Multi-sensor high resolution acoustic mapping of marine macro-litter on the sea-floor: a new approach of the 'marGnet' project in the North Adriatic Sea

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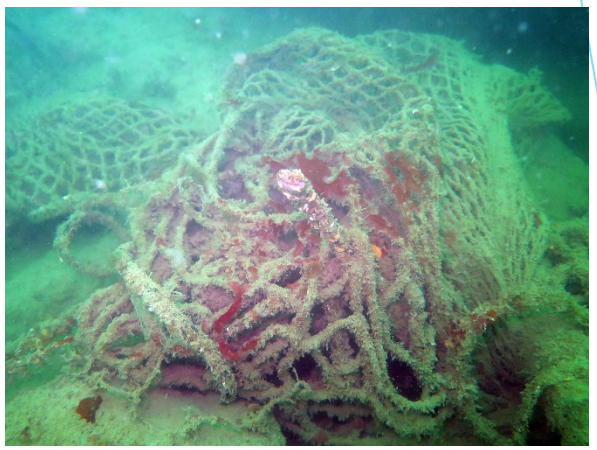
CURRENT SCENARIO

- Changes in the composition, abundance and distribution of marine litter (ML) on the seafloor is, at the moment, much less widely investigated than sea surface patterns.



- To monitor and quantify the ML on the sea floor are often cost-prohibitive for the authorities and not efficient to map large areas

- The different experiences in recycling shows the need of a pre-treatment of the ML used for the various recycling options

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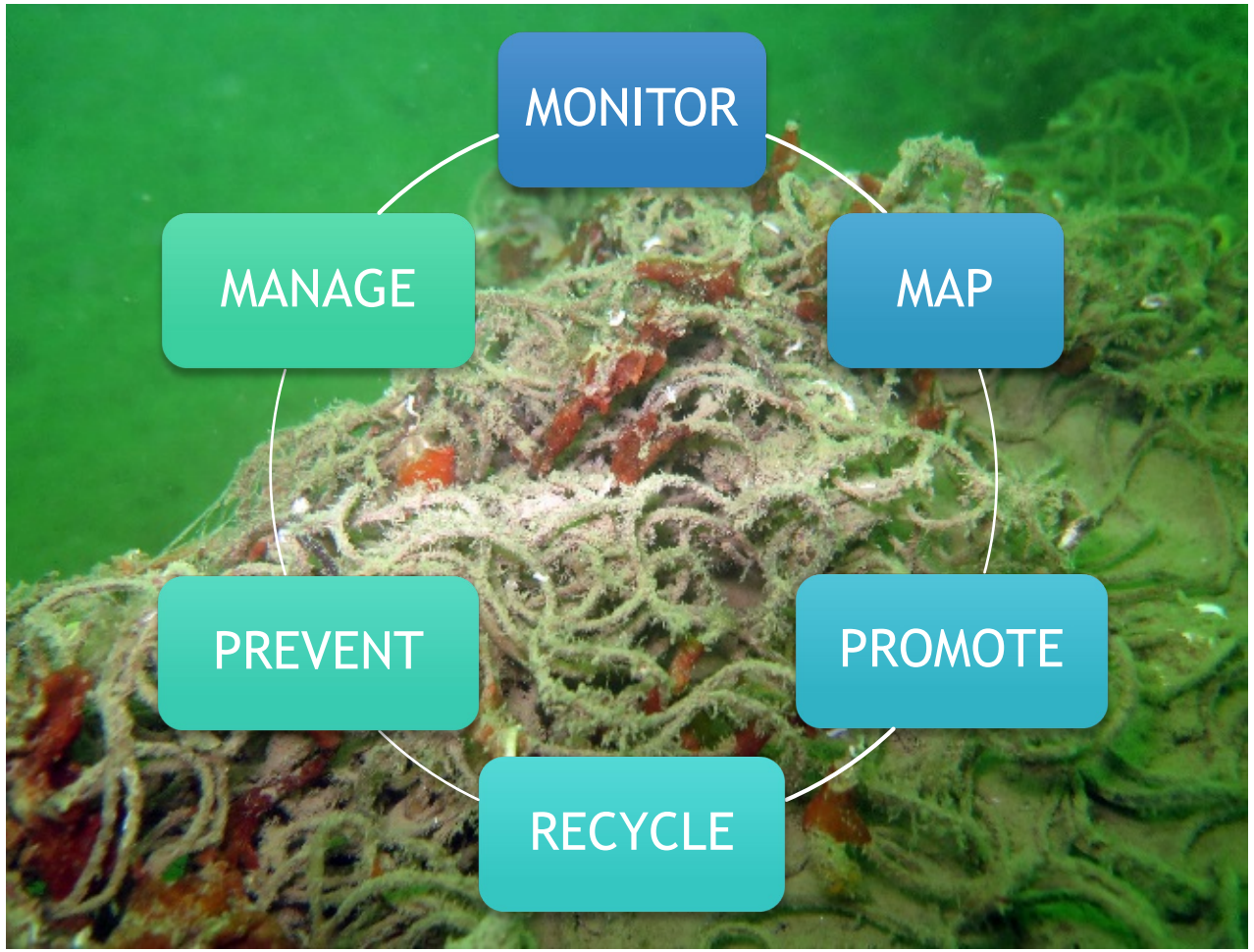
PROJECT CONCEPT AND AIM



