"PLASTIC PIRATES" IN LATVIA:
# LITTER AND MICROPLASTIC POLLUTION IN WATERWAYS

How much land based sources contribute to plastic pollution in the sea?
In order to deepen our understanding of riverine input of litter and microplastics into the sea, a Europe-wide citizen science campaign invites school children to investigate litter pollution in local rivers and streams. Samplings in Latvia took place in Autumn 2023.

300 participants from **18 schools** took part in sampling activities along their local waterways following protocol available at: _www.plastic-pirates.eu_, where students were divided in **4 groups** - Group A and Group B looked at macrolitter on shore, Group C collected microplastic samples in water adn Group D were the reporters, collecting information about the sampling site.

Possible sources of pollution in most cases were cited to be **visitors** (70.59%) and **local residents** (58.83%), least reported - agriculture and fishing
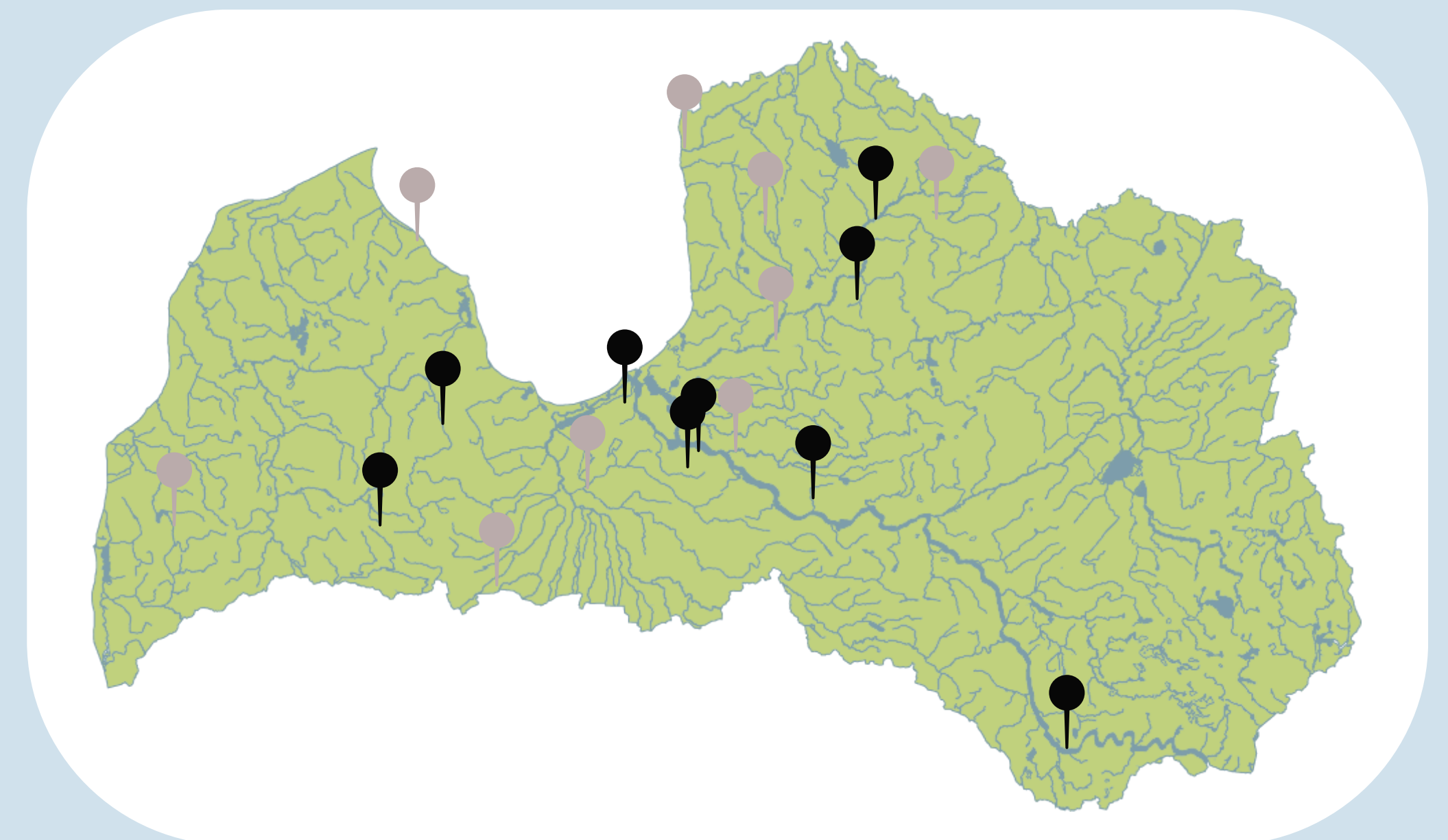
Sampling locations in Autumn 2023. In black- verified data sets, in gray - data sets with missing information

