative of the size typically consumed by river otters and get a reasonable estimate of PCB concentrations in whole-body largemouth bass to compare to ecological RAO
- NYSDOH Funding
  - Provided sufficient funding for NYSDOH to continue Hudson River fish advisory outreach program
- Lipid Normalization and Observed Recovery Trends
  - Gain a better understanding of how lipids vary through time and impact recovery rates and develop the most appropriate method to account for variations in lipid

Follow-up Items (continued)

- Capping Institutional Controls (ICs)
  - ICs should be in-place in order to protect the river bottom caps GE installed during dredging
- Additional Monitoring to Support the OM&M Program
  - Evaluate OM&M data to determine whether adjustments to the program are needed
- Be-7 Sediment Sampling
  - Understand PCB fate and transport through recently deposited sediments in the Upper Hudson River
- Cap Isolation Layer Material Sampling
  - Verify the basic design assumptions for the cap and verify the effectiveness of the cap to control chemical migration

Next Steps

- Special Studies in 2025
  - Whole-body largemouth bass collection began in spring 2025
  - Fish aging and diet studies (gut content) to begin with 2025 sampling
  - Scope for evaluation of fish exposure areas and localized fish exposure currently being considered
- Some studies have been completed (Dissolved Phase and Particulate Organic Carbon Water Column Study and Mohawk River Water Sampling Study)
- Continue discussions with GE and NYSDEC on scope of special studies
- Ongoing development of work plans for special studies