

Performance of the Natural Recovery Component of the Upper Hudson River Remedy

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Background/Objectives. The Record of Decision for the Hudson River Polychlorinated Biphenyls (PCBs) Superfund Site selected a remedy that included removal of PCB-contaminated sediment (followed by capping or backfilling) and monitored natural recovery. Dredging began in 2009 and was completed in fall 2015 (with habitat restoration complete in 2016). To track the recovery of the river, long-term monitoring of surface sediment PCB concentrations began in 2016 and will continue approximately every 5 years for the foreseeable future. The recent sampling provides an opportunity to assess the recovery of sediments not targeted for dredging since they were last sampled before dredging began (as part of the remedial design).

Approach/Activities. Surface sediment data collected from 2002 through 2005 in areas not targeted for removal were compared to surface sediment data collected in 2016 and 2017. Changes in Total PCB and Tri+ PCB concentrations were examined with strategies aimed at accounting for differences in the spatial structure of the samplings. These results will be presented along with analyses examining the importance of sediment type and the treatment of abandoned locations in the assessment of trends. Additionally, comparisons of congener and homolog patterns between pre- and post-dredge surface PCB concentrations will be explored.

Results/Lessons Learned. Declines in Total PCB and Tri+ PCB concentrations were greatest upstream, near the original PCB source, and generally decreased with distance downstream. Interpretation of the declines were found to be influenced by accounting for different sediment types among sampling locations and programs, and including abandoned locations in PCB calculations. Overall, the results suggest that the natural recovery component of the remedy is functioning, and support continued monitoring to assess long-term trends.