
Addressing the harmonization of citizen science litter data

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Abstract

The world's current consumption model is creating a growing waste disposal problem. Litter pollution has triggered a global wave of cleanup initiatives and research surveys that are generating important information across a wide range of ecosystems. Unfortunately, this information is often difficult to integrate due to divergences in litter classification methods and the poor comparability of the quantitative estimates of litter concentration, limiting the knowledge needed to guide management strategies. Data often include more than 100 litter types, comprising items made of diverse materials and sizes ranging from a few centimeters to meters long. Some surveys incorporate weight measurements, but usually objects were wet or dirty as cleaning and drying litter is a tedious task. To try to mitigate these limitations, the Global Litter Observatory (GLO) was created with the aim of harmonization of large-scale litter information. To compare different datasets, GLO relies on the adoption of a mass-based metric per material. By using abundance-weight distributions representative of each category the data in number of items per category could be converted to weight. In case the sampling provided images of litter the areas of the objects were measured, and their mass was estimated from specific area-weight algorithms previously calibrated for different types of litter. In this way, GLO will enable comparison between different data sources, enhancing effective litter monitoring all over the world. At this talk, we will present GLO and showcase the status of its database and data exchange platform.

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