

B06: Microplastics in marine, freshwater, and soil environments

Conveners: Britt Hall¹, and Peter Ross²

Co-chairs: Britt Hall¹, and Peter Ross²

¹ Biology Department, University of Regina, Regina, SK, S4S 0A2

Phone: 306-337-2355 Fax: 306-337-2410, E-mail: Britt.Hall@uregina.ca

² Ocean Pollution Research Program, Vancouver Aquarium Marine Science Centre

Phone: 604 659 3563 Fax: 604 659 3599, E-mail: Peter.Ross@vanaqua.org

Session Description

The contamination of marine, freshwater and terrestrial environments with microplastics (any plastic with a diameter ≤ 5 mm), as well as their ingestion by aquatic and soil organisms, is of increasing concern. Recent attention paid to increasing prevalence in aquatic and marine systems of microplastics beads could be considered a “red herring”, in part because of the recent movement to bans these products has led to the false sense of security that society can significantly reduce these pollutants. However, secondary microplastics originating from the breakdown of macroplastics through ultraviolet, microbial, and physical degradation are much more difficult to control, and in fact, plastic micro-fibers and fragments have been shown to be more prevalent than microbeads in many environments. In aquatic and marine environments, issues of concern include pseudo-satiation, intestinal blockage, endocrine disruption through leached plasticizers, and contamination by pollutants accumulated on plastics. In agricultural environments, increased prevalence of microplastics in soils may have direct and indirect implications for long-term soil quality with the potential to alter microbial communities to more harmful assemblages, increase sorbtion of agrochemicals, and change the capacity for soil to hold water. The goal of the session is to draw together aquatic and terrestrial ecologists, agrologists, toxicologists, and biogeoscientists to share recent findings on our current knowledge of the prevalence of microplastics in both aquatic and terrestrial systems, the future research avenues that will increase our understanding of important ecological impacts, and the possible solutions or alternatives to plastics in our daily lives.

Primary Affiliation: Biogeosciences