

Microplastic Pollution in French Subalpine Lakes.

Julia Dusaucy^{1*}, David Gateuille¹, Emmanuel Naffrechoux¹

¹ Savoie Mont Blanc University, CNRS, Univ. Grenoble Alpes EDYTEM, 73000, Chambéry, France

* julia.dusaucy@univ-smb.fr

Résumé

Since their first detection in the 1970s in oceans, microplastics (MP) have been a growing concern in public opinion. Studies on MP pollution in lakes are recent, the first study was published in 2011. Most of plastic waste in seas and oceans originates from terrestrial environment and, inland waters. With significant focus on ocean and sea contamination, contamination of freshwater ecosystems is a new and rising topic. In particular, identification of MP sources, degradation processes of these compounds and their impacts on aquatic ecosystems constitute fields of research to be explored. My research work concerns the origin, presence and, fate of MP in three French Alpine lakes. During this thesis work, different systems are developed and implemented at each of the three sites to collect data on several environmental matrices. The environmental matrices studied to monitor microplastic pollution are surface water, water column, atmospheric deposition and, sediments. In addition, the work focuses on MP origin by determining the contributions of different potential MP sources. Therefore, other environmental matrices of lake environments of each of the three lakes are studied, including tributaries, outlets, wastewater discharges and stormwater runoff based on climatic and anthropogenic one-time events. The first results of the thesis work will be presented at the GDR P&O 2022 congress with an inventory of the MP contamination of each of the three lakes. The MP contamination rates of different environmental matrices will be compared between study sites. Finally, preliminary hypotheses will be discussed regarding MP sources.

Mots clés : microplastic, lakes, sources, subalpine

Thème(s) :

- 1/ Sources, Niveaux de contamination, Modélisation
- 2/ Mécanismes de transformation des plastiques
- 3/ Impacts des plastiques et risques sur les organismes et les écosystèmes
- 4/ Conception de polymères à plus faible impact environnemental, Solutions
- 5/ Approches sociologique, socio-économique, nouveaux modèles économiques