

NET4MPLASTIC PROJECT

Activity 3.2

Report of the results of previous EU projects on MP and data collection related to plastic and MP in the northern Adriatic basin

D 3.2.1

30/12/2019

CONTRIBUTING PARTNERS	UNIFE
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ACRONYM	FUNDED	year	WEB SITE	GENERAL INFORMATION	METHOD
MICRO	Interreg	2012-2014	<p>Leading Partner Institute for Agricultural and Fisheries Research (ILVO) - Oostende, Belgium www.ilvo.vlaanderen.be</p> <p>https://www.ilvo.vlaanderen.be/micro</p>	<p>MICRO is a project in which five scientific institutes will study the occurrence and impact of microplastics in the Interreg 2 Seas area and the Channel region. It's a cooperation between the Belgian Institute for Agricultural and Fisheries research, the Centre for Environment, Fisheries and Aquaculture science in England, the Dutch Stichting Deltares and two French partners: l'Institut Français de Recherche pour l' Exploitation de la Mer (IFREMER) and the Centre National de la Recherche Scientifique (CNRS).</p> <p>The project started the first of July 2012 and the crossborder partnership is made until the end of September 2014. The project is funded by the European Interreg 2 Seas programme and is led by ILVO.</p>	<p>Modeling of the presence and accumulation of microplastics and macroplastics in the marine environment.</p> <p>Analysis of the transport of microplastics in the environment.</p> <p>Determination of the biological effects of plastic particles on marine life and marine environment.</p> <p>Determination of the biological effect of the chemical load of microplastics on marine life.</p> <p>Searching for mitigating actions. In some applied cases (oyster mariculture, tourism...), impact on economical relevant activities will be assessed and mitigating actions (like degradation) proposed.</p>
MARLISCO	FP7	1 June 2012 – 31 May 2015	<p>MARLISCO Project Office Provincia di Teramo, Local Authority, B7 Sector Via Milli 2, 64100 Teramo, Italy</p>	<p>The main objectives of the MARLISCO (Marine Litter in European Seas - Social Awareness and Co-Responsibility) project are</p>	<p>To provide a platform for structured dialogue among the key stakeholders from industry, end users, science and society, in 12 European countries. This</p>

			<p>MARLISCO Project Coordinator: Mrs Doriana Calilli marlisco@provincia.teramo.it</p> <p>MARLISCO Project Manager: Angelo Santonocito a.santonocito@provincia.teramo.it</p> <p>http://www.marlisco.eu/</p>	<p>to increase the awareness of the consequences of societal behaviour in relation to waste production and management on marine socio-ecological systems, to promote co-responsibility among the different actors, to define a more sustainable collective vision, and to facilitate grounds for concerted actions through the successful implementation of the MMLAP. The main focus is to provide and evaluate mechanisms to enable society to perceive the impact of litter on the marine environment, to identify the land-based activities that are involved and collectively arrive at solutions to reduce that impact – in particular solutions that can be implemented locally but having a regional effect.</p>	<p>will help to identify and resolve barriers that currently retard the adoption of good practice.</p> <p>To develop a video contest in schools in 14 countries around the European Seas in which children will be encouraged to develop short videos about the issue, embodying a multi-disciplinary process of getting in touch with the problem and addressing potential solutions as they see them.</p>
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Fishing for litter- Scotland/South West	Supported by EY fisheries funds	2008 - 2015	<p>Project Coordinator - Graham Humphries</p> <p>KIMO UK c/o Aberdeenshire Council 47 Bridge Street, Ellon Aberdeenshire AB41 9AA</p> <p>Tel: +44 (0) 7789 790775 Email: scotland@fishingforlitter.org.uk</p> <p>http://www.fishingforlitter.org.uk/</p>	<p>The project was developed by KIMO (Local Authorities International Environmental Organisation), an association of coastal local authorities whose goal is to eliminate pollution from the Northern Seas. Since the project started in the South West in 2009, Fishing for Litter has facilitated and funded the recovery of more than 150 tonnes of marine litter. The volume of lightweight plastic items is much higher than initially anticipated; forming 88% of all items surveyed during the last phase of the project. The overall tonnage of marine litter recovered by fishermen in Cornwall and Devon is considerably higher, since some items with a value e.g. scrap metal are often segregated out.</p>	<p>Participating vessels are given hardwearing bags to collect marine litter that is caught in their nets during their normal fishing activities.</p> <p>Filled bags are deposited in participating harbours on the quayside where they are moved by harbour staff to a dedicated skip or bin for disposal. Operational or galley waste generated on board, and hence the responsibility of the vessel, continues to go through established harbour waste management systems.</p>
Cool Seas Investigators (CSI – Challenge), UK	promoted by the Marine Conservation Society and the Plastics	2017	<p>https://www.mcsuk.org/coolseas/coolseas_investigators.php</p>	<p>The competition will help students to reduce litter in their school, and better still, the winning school will have their campaign up-scaled and promoted by the Marine Conservation Society and the Plastics Industry, to help reduce</p>	<p>The project will begin with an in-school litter survey to be completed before the webinars. Live webinars will take place on 7th and 10th March with 10 places available per webinar. The webinars will also be recorded and can be accessed online at any time. Schools will have</p>

