



SUMMER 2006

MINK INVESTIGATIONS 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 of natural resources and determining appropriate actions to restore those resources. Natural resource damages provide a means for the Trustees to restore the 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.

This fact sheet provides information regarding investigations of PCB impacts to mink being conducted under the NRDA.

WHY STUDY HUDSON RIVER MINK?

Many species of mammals rely on the Hudson River, including its floodplain, for habitat, food, and as a breeding ground. Mammals that depend on the river for food and habitat include otter, muskrat, raccoon, beaver, and mink. The Hudson River NRDA Plan identified mink health as an area for biological injury investigation.

Mink are small carnivorous mammals that are associated with aquatic habitats of all kinds, including rivers, lakes, and wetlands. Mink are opportunistic feeders that consume a wide range of prey. Their diet includes mice, rats, rabbits, muskrats, frogs, fish, and crayfish. They also eat birds, snakes, insects, and other invertebrates. Mink are exposed to PCBs through their diet, and they come into contact with and ingest contaminated water, soil, and sediments as they build dens and forage for food.

Many laboratory and field studies done in other parts of the country have shown the potentially harmful effects of PCBs on fish, mammals, and other wildlife. In mink, PCBs have been shown to cause a range of adverse impacts, including inhibition of reproduction, reduction in fecundity (litter size), reduced kit survival, and jaw lesions.

Mink collected in the vicinity of the Hudson River contain relatively high concentrations of PCBs in their fat and livers. Comparison of PCB concentrations in the livers of Hudson River mink to the results of published mink toxicology studies suggests that wild mink in the vicinity of the Hudson River could be experiencing reproductive impairment and a consequent

decrease in abundance. Currently, PCB concentrations in livers collected from mink near the Hudson River are above criteria published in the scientific literature for impairment of mink health and reproduction.

Based on these and other considerations, the Trustees determined that it is appropriate to conduct further investigations focused on mink to be initiated in 2006, and have released an injury determination study plan as part of the Hudson River NRDA.

TRUSTEE MINK STUDY: 2006

The Trustees have commissioned a study to determine how reproduction and survival are affected in mink exposed to Hudson River PCBs. The study, which will begin in 2006, will examine reproductive performance, offspring (kit) growth and survival, and development of jaw lesions through a carefully controlled experiment of ranch mink whose diet is partly composed of PCB-contaminated fish from the Hudson River. A number of endpoints will be assessed in this investigation, including those related to kit development and survival, histopathology of organs and jaws, and concentrations of PCBs and other contaminants in tissues. Data generated by this investigation can then be compared to existing site-specific field data on concentrations of PCBs in typical prey species and concentrations of PCBs in livers of wild mink to allow evaluation of risk posed to mink residing in the Hudson River watershed. Following completion of the study, the Trustees will be able to assess the following potential injuries to mink: death, disease, cancer, physiological malfunctions (including malfunctions in reproduction), and physical deformations.

Pursuant to the Hudson River NRDA Plan, the results of this study will be peer reviewed upon completion of the study, and the results then released to the public.

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Mink (*Mustela vison*)

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NEXT STEPS

The study being conducted by the Trustees is designed to evaluate whether mink in the vicinity of the Hudson River have been adversely affected by PCBs. To the extent such injuries are identified, the Trustees will develop plans to restore the injured natural resources. The Trustees will also use the results of this study to help determine whether future work will be performed, and if so, to help in its design. In accordance with the Hudson River NRDA Plan, the Trustees will continue to make study plans for any future work on mink available to the public.

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The Hudson River Trustees—assessing and restoring your natural resources

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