



Monitoring Contaminants in Fish at Sleeping Bear Dunes

- Sleeping Bear Dunes National Lakeshore is within an area of the United States where environmental contaminants have been shown to impair wildlife reproduction and cause developmental deformities.
- Many of these chemicals are known or believed to cause similar reproductive and developmental problems in humans.
- Long-distance airborne transport accounts for a significant proportion of current contaminant levels.
- We are collecting predator and prey fish and dragonfly larvae (nymphs) from four lakes to determine how much methylmercury and other compounds, including DDT



Long-term and Regional Comparisons

This monitoring program provides managers at Sleeping Bear Dunes with information about contaminant levels and how they are distributed in fish. Sampling began in May 2008 and will be repeated annually. Sleeping Bear Dunes fish will be compared with those from five other national parks in Michigan, Minnesota, and Indiana. Combining fish contaminant information with data collected from our water quality monitoring program, we can better understand the interactions of water quality, contaminants, and wildlife and human health. Collection of fish and invertebrates is accomplished through a contract with the University of Wisconsin-La Crosse, River Studies Center.

What We Are Finding at Sleeping Bear Dunes

Laboratory analysis to determine toxin loads is still occurring, but the following is a summary of what was caught at each lake in 2008:

- *Lake Manitou* – Eleven smallmouth bass, 25 Iowa darters, and more than 105 dragonfly nymphs from four families. Yellow perch, reported by other investigators to be abundant in the lake, were not caught.
- *Bass Lake* (Leelanau County) – Twenty-five yellow perch, three bluntnose minnows, two largemouth bass, two bluegills, one pumpkinseed, several banded killifish, one northern pike, eight fish not identified to species, and more than 115 dragonfly nymphs from three families.
- *Bass Lake* (Benzie County) – Twenty-five bluegills, 10 Iowa darters, two johnny darters, two central mudminnows, two pumpkinseed, one yellow perch, two northern pike and one largemouth bass. We caught three species – banded killifish, Iowa darter, and five-spined stickleback – that had not been recorded in prior surveys of the lake. We also collected more than 100 dragonfly nymphs representing three families.
- *Round Lake* – Twenty-five bluegills, four yellow perch, 11 largemouth bass, and 101 dragonfly nymphs from four families.



The Great Lakes Inventory and Monitoring Network is a group of nine national parks in Minnesota, Wisconsin, Indiana, and Michigan that share similar management issues. The Great Lakes I&M Program office is in Ashland, Wisconsin. Program staff work with managers at each of the nine parks to develop long-term scientific monitoring programs that help to track the “health” of natural resources and provide information for making management decisions. Visit us online at <http://science.nature.nps.gov/im/units/glkn/>.