



SEPTEMBER 2008

SEDIMENT TOXICITY PILOT STUDY FOR THE HUDSON RIVER NRDA

HUDSON RIVER NATURAL RESOURCE DAMAGE ASSESSMENT

Past and continuing discharges of polychlorinated biphenyls (PCBs) have contaminated Hudson River natural resources. While the U.S. Environmental Protection Agency is continuing with cleanup plans, federal and state trustee agencies – the U.S. Department of Commerce, the U.S. Department of the Interior, and New York State – are conducting a natural resource damage assessment (NRDA). These agencies are responsible for evaluating the injuries associated with hazardous substance contamination to natural resources and determining appropriate actions to restore those resources. Natural resource damage payments provide a means for the Trustees to restore injured public resources to the condition they would have been in but for the release of hazardous substances to the environment, and to compensate the public for lost services provided by those resources.



Sediment toxicity pilot study test organism.
***Hyalella azteca* (amphipod).**

Photo courtesy of U.S. Geological Survey.

The Hudson River provides habitat for a range of organisms that live in or on the river bottom. These sediment-dwelling organisms — or benthic macroinvertebrates — live in direct contact with the aquatic sediments that are contaminated with PCBs. The presence of elevated concentrations of PCBs in sediments could be harmful to these organisms, which are important elements of aquatic ecosystems and are often used as indicators of the health of such systems. In addition, PCBs can accumulate in the tissues of benthic macroinvertebrates, thereby placing consumers of these organisms, such as birds and fish, at risk of adverse health effects.

This fact sheet provides information about a preliminary investigation regarding sediment toxicity and associated injuries to natural resources.



Sediment toxicity pilot study test organism.
***Chironomus dilutus* (midge).**

Photo courtesy of U.S. Geological Survey.

SEDIMENT TOXICITY PILOT STUDY 2008

The objective of the sediment toxicity pilot study is to determine if PCB-contaminated sediments from the Hudson River are toxic to sediment-dwelling organisms. Sediment-dwelling organisms may be exposed to PCBs that are bound to sediment particles, as well as any PCBs that are dissolved in the water in and around the sediment. Sediment toxicity tests measure the effects of sediment-associated PCBs on benthic macroinvertebrates by exposing test organisms to PCBs in the same way they are exposed in the environment. The study will also evaluate the composition and structure of the benthic macroinvertebrate community and assess the bioavailability of PCBs. The combination of sediment toxicity, benthic community, and bioavailability data provide multiple means of measuring potential effects of PCBs.

During late September and early October 2008, the Trustees will collect sediment from the Hudson River between the former Fort Edward Dam and the Thompson Island Dam. Samples representing a range of PCB concentrations will be sent to a toxicity testing laboratory where test organisms will be placed in exposure chambers containing the Hudson River sediment. These organisms will be monitored over several weeks for survival, growth, and reproduction. The study will also evaluate PCB bioavailability and the structure of the benthic macroinvertebrate community.

NEXT STEPS

Depending on the results of this pilot study, the Trustees may conduct additional field investigations and/or laboratory studies to further evaluate the effects of PCBs on sediment-dwelling organisms.



The Hudson River Trustees—assessing and restoring your natural resources

Further information on the Hudson River NRDA can be found on the following websites:

www.darp.noaa.gov/northeast/ HUDSON/index.html

www.dec.ny.gov/lands/25609.html

<http://contaminants.fws.gov/restorationplans/HudsonRiver/HudsonRiver.cfm>

To add yourself to the **Hudson-NRDA listserv**:

1. Send a message to: requests@willamette.nos.noaa.gov
2. Write in the subject: `Subscribe hudsonnrda`

Hudson River Natural Resource Trustees
NYSDEC
625 Broadway, 5th Floor
Albany, NY 12233

If you have questions about natural resource damages, or want to submit a restoration project or be placed on the Hudson River NRDA mailing list, please contact one of the individuals listed below:

Tom Brosnan
National Oceanic and Atmospheric Administration
1305 East West Highway N/ORR3
Silver Spring, MD 20910
301-713-3038 x186
Tom.Brosnan@noaa.gov

Kathryn Jahn
United States Fish and Wildlife Service
3817 Luker Road
Cortland, NY 13045
607-753-9334
Kathryn_Jahn@fws.gov

Steve Lorence
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233
518-402-8924
splorenc@gw.dec.state.ny.us