

Preventing marine plastic pollution and promoting public stewardship through citizen science



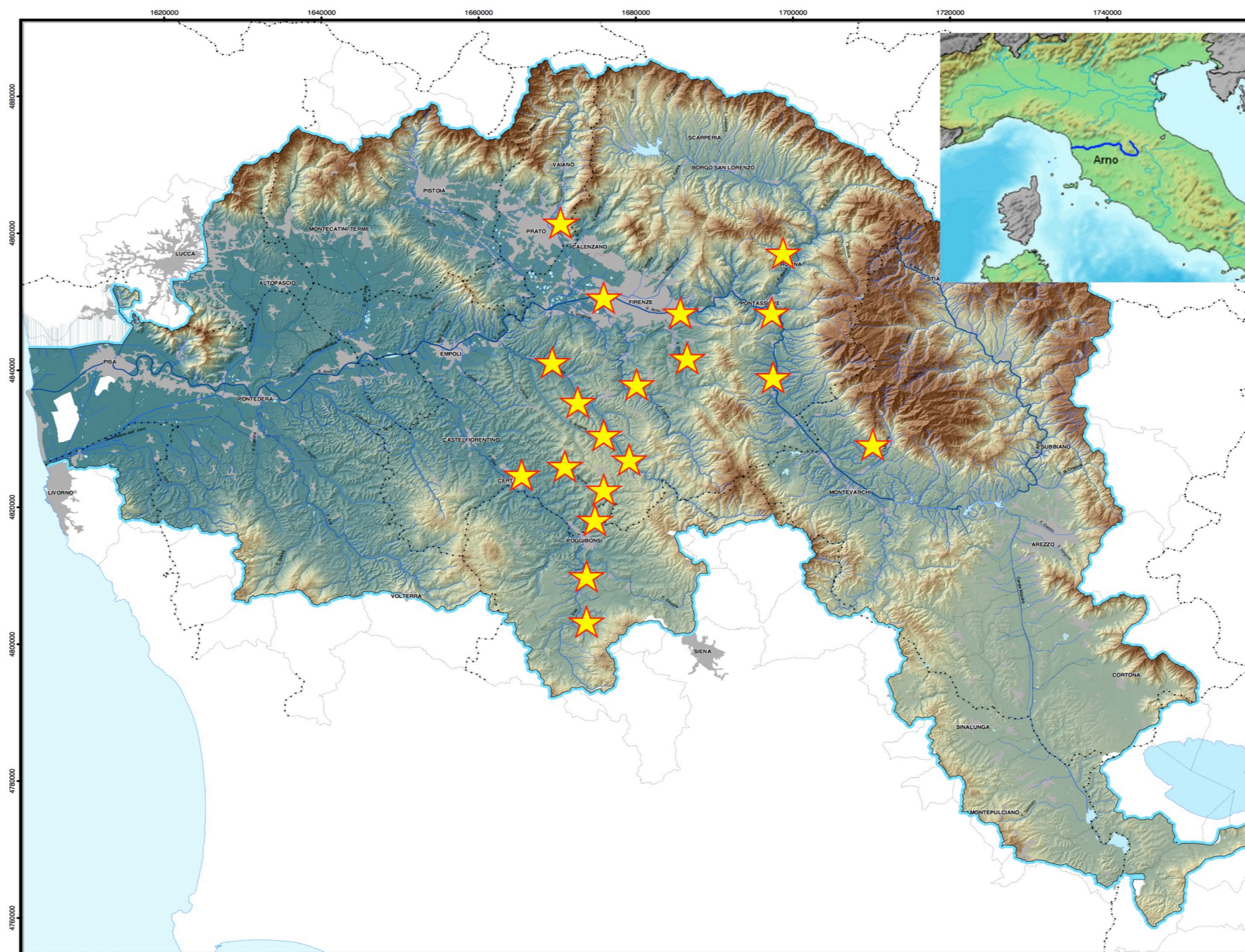
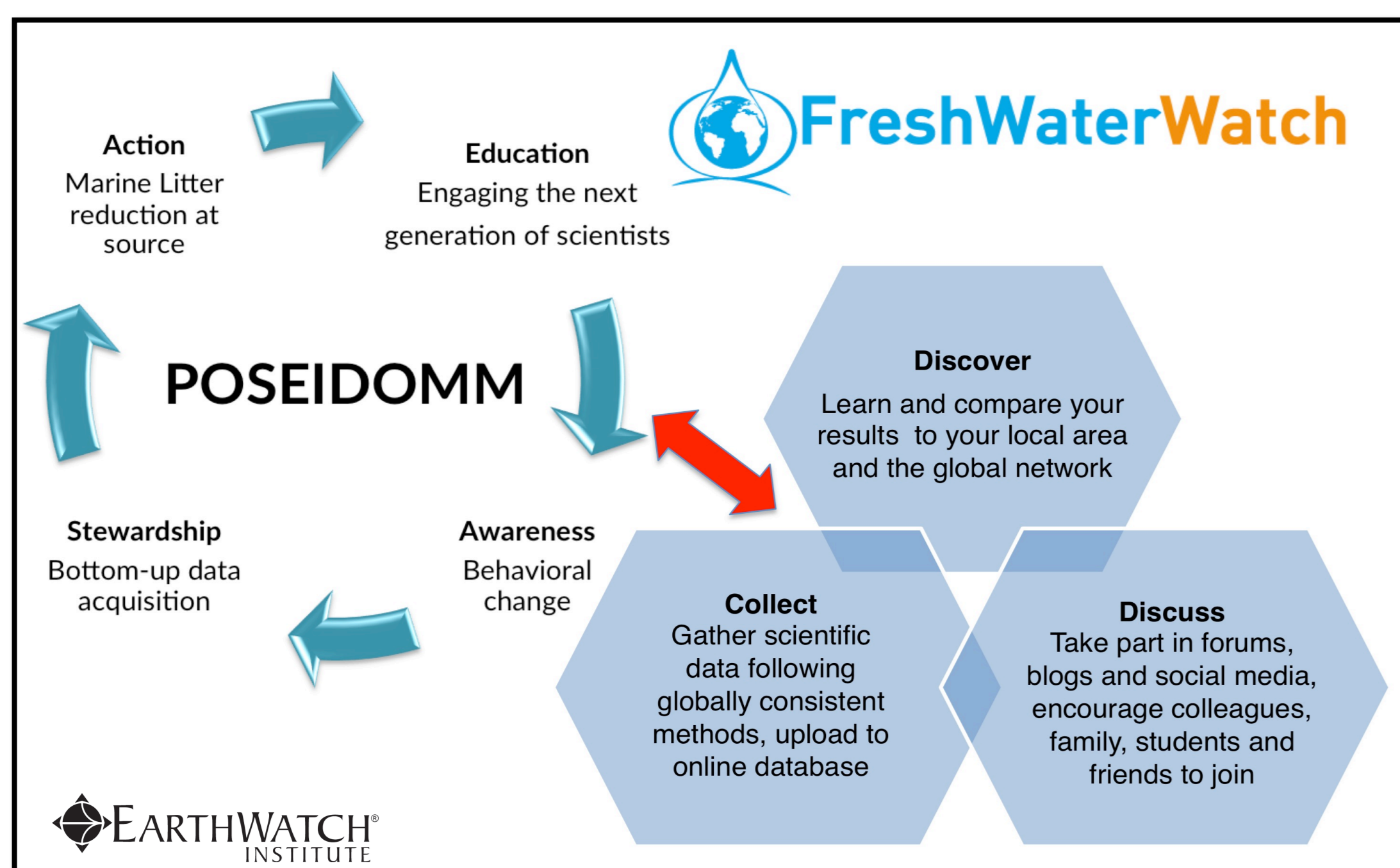
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