

## Arsenic Bioaccumulation in Tissues of Chinese Mystery Snails Collected from Lake Ecosystems

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Arsenic (As) is a legacy contaminant that was released by the American Smelting and Refining Company (ASARCO) smelter in Ruston, WA, throughout its 100-year operation. The pollutant was distributed to many lakes in the Puget Sound lowland region, which presented concern about As entering the food chain in these lakes. Chinese mystery snails (CMS) are a primary consumer in these lakes and have been shown to bioaccumulate As in their whole-body; however, it is unclear whether As is localized to a particular tissue region. We hypothesized that more As would bioaccumulate in the CMS gut. Field-collected snails from Lake Killarney (20 ppb As in water) and Trout Lake (~0 ppb As in water) were dissected into different tissue groups (head/foot, mantle, gut, and remaining viscera). The samples were acid-digested and inductively coupled plasma mass spectroscopy (ICP-MS) was performed to obtain total As concentrations. There was significantly higher bioaccumulation of As in the gut (40.4 ug/g dry weight) compared to the other tissue groups in the samples from Lake Killarney. The gut, head/foot, and viscera tissue groups had significantly higher concentrations of As in Lake Killarney compared to Trout Lake. Future research on quantification of As species (arsenate, arsenite, and organic forms) that are bioaccumulating in the CMS tissues may give insight into biotransformation processes that affect toxicity.