



Idaho
Department of
Environmental
Quality
Water Quality
Division
1410 N. Hilton
Boise, ID 83706
(208) 373-0502
www.deq.idaho.gov

Focus on Mercury Monitoring

Mercury is a naturally occurring metallic element that is found in trace amounts in air, water, and soil. Much of it is locked away in coal and other geological deposits, where it does not pose a danger to living organisms. However, human activities can release mercury from these natural sources.

All forms of mercury are poisonous to humans. The severity of effects depends largely on the amount and timing of exposure. The most common route of mercury exposure in humans is eating fish contaminated by methylmercury, which is formed from inorganic mercury by the action of anaerobic organisms that live in aquatic systems.

Research Partnerships

The Idaho Department of Environmental Quality (DEQ) is working with a number of state and federal experts to better understand the science as well as the occurrence of mercury in Idaho air and water.

DEQ recently signed a Memorandum of Understanding (MOU) with the states of Nevada and Utah as well as U.S. Environmental Protection Agency Regions 8, 9 and 10. The intent of this MOU is to collaborate on mercury investigations, funding opportunities, and control strategies.

Mercury Fish Studies

In 2007, DEQ conducted a mercury fish tissue survey in 50 randomly selected lakes and reservoirs across Idaho. The intent was to determine the range of mercury concentrations in fish and identify waters with significant mercury problems.

In conjunction with the lake survey, DEQ sampled fish at seven Idaho Department of Fish and Game (IDFG) hatcheries to determine their mercury concentration. DEQ also contracted with the U.S. Geological Survey (USGS) to collect and analyze fish from six different rivers in Idaho.



It must be acknowledged that the science of mercury movement and transformation in the environment is very complex. This presents a significant challenge to identifying local, regional, and global mercury sources and quantifying their contributions to elevated fish tissue levels.

*Michael McIntyre
DEQ Surface Water
Programs Manager*

In 2006, the USGS found fish in the Portneuf River that exceeded the mercury water quality criterion. DEQ went back in 2007 and collected more fish at two sites on the Portneuf River to verify the previous year's findings.

Key Findings

In the 2007 lake and reservoir survey, 20 out of the 50 lakes sampled (40%) had at least one fish species in which the mercury criterion (0.3 mg/kg) was exceeded. By species, 27 out of 89 (30%) were above the criterion.

Both smallmouth and largemouth bass and wall-eye made up the majority of the fish exceeding the criterion in lakes. None of the rainbow trout from lakes exceeded the criterion. No apparent pattern to the exceedances was evident, and there are no obvious mercury sources in many cases that would explain the mercury exceedances.

Fish sampled from the seven IDFG hatcheries were well under the mercury criterion. Both sites on the Portneuf River had fish in which the criterion was exceeded. Two out of the six rivers sampled by the USGS had fish over the criterion.

more >

Focus on Mercury Monitoring

Wet Air Deposition Monitoring

To gauge mercury in rain and snow, DEQ operates wet air deposition monitors in McCall and Nampa. In addition, DEQ continues to maintain a long-term wet air deposition monitor at Craters of the Moon.



Salmon Falls Creek Reservoir

DEQ submitted to the U.S. Environmental Protection Agency a water quality improvement plan, known as a Total Maximum Daily Load or TMDL, for mercury for Salmon Falls Creek Reservoir. DEQ expects EPA approval of the TMDL shortly.

Next Steps

- DEQ plans to conduct a sampling of large rivers for mercury in 2008, similar to the 2007 lakes and reservoirs survey. This will provide a range of mercury fish tissue concentrations in rivers around the state.
- DEQ will again contract in 2008 with the USGS to sample 5-7 rivers/streams around the state for mercury as part of our continuing annual monitoring agreement.
- DEQ plans to finalize the Jordan Creek mercury TMDL and submit it to EPA for approval.
- Wet air deposition data will be collected weekly at all three deposition monitors (McCall, Nampa and Craters of the Moon).
- A comprehensive report on the 2007 lake and reservoir survey will be available in February.
- The USGS found brown trout in Silver Creek in which the mercury criterion was exceeded at two different locations in 2007. DEQ plans to collect rainbow trout in follow-up monitoring to see if the mercury impacts both brown and rainbow trout. Along with the fish sampling, DEQ plans to sample water at the source of Silver Creek to help determine possible sources of mercury.
- Finally, DEQ plans to create a comprehensive mercury database to hold all mercury data collected to date. This will aid DEQ in analyzing results and facilitate public outreach.

For more information about mercury monitoring in Idaho, contact:

Michael McIntyre
Surface Water Programs Manager
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706
(208) 373-0570
Email: michael.mcintyre@deq.idaho.gov