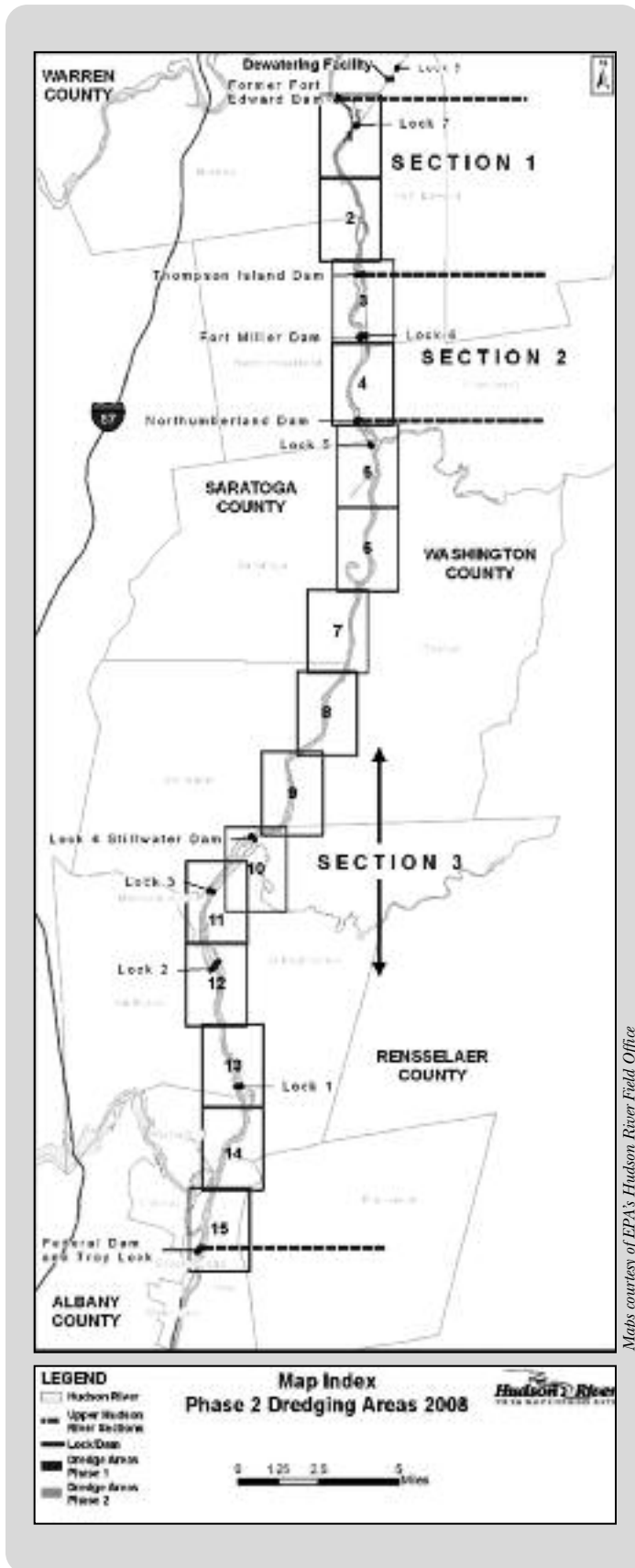


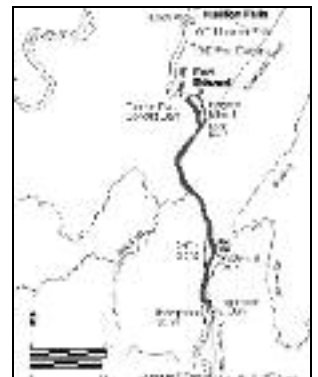
Dredging: Key to Future Health of Hudson River

by Kristen Skopec



Improvements in the health of the Hudson River are visible and substantial, thanks to the federal Clean Water Act and advances in sewage treatment. In the past several years, bacteria and nutrients have declined significantly, creating a healthier river environment that has encouraged the return of fish and wildlife. However, the bottom line is that there are substantial amounts of PCB (polychlorinated biphenyls) in the river sediment, and letting nature take its course will not protect people and animals eating fish from the Hudson River. The US Environmental Protection Agency's goal of a cleaner, healthier Hudson River will only be achieved through dredging the PCBs.

Each day, about three to five ounces of PCBs enter the river at the top of the Thompson Island Pool, an area where Hudson River water swirls around a small island located in the town of Fort Edward, through fractures in the bedrock underneath the General Electric (GE) Hudson Falls plant. Sediment and water samples taken by the New York State Department of Environmental Conservation and EPA show that about one to two pounds of PCBs flow out of the Thompson Island Pool every day. Just by turning off the Hudson Falls spigot, PCB levels in fish should go down somewhat. That's why control of the source is an important complement to the EPA's cleanup plan detailed in the Record of Decision, or ROD, that was finalized in 2002. Yet, without targeted dredging, PCBs in the sediment will continue to find their way into fish at unacceptable levels.