	Industry			<p>litter across the UK! Schools taken part have a chance to win £250 towards a “green project” at their school. Full student resources and teachers’ notes will help to run the project in the schools. This is a problem-based learning project giving students the opportunity to:</p> <ul style="list-style-type: none"> (i) Investigate the issue of litter through a hands on litter survey, (ii) Take part in webinars to learn more from a litter expert, (iii) Work together to design a litter campaign, including shareable digital content such as a video, image or animation. 	<p>until the 3rd April to develop a concept, design, run and submit their campaigns.</p>
<p>Keep It Beachy Clean (Virginia) NORTH AMERICA/UNITED STATES</p>	<p>is a program of Clean Virginia Waterways of Longwood University.</p>	2017	<p>http://www.beachycleanvb.org/</p>	<p>This unique litter prevention and marine debris prevention program, piloted by Clean Virginia Waterways, focuses on reaching Virginia Beach’s resort community (hotel guests and employees) with anti-litter messaging. Designed to influence the behaviours of visitors to beach resorts and beach communities, the Beachy Clean messages focus on specific</p>	<p>To involve Virginia Beach’s resort community, such as hotel guests and employees, with anti-litter messaging and to influence their behaviours.</p>

				<p>actions that beach visitors can take to ensure clean, safe beaches and waters. America's Plastics Makers™ joined Clean Virginia Waterways in this effort in 2017 and look forward to supporting the upcoming campaign expansion into additional coastal communities. The Keep It Beachy Clean program is supported by monetary and in-kind donations, sponsorships and grants. We'd like to thank the following organizations for their sponsorship of Keep It Beachy Clean in Virginia Beach.</p>	
Marine Litter Platform	Launched by the British Plastics Federation (BPF)	2015	<p>https://www.marinelittersolutions.com/projects/marine-litter-platform/</p>	<p>The British Plastics Federation (BPF) launched a Marine Litter Platform to foster collaboration between the government, brands, retailers, academics, NGOs, manufacturers and recyclers to deliver the best solutions to this global problem. The plastics industry and over 30 companies and organisations including Co-op, Danone Water, Marks and Spencer and Waitrose have agreed to take</p>	<p>The projects range in size, focus, and scope and involve an ever growing number of partners. All are forging cooperation and furthering progress to prevent, reduce, and improve understanding of marine litter. At the present time this list does not reflect the entire universe of commitments. They are currently working to get each project included here.</p>

				collaborative action and pledged to reduce waste and litter entering our oceans.	
Plastic Watch	H2020 (STSM)	2017	https://www.cs-eu.net/sites/default/files/media/2018/04/CA15212_STSM_Report_LuisaGalgani.pdf	The STSM PlasticWatch has been directed to individuate the best research methodologies for microplastics monitoring in freshwater systems through citizen science projects. This STSM aimed at harmonizing existing methods and protocols across different research institutes and NGOs, for a comparable, global database on microplastic pollution in world's aquatic ecosystems, achieved through citizen science. This activity highlights the opportunity of using citizen science data in an area, such as plastic pollution of inland waters and marine ecosystems, that need development for future research	The topics discussed during the STSM meant to build a successful microplastics freshwater monitoring, have been the following: (i) Impact, Monitoring and Evaluation of projects: from the starting idea to a successful continuation of citizen science initiatives; (ii) Platform implementation, data management and mapping: a new ArcGIS online map has been set up for the Italian FreshWater Watch POSEIDOMM project, to better visualize spatial data and water quality. Within this map, the next step will be including macro and microlitter; (iii) Engagement and Science: introduction from EarthWatch scientists to practices for successful engagement of volunteers while maintaining a good scientific quality, and discussion on how to

