

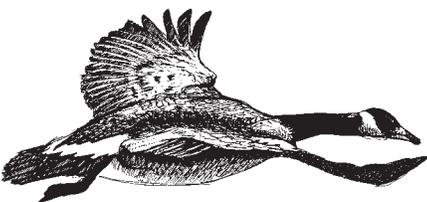


SUMMARY OF THE DAMAGE ASSESSMENT PLAN

Polychlorinated biphenyls (PCBs) have polluted the Hudson River environment since the late 1940s. Two General Electric manufacturing facilities located in Fort Edward and Hudson Falls, New York, discharged up to 1.3 million pounds of PCBs into the river.

PCBs are a major concern because they last in the environment for many decades, low concentrations pose health hazards to humans, birds, fish, and mammals, and they accumulate in living creatures over time. The Hudson River is a Federal Superfund Site, and the U.S. Environmental Protection Agency has issued a Record of Decision calling for the removal of an estimated 150,000 pounds of PCBs from selected areas along a 40-mile stretch of the river between Hudson Falls and the Federal Dam at Troy, NY.

One State agency and two Federal agencies share responsibility for restoring the Hudson River's natural resources injured by PCBs. They are the New York State Department of Environmental Conservation, the National Oceanic and Atmospheric Administration, and the U.S. Department of the Interior. Collectively, these agencies are called "Trustees" and act on the public's behalf to assess and restore injured natural resources. This effort is called a Natural Resource Damage Assessment (NRDA).



CLEANUP AND RESTORATION

NRDA is different from EPA Superfund cleanup. EPA focuses on cleaning up or containing the PCBs to reduce present and future risks to human health and the environment. In a Natural Resource Damage Assessment, Trustees assess the past, current, and future PCB injuries to the resources. Trustees identify and plan restoration actions to address these injuries and the public's lost use of the resources.

NATURAL RESOURCES EXPOSED TO PCBs

The Trustees have determined that the following natural resources have been exposed to PCB contamination:

- Living resources, including fish, birds, mammals, amphibians, reptiles, invertebrates (insects, crabs), and plants,
- Surface water resources, including river sediments,
- Groundwater resources,
- Geologic resources, including floodplain soils, and
- Air resources.

THE NATURAL RESOURCE DAMAGE ASSESSMENT PLAN

As part of Hudson River damage assessment, the Trustees have completed a Damage Assessment Plan that provides information on the planned, current, or completed Trustee-sponsored studies of natural resources exposed to PCBs. Studies outlined in the Damage Assessment Plan may be considered as one of three types:

1>>> Injury Determination

Injury determination studies identify the natural resource injured from PCB exposure, how much of the resource has been injured, and the length of time the resource has been and will be injured.

2>>> Pathway Determination

Pathway determination studies document how PCBs move through the environment to the injured resource.

3>>> Damage Determination and Restoration

The Trustees analyze information gathered from studies and identify the best methods to restore the injured resources and lost human services provided by these resources.

NATURAL RESOURCE DAMAGE ASSESSMENT STUDIES

Below is a list of the planned, current, or completed studies being conducted by the Trustees for the Natural Resource Damage Assessment or NRDA.

INJURY DETERMINATION STUDIES

FISH INJURY STUDIES

1> **Fish Consumption Advisory**

NRDA regulations under which the Trustees operate define the existence of fish consumption advisories as an injury to the resource. The Hudson River has had advisories in place since 1976. To document this injury the Trustees have evaluated the history, dates, and geographic ranges of the advisories, including relevant species. This study is completed and can be viewed at www.dec.state.ny.us/website/dfwmr/habitat/nrd/index.htm

2> **Fish FDA Tolerance** To protect human health, the Food and Drug Administration (FDA) requires that fish containing PCB concentrations in excess of designated levels be removed from commerce. For PCBs, the current tolerance is 2 ppm in edible fish tissue. Fish are injured when PCB concentrations exceed this tolerance level. The Trustees will compare the fish tissue data available from previous New York State studies and other sources with the FDA tolerance to determine the extent of this injury.

