

Arsenic-Related Human Health Risk from Consumption of *Doryteuthis opalescens* (Market Squid) in Puget Sound, WA

Doryteuthis opalescens, or market squid, is a growing and popular recreational fishery in Washington State. Despite their growing popularity, there is very little research conducted on squid that enter the Puget Sound. Collaborating with the Washington Department of Fish and Wildlife, who are conducting their own population and creel surveys on market squid, we have collected samples at four locations using jigging methods. The two purposes for which we analyzed metal concentrations in squid mantle tissue was to fingerprint differences within the squid population based on location, and to assess for possible carcinogenic pollutants. I hypothesized that squid caught in the South Sound would have trace, but distinctly different concentrations of metals compared to squid caught closer to the entrance of the Pacific Ocean. My results showed very high levels of arsenic, averaging 4.95 mg/kg dry weight of squid mantle tissue. This concentration equates to a human health risk for average consumers that is 83 times greater than the cancer risk threshold (1 in 100,000), and four times greater than the non-cancer illness threshold. These results will be reported to the WA Department of Health to determine if a consumption advisory is warranted, which we believe is the case. Our results constitute a significant finding of public health risk, and ultimately will be useful for bolstering public health.