

everwave – A Holistic Solution to Combat Riverine and Marine Litter

Tilman Flöhr

Everwave GmbH, Aachen

Abstract

The social enterprise everwave is dedicated to protecting rivers and the ocean from plastic waste and to promote a more sustainable lifestyle. Its holistic approach aims to support a circular economy and preserve water bodies as precious habitats, food sources and economic regions. For this purpose, everwave is founded on two pillars: Technological Innovation and Ecological Inspiration.

'Technological innovation' comprises the three steps: Detect, Collect, Recycle. 'Detect' utilises AI-supported UAV drone observations to identify and analyse waste hot-spots as well as possible entry pathways. 'Collect' deploys a combination of active and passive cleanup technologies for rivers, the AI-supported garbage collection boat CollectiX and the stationary collection system HiveX. 'Recycle' makes use of suitable recycling processes to valorise the waste and create new products.

'Ecological Inspiration' comprises raising public awareness for the global plastic crisis and promoting solutions through environmental education, interactive events, and creative PR activities with international outreach.

The combination of these measures - cleanups, support of local recycling infrastructures, environmental education and closure of entry pathways in cooperation with local stakeholders - will enable the overall objective to be achieved: to close the loop and prevent waste from entering the environment in the first place.

The presentation will share insights on the overall concept and experiences from the field work in Eastern Europe: Slovakia, Serbia, Bosnia and Herzegovina. In addition to the cleanup work in the aftermath of the flood catastrophe in Western Germany in July 2021. A special emphasis will be placed on material compositions and recycling options, with a concluding outlook on the role of thermochemical treatment processes for riverine and marine litter.