

# **Determining the Efficacy of Depurating Microplastics from Pacific Oysters (*Crassostrea gigas*)**

**By: Maggie Dietterle**

**VIU Faculty Advisor: Sarah Dudas**

Due to the large amount of plastic pollutants, namely microplastics, present in the marine environment there is increase concern for accumulation of plastics in shellfish bound for human consumption (Van Cauwenberghe & Janssen, 2014 & Rochman *et al*, 2015). As opposed to other seafood's where the intestinal tracts are removed before ingestion, filter-feeding shellfish are of greater concern for microplastic consumption by humans as the entire organism is ingested. Depuration is a process that utilizes the filter feeding gastro-physiological functions of bivalves, such as Pacific Oysters (*Crassostrea gigas*), along with filtered seawater to remove contaminants from shellfish (Jackson and Ogburn, 1999). Depuration is a process used by the shellfish industry most commonly for the removal of bacteria, microbes and viruses, but its use for microplastic removal is unknown. Here, we investigate the potential for depuration to remove microplastics from Pacific Oysters over 1, 3, 5, and 10 days of depuration. Experimental set-up included 10 experimental tanks provided with a filtered flow-through seawater system to reduce environmental contamination. Preliminary results suggest that a depuration period of 10 days is effective for removing microplastics from Pacific Oysters. However, the difficulty and cost of maintaining a clean water filtration system may limit the utility of depuration for microplastics in an industry settings.