A systematic survey of plastic pollution in watercourses of Greece

A two years research carried out by school students in Greece as part of the "Plastic Pirates Go Europe" citizen science program.

INTRODUCTION

During the period 2022-2024, teams of young students from eight (8) different schools in Greece undertook to study plastic pollution in small streams and rivers in the country as part of the citizen science project Plastic Pirates Go Europe.

Photos 1-2: Classification and assessment (category, quantity, weight) of all litter found

Photo 3: Overall collection of all litter in a zone parallel to the riverbed

TARGETS

The aim of the activities was both:

- the systematic research the problem of plastic pollution of watercourses and
- to raise awareness among the participants and their society with the perspective of changing attitudes and behaviors in order to tackle the problem.

Photo 4: Systematic sampling on a 7m² plot

Photo 5: Substrate screening to detect microplastics

The data was collected following the pan-European protocol of the Plastic Pirates Go Europe project in order to be comparable with findings from other countries.

STUDY METHODS AND MATERIALS

In each sampling session up to 5 different subgroups undertook one of the following tasks:

- **Systematic sampling on 7m² plots** in three different zones of the bank.
- **Overall collection**, classification and assessment/evaluation (category, quantity, weight) of all litter in a zone parallel to the riverbed
- Systematic sampling **of floating waste** using a special net
- Systematic survey of **microplastics in the substrate** of the stream's flood line
- **Journalistic media coverage** of the action, including the opinion of the residents and visitors to the study area.

RESULTS & CONCLUSIONS

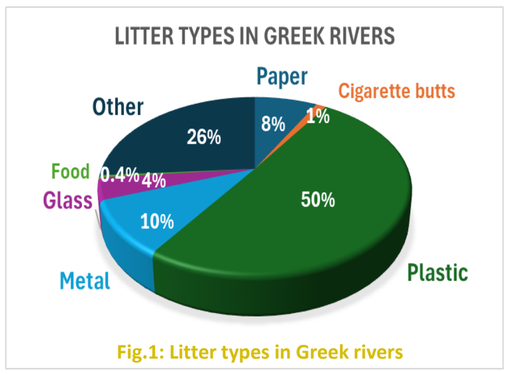

Fig.1: Litter types in Greek rivers

Plastic debris was found in all watercourses and in all bed zones, from the water column up to the high flood zone.

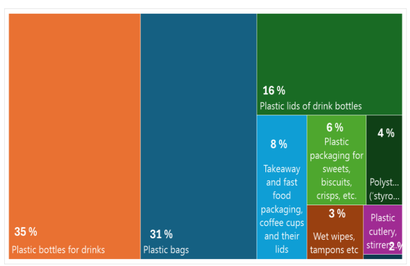

Fig.2: Single Use Plastics found on Greek River banks

Map 1.: Litter/m² in the sampling stations

THE "HIDDEN PLASTIC" PROBLEM

It was found that the problem of "hidden plastic" is extremely widespread. By the term "hidden plastic" we defined the presence of polymers in materials that the public perceives to be simple biodegradable paper (wet wipes, "paper" cups, illustration paper sheets).

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