

PhD Dissertation
Department of Environmental Science and Policy
College of Science
George Mason University

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Title: Biomonitoring for Per- and Polyfluoroalkyl Substances using the invasive Asian clam *Corbicula fluminea*

Dissertation Director: Dr. Amy Fowler

Committee: Dr. Thomas Huff, Dr. Kirin Furst, Dr. Andrew Pfluge

ABSTRACT

Considered contaminants of emerging concern, per- and polyfluoroalkyl substances (PFAS) are a class of toxic, manufactured chemicals from commercial and consumer products found in the environment, drinking water, and wildlife. This dissertation (1) explored the use of PFAS in munitions in the Russia-Ukraine conflict, (2) showed increasing use of freshwater bivalves as bioindicators for chemicals of concern, but highlighted opportunities to incorporate these organisms into field studies and long-term monitoring programs globally, and (3) confirmed the utility of the low-cost, replicable biomonitoring methods using the Asian clam to detect and quantify PFAS in freshwater ecosystems.