

## CSU researching High Park Fire's effect on mercury levels

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(Phys.org) -- Although the destruction caused by the High Park Fire is tragic, the fire's aftermath is providing a rare opportunity for researchers to better understand how fire transports mercury across the landscape and into the environment. Researchers from the Department of Fish, Wildlife and Conservation Biology at Colorado State University's Warner College of Natural Resources are studying the High Park Fire's effect on mercury levels in water and potential increases of mercury in the food chain.

The two-year study began in June, and will analyze [mercury](#) level data from rainwater, air, and water and fish samples from Horsetooth Reservoir in Fort Collins. Mercury accumulates in fish and other aquatic organisms - especially those at the top of food chains in lakes, reservoirs and oceans. When organisms with high mercury levels are consumed by humans, mercury exposure can become a health threat.

“Mercury is accumulated in essentially all living things, and when these things are burned - fossil fuels and trees, for example - they emit mercury into the atmosphere which is then deposited on the landscape where it can be recycled by other living things,” said Jesse Lepak, aquatic research scientist with Colorado Parks and Wildlife. “It has been shown that forest fires can increase mercury deposition on the landscape, and further research is needed to understand the negative impacts of this increased mercury in the environment.”

The research project is being conducted with Colorado Parks and

Wildlife in collaboration with Colorado Department of Public Health and Environment Water Quality Control Division, Northern Colorado Water Conservancy District and the city of Fort Collins. It originally began as a research project evaluating mercury contamination in Colorado sportfish, and researchers installed the automatic precipitation collector to measure mercury in rainfall just four days before the High Park Fire ignited. With the fire so near to Horsetooth Reservoir and data collection devices already in place, the situation presented an invaluable research opportunity, scientists said.

Brian Wolff is a research associate working with Professor Brett Johnson of the Department of Fish, Wildlife, and Conservation Biology at CSU's Warner College of Natural Resources, and is one of the primary investigators on the mercury research project.

"CSU has collected detailed mercury data from Horsetooth Reservoir in the past, so we can now compare mercury levels in fish before, during, and after the High Park Fire," Wolff said. "This unique research opportunity will help us understand how fire influences mercury in the water and the organisms within it."

The research project is gaining interest from the scientific community at the national level. The study's precipitation collector site, located at CSU's Foothills Campus, is now part of the National Atmospheric Deposition Program's Mercury Deposition Network, making it the first on the Front Range and one of about 100 sites that monitor mercury in precipitation throughout the United States and Canada. The network is also donating a mercury collector that measures mercury in small particles in the air to help support the research.

"These mercury collection devices will help fill a large void in mercury deposition data in the Mountain West region, and also provide invaluable information about the importance of forest fires for transporting

mercury across the environment,” said Wolff.

Wolff hopes to have preliminary data in the coming weeks, and will begin testing fish and other aquatic organisms in Horsetooth Reservoir next year to begin determining the fire’s effect on mercury bioaccumulation in the food chain.

Provided by Colorado State University

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