

CleanAtlantic

Tackling Marine Litter in the Atlantic Area

DELIVERABLE - Booklet on “WASTE PREVENTION AND
MANAGEMENT FROM FISHING, AQUACULTURE AND
PORTS”: A selection of resources based on the CleanAtlantic
Knowledge Tool

WP 7: Tackling Marine Litter



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INTRODUCTION

Marine litter is a severe pollution threat with environmental, human health, safety and socioeconomic impacts and demanding regional collaboration. CleanAtlantic addresses this challenge and aims to protect biodiversity and ecosystem services by improving the regional cooperation and by reinforcing capabilities to prevent, monitor and remove marine litter in the Atlantic Area. Eventually, the project will contribute to raise awareness and change attitudes among stakeholders and to improve marine litter managing systems. Project outputs will be transferred to competent authorities and key stakeholders to improve management and facilitate MSFD and OSPAR Marine Litter Regional Action Plan implementation.

Aligned with these objectives, CleanAtlantic identified and compiled existing knowledge on marine litter generated by EU and national funded public research, as well as by national and European organisations dealing with this topic, and made them easily available through a user friendly publicly available database: the CleanAtlantic knowledge tool. This online database allows users to search for resources by marine litter themes, type of resources, organisation or project generating resource, and funding source.

Through a combination of simple and advanced queries, users can have direct access to resources or when appropriate, to the author's website. It currently stores information on 175 research projects and 115 organisations and contains 888 resources with relevance for marine litter such as Fishing for litter, Modelling, Monitoring, Policy, Governance and Management, Socioeconomic Analysis and Impact, Training and Education, Awareness, Circular Economy and Microplastics, among other. The compiled resources include thematic reports, databases, scientific publications, best practices, case studies, policy briefs, equipment/technologies, software and modelling tools, books, protocols and guidelines, databases, services and tools, dissemination materials, multimedia and training activities and materials.

With the help of the CleanAtlantic Knowledge Tool, and based on a criterion guided selection of marine litter resources, this booklet provides an example on how the knowledge generated by expert organisations and research projects have addressed marine litter related issues relevant for "Waste Prevention and management from Fishing, Aquaculture and Ports".

This category includes resources dealing with reducing ship-generated marine litter, sustainable fishing, preventing and managing litter from aquaculture, handling and managing litter discharged at port, management of end-of-life fishing gear, measures for improving the efficiency of waste management systems at port and for the correct disposal of recovered/disused nets, and to promote their recycling.

Being aware that the topic on waste prevention and management incorporates a wide range of components (protocols, guides, information, tools, etc.), for the purpose of this booklet we selected those that address these topics under a wide perspective, mainly manuals, guides and tools and that can help managers and fishermen in getting an overview of the issues that need to be considered.

Resources dealing with "Fishing for Litter" and "ALDFG" are also key elements to be considered when talking about waste management activities but they have been included in separate booklets to facilitate the usability and consultation.

A total of 93 resources have been selected keeping in mind the considerations mentioned above and the following criteria:

- Free online availability
- No confidentiality restrictions
- Prioritisation of targeted resources

- Prioritisation of operational materials vs. scientific publications
- Available in English

To facilitate the reading of this booklet, resources have been grouped into 10 different categories according to resource types: reports, protocols/guidelines, best practices, policy briefs, databases, services/tools/models, books/reviews, scientific publications, multimedia and dissemination materials. For each resource, a basic description (title, description, source, year of publication, and link to resource) is provided.

These booklets are intended to demonstrate how knowledge can be compiled and clustered to facilitate its uptake. Nevertheless, to get a comprehensive overview of all the resources potentially relevant for the different thematic areas, readers are kindly invited to explore the full content and search functionalities of the CleanAtlantic knowledge tool.

Taking into account that the universe of R&D projects and organisations that are tackling marine litter issues, and particularly dealing with waste management issues, is extremely broad, this booklet aims at showing a significant, but not fully comprehensive picture of the knowledge produced at European and national level in the CleanAtlantic partner countries, and facilitates its further exploration to users.



