



DECEMBER 2006

AVIAN 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 damage settlements 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 an update regarding investigations of PCB impacts to various bird species being conducted under the NRDA.

WHY STUDY HUDSON RIVER BIRDS?

Laboratory and field studies conducted in other parts of the country have shown the potentially harmful effects of PCBs on fish, mammals, and other wildlife. In birds, PCBs have been shown to cause a range of adverse impacts, including disease, behavioral abnormalities, genetic mutations, physical deformities, changes in brain chemistry, reduced hatching rates, embryo mortality, and death.

TRUSTEE BIRD STUDIES: 1994 - 2005

Beginning in 1994, the Trustees conducted studies to assess PCB exposure and potential reproductive effects in several bird species along the Hudson River. These studies have shown Hudson River PCB contamination in birds and their eggs and reveal altered reproductive behavior in tree swallows (*Tachycineta bicolor*). In 2002, the Trustees analyzed PCB levels in bird eggs from eleven species nesting along the Hudson River. This study revealed that the eggs from all species exhibited elevated PCB levels and that eggs from spotted sandpiper (*Actitis macularia*) and belted kingfishers (*Ceryle alcyon*) had the highest levels of PCB contamination. As a result, the Trustees began an ongoing study in 2004 of belted kingfisher, spotted sandpiper and tree swallow.

TIMELINE OF TRUSTEE BIRD STUDIES

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| 1994 - 1995 | Tree swallows studied for PCB exposure and reproductive effects |
| 2002 | Eggs from 11 avian species studied for PCB exposure; eggs from peregrine falcon also studied for PCB exposure |
| 2003 | Eggs from Eastern screech owl studied for PCB exposure |
| 2004 | Belted kingfisher, spotted sandpiper, and tree swallows studied for PCB exposure and reproductive effects |
| 2005 | Continuation of 2004 study, focusing on tree swallows |

TRUSTEE BIRD STUDIES: 2006

In 2006 the Trustees initiated a study to evaluate how two species of wild birds (tree swallow and American kestrel) and a reference species (domestic chicken) are affected when PCBs are injected into their eggs. The objective of the investigation is to evaluate the toxicity and adverse effects of embryonic exposure of these species to various doses of a specific PCB congener (PCB 126) or a PCB mixture fitting a similar profile to the mixture of PCBs occurring in the eggs of birds nesting in the Upper Hudson River Basin. The Trustees expect to continue this work in 2007.

To conduct an egg injection experiment such as this, eggs are collected in the wild and brought into a laboratory where they are injected with the substance being tested. The eggs are then incubated in the laboratory and their development monitored. The Trustees issued a draft study plan describing this work for public comment in February 2006. Following review of these comments, the Trustees issued a final study plan in July 2006.

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Spotted Sandpiper

(Continued from front page)

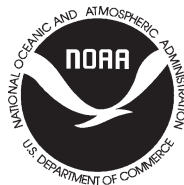
In addition to the egg injection study, the Trustees will continue to perform analyses of the exposure and reproductive data collected for tree swallow, belted kingfisher, and spotted sandpiper in 2004 and 2005.

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

NEXT STEPS

The studies being conducted by the Trustees are designed to evaluate whether birds 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 the work conducted in 2006 to help determine whether future studies will be performed, and if so, to help in their design. In accordance with the Hudson River NRDA Plan, the Trustees will continue to make study plans for future bird investigations available to the public.

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The Hudson River Trustees—assessing and restoring your natural resources

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