Idaho Department of Environmental Quality

Mercury in Surface Water

Mercury is a naturally-occurring metallic element found in air, water, and soil in trace amounts. Mercury is toxic to aquatic life and humans, but its toxicity is primarily a human health concern.

Inorganic mercury occurs naturally due to its presence in rocks and soils, where it is slowly released through erosion and weathering into surface waters. Most of the mercury in surface waters remains inorganic, but in certain environments (e.g., low-pH, low-dissolved oxygen; high organic matter in the bottoms of lakes, marshes, and wetlands) it may convert to a much more toxic organic form—methylmercury. Airborne mercury from coal-fired power plants, mining operations, and other industrial sources can settle into soil, rivers, lakes, and oceans where aquatic microbes convert it to methylmercury through a biochemical reaction. Elemental mercury released to the atmosphere can circulate around the world. People are not just exposed to mercury from locally-caught fish, but also from fish and shellfish caught elsewhere and sold in the market. Mercury pollution is truly a global problem.

Methylmercury accumulates in the tissue of fish as they feed on other aquatic organisms. As larger fish eat smaller ones, concentrations of the pollutant increase in the bigger fish, a process known as bioaccumulation. Thus, mercury enters the food chain and becomes concentrated. According to the federal Centers for Disease Control, by far the most common route of mercury exposure in humans is eating fish and shellfish contaminated by methylmercury.

Fish Consumption Advisories

The Idaho Department of Health and Welfare, through the Idaho Fish Consumption Advisory Program, issues fish consumption advisories when fish in Idaho water bodies are found to have methylmercury levels above what is considered safe.

- Idaho Fish Consumption Advisory Program

Fish consumption advisories don't mean people should stop eating fish from affected water bodies, but that they should be aware of the risks and may need to limit consumption to amounts specified in the advisory to be safe.

Mercury Monitoring

DEQ investigated mercury in Idaho's major rivers in 2006 and 2008 and in lakes and reservoirs in 2007. Fish were collected at a number of randomly-selected sites across Idaho. Fish tissue samples from these sites were analyzed for mercury and compared to Idaho’s mercury fish tissue criterion. Random sampling allows extrapolation of the results to unmonitored water bodies and estimation of the rate at which water bodies throughout Idaho meet or exceed the fish tissue criterion.

From 2004–2008, via a statewide cooperative with the US Geological Survey (USGS), additional fish tissue samples were collected at 30 Idaho gaging sites. Some sites were sampled twice during that period.

DEQ subsequently produced two statewide assessments of mercury in fish tissue:

- Lakes and Reservoirs Assessment
  https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15208

- Rivers Assessment
  https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15209