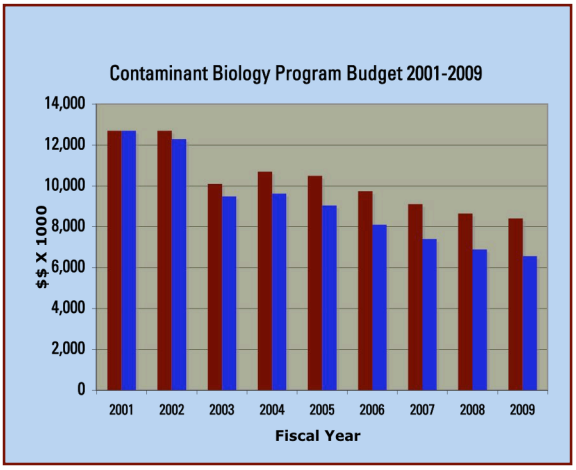
The USGS Contaminant Biology Program

Changes in 2009: Declining Budgets for Emerging Contaminants



Since the days of Rachel Carson, biologists at Department of the Interior Research Centers have investigated fish and wildlife diseases and dieoffs that are caused by contaminants in the environment. Their findings have enabled Federal and State agencies and the public to solve and prevent these problems across the country. But in recent years, the ability of scientists to respond to problems such as intersex fish, or emerging contaminants such as nanoparticles and pharmaceuticals have been affected by funding reductions. Like canaries in a coal mine, fish and wildlife serve as an early warning system for the effects of environmental contamination on human health.

Since 2001, support for the Contaminant Biology Program has declined by one third (or by half in dollars indexed to inflation), with corresponding reductions in the scope of the program. These reductions have curtailed the Biomonitoring of Environmental Status and Trends Program, which monitored contaminant effects in aquatic environments, and eliminated support for biological investigations related to monitoring programs. The reductions have also affected the ability to assess the damage and hazard to fish and wildlife in contaminated environments and provide the scientific information that is needed to solve today's emerging contaminant issues, such as nanotechnology. Funding for scientists in several states has been reduced or eliminated. In some cases, these dedicated scientists have taken leave without pay in order to have the operating funds to do their work.


Intersex fish: eggs in male sturgeon

In fiscal year 2009, reductions of $250,000 in Contaminant Biology are proposed in the budget. Scientists in additional laboratories could be affected. The science that would be terminated has nationwide relevance. The cuts would further reduce capabilities to carry out research to examine the implications of environmental contaminants for endocrine disruption and reproduction in 2009 and beyond.


Largemouth bass

➔ Specifically, the 2009 cuts will affect the ability of the **Leetown Science Center** in West Virginia, and the **Columbia Environmental Research Center** in Missouri to conduct research on the role of pesticides, hormones and sewage effluent in endocrine disruption and intersex in fish. Scientists have found a high incidence of intersex and poor fish health in the Shenandoah and Potomac River, which drain into Chesapeake Bay. Definitive laboratory studies and additional fieldwork and analysis are needed to correctly identify the cause of the problem. Intersex has also been found in Missouri River sturgeon and fish from other areas as well. This research would paint a clearer and more realistic picture of the relative roles of different chemicals in endocrine disruption, and the implications of those effects for further environmental management, refinement of sewage treatment practices and regulation.

Deformed bill on red-tailed hawk, Oregon

➔ Reduction of funding for the **Forest and Rangeland Ecosystem Science Center** in Oregon would affect research on the impacts of contaminants on reproduction in wildlife. Specifically, it would curtail research to determine the effect of high concentrations of brominated flame-retardants on ospreys that nest on the Willamette and Columbia Rivers, an investigation of deformities in red-tailed hawks in northwestern Washington, and an examination of the effects of pesticides on the decline of sage grouse. Information from this research is needed by state agencies in Oregon, Washington, and Idaho, and the US Fish and Wildlife Service to manage contaminant problems throughout the northwest.

Tree swallow in nest box

➔ Funding would be reduced for wildlife research conducted by researchers from the **Upper Midwest Environmental Sciences Center** in Wisconsin. The research focuses on effects on wildlife reproduction at contaminated sites in Indiana, Wisconsin, Massachusetts, New York, North Dakota, Minnesota and Colorado. These studies use swallow nesting success to indicate the safety of habitats that are under consideration for remediation of contamination.

Endangered snail kite and nestlings

➔ Funding reductions would also impact additional USGS research to develop information on contaminant effects on reproduction. This information is needed to understand the implications of Everglades restoration for snail kites and other endangered species. Reproduction of the snail kite could be affected by management actions that could increase contamination in their environment. Funding reductions will decrease the support for the USGS at the **Florida Integrated Sciences Center's** efforts to develop information that is needed to understand the implications of Everglades restoration and to take appropriate steps to reduce those threats during site selection.

Relevant USGS websites

Contaminant Biology Program - http://biology.usgs.gov/contaminant/index.html
Leetown Science Center - http://www.lsc.usgs.gov/
Columbia Environmental Research Center - http://www.cerc.usgs.gov/
Forest and Rangeland Ecosystem Science Center http://www.fresc.usgs.gov/
Florida integrated Sciences Center http://fisc.er.usgs.gov/