

Quantifying the mercury:calorie ratios of aquatic invertebrates from two lakes in Kejimikujik National Park and National Historic Site, Nova Scotia

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Mercury (Hg) is a toxic contaminant that bioaccumulates in organisms and biomagnifies through food webs. Kejimikujik National Park and National Historic Site (KNPNHS) is situated in southwestern Nova Scotia and has been identified as one of several biological Hg hotspots in Eastern Canada. Aquatic invertebrates are important food sources within lacustrine food webs. Hg accumulates in aquatic invertebrates and biomagnifies to toxic concentrations in higher trophic level animals. Aquatic invertebrates with high Hg concentrations and low caloric content values may be significant sources of Hg to predators. Twenty-one aquatic invertebrate families were collected from two lakes with contrasting water chemistry characteristics in KNPNS to be analyzed for total mercury (THg), methylmercury (MeHg), and caloric content. A mean MeHg concentration of 201.0 ± 167.3 ng/g ($n = 136$) was determined for all analyzed invertebrates. Invertebrate MeHg concentrations ranged from 24.7 ng/g to 1469.2 ng/g. The objective of this project is to quantify the Hg:calorie ratios of aquatic invertebrates in KNPNS to reveal which aquatic invertebrates pose the greatest Hg risk to higher trophic level animals in this ecosystem.

Keywords: methylmercury, bioaccumulation, biomagnification, aquatic invertebrate, caloric content, foodweb

Oral presentation