				activity.	individuate the best engagement and science activities for the microplastics initiative on freshwater habitats. (iv) Participation to the final project report from Freshwater Habitat Trust and Thames Water organized on November 29th, 2017; (v) Education and Learning: how to set up a school programme, online learning, engage and motivate teachers, families, and corporates. Individuation of actions to be implemented at various levels of engagement and in different environments (home, office, school, communities).
EMODnet - THE EUROPEAN MARINE OBSERVATION AND DATA NETWORK	European Maritime and Fisheries Fund	2009-2017	http://www.emodnet-chemistry.eu/marinelitter	Beach litter maps include temporal coverage of surveys, beach litter distribution (mean abundance per year) and beach litter composition (litter material categories in percentages). Sea floor litter maps show information about the fishing gear used, litter distribution along trawls (density as items/km ²) and litter composition (material categories in percentages). Maps illustrating the distribution of relevant litter types are available	It holds data of floating micro-litter from EMODnet partners and external research projects. Floating micro-litter data are gathered in the system using a specific version of ODV format, where relevant characteristics are codified using common vocabularies. The MLDB and floating micro-litter data are accessible via the Data Discovery and Access Service. The Service provides relevant metadata, including identifier, date and location of the survey, data originator and data holding center for all

				for both beach litter (cigarette related items, fishing related items and plastic bags) and sea floor (fishing related items and plastic bags).	datasets. The data are available for downloading in the EMODnet Chemistry formats, depending on the specific sharing policy (public, restricted, moratorium...) applied by the originator.
CLAIM	H2020	01/11/2017 - 31/10/2021	http://www.ismar.cnr.it/projects/international-projects/copy2_of_project-001/claim-project?set_language=en&cl=en	CLAIM focuses on the development of innovative cleaning technologies and approaches, targeting the prevention and in situ management of visible and invisible marine litter in the Mediterranean and Baltic Sea.	Two innovative technological methods will be developed: a photo catalytic nano coating device for cleaning microplastics in wastewater treatment plants and a small-scale thermal treatment device for energy recovery from collected litter on board ships and ports. An innovative floating boom for collecting visible litter and a method to measure microlitter on board ships (Ferry box) will be developed. The proposed cleaning technologies and approaches prevent litter from entering the sea at two main source points, i.e. wastewater treatment plants and river mouths. Effectiveness of developed devices and methods will be demonstrated under real conditions. Additionally, CLAIM will develop innovative modeling tools to assess the marine visible and invisible plastic pollution at basin and regional scales (Saronikos Gulf, Gulf of Lyon, Ligurian

					Sea and Belt Sea).
CLEANSEA	FP7	2016-2020	https://cleanseaproject.wordpress.com/	Scuba divers, fishermen, boaters, lifeguards, swimmers, children and all citizens: Clean Sea Life unites the lovers and workers of the sea in an extraordinary campaign of prevention and cleaning of coasts and seabeds. Hundreds of clubs, schools, clubs, federations, marinas, seaside operators, professional fishermen cooperatives, companies, schools, parks and protected marine areas have already joined, contributing to develop a change of habits and a more respectful mentality for the sea. 300,000 people will be involved in the project, of which at least 20,000 will sign the Manifesto committing to adopt a more respectful behavior and to contribute to the cleaning of coasts and seabeds.	The project aims to increase public attention to the quantity of waste present at sea and on the beaches, to show how we are responsible for it and to promote an active and constant commitment to the environment. In addition to awareness-raising activities, the project is compiling a map highlighting areas where the accumulation of waste carries a risk to biodiversity. It is also identifying the best practices for the prevention and management of marine waste to apply them locally and disseminate them nationally and internationally.
INDICIT & INDICIT II	funded by the European Union.	2017-2019 & 2019-2021	https://indicit-europa.eu/description/	INDICIT focuses on the Descriptor 10 of the MSFD (“Marine Litter”), which aims to maintain or achieve the Good Environmental Status (GES) of the marine environment	Monitoring marine litter impacts on sea turtles. Protocol for the collection of data on ingestion and entanglement in the loggerhead turtle (<i>Caretta caretta</i> Linnaeus, 1758). The protocol is