3> **Fish Health Survey** To evaluate whether PCBs are affecting the health and viability of fish in the Hudson River, the Trustees are conducting a multi-phase study.

■ **Fish Health Reconnaissance Survey**

In 2001, the Trustees began assessing the prevalence of abnormalities in fish tissue and gross abnormalities to internal organs and external features of fish sampled from the river. The Trustees also collected fish tissue for future chemical analysis that may be carried out if the survey results suggest that fish are exhibiting these injuries.

■ **Effects of PCBs on Early Life Stages of Fish** The Trustees are considering whether to examine any adverse effects of PCBs on early life stages and development of fish.

BIRD INJURY STUDIES

1> **Waterfowl Consumption Advisory**

New York State has issued a statewide advisory recommending limited consumption of wild waterfowl such as ducks and geese due to PCBs and pesticide contamination. The Trustees plan to evaluate what part of the contamination that led to the statewide advisory is attributable to PCBs from the Hudson River.

2> **Waterfowl FDA Tolerance** To protect human health, the FDA requires that poultry containing PCB concentrations in excess of safe levels be removed from commerce. For PCBs, this tolerance is 3 ppm. Waterfowl are injured when PCB concentrations exceed this tolerance level. The Trustees plan to compare available waterfowl tissue data with the FDA tolerance.

3> **Breeding Bird Survey** The Trustees have completed a preliminary investigation of the presence and relative abundance of the bird species found in the Hudson River Valley. This study will help the Trustees determine whether particular bird species are at risk from PCB contamination and whether future studies should be conducted.

4> **Bird Egg Survey** There is limited information on exposure of Hudson River bird species to PCBs, especially at sensitive early life stages. The Trustees are conducting a preliminary investigation of PCB concentrations in eggs from a number of species of Hudson River birds.

5> **Evaluation of Avian Exposure From Feeding on Floodplain** The Trustees plan to survey the Hudson River floodplain to identify areas being used by certain bird species for nesting and feeding. This preliminary analysis could help determine whether species that live and feed in the floodplain have been exposed to PCBs and determine the need for future studies of floodplain-dependent bird species.

6> **Bald Eagle Monitoring** The Trustees are monitoring bald eagle nests for reproductive success and potentially collecting and analyzing blood samples to evaluate possible adverse effects from PCBs.

MAMMAL INJURY STUDIES

1> **Mink and Otter Health** The Trustees plan to build upon existing NYSDEC mink and otter studies to determine PCB effects in these organisms.

2> **Bat Exposure** The Trustees plan to analyze PCB concentrations in bats that have been collected to assess the extent and severity of PCB exposure.

REPTILE INJURY STUDIES

1> **Snapping Turtle Consumption Advisory** New York State has issued a statewide advisory recommending limited consumption of snapping turtles due to PCB contamination. NRDA regulations under which the Trustees operate define the advisory as an injury to the resource. The Trustees plan to evaluate what part of the contamination that led to the statewide advisory is attributable to PCBs from the Hudson River.

2> **Snapping Turtle Health** The Trustees plan to collect and analyze snapping turtle eggs to assess potential PCB impacts and whether the eggs are a pathway for PCB contamination to other reptiles, birds, etc.

WATER QUALITY AND SEDIMENT INJURY STUDIES

1> **Water Quality Evaluation** Previous studies showed that PCBs in the Hudson River consistently exceeded water quality standards. NRDA regulations define exceedances of such State or Federal standards as an injury to the surface water. To document the injury to surface water resources, the Trustees are comparing existing water quality data with established water quality standards. The Trustees are also making a determination of the extent to which living resources have been injured by exposure to the surface water.



The Hudson River Trustee agencies — assessing and restoring your natural resources



2> Sediments Characteristic of Solid Waste The Trustees plan to evaluate existing Hudson River sediment data to determine if they exceed criteria for PCB levels specified under the Solid Waste Disposal Act. If the sediment exceeds SWDA criteria, this would also constitute an injury to surface water.

