

The first findings on microplastics exposure and impact in the Krka River

FINAL PROJECT MEETING

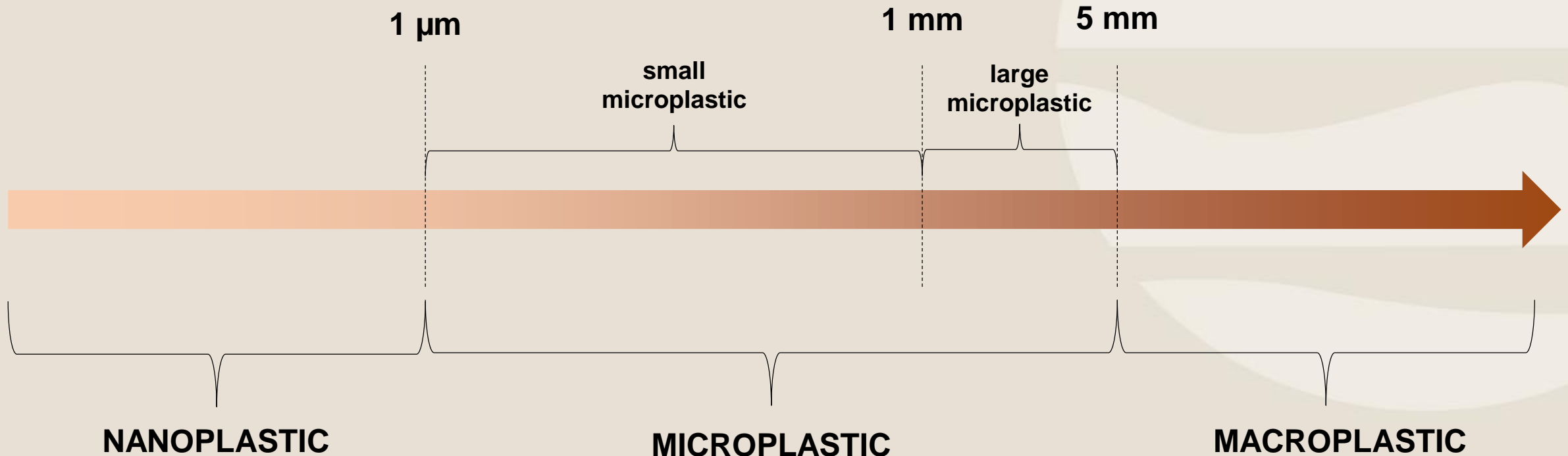
Integrated evaluation of aquatic organism responses to metal exposure: gene expression, bioavailability, toxicity and biomarker responses (BIOTOXMET)

Zagreb, 19th May 2023

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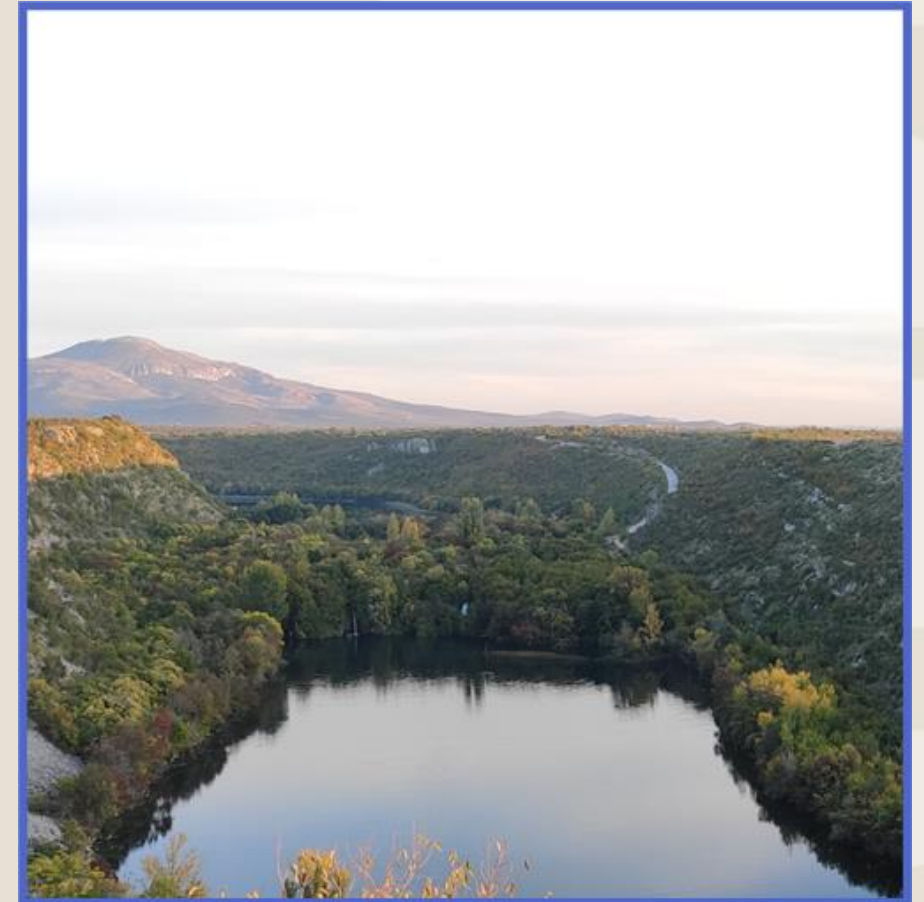
MICROPLASTIC

Plastic particles, less than 5 mm, that result from the breakdown of larger plastic materials or are intentionally produced, posing an environmental problem due to their widespread presence and potential harmful effects on nature and health of the organisms.



SAMPLING AREA – Krka River

- the presence of MP in river ecosystems and its impact on freshwater organisms
- less data for freshwater ecosystems than for marine ecosystem



SAMPLING AREA – Krka River – **impacts of wastewaters**

Krka
National
Park



waste
water



- municipal wastewater of the city of Knin – it is discharged into the river without adequate preliminary treatment



- industrial wastewater from the screw factory - flows directly into the tributary Orašnica, and further into the river Krka

MAIN GOAL:
the presence
of MPs in the
Krka River
and fish

WORK METHODS

SAMPLING OF
WATER AND FISH



DETERMINATION
OF MP IN WATER
AND FISH GUT
CONTENT



**Vacuum
filtration**

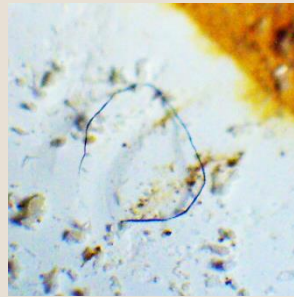


Microscope

- Water samples – vacuum filtration – pore size 0.45 μm
- The fish gut contents were digested with HNO_3 and HF , and then filtrated
- determination under the microscope

RESULTS

- MP fragments found in all river water samples – stations under anthropogenic influence, but also the source of the river



IWW



KRK

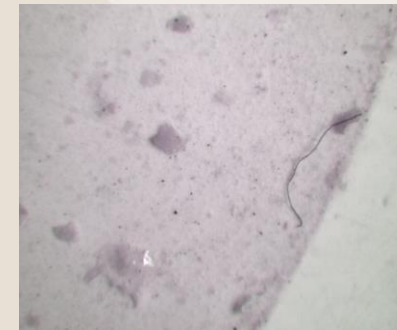


TBU



KRS

- MP present in almost all samples of digested gut contents of brown trout - confirmed intake through food



CONCLUSIONS

- MP isolated from water samples from all locations
- MP isolated from the fish gut content of almost all fish individuals
- The presence of MP was confirmed and the next step is to perform identification of MP types and shapes in water, sediment and aquatic organisms



THANK YOU FOR YOUR ATTENTION!

