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U.S. Fish & Wildlife Service

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Environmental Contaminants Program

What Are Environmental Contaminants and Why Should We Be Concerned about Them?

Stated simply, environmental contaminants are materials that can pollute our surroundings and adversely impact living organisms. Often these pollutants are chemical compounds produced by human endeavors, although environmental contamination can also come from non-human sources such as naturally occurring metals, animal waste, oil seeps, and algal blooms. Some well-known examples of manufactured environmental contaminants include the organochlorine pesticide *DDT*, linked to past declines of bald eagle and other bird populations, and the industrial chemicals known as *PCBs*, compounds that can adversely affect animal reproductive health. Although use of these compounds has been prohibited in the United States for many years, they continue to threaten living organisms due to their persistence in the environment and their capacity to affect all levels of a food chain. Depending on the concentration and degree of exposure, contaminants may be harmful to a wide variety of plant and animal species, including humans, and could have long-lasting consequences for our environment.

Environmental contaminants may pollute soil, surface water, or aquatic sediments. Many compounds also leach through soils into groundwater, potentially impacting drinking water supplies. Numerous pollutants are discharged directly into the atmosphere by human industry, where winds may transport them to Earth's most remote corners. It is important, however, to note that industry is not the sole source of contaminants; individuals also contribute to this problem through the use of household pesticides and fertilizers, improper disposal of hazardous materials (e.g., used motor oil, paints, cleaning products), and even by driving the family car.



The U.S. Fish & Wildlife Service (Service) is responsible for conserving, protecting and enhancing fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The Environmental Contaminants Program, developed in response to pollutant-related threats to our natural trust resources, is one way the Service fulfills this mandated responsibility. Biologists in this program identify and evaluate toxic substances in the environment, and strive to prevent or reduce their negative impact on wild living resources.

What Role Does the Environmental Contaminants Program Play in New Jersey?

Much of New Jersey is highly industrialized, which has contributed to the State becoming the nation's most densely populated. Attendant with this growth is the increase in creation and potential discharge of environmental contaminants. Despite these intense pressures, New Jersey still boasts a surprising richness of fish, wildlife, and natural habitats. Protecting this natural diversity from pollution-related impacts is the primary mission of contaminants biologists stationed at the New Jersey Field Office (NJFO).

The goals of the NJFO's Environmental Contaminants Program are to: (1) identify and measure environmental contaminants and their effects on fish and wildlife; (2) prevent losses of fish and wildlife, or degradation of their habitats, from pollutant exposure; and (3) evaluate and restore contaminated areas throughout New Jersey. These goals are achieved through the following work activities:

National Wildlife Refuge Land Acquisition Screening--

Ensure that lands acquired for future inclusion into the National Wildlife Refuge system do not contain levels of contaminants that might impact federal trust resources.

Oil and Chemical Spill Response--

Work with other agencies and organizations to prevent or reduce adverse impacts to fish and wildlife from oil and chemical spills.

Natural Resource Damage Assessment and Restoration--

Act in conjunction with other government agencies to restore natural resources injured by oil spills or Superfund sites.

Superfund Activities--

Participate in the Biological Technical Assistance Group, a cooperative effort with other federal agencies that assists the U.S. EPA in investigating and reducing contaminant impacts from New Jersey's Superfund hazardous waste sites.

Contaminant Investigations--

Conduct scientific studies on and off Service-owned lands to document contaminant exposure in fish and wildlife and suggest ways to minimize potential or observed impacts.

Biomonitoring of Environmental Status and Trends (BEST)--

Measure long-term pollution trends in fish and wildlife and their habitats (air, soil, water, sediments) on refuge lands.

Pollution Prevention--

Make recommendations to other State and federal agencies on ways to eliminate or minimize contaminant exposure to New Jersey's fish, wildlife, and natural environments. Examples of NJFO activities include: pesticide registration review, participation in water quality standards development, and the review of dredging permits.

Endangered Species--

Federal agencies must consult with the Service to ensure that federally listed threatened and endangered species are not adversely impacted by federal government activities. Contaminants biologists review proposed federal activities for any risk of toxicant exposure to listed species.



What Does All This Mean for the Citizens of New Jersey?

When contaminants are released into the environment, fish and wildlife are not the only organisms that can be impacted. Humans also can suffer from pollution in the environment, both from the potential for direct exposure and from the indirect impacts on our quality of life. Contaminant levels in drinking water, fish, and shellfish have occasionally resulted in consumption advisories, causing New Jersey's citizens and economy to suffer due to restrictions on fishing, clamming, and recreational pastimes. In addition, many people place an intrinsic value on wildlife resources, and this value is diminished when pollution harms the health and diversity of fish and wildlife populations.

The following examples of ongoing work by NJFO contaminants specialists illustrate how both New Jersey's natural resources *and* human inhabitants benefit from the Environmental Contaminants Program.

Contaminant Identification and Assessment:

NJFO biologists are conducting a contaminant investigation in abandoned cranberry bogs within the Edwin B. Forsythe National Wildlife Refuge. The biologists are investigating whether sediment-bound organochlorines, detected in previous samples, have the potential to move through the aquatic food chain and adversely impact piscivorous (fish-eating) wildlife.

Contamination Prevention:

In 1998, NJFO contaminants specialists became aware of a possible threat to the State's only known population of the federally endangered dwarf wedgemussel. The proposed construction of a sewage treatment plant that will discharge into water harboring the mussels prompted a joint effort with New Jersey's Division of Fish & Wildlife to delineate the population range and prevent actions possibly jeopardizing the mussel's survival.



Contamination Evaluation and Restoration:

NJFO biologists work with other federal agencies in evaluating natural resource injuries resulting from exposure to contaminants, and then develop restoration plans to compensate the public for lost or impaired resources. A recent example involves a \$3.4 million settlement for improper disposal of pollutants on land now part of the Great Swamp National Wildlife Refuge. The settlement will be used in a restoration plan designed to compensate the public for the permanent loss of wetlands and the ecological services they provided.

Will We Always Need the Environmental Contaminants Program?

Regulatory controls, improved technologies, and increased awareness have done much to reduce the amount of contaminants discharged into our environment during the last few decades; however, for the foreseeable future, our industrialized lifestyle will continue to produce and release a variety of pollutants. While NJFO biologists will continue their efforts to counter the impact of environmental contamination on wild living resources, New Jersey's citizens can also play a role in protecting the environment. Community involvement is necessary to monitor activities that may impact our natural resources and to promote less harmful alternatives. And as individuals, each of us has the responsibility to examine our own actions and recognize that each reduction in pollution enhances the quality of life for all creatures.