				<p>by 2020 with respect to marine litter. The overarching aim is to develop a set of standardized tools for monitoring the impacts of litter on marine fauna as bio-indicators: Indicator 1 “macro-litter ingested by sea turtle (debris items >5 mm)”, Indicator 2 “Marine wildlife entanglement in debris (all taxa)” and Indicator 3 “micro-litter ingested by fish/ sea turtle (debris items <1mm)”. A particular focus will be devoted on Indicator 1.</p>	<p>intended to respond to the MSFD requirements for the indicator 10.2.1 “Trends in the amount and composition of litter ingested by marine animals”. The INDICIT program proposed marine turtles as an indicator species to study marine litter ingestion on biota through the development and the implementation of one major indicator “Litter ingested by sea turtles”. Standardized methodologies for extracting litter ingested from dead and live individuals. Some modifications have been conducted from the original methodology drafted and tested in Italy since 2012, following the first applications (Camedda et al., 2014; Matiddi et al., 2017) and within the European Project INDICIT (GA n°11.0661/2016/748064/SUB/ENV.C2) as well as thanks to the feedbacks of rescue centres and stranding networks.</p>
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DEFISHGEAR	LIFE+	2007-2013	http://www.defishgear.net/	<p>The IPA-Adriatic DeFishGear project aims to facilitate efforts for integrated planning to reduce the environmental impacts of litter-generating activities and ensure the sustainable management of the marine and coastal environment of the Adriatic and Ionian Seas. DeFishGear is part of an active community of science and society reporting on research achievements, macro- and micro-litter status assessments, training, new methods, clean up missions, fishing for litter schemes, strange litter on the sea bed and seashore, recycling for litter and fishing nets, targeted awareness raising events and sharing articles and photos on www.facebook.com/defishgear and www.defishgear.net</p>	<p>Developing a harmonized methodology for monitoring and assessment of microplastics.</p> <p>Carrying out research activities to improve the understanding of the quantities, types and sources of microplastics in the Adriatic Sea, as well as their presence in marine biota.</p> <p>Undertaking studies to enhance knowledge on persistent organic pollutants adsorbed on microplastics.</p>
BONUS MICROPOLL	FP7	2011-2017	https://www.bonusprojects.org/bonus-projects/the_projects/blue_baltic_projects/micropoll	<p>BONUS MICROPOLL studies the multilevel impacts of microplastics (MP) themselves, of associated pollutants and of attached biofilms on the ecosystem of Baltic Sea. The hazard potential and impacts of these substances will be</p>	<p>Building capacities to monitor marine litter in a harmonized way through reinforced exchange of experiences, techniques and know-how.</p> <p>Defining a joint monitoring and assessment approach for marine litter (monitoring protocols), through a</p>

				<p>determined by i) detecting the recent status regarding MP in the Baltic Sea (abundance, composition, sources, sinks), ii) exploring the vector function of MP for associated pollutants and biofilms, and iii) <i>in situ</i> and laboratory experiments, exposing marine organisms from different trophic levels to defined levels and size classes of MP and POPs.</p>	<p>participatory process. Creating a GIS-based Baltic Marine (Micro) Litter Atlas with broad range of spatial MP data, expandable with other litter fractions. Making available a spatio-temporal model to better understand MP cycling and mitigation in the Baltic Sea.</p>
PLASTIC BUSTER	MED Interreg	2013	http://plasticbusters.unisi.it/	<p>Over a 4-year period, the Plastic Busters project will enable to assess the amount, sources, pathways, distribution convergence areas and effects of marine litter on biota as well as mitigate and reduce the impact of marine litter in the Mediterranean Sea. The nature and effects of plastic litter on the marine food chain, fisheries and fishing activities, as well as human health are still largely unknown and are important issues to be investigated within this project.</p>	<p>Identifying hotspots of marine litter and pave the way for a regional integrated monitoring program and use findings and information to raise awareness. From diagnosis to solution: (i) model-based prediction to design sampling activities; (ii) monitoring with bioindicators (GIS mapping hotspot); (iii) detecting the effect on fishing resources; (iv) investigating effects on human health.</p>

SPICE	co-financed by the EU	2017	http://www.helcom.fi/helcom-at-work/projects/completed-projects/spice	The project will assess the overall environmental status of the Baltic Sea and its pressures, and evaluate progress in relation to the goals of the Baltic Sea Action Plan (BSAP). It will be developed so that it can also be used by Contracting Parties also being EU Member States in the reporting under the EU Marine Strategy Framework Directive (MSFD).	Developing marine litter indicators towards operationalization and preparing a proposal for the assessment of marine litter in the 2nd holistic assessment will produce an assessment of beach litter, seafloor litter and microlitter in the Baltic Sea, Definition of baselines if possible, depending on available data. The theme 2 will also propose a regional litter database. To propose a method for the regional business as usual scenario for the Baltic Sea as well as recommendations on how to use the existing integrated assessment tools to support an integrated environmental and socio-economic analysis of the marine environment.
NANOPLAST A computational study of the interaction between nanoplastic and model	FP7	2013-2016	https://cordis.europa.eu/project/id/618560	The Nanoplast project proposes a computational study of the interaction between polymers of everyday use and model lipid membranes. The main goal is to identify possible physical mechanisms of damage to the cell membrane induced by the interaction with plastic nanofragments.	The project will study the polymers most commonly found in the marine environment (polypropylene, polyethylene, polyethylene terephthalate, polystyrene...) and model membranes of various compositions. It will model both the polymers and the membranes at a coarse-grained level, relying on the support of detailed all-atom models whenever necessary.