Macrolitter on shore - concentrations of litter were on average **0.57 items/m^2**

Types of macrolitter - in total **986** items weighing at least 90.35 kg were found, from which around 1/3 (32.34 kg) were identified as plastics. From those nearly half, namely **41.63%** were packaging materials

Photo: Jelgavas Pārlielupes pamatskola
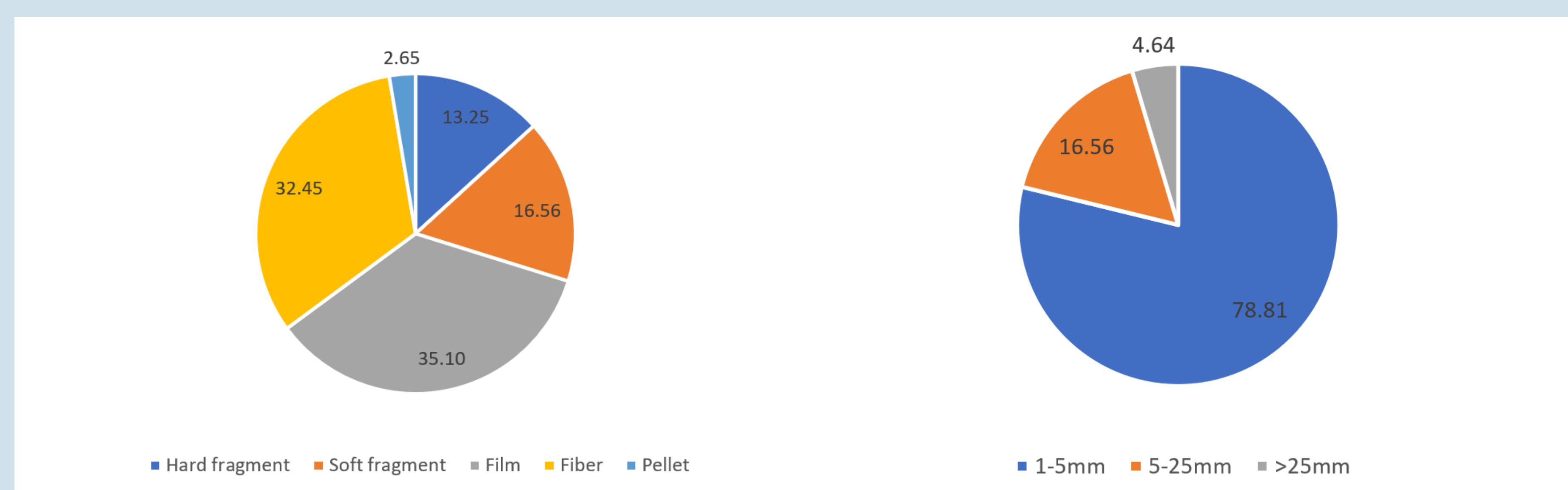

Photo: Siguldas 1.pamatskola
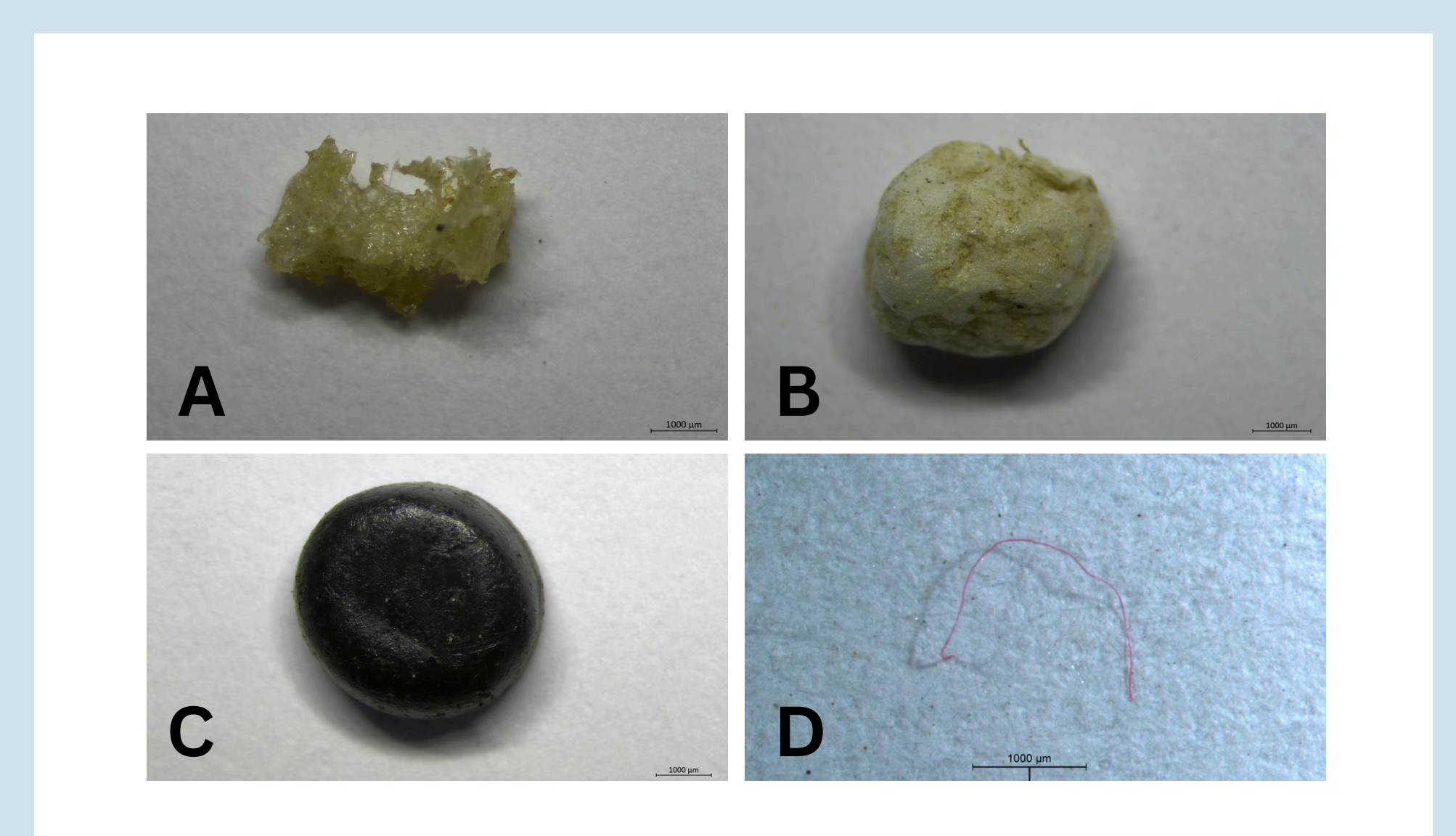

Photo: Limbažu vidusskola

Microplastics in water concentrations varied between **0-0.48** particles/m^3, averaging at **0.15** particles/m^3

The most common polymer types: **polyethylene ethyl acrylate** (10.6%), **polyethylene** (8.61%), **polypropylene** (7.95%)

The most common colors: **transparent** (23.84%), **black** (22.52%) and **white** (21.19%)

2.65
13.25
16.56
35.10
32.45

■ Hard fragment ■ Soft fragment ■ Film ■ Fiber ■ Pellet

4.64
16.56
78.81

■ 1-5mm ■ 5-25mm ■ >25mm

Microplastic particle type and size distribution in percentage (%)

Microplastics from the samples. A and B - soft fragments, C - granule, D - fiber