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1. MONITORING

- Monitor the presence of ML from sea-based sources, especially from fisheries and aquaculture activities, by means of combined multi-sensor high resolution acoustic mapping, data analysis, field measurements

- marGnet project will develop a fast methodology for wide scale monitoring of ML on sea flooR

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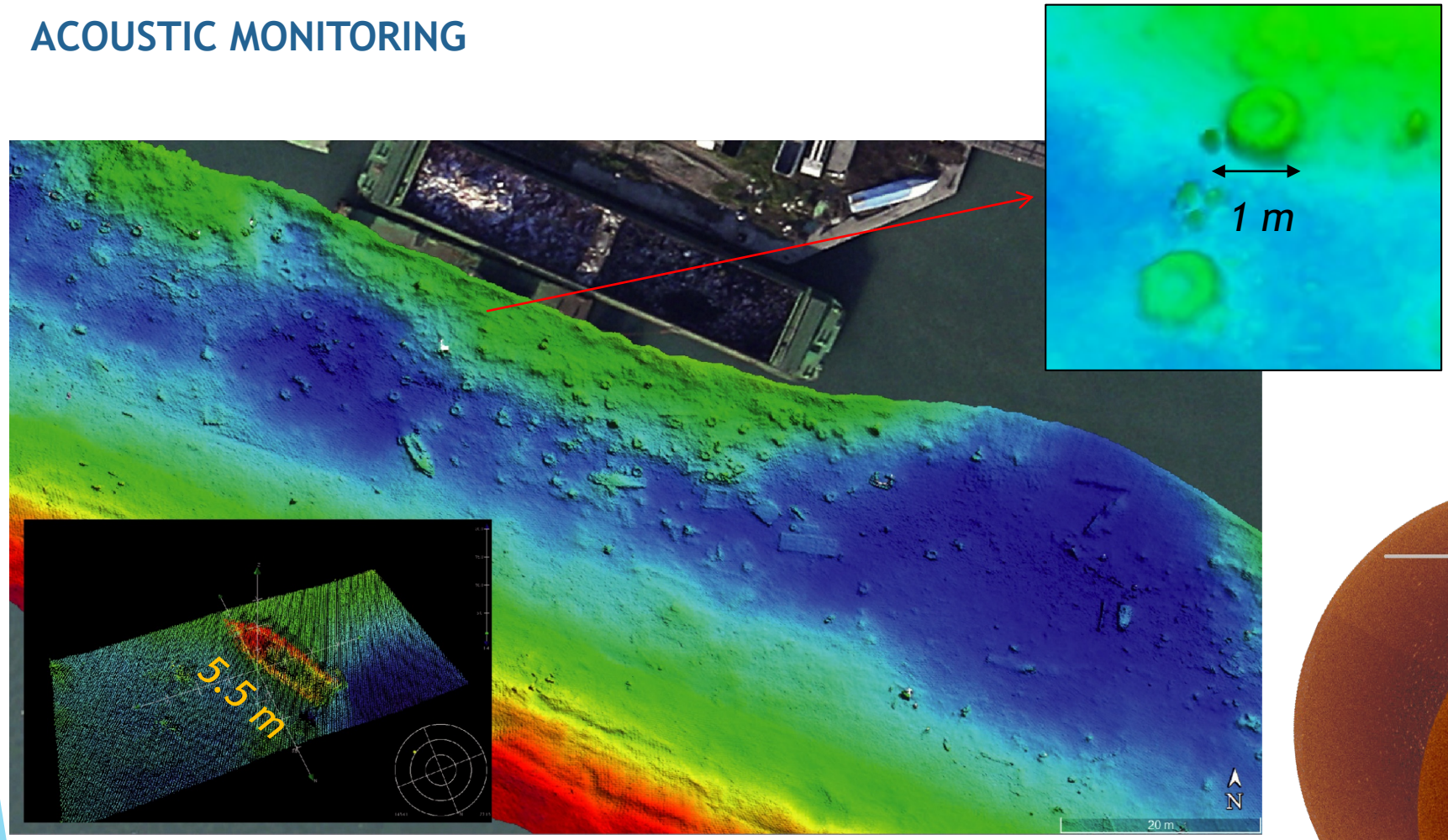
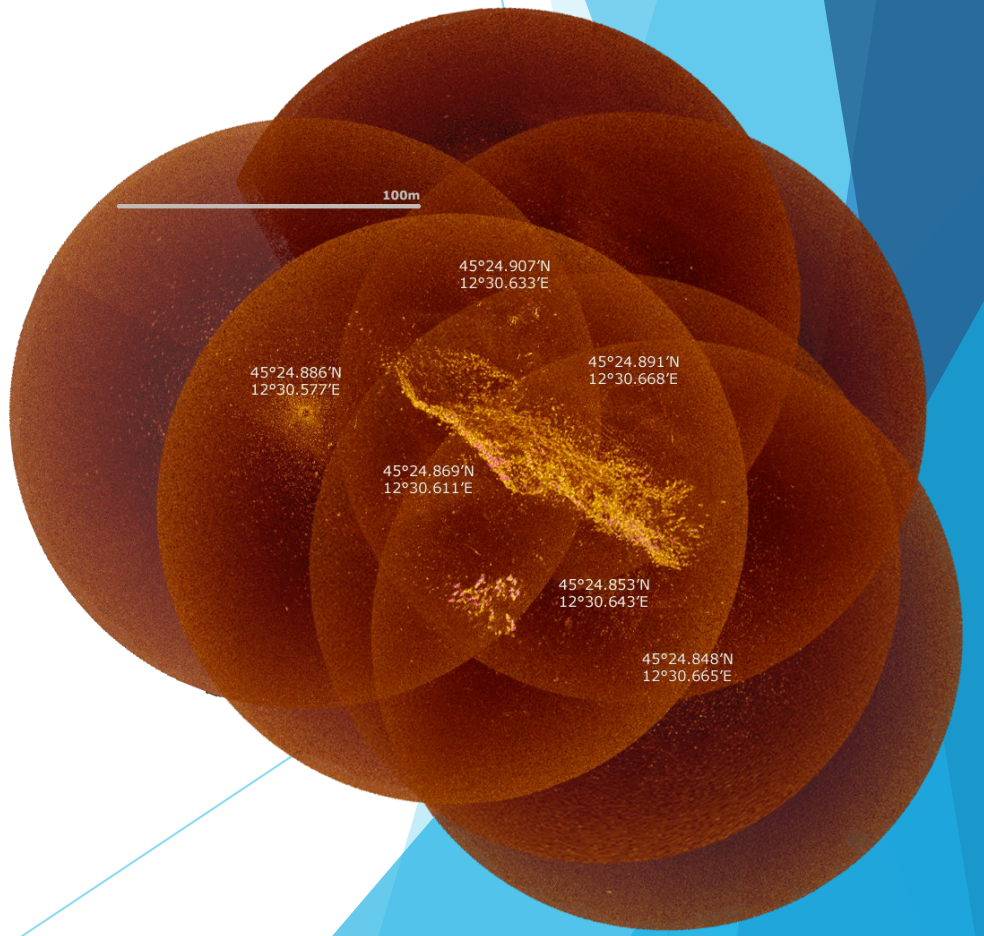
ACOUSTIC MONITORING