biological membranes					
<p>Sea Litter Critters</p> <p>A compact, unmanned, renewables-powered and self-sufficient vessel able to pick up marine litter and to treat it on board for volume reduction and energy recovery</p>	H2020	2016	<p>https://cordis.europa.eu/article/id/203875-cleaning-up-with-the-sea-litter-critter/it</p>	<p>The project intends to explore the feasibility of introducing to the market Sea Litter Critters, a compact, unmanned, renewables-powered and self-sufficient marine litter collection and treatment vessel based on a patent pending device treating waste thermally with plasma technology and no harmful emissions. This device is designed to operate near the shores especially nearer tourist facilities substituting the mechanical collection of litter currently adopted.</p>	<p>By picking up litter (plastic debris mostly) near the point of entry, Sea Litter Critters contribute to minimising the pollution risks linked to plastic in the sea, where plastic items become brittle and break down into small particles, but basically never dissolve. Such particles can be eaten by zooplankton and thus enter the foodchain. Therefore, picking up plastic debris while still intact and as soon as possible after their disposal supports and complement in the short term all the high level policy actions for litter prevention (minimisation of waste, use of biodegradable plastic, awareness raising, beach clean-up days, etc.). This study aims to check the attractiveness of the innovation to the market involving potential customers (coast towns, associations of tourist and fishing ports and marinas, representatives from the cruise and hotels industry, marine natural reserves authorities). The first markets identified are in the Mediterranean Sea, which is at the center of a very highly populated area of</p>

					the world with many countries relying mostly on tourism.
Upcycling the Oceans	Supported by its own Foundation as well as from the HAP Foundation	2015	https://ecoalf.com/en/p/upcycling-the-oceans-15?gclid=EAIaIQobChMIjdD2qafQ4QIVAoXVCh1_qQaKEAAYASAAEgIZRvD_BwE	The main objective of the UPCYCLING THE OCEANS project is to produce and sell fabrics and clothes made from marine plastic litter, by recycling and industrial methods to convert these plastics into high properties textiles.	A proposal to implement a collaborative scheme with fishermen's organisations (agreements already signed) to collect plastic from seas; to implement an industrial process that includes waste management, pellets production and addition, spinning and fabrics, and clothes manufacturing; and to distributions and marketing the new products in Europe.
BIOCLEAN	H2020	2012-2015	http://www.biocleanh2020.eu/index.php/project	In BIOCLEAN project, novel and robust microorganisms (aerobic and anaerobic bacteria, and fungi) able to extensively degrade polyethylene (PE), polypropylene (PP), polystyrol (PS) and polyvinyl chloride (PVC) polymers and plastics will be isolated from actual-site aged plastic wastes obtained from several European marine and terrestrial sites, composting facilities and landfills, and obtained via tailored screenings from existing European collections of microbes. Robust enzymes able to fragment the	The most promising microbial cultures and enzymes will be exploited in the development of pilot scale, slurry or solid-phase bioprocesses for the bioremediation and controlled depolymerization, respectively, of target pretreated plastics and in the setup of tailored bioaugmentation protocols for enhancing plastic waste biodegradation in marine water systems, composting and anaerobic digester facilities. The processes developed will be assessed for their economical and environmental sustainability.

				target plastics with the production of valuable chemicals and building blocks will be obtained from the selected microbes and enzyme collections.	
RIMMEL	JRC Exploratory Research Project	2015	https://mcc.jrc.ec.europa.eu/main/default/view.py?N=simple&O=380&titre_page=RIMMEL	The JRC exploratory project RIMMEL provides information about litter, mainly plastic waste, entering the European Seas through river systems. RIMMEL has collected data on riverine floating macro litter inputs to the sea. Data acquisition was based on the Riverine Litter Observation Network (RiLON) activities, which collected data from rivers in the European marine basins over a period of one year (September 2016 – September 2017). Data was collected by visual observations and documented with the JRC Floating Litter Monitoring Application for mobile devices, allowing a harmonized reporting, compatible with the MSFD Master List of Categories for Litter Items. Results provide the list of most frequent floating macro litter items	RIMMEL aims to quantify floating macro litter loads through rivers to marine waters, by collecting existing data and developing a European observation network for acquisition of new data. Eventually, results will be used to build a statistical inverse model of litter loading based on catchments characteristics (flows, population, economic factors and others) upstream the observation points. This is the first-ever European-scale attempt for quantification of loads of floating litter to the European marine basins. RIMMEL will provide users with a Tablet Computer Application to record visual observations of floating macro litter in the river/sea boundary (estuaries).