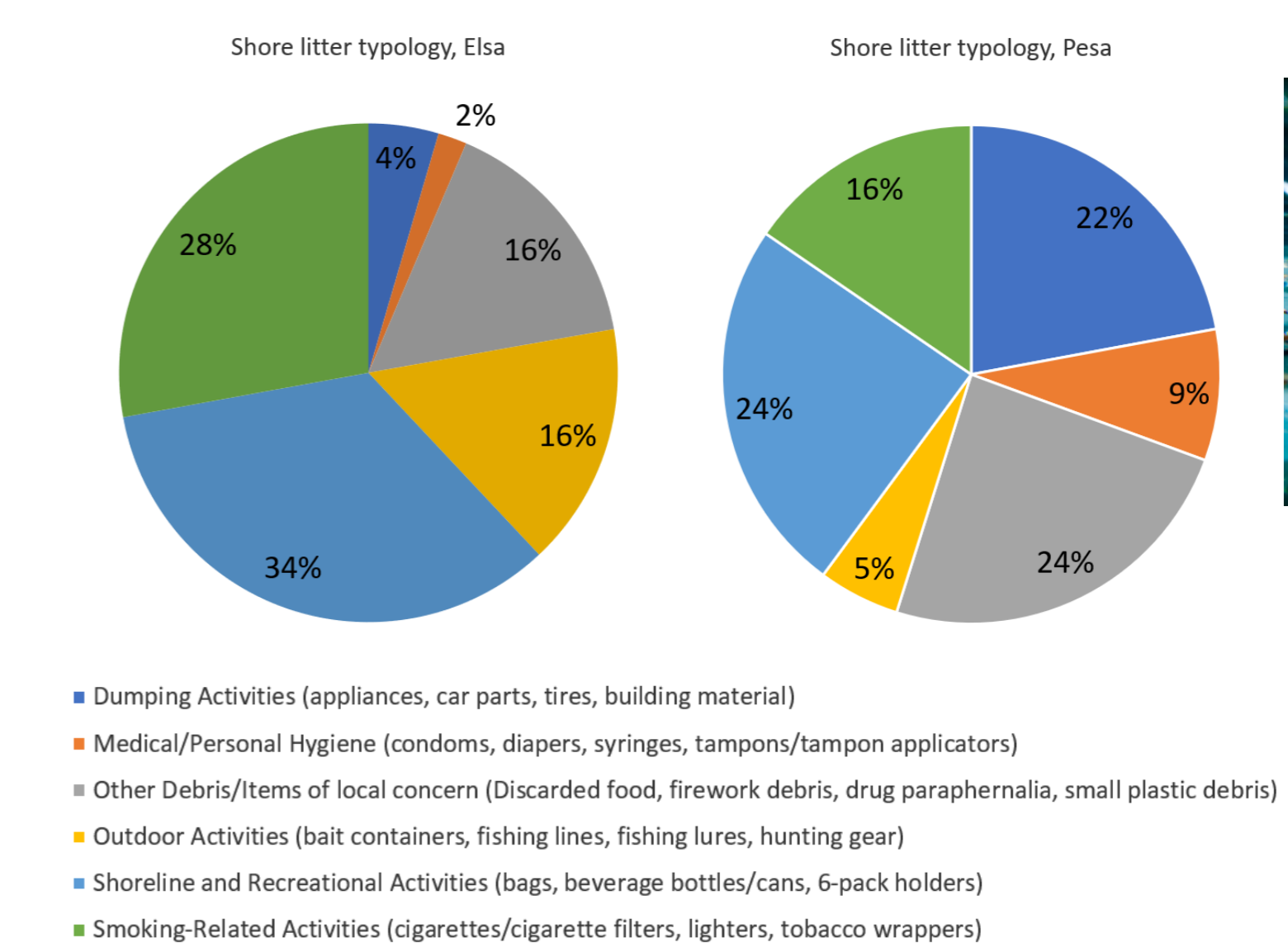
Citizen-Science: students and citizens for healthy rivers and seas