Field experiments for acoustic data calibration

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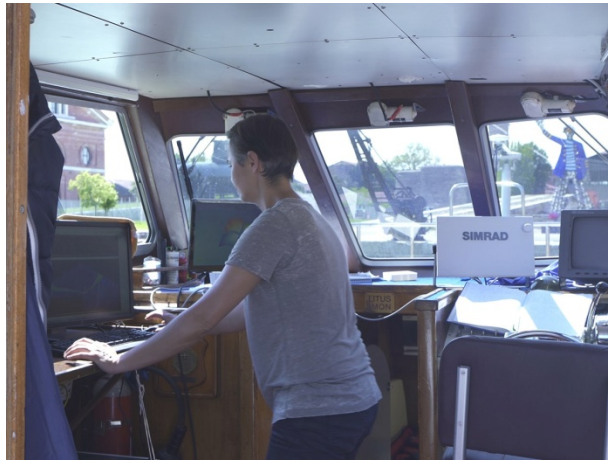
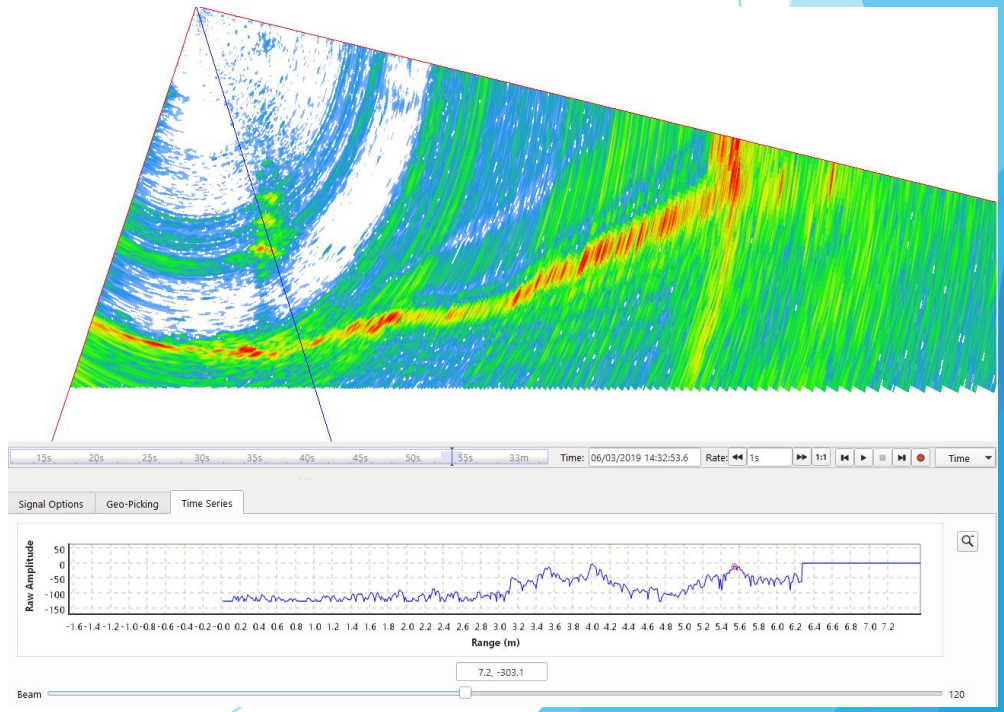
FIELD EXPERIMENTS FOR ACOUSTIC DATA CALIBRATION CARRIED OUT IN JUNE 2019





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2. MAPPING

- Mapping the presence of hotspots of ML on the sea floor especially from fisheries and aquaculture activities on a wide scale through the development of 3D predictive model, able to simulate dispersion of **sinking ML**
- MarGnet will provide maps of potential distribution of ML hotspots in the Northern Adriatic Sea