3> Sediments Injury: Pathway and Biota The Trustees may investigate whether PCB concentrations in sediments are sufficient to cause injury to other natural resources that are exposed to the sediments. The Trustees may compare Hudson River sediment data with existing scientific studies that examine PCB thresholds and effect levels to document where and when the sediments exceed these thresholds and effect levels.

GROUNDWATER INJURY STUDY

The Trustees plan to compile existing information regarding the presence of PCBs in groundwater resources in and around the Hudson River and compare that information to Federal and State water quality standards established for PCBs.

GEOLOGIC RESOURCE INJURY STUDY

The Trustees plan to compile existing information regarding the presence of PCBs in geologic resources, such as floodplains, in and around the Hudson River to determine if they exceed PCB criteria and standards specified in the Solid Waste Disposal Act and the Toxic Substance and Control Act. Geologic resources are injured when concentrations of PCBs exceed these standards.

AIR RESOURCE INJURY STUDY

The Trustees may investigate existing information regarding the presence of PCBs in the air around the Hudson River to determine whether there are exceedances of air quality standards under the Clean Air Act or other Federal or State air standards.

PATHWAY DETERMINATION STUDIES

1> PCB Source Evaluation The Trustees are conducting a screening-level analysis of available data on sediment chemistry, sediment transport and deposition, fish tissue chemistry, and PCB loadings to the Hudson River. This analysis will allow the Trustees to make preliminary determinations regarding the relative PCB contribution from upriver sources.

2> Foodweb Pathway Evaluation The Trustees may develop studies to explore how PCBs move through the Hudson River foodweb from sediment-dwelling organisms to fish and wildlife.

3> Floodplain Evaluation In 2000, the Trustees conducted a preliminary investigation from Fort Edward to Stillwater and identified PCB contamination in floodplain soils and in small mammals. Floodplains are land areas next to rivers and streams that are periodically inundated by water. Preliminary results indicate that PCB concentrations in floodplain soils in the 20 miles downstream of Fort Edward ranged from undetected to 360 parts per million (ppm). The Trustees expanded this investigation in 2001 to refine the areas and species that may be exposed to PCBs in floodplains.

DAMAGE DETERMINATION AND RESTORATION STUDIES

1> Recreational Fishing Lost Use Study The Trustees are assessing the value of the lost use of the recreational fishery, specifically examining how fishing restrictions and consumption bans in the Hudson River affect angler behavior.

2> Habitat Equivalency Analysis The Trustees may conduct a Habitat Equivalency Analysis, which will help determine how much restoration is needed to address the injured resources from the date of the PCB release until recovery.

3> Lost Navigational Services The Trustees will determine the extent to which PCB-contaminated sediments have caused reduced navigational dredging resulting in decreased recreational and commercial boat traffic on the river, and the increases in costs of such dredging attributable to the PCB contamination.

4> Assessment of Impacts to National Park Sites and Affiliated Areas The Trustees plan to investigate whether the presence of PCBs has adversely impacted visitor use and perceptions and agency management plans for parks and historic sites in the Hudson River Valley.



HUDSON RIVER DAMAGE ASSESSMENT PLAN

HOW CAN I HELP?

You can obtain a copy of the Damage Assessment Plan and provide Trustees with your comments about our proposed approach to assess natural resource injuries. The plan is also located at information repositories throughout the state. Call Steven Sanford at 518.402.8996 for a location near you.

To receive a copy of the Damage Assessment Plan, please contact one of the individuals listed here or download a copy from one of the following websites:

www.darp.noaa.gov/neregion/udsonr.htm

www.dec.state.ny.us/website/udson/index.html

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

The Trustees would also like to hear your ideas for possible restoration projects in the Hudson River Valley. Please tell us about habitats (wetlands, streams, etc.), resources (fish, birds, or other wildlife), or specific sites that could be restored or enhanced. Contact one of the individuals listed below to submit restoration project ideas.

HOW DO I FIND OUT MORE?

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