POSEIDOMM-FreshWater Watch citizen science project was created to promote public stewardship of local aquatic resources, while helping to quantify the type and quantity of macroplastics entering key Tuscan rivers as well as reducing that reaching the Mediterranean Sea.

Next challenge: creating a citizen scientist microplastics platform to provide consistent and comparative geospatial data to complement marine studies, in collaboration with Earthwatch Europe, UK.



Identification and study of the fluxes of plastic and non-plastic debris along two local rivers: results from June 2016 to February 2018



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- Nutrients and turbidity
- Slope and river banks
- Algal blooms
- Litter presence, type and density

Real-time measurements and observations

Beach Refuse Type (nr. of refuse type counted in a 20 x 50 steps area)

- Shoreline and Recreational Activities
- Bait containers, fishing lines, fishing lures...
- Smoking-Related Activities
- Dumping (tires, etc.)
- Medical/Personal Hygiene
- Other Debris/Items of local concern
- Most peculiar object found?

Mobile app: POSEIDOMM datasheet

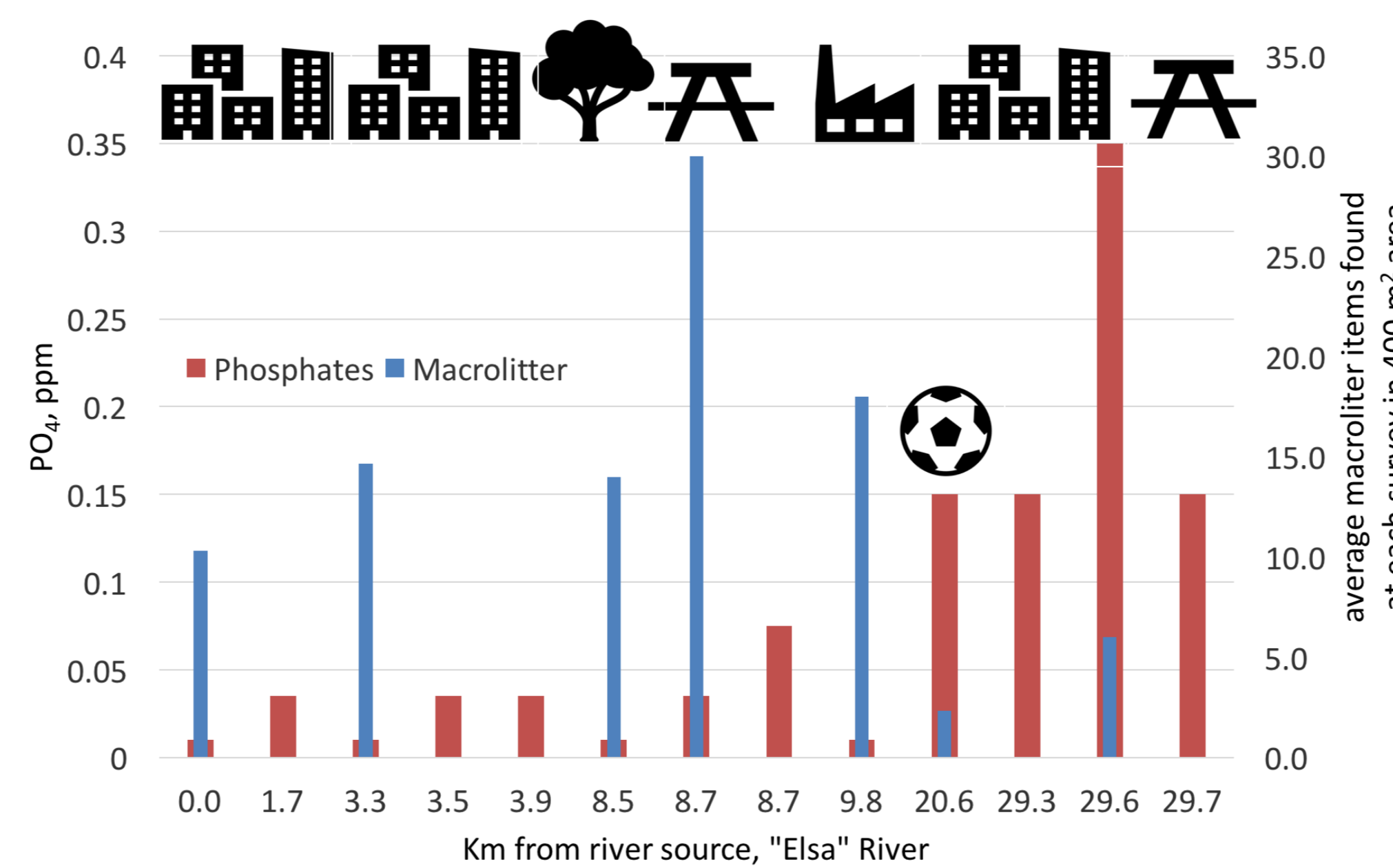
The Arno River catchment and sampling sites

- 22 high-school students and science teacher of IV D/L, "Sustainable School Communities", Florence
- 20 citizens supported by the municipality of Tavarnelle Val di Pesa, winner in 2012 for "Effective eco-innovations supporting improvements in environmental performance" (recycling rate > 86% in 2015)