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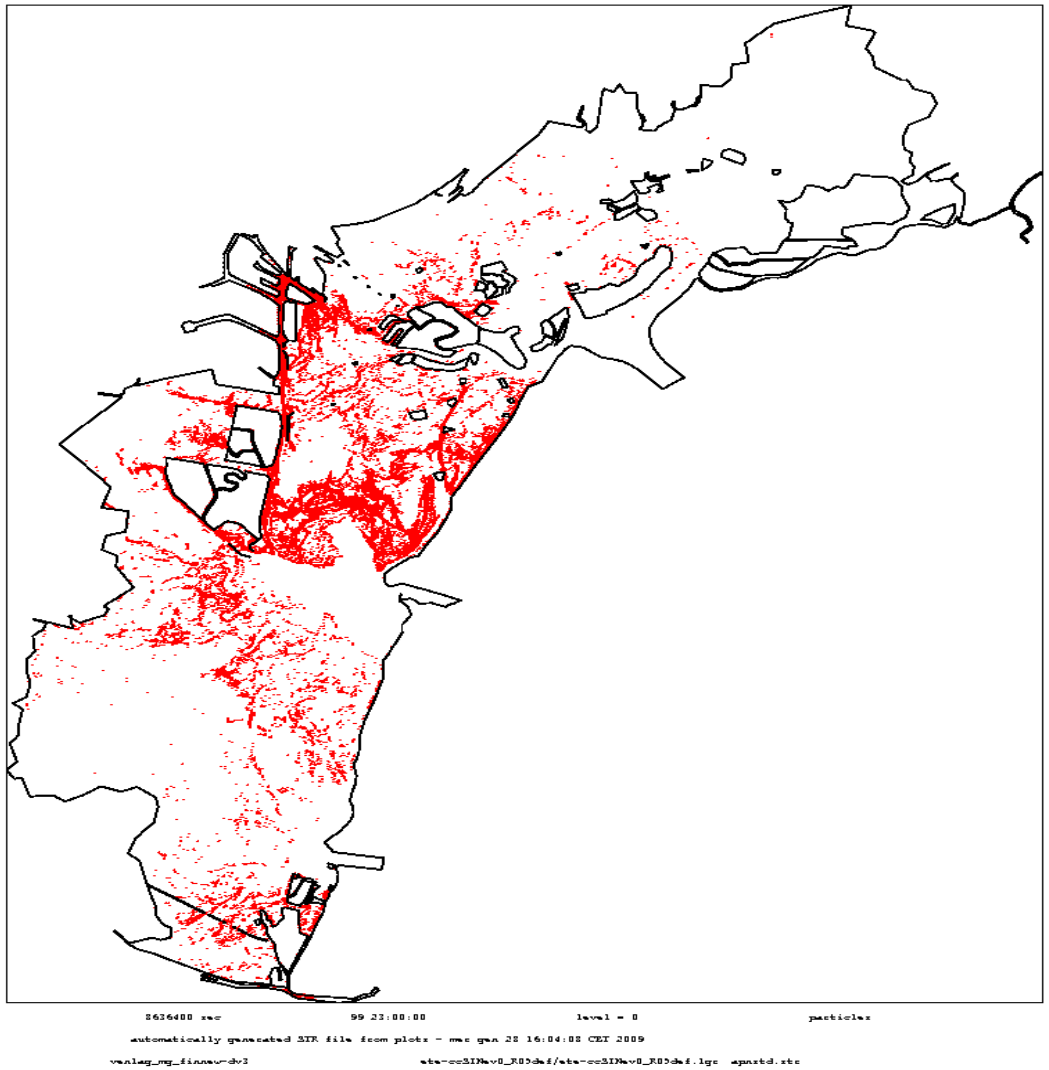
3D LAGRANGIAN MODELLING WITH SINKING ML



- Floating in the water column
- Sinking on the bottom

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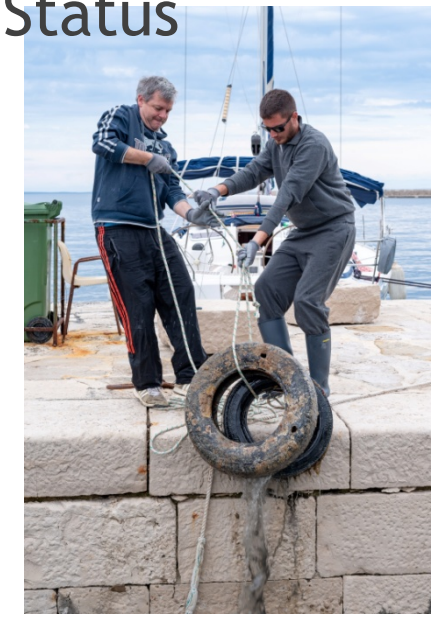
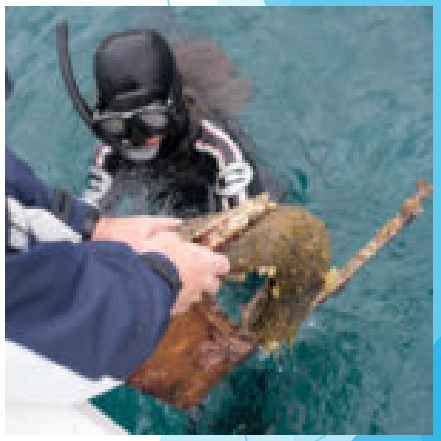
3. PROMOTION

Promotion of sustainable removal of sea floor ML in pursuit of Good Environmental Status





4. RECYCLING

- Improvement of the environmental sustainability and efficiency of recycling process of ML
- marGnet will develop a **portable prototype** that exploits low temperature pyrolysis to transform the ML in certified marine fuel at a reasonable cost

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5. REDUCING

- Reducement of the quantity of ML from fisheries and aquaculture activities by testing the described prototype in fishing port areas demonstrating its easy-usability and therefore, convenience for fishermen and general public
- marGnet promotes a change in behaviour of fishermen towards sustainable practices

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THANKS FOR YOUR ATTENTION