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**Mercury Contamination of Fish in the Rivers of the Crow Reservation,
Montana**

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Abstract:

This study is part of a larger risk assessment of exposure to hazardous chemicals among residents of the Crow Reservation, Montana. Our project is a partnership among Little Big Horn College (LBHC, the local tribal college), the Crow Tribe, the Indian Health Service Hospital, the Apsaalooke [Crow] Water and Wastewater Authority and Montana State University at Bozeman. Our hypotheses are that (a) subsistence lifestyles, other cultural traditions, land tenure practices and additional factors elevate Reservation residents' risk of exposure to environmental contaminants; (b) following CBPR principles in conducting risk assessment, risk communication and risk mitigation will be an effective way to reduce health disparities, and (c) When Tribal members are equal partners in the research effort and Tribal college science majors are the research interns, community capacity to address environmental health issues will be strengthened.

Coal burning power plants in the nearby communities of Colstrip, Hardin and Billings release more than 90% of the atmospheric mercury pollution in the state. In a nationwide survey of fish mercury levels conducted by the EPA, walleye in Big Horn Reservoir on the Reservation has some of the highest levels of contamination in the country. Some Tribal members regularly eat local fish, so the community is concerned. Fish were collected from the Little Bighorn River, Bighorn River, Pryor Creek and Willow Creek Reservoir. The samples were analyzed by Cummins (a Tribal member) at MSU, providing the first available data on fish mercury levels from most of these water bodies.

Impact Statement:

Larger rainbow trout, brown trout and small mouth bass consistently had levels above 0.200 ppm, indicating that consumption of these fish should be strictly limited. Local data on fish consumption patterns are being collected through surveys. A dozen Tribal College science majors have participated in this study since 2006, gaining meaningful research training and experience.

Category: Watershed Assessment and Restoration

Type of Presentation: Poster Presentation