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A.F. Fish Found High in Mercury

Water in the American Falls Reservoir contains twice the concentration of mercury listed by the Environmental Protection Agency (EPA) as the maximum allowable if fish and predatory aquatic organisms are to be protected. This indicates a threat to aquatic life, according to an Idaho State University researcher.

"The mean value for mercury in American Falls Reservoir water is 0.4 parts per billion," said Chris Kent, an ISU graduate student in zoology who has conducted research at the reservoir.

"The EPA has recommended that for the protection of fish and predatory aquatic organisms, total mercury concentration in unfiltered water should not exceed 0.2 parts per billion at any time or place," the researcher said.

Kent presented a paper entitled "American Falls Reservoir: Sediment, Fish, and Public Health" before the 14th annual meeting of the Idaho Chapter of the American Fisheries Society in McCall Friday.

"Mercury was found in all species of fish analyzed," Kent said. "The research results indicated that the Food and

Drug Administration (FDA) standard for human consumption of 0.5 parts per million of mercury may be commonly exceeded in crappie, suckers and large rainbow trout. Perch and brown bullhead did not exceed the FDA standard for mercury."

Kent said species other than rainbow trout were analyzed for lead, cadmium, and chlorinated hydrocarbons.

"Lead and cadmium were not detected in reservoir fishes," he said. "Chlorinated hydrocarbon residues, DDT metabolites, dieldrin and PCBs—plasticizers—have been found in sediment and fish flesh samples. The concentration and type of chlorinated hydrocarbon varied with fish species and age."

"Chlorinated hydrocarbons were not detected in the water samples. The residue levels of DDT metabolites and dieldrin may be excessive and the concentration of PCBs exceeds the EPA recommended level of 0.5 parts per million for fish being consumed."

There is evidence to warrant concern for human health if a person eats anything with 0.5 parts per million or more of mercury content.

Bacteria in the sludge of bottom sediments in the reservoir are what activate the mercury and put it in a form which can be taken up by living organisms.

"The availability of mercury to living organisms is directly related to the presence of large numbers of bacteria in the sludge in the bottom sediments of a reservoir," Dr. D.W. Johnson said. "In a free flowing river this problem does not develop."

Most of the mercury in the American Falls Reservoir is believed to come from hot springs up the Snake River northeast of the reservoir.

This investigative work is supported by a grant awarded by the federal Office of Water Research and Technology to Johnson, an ISU assistant professor of biology, who is Kent's academic advisor. Kent is from Chebanse, Ill.