

**6.04P.7 Bioaccumulation and biomagnification of perfluorinated alkyl substances (PFAS) in marine biota of the Belgian North Sea and their potential risk for human consumption** C. Byns,

Systemic Physiological and Ecotoxicological Research (SPHERE), University of Antwerp / Biology; L. Teunen, University of Antwerp; R. Lasters, University Antwerp; L. Bervoets, University of Antwerp / Biology. Perfluorinated alkyl substances (PFAS) are synthetic chemical compounds with a highly persistent character and a widespread usage, making them ubiquitous in the environment. Biomonitoring of PFAS is of critical importance because of their bioaccumulative potential and known adverse health effects on biota, including humans. Due to the proximity of a fluorochemical plant near the port of Antwerp (Belgium), the Western Scheldt estuary is an interesting area to study the occurrence, fate and effects of PFAS in an aquatic environment. Previous studies have been performed on PFAS contamination in biota from the Western Scheldt, yet little is known on the occurrence of PFAS in marine biota of the southern North Sea. The first objective of this study is; (1) to identify whether a PFAS pollution gradient can be found from the Western Scheldt towards the Belgian North Sea. Therefore, PFAS contamination profiles are analysed in muscle and liver tissue of marine biota sampled at 10 locations expanding from the mouth of the Scheldt estuary towards open sea and along the Belgian coast. Secondly, (2) the biomagnification potential of PFAS compounds throughout the marine food web of the North Sea is studied using stable isotope analysis of seven fish species and four invertebrate species. Since the Belgian North Sea is a commercial fishing area and PFAS tend to accumulate in muscle tissue of fish, a third objective (3) is to determine the potential risk to human health by consumption. Based on the Minimum Risk Levels (MRLs) determined by the Agency for Toxic Substances and Disease Registry (ATSDR), the maximum daily consumption of perfluorooctane sulfonate (PFOS) contaminated fish is calculated in relation with human body weight. With this study we aim to provide more in-depth knowledge on PFAS pollution along Belgian coastal waters in order to assess the potential risks to marine biota and humans.