

MICROPLASTICS IN MARINE AND TERRESTRIAL ENVIRONMENTS

(2 PROJECTS)

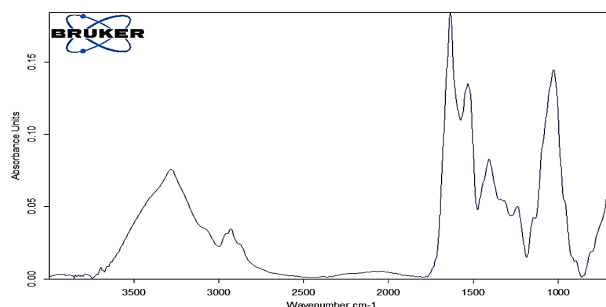


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Project description: Microplastics are now everywhere in the marine and terrestrial environments. They are seen as preys by larval fish who feed on them, or as alternative food items for terrestrial animals. Once ingested, plastics is indigestible and remains in the digestive system of the animals, sending messages of a full stomach to the brain. As a result, animals do not strive for additional preys, and eventually die of starvation.

Recent field work in the Peel Harvey estuary has revealed hot spots of contamination by specific types of microplastic particles, with types of plastics being identified by spectral analysis (shown below). It is not known, however, how widely spread this contamination is in the Peel Harvey, and if these particles are ingested by fish larvae. The aim of this project is to document the distribution if these round, persistent microplastic particles and assess if they are present in fish larvae/small fish from the estuary. This project involves field sampling as well as laboratory work.

Another environment where microplastics are found in abundance is the terrestrial environment however, there is little information on the size distribution of microplastics, and to what extent animals (invertebrates, vertebrates) ingest terrestrial microplastics. The aim of this project is to assess if terrestrial organisms (e.g. insects, bobtails) do ingest microplastics, and evaluate the residence time of microplastics in the animals. This project involves field work and/or laboratory experimentation (to be determined according to the student interests).



The origin and type of microplastics can be inferred by simple spectral analysis. The spectral fingerprint above suggests the scanned microplastic fragment is from domestic PVC origin.