				<p>entering the European Seas through rivers. Quantitative results and analysis of riverine litter input data will provide estimates of riverine litter load at European scale.</p> <p>The RIMMEL project will quantify floating macro litter loads through rivers to marine waters, by collecting existing data, developing an European observation network, deploying a camera system and using the resulting data to build a statistical inverse model of litter loading based on the characteristics of the catchments. This is the first-ever European-scale quantification of loads of floating litter to the European seas.</p>	
BLASTIC	Interreg	2016-2018	https://www.blastic.eu/	<p>The BLASTIC project (2016-2018) aims to reducing plastic waste and, thereby, the inflow of hazardous substances into the Baltic Sea by mapping and monitoring the amounts of litter in the aquatic environment.</p>	<p>Methods will be focused on monitoring the flow of litter from different sources and pathways to the sea. Plastic macrolitter is monitored with the assistance of a consultancy in the pilot areas according to the methodology developed. The findings from the monitoring activities will be used to formulate detailed recommendations to</p>

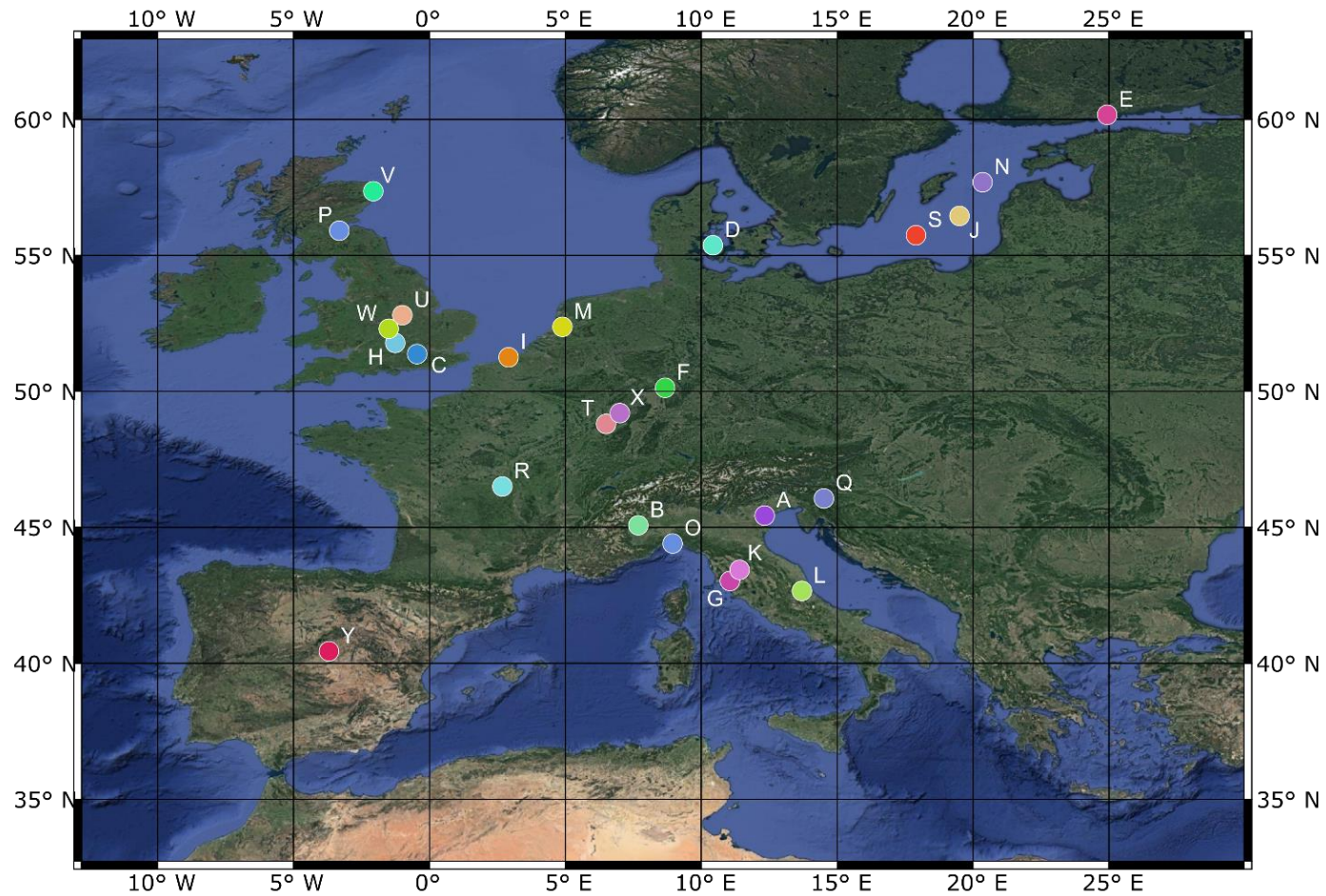
					the municipalities on what measures they can take to reduce the flow of litter to the sea. Recommendations will also be made on how the municipalities should design their own monitoring programs for marine litter.
GoJelly	H2020	2018-2021	https://gojelly.eu/	GoJelly intends to mitigate the problem of microplastic pollution using the mucus produced by jellyfish. Taking advantage of the ability of jellyfish mucus to bind microplastic, the GoJelly researchers plan to use it to develop a microplastics filter for commercial and public use. The biofilter created will be used in wastewater treatment plants and in factories where microplastic is produced. This could help to prevent much of the microplastic particles from getting into marine ecosystems.	GoJelly will develop, test and promote a gelatinous solution to microplastic pollution by developing a TRL 5-6 prototype microplastics filter made of jellyfish mucus. The researchers will therefore address two environmental issues: commercially and ecologically destructive sea and coastal pollution of both jellyfish and microplastics . The result is less plastic in the ocean and in turn more jobs for commercial fishers in off-seasons to harvest the jellyfish. An added value is the green innovation: novel, valuable resource for the food and feed industry as well as agro-biological fertilizer for organic farming.
MARMICRO TOX	FP7	2014-2016	https://cordis.europa.eu/project/rcn/189925/reporting/en	This project has contributed to an advance in the understanding of microplastic effects in aquatic organisms. The data indicates that particles are present at very low levels in wild mussels and in	To assess abundance and type of microplastics in wild mussels collected from sites on the coast of Scotland, as well as (i) to conduct laboratory studies to investigate effects of microplastics uptake in mussels in gills and digestive

