

Comparison of Microplastic Intake between Feeding Mode of Baynes Sound Clams, British Columbia

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Microplastics are plastic particles smaller than 5mm found in all marine environments. Sewage waste water, macroplastic pollution, marine vessels, plastic spills, and aquaculture are sources of microplastics in marine ecosystems. Because these particles are so small they are readily available to many marine organisms, including fish, shellfish, and crustaceans that are consumed by humans. Bivalves are filter-feeders often used as model organisms in microplastic research. Very little is known about differences of contamination levels between species. The purpose of this study was to examine the difference in microplastic intake between the clams that are suspension feeders and those that are deposit feeders. Four different clam species, collected from Baynes Sound, are being studied; manila clam (*Venerupis philippinarum*), varnish clam (*Nuttallia obscurata*), bentnose macoma (*Macoma nasuta*), and pacific littleneck (*Protothaca staminea*). The manila clam and the pacific littleneck are suspension feeders whereas the bentnose macoma is a deposit feeder and the varnish clam can switch between both feeding methods. 66 clams were digested using a 10% potassium hydroxide solution and subsequently filtered through an 8µm mesh and examined under a compound microscope. Results show a difference in microplastic intake between species. The manila clam microplastic content was statistically different of that from the pacific littleneck ($p=0.0035$) and the bentnose macoma ($p=0.0013$). Feeding method does not account for these differences. 72% of microplastics found were clear fibers.