PROTOCOLS / GUIDELINES

2018



BLASTIC LMLAP Guidelines Document for municipalities working with mapping and prioritisation tool

Description: In this document the authors propose a selection of marine litter reduction measures that are most relevant for municipalities, and urban areas in particular. The selection list consists of 38 creative ideas and practices, and some of them are already introduced in European cities and beyond. All measures are structured according to the topical areas based on the sources most relevant for different activities within the municipality's responsibility area (e.g. waste management, street cleaning, waste water treatment) or economic activities (tourism and recreation, industrial and commercial activities, agriculture) where litter is generated. Each measure has a short description, including its relation to the European waste hierarchy principle.

Publication year: 2018

Authors: Foundation for Environmental Education, Latvia

Project: BLASTIC

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources



Action Plan to address marine plastic litter from ships

Description: IMO's Marine Environment Protection Committee (MEPC) in 2018 adopted the IMO Action Plan to address marine plastic litter from ships, which aims to enhance existing regulations and introduce new supporting measures to reduce marine plastic litter from ships.

Publication year: 2018

Authors / Organisations: IMO

Language: English

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports

2017



Guidelines for the implementation of MARPOL ANNEX V

Description: Guidelines adopted by IMO recommend that "all ship-owners and operators should minimize taking on board material that could become garbage". Specifically, the guidelines recommend that ship-owners and operators, where possible with the ships suppliers, should consider the products being procured

in terms of the garbage they will generate.

Publication year: 2017

Authors / Organisations: IMO

Language: English

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports

2016



Hands-on Manual to prevent and reduce abandoned fishing gear at sea

Description: This manual is an operational guide targeting institutions, public and private bodies, sector operators and environmental associations, all contributing in various ways to marine ecosystem protection particularly through the adoption of appropriate measures for the management of fishing gear and aquaculture equipment abandoned at sea. Protocols and guidelines drawn up within the scope of the LIFE-GHOST project are the main contents of this manual. They have been designed in the conviction that their replicability will positively contribute to extending locally obtained benefits to other similar environmental contexts. Significantly, suggested methods are particularly suitable for use in shallow coastal areas of particular biological importance, owing to the (occasional) presence of seabeds characterised by rocky formations and high biodiversity. The abandoned fishing gear considered in this manual is mostly of small size, as fishing activities in these areas are mostly classified as small-scale coastal fishing.

Publication year: 2016

Authors: Da Ros L., Delaney E., *et al.*

Project: GHOST

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Impacts, reduction & retrieval of ALDFG

2015



Regional Action Plan for Marine Litter (RAP ML)

Description: This Regional Action Plan (RAP) for Marine litter was developed by OSPAR in 2014 describing the various types of actions that OSPAR will work on over the coming years to achieve its objective to significantly reduce amounts of marine litter. It also provides a timetable to guide the achievement of these actions. The RAP focuses on both sea-based and land-based sources of litter, as well as considering removal actions and education and outreach. It will be implemented over the period 2014-2021.

Publication year: 2015

Authors / Organisations: OSPAR

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Toxicity and impact of meso and macro marine litter; Bioplastics; Circular economy & recycling; Cleaning the marine environment; Fishing for litter; Impacts, reduction & retrieval of ALDFG; Mapping of marine litter; Microplastics

2014



The MARLISCO Guide for Reducing Marine Litter: Get Inspired and Become Innovative Through Best Practices

Description: This guide was based on a collection of best practices for the reduction of marine litter recorded from across Europe within the project MARLISCO. An analysis of over 70 practices showed that they could be clustered in 14 categories, each representing initiatives with specific, and often innovative, characteristics. Initiatives focus on seabed litter and 'Other' types of practices included information on nets retrieval, separation and recycling.

Publication year: 2014

Authors: Orthodoxou L. Demetra, Loizidou Xenia and Loizides I. Michael

Project: MARLISCO

Language: English; German; Greek; Italian; Portuguese; Turkish; Arabic

Areas of knowledge: Impacts, reduction & retrieval of ALDFG; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Training and education; Awareness; Cleaning the marine environment; Fishing for litter; Microplastics

2011



The Honolulu Strategy - a global framework for prevention and management of marine debris

Description: The Honolulu Strategy is a framework for a comprehensive and global effort to reduce the ecological, human health, and economic impacts of marine debris globally. It consists of three goals and associated strategies: 1) Reduced amount and impact of land-based sources of marine debris introduced into the sea, 2) Reduced amount and impact of sea-based sources of marine debris, including solid waste; lost cargo; abandoned, lost, or otherwise discarded fishing gear (ALDFG); and abandoned vessels, introduced into the sea, and 3) Reduced amount and impact of accumulated marine debris on shorelines, in benthic habitats, and in pelagic waters.

Publication year: 2011

Authors / Organisations: NOAA Marine Debris Program; UNEP GPML

Language: English

Areas of knowledge: Cleaning the marine environment; Impacts, reduction & retrieval of ALDFG; Waste

prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources



Code of Conduct for Responsible Fisheries

Description: This code sets out principles and international standards of behaviour for responsible fisheries practices with a view to ensuring the effective conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity. States should take appropriate measures to minimize waste produced by fishing activities, and the development and use of selective, environmentally safe and cost effective gear. Waste disposal systems should be introduced, including for the disposal of oil, oily water and fishing gear in port areas.

Publication year: 1995

Authors / Organisations: FAO

Language: Albanian; Arabic; Catalan; Chinese; Croatian; English; Estonian; French; German; Icelandic; Indonesian; Italian; Japanese; Korean; Latvian; Maltese; Polish; Russian; Slovenian; Spanish; Vietnamese;

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports;



BEST PRACTICES

2020



OSPAR scoping study on best practices for the design and recycling of fishing gear as a means to reduce quantities of fishing gear found as marine litter in the North-East Atlantic

Description: This scoping document sets out current understanding of the provisions, challenges, barriers, solutions and best practice examples for design and recycling of fishing gear, while also providing suggestions for next steps. The information collated in this document may aid Contracting Parties in implementing Extended Producer Responsibility schemes for fishing gear containing plastics, as foreseen under the EU Directive (EU) 2019/904.

Publication year: 2020

Authors: Task leads for Action 36 of the OSPAR ML RAP (The Netherlands and The United Kingdom)

Organisations: OSPAR

Language: English

Areas of knowledge: Circular economy & recycling; Impacts, reduction & retrieval of ALDFG; Waste prevention & management from fishing, aquaculture and ports



Net cuttings waste from fishing in the North-East Atlantic: best practices for mitigation

Description: On behalf of the Swedish Agency for Marine and Water Management, KIMO International conducted a survey of harbour authorities and fishers from four countries in the North Sea region in order to explore challenges and solutions to reducing the volume of waste net cuttings from the fishing industry that end up in the sea. This report presents an analysis of background research and of the results from the survey, including feedback gained through face to face interviews. Information was gathered about the sources of net cuttings and practices that mitigate inputs to the marine environment. Fishers and harbour authorities contributed valuable information about current work practices, attitudes towards disposal of cuttings, and evaluation of remedial measures. Recommendations for next steps for national governments, ports and fishers are also provided in the report. The surveys, a best practices guide and a set of awareness-raising materials have been developed to accompany this report.

Publication year: 2020

Authors: Ryan Metcalfe and Arabelle Bentley, KIMO International

Organisations: KIMO

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



Best Practices to reduce marine litter from net cuttings waste

Description: These best practice recommendations and examples have been compiled primarily from the results of the survey undertaken by KIMO of harbours in four European countries and feedback from face to face dialogue with harbour staff and fishers. They demonstrate some of the most simple, practical and inexpensive ways in which fishers and harbour authorities can reduce the number of net cuttings ending up in the sea and consequently reduce the negative impacts caused by this waste to our marine environment and economy.

Publication year: 2020

Authors: Ryan Metcalfe and Arabelle Bentley, KIMO

Organisations: KIMO

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



Portfolio of best practice factsheets