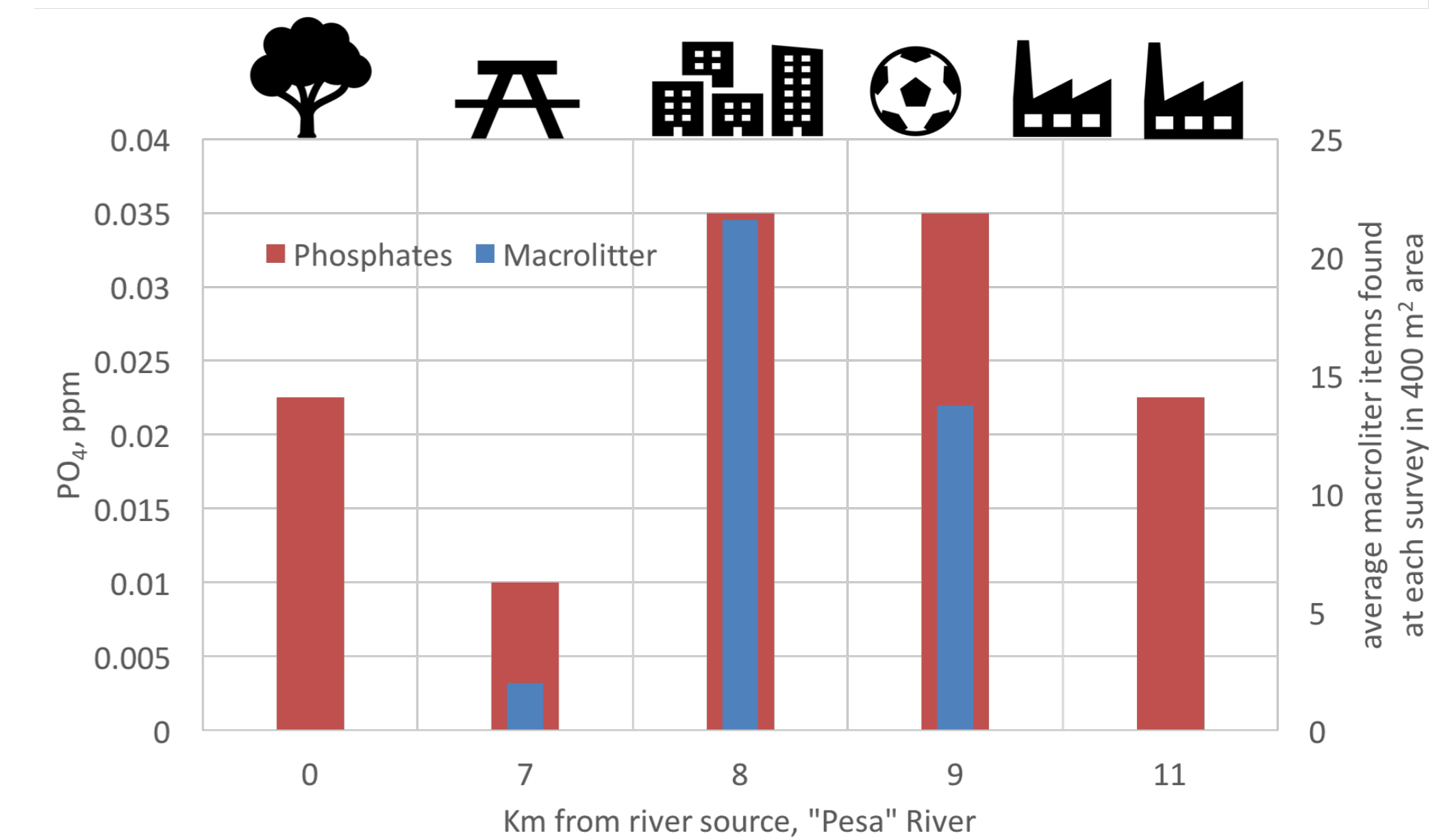


The majority of debris along the two study rivers were items discarded through recreational activities from urban/residential centers and urban leisure parks. In some places, the human impact is also visible from the input of nutrients (phosphates) in the aquatic environments. Most frequent litter items were associated to smoking activities, bags and bottles, fishing equipments and illegal dumping.

Human activities generating waste



Human activities generating waste



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