Details of Dredging

Beginning in spring of 2009, dredging will commence in the upper 40 miles of the Hudson River, between the Towns of Fort Edward and Troy. The areas to be dredged are outlined (see map, left) in the ROD as three distinct sections of the Upper Hudson River: River Section 1 (from the former Fort Edward Dam to the Thompson Island Dam); River Section 2 (from the Thompson Island Dam to the Northumberland Dam); and River Section 3 (from the Northumberland Dam to the Federal Dam at Troy). Phase 1 dredging will be conducted in two areas of River Section 1; the northern portion of the Thompson Island Pool and the east channel of Griffin Island. This phase will take approximately one year to complete and will remove about 10 percent of the amount of PCBs targeted by the project. All of the Phase 1 dredging will occur in River Section 1. Phase 2 dredging will take place in River Sections 1, 2, and 3, will last approximately five years, and will address the remaining 90 percent of PCBs being targeted.

Between six and eight mechanical clamshell dredges will be working at the same time during the project to scoop PCB-laden sediment into approximately 14 barges. The work will go on 24 hours a day, six days a week and constant monitoring will be done to ensure a minimal amount of sediment re-suspension. All of the areas to be dredged will be backfilled with clean material and specialists will conduct wildlife habitat replacement.

PCBs and Fish Consumption

For 25 years, concerns about PCBs in Hudson River fish have prompted New York State to issue health advisories that recommend limits on eating fish from the river. People should protect themselves



Photo courtesy of EPA's Hudson River Field Office

The Champlain Canal has been widened by 65 feet where a wharf is being built for a process and transfer facility to enable boats not associated with the dredging project to pass by when barges are moored there. This photo shows excavation of the canal's banks in order to expand the canal and construct the wharf. When dredging begins, barges loaded with sediments dredged from the Upper Hudson River will dock and unload here.

by following state fish consumption advisories. Women of childbearing age and children under age 15 should not eat any fish from the Hudson River. Furthermore, no one should eat fish caught between the Federal Dam at Troy and Hudson Falls.

It has been suggested that if no action were taken other than source control, the levels of PCB in fish will meet the federal Food and Drug Administration (FDA) tolerance level of 2 ppm (parts per million) between 2010 and 2014. FDA standards reflect a market basket approach, which assume people eat a variety of fish from a variety of places, purchased at their local markets. A PCB level of 2 ppm is not sufficient to protect people and animals regularly eating fish from the Hudson River. That's why the EPA has developed a risk-based concentration of .05 ppm as its goal for PCB in fish. That is also the advisory level for unrestricted consumption accepted for the Great Lakes.

The enduring quality of PCBs, which made them valuable as industrial products, makes them hazardous to the environment. PCBs degrade naturally over time, but the process, called natural dechlorination, does not make them harmless. EPA considers all PCBs, regardless of their level of chlorination, to be hazardous to people's health. The PCBs may change, but they don't go away.

Dewatering Facility for Dredging

The construction of the Hudson River PCB dewatering facility in Fort Edward is on track to allow for dredging to begin in May. Equipment at the facility will squeeze the water from the dredge spoils, treat it to drinking water standards, and re-release it into the Champlain Canal. The filter cake, which is the pressed and dried PCB-laden sediment remaining, will be shipped by railcar to a hazardous materials disposal facility in Texas.

The EPA has created quality of life performance standards to reduce the effects of dredging, sediment processing, transferring and dewatering, and support operations on people, businesses, recreation, and community activities in the project area for the Hudson River cleanup. When the project is complete, the Hudson River's health will be much improved and the ecological benefits of cleaning up the river will be enjoyed for generations to come.

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The fine sediment stockpile, which has the highest potential for PCBs to be released into the air, will be deposited inside this structure, where the air will be filtered to remove PCBs (dewatering process). There are two structures of this type being built on the site, the second one was started this spring. The PCB-laden sediment will be transferred to railcars from these structures and transported to a hazardous waste storage facility in Texas.



Workers place a nonpermeable liner under the floor of the second filtercake storage building being built. Although all ground water on the 110-acre site will be treated to drinking water standards, areas where the ground could come in contact with PCBs are being covered with this type of liner as an added precaution.



This shows the inside of one of the two filtercake storage buildings. The buildings are 400 feet long and will have an air filtration system to negate any problems from PCB volatilization.

Photos courtesy of EPA's Hudson River Field Office