## Microplastics in snow of a high mountain national park: El Teide, Tenerife (Canary Islands, Spain)

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## Abstract

Microplastics (MPs) in the marine environment have been the focus of most of the studies developed in recent years. However, these contaminants are also present in soils and the atmosphere, being precisely the last of them one of the main reservoirs and carriers of MPs. In fact, in the atmosphere MPs can travel long distances and reach remote regions, such as high mountain systems, where they can be deposited through dry or wet deposition processes. Once deposited, MPs can affect the ecosystems of the area, by their introduction into the soil or groundwater or even by their ingestion by living organisms (1,2). However, despite the significant problems that the presence of these particles can cause in these regions, few studies have been carried out to evaluate the presence of MPs in high mountain systems. In this study, the determination of MPs in snow samples collected at El Teide National Park (Canary Islands, Spain) at 2,100-3,200 m in January and February 2021 has been developed. The first sampling was developed one week after the opening of the Park for visitors while the second one was immediately carried out the Park opening day. Once at the laboratory, and after snow melted, samples were filtered and visualized using a stereomicroscope, quantified and classified by size, shape, and colour as well as by their chemical composition using a micro-Fourier transform infrared spectroscope. The results revealed the deposition of MPs with the snow as well as a higher presence of MPs as a result of the high anthropogenic pressure of the park during such snow period. Besides, the prevalence of blue and black fibres of 1259  $\mu m$  average length, mostly composed of cellulose followed by polyester and

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acrylic fibres, was also found.

## **References:**

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- (2) Cryosphere, 2022, **16**, 2127-2145.

**Keywords:** Snow, microplastics, national park, Canary Islands, Fourier transform infrared spectroscopy