

TROPHIC POSITION, HABITAT USE, AND MERCURY IN FLATHEAD LAKE FISH: INSIGHTS FROM STABLE ISOTOPES^{AFS}

Craig P. Stafford, Division of Biological Sciences, University of Montana, 32 Campus Drive No. 4824, Missoula, MT 59812, craig.stafford@mso.umt.edu

Jack A. Stanford, Flathead Lake Biological Station, University of Montana, 311 Bio Station Lane, Polson, MT 59860

We measured $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ in lake trout, lake whitefish, and their major prey items to quantify foraging depth and trophic position of individual fish in Flathead Lake, Montana. We subsequently applied our isotopic quantification of foraging depth and trophic position to investigate mercury contamination at the individual fish level. $\delta^{15}\text{N}$ of chironomids increased with site depth, and $\delta^{13}\text{C}$ generally declined. In contrast, *Mysis relicta* showed no relationship between its isotope ratios and site depth. The isotope ratios in the pooled fish sample were related to fish capture depth, growth rate, and total length. We found no relationship between mercury contamination and our isotopic assessment of foraging depth in the fish. A significant relationship between existed between fish mercury contamination and our isotopic assessment of trophic position, suggesting that fish that feed deeper and/or higher up the food web are more contaminated.