



University of Rijeka, Faculty of Maritime studies

PROJECT ACRONYM AND TITLE: IMPACT OF NAUTICAL TOURISM VESSELS ON SEABED POLLUTION IN PRIMORSKO-GORANSKA COUNTY

FUNDING PROGRAMME: Scientific-Research Project Initiatives of The University of Rijeka (ZIP UNIRI)

PERSON RESPONSIBLE: Livia Maglić, Ph.D., Assistant Professor

FINANCIAL DATA

Project total cost	Overall funding assigned to PFRI
13.073,20 €	13.073,20 €

SUMMARY

Marine litter is a significant and growing source of pollution of the seas and oceans. Every year, about 10 million tonnes of litter enter the seas and oceans of the world. It is well known that most marine litter is caused by land-based activities, but maritime activities also contribute. The most significant contributors are larger plastic litter, including everyday items such as beverage bottles and other plastic packaging, as well as lost and discarded fishing gear. Most studies on the distribution, accumulation zones, and concentrations of marine litter have focused on beaches and floating litter. Studies focusing on the seabed litter are rarely conducted due to less accessible environment, technical challenges and costs of monitoring, sampling, and disposal.

This project will investigate and monitor the quantity and composition of seabed litter at two selected sites in Primorsko-goranska County using remotely operated underwater vehicles and scuba divers. The selected survey areas will be popular natural bays that are heavily frequented by pleasure boats and yachts during the summer season. The selected areas will be monitored twice a year (before and after the summer season) and litter larger than 2.5 cm will be recorded. Underwater surveys will be carried out by scuba divers at depths between 0 and 20 m (shallow water) and by underwater vehicles (ROV) at depths greater than 20 m. The videos will be analysed with a novel approach using object recognition algorithm to determine specific categories of marine litter.

The project has three main objectives: to assess the pollution of the seabed by nautical tourists at the observed sites; to determine the efficiency and reliability of the ROV as a monitoring method; and to test the accuracy and efficiency of the object recognition algorithm based on the captured images of marine litter on the seabed.

The results obtained will be useful for mapping the sources and pathways of marine litter at local and state levels, as well as for municipalities when developing action plans and management measures to reduce and prevent marine litter.

Start date	End date
01.06.2023.	31.05.2026.

WEBSITE: -

ADDITIONAL INFORMATION:

Members of the project team:

- Livia Maglić, *Faculty of Maritime Studies, University of Rijeka*
- Lovro Maglić, *Faculty of Maritime Studies, University of Rijeka*
- Ivana Ognjanović, *University of Donja Gorica, Montenegro*
- Antonio Blažina, *Faculty of Maritime Studies, University of Rijeka*