				<p>mussels placed in cages deployed at various locations in Scotland. Co-contaminants (cadmium and Benzo(a)pyrene) sorbed to MPs were bioavailable to mussels via ingestion, but only at high plastic particle concentrations. Rainbow trout ingested MPs and there were no gross indications of distress in fish exposed to MPs or MPs with sorbed triclosan (a bactericide present in toiletry products). Analyses of the effects of MPs and triclosan on fish gut microbiota and immune system function are nearing completion. The data represents an important step into the assessment and analysis of MPs contamination levels and effects, leading to a better understanding of possible ecological risks.</p>	<p>gland tissue, (ii) to assess pathophysiological effects in fish and (iii) to understand whether co-contaminants sorbed to microplastics are bioavailability to mussels and fish.</p>
SULACHANG E	H2020	2018-2020	https://cordis.europa.eu/project/id/829681	<p>The aim of the SULACHANG project is to finalise a product offering to capture the full potential of a unique material and prepare for global scale market introduction. It will optimise the recipe and barrier coatings for high</p>	<p>Sulapac® is a fast biodegrading water, oil and oxygen resistant material solution. It is suitable for mass manufacturing of rigid and flexible packaging such as jars and tubes. It can also be used for light weight packaging. Sulapac is a real alternative to plastics used in high-</p>

				<p>volume cosmetic and food industries, apply for required certificates, do customer pilots and create a licensing model. As a result of the project, the company will grow to annual revenues of €90 million within a few years.</p>	<p>volume cosmetics and food industries.</p>
<p>Freshwater MPs</p>	<p>H2020</p>	<p>2015-2017</p>	<p>http://www.viron-microplastic.org/ https://cordis.europa.eu/project/id/660306</p>	<p>The goal of this project is to assess the environmental risk of MPs in freshwater habitats.</p>	<p>A detailed investigation of MP environmental persistence will be carried out. This will provide environmental fate summaries for different polymer classes and enable the modelling of their degradation processes. This will be combined with laboratory studies to assess relevant sub-lethal endpoints such as reproduction, fitness, inflammation, and oxidative stress. As MPs are known to accumulate co-occurring organic pollutants, the toxicity of virgin MPs will be compared to MPs conditioned with relevant freshwater pollutants. This work will build towards a sophisticated state-of-the-art mesocosm study that will evaluate both MP fate and impacts in model ecosystems. The establishment of a novel framework for the environmental risk assessment of MPs</p>

					will inform our ability to achieve conservation objectives taking into account MPs as emerging pollutants. The merit of this is that protection goals may be better accommodated in policy and management through the generation of so far unavailable data on MP persistence and environmental toxicity. Taken together, the project will generate so far unavailable data sets to assess for the first time the environmental impacts of freshwater MPs.
POSEIDOM M	H2020	2016-2018	http://www.poseidomm.eu/	A trans-disciplinary approach combining innovative spectroscopic and biological analyses to study the SML in controlled microcosms and in-situ mesocosm studies. Through a close cooperation with leading European partners, POSEIDOMM will close major gaps in our understanding of the interaction of micropollutants with marine biological processes and atmospheric gas exchange.	POSEIDOMM will investigate the influence of microplastics on the photochemical and biological processes in the SML Sea-surface microlayer. It will verify the effect of microplastic pollutants on the formation of a surface-active biofilm, the implications for microbial cycles and for the photochemical generation of reactive chemical species and labile organic compounds. The goals of POSEIDOMM are to provide a chemical and biological characterization of the microplastic-biofilm aggregates in the SML, to quantify the photochemical cycling of

					such aggregates and to identify the implications of this cycling on gas exchange and on the microbial carbon cycle.
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ID	Project name/acronym	City/Country/Region	Funded/Supported by	Period	Link
A	CLAIM	Venezia (IT)	H2020	2017-2021	http://www.ismar.cnr.it/projects/international-projects/copy2_of_project-001/claim-project?set_language=en&c=en
B	Sea Litter Critters	Torino (Italy)	H2020	2016	https://cordis.europa.eu/article/id/203875-cleaning-up-with-the-sea-litter-critter/it
C	BIOCLEAN	Weybridge (UK)	H2020	2012-2015	http://www.biocleanh2020.eu/index.php/project
D	GoJelly	Denmark	H2020	2018-2021	https://gojelly.eu/
E	SULACHANGE	Finland	H2020	2018-2020	https://cordis.europa.eu/project/id/829681
F	FreshwaterMPs	Germany	H2020	2015-2017	https://cordis.europa.eu/project/id/660306
G	POSEIDOMM	Siena (Italy)	H2020	2016-2018	http://www.poseidomm.eu/
H	PlasticWatch	IT and UK	H2020 (STSM)	2017	https://www.cs-eu.net/sites/default/files/media/2018/04/CA15212_STSM_Report_LuisaGalvani.pdf
I	MICRO	Oostende (Belgium)	Interreg	2012-2014	https://www.ilvo.vlaanderen.be/micro
J	BLASTIC	Baltic Sea	Interreg	2016-2018	https://www.blastic.eu/
K	PLASTIC BUSTER	Siena (IT)	MED Interreg	2013	http://plasticbusters.unisi.it/
L	MARLISCO	Terano (Italy)	FP7	2012-2015	http://www.marlisco.eu/
M	CLEANSEA	Amsterdam (NL)	FP7	2016-2020	https://cleanseaproject.wordpress.com/
N	BONUS MICROPOLL	Baltic Sea	FP7	2011-2017	https://www.bonusprojects.org/bonusprojects/the_projects/blue_baltic_projects/micropoll
O	NANOPLAST	Genova (Italy)	FP7	2013-2016	https://cordis.europa.eu/project/id/618560
P	MARMICROTOX	Scotland (UK)	FP7	2014-2016	https://cordis.europa.eu/project/rcn/189925/reporting/en
Q	DEFISHGEAR	Ljubljana (Slovenia)	LIFE+	2007-2013	http://www.defishgear.net/
R	INDICIT and INDICIT II	France, Greece, Italy, Portugal, Spain, Tunisia, Turkey and the United Kingdom	funded by the European Union	2017-2019 and 2019-2021	https://indicit-europa.eu/
S	SPICE	Baltic Sea	co-financed by the EU	2017	http://www.helcom.fi/helcom-at-work/projects/completed-projects/spice
T	RIMMEL	EU	JRC Exploratory Research Project	2015	https://mcc.jrc.ec.europa.eu/main/dev.py?N=simple&O=380&titre_page=RIMMEL
U	Cool Seas Investigators (CSI – Challenge)	United Kingdom	promoted by the Marine Conservation Society and the Plastics Industry	2017	https://www.mcsuk.org/coolseas/coolseas_investigators.php
V	Fishing for litter	Ellon (Scotland, UK)	Supported by EY fisheries funds	2008-2015	http://www.fishingforlitter.org.uk/
W	Marine Litter Platform	UK	Launched by the British Plastics Federation (BPF)	2015	https://www.marinelittersolutions.com/projects/marine-litter-platform/
X	EMODnet	EU	European Maritime and Fisheries Fund	2009-2017	http://www.emodnet-chemistry.eu/marinelitter
Y	Upcycling the Oceans	Spain	Supported by its own Foundation as well as from the HAP Foundation	2015	https://ecolif.com/en/p/upcycling-the-oceans-15?gclid=EAIaIQobChMjdD2qaQ4QIVa0XVCh1_qQAEAAAYASAAEgI2RvD_BwE