

# Assessing Fish Health



## Background

Past and continuing discharges of PCBs have contaminated natural resources of the Hudson River for at least 200 miles. Federal and state trustee agencies are conducting a natural resource damage assessment (NRDA) to assess and restore Hudson River natural resources that may have been injured by PCB contamination. PCBs are a major concern because they persist in the environment for many decades, can be harmful at low concentrations, and accumulate in living creatures.

PCBs pose health hazards to Hudson River fish, mammals, birds, and other wildlife and are found at concentrations up to 1,000 times greater than those considered protective of human health or the environment. For example, agency scientists recently found PCB concentrations in fish from the upper Hudson ranging from 1.9 to 287 parts per million (ppm). In comparison, New York has established a PCB guidance value of no more than 0.11 ppm of PCBs to protect wildlife that eat fish.

This factsheet provides summary information about one of the studies being implemented under the NRDA, the "Hudson River Fish Health Assessment."

## PCB Effects

Many laboratory and field studies done in other parts of the country have shown the potentially harmful effects of PCBs on fish, birds, mammals, and other wildlife. Some effects on fish include impaired reproductive, endocrine, and immune system function, increased lesions and tumors, and death. Several other studies have documented the contamination of Hudson River wildlife by PCBs. However, very few studies have assessed whether

this long-term PCB contamination is harming Hudson River wildlife.

## Study Objectives

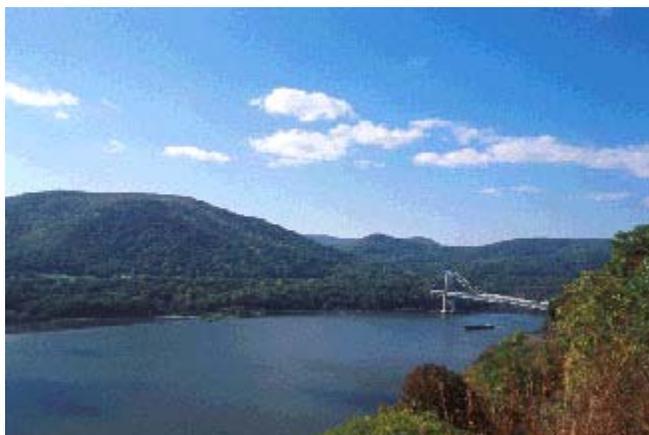
This study will investigate whether fish in areas highly contaminated with PCBs show more indicators of injury than fish from reference areas that are less contaminated with PCBs. Fish will be examined for evidence of internal and external lesions, tumors, or other abnormalities and diseases, parasites, and other immune system indicators.

## Methodology

Fish were collected from four sites in the Fall of 2001. Two sites were located in the most contaminated reach of the Hudson River, downstream of the industrial sources of PCBs at Hudson Falls and Fort Edward. The other two sites were reference sites, with one located upstream of Hudson Falls and one located in a waterbody known to have very low levels of contamination. Fish species targeted for this study include brown bullhead, smallmouth bass, and yellow perch. Tissue samples were collected to investigate a variety of biological impacts that can be caused by PCB contamination.

## Investigators

The study was implemented by the following trustee agencies: the U.S. Fish and Wildlife Service, the New York State Department of Environmental Conservation, and the National Oceanic and Atmospheric Administration. The U.S. Geological Service also provided assistance.



A view of the Hudson River and Bear Mountain Bridge.

## For more information, contact

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