

# **Evaluating Perfluorinated Compound Contamination in Mussel Samples from Urban Bays around Puget Sound Area**

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Perfluorinated alkyl substances, also known as PFAS, are a large class of compounds that have been used for a long time in industrial and consumer products. Applications include food handling products such as Teflon, carpets, and waterproof rain jackets. These compounds have been of increasing concern recently due to their persistence in the environment, their bioaccumulation, their detection in human blood samples worldwide, and the health risks they pose to humans and other animals. Recently, PFAS have been detected in drinking waters around the United States and Washington state. This study aims to quantify PFAS in mussel samples obtained from various bays around western Washington. Bivalves are known filter and thus can serve as indicator species for contaminants. Previous research has been scarce in illuminating the degree of PFAS concentrations in marine bivalves, especially in urban waterways like the Puget Sound in Washington state. In this study, we validated an extraction method known as QuEChERS (Quick, Easy, Cheap, Effective, Rugged, and Safe) and evaluated the contamination of PFAS in mussel samples from urban and non-urban bays in the Puget Sound. The range of analytes measured included 17 perfluorinated alkyl substances, ranging from 3 to 14 carbon chain lengths. Samples were analyzed via a liquid chromatography tandem mass spectrometry (LCMSMS). Analyte recoveries ranged from 68% to 121%. The most prevalent compounds detected were PFOA and PFHXS, which appeared in 100% of the samples thus far. This data will contribute to limited studies done on PFAS contamination from shellfish collected around the Puget Sound region and can provide further information to assess possible routes of PFAS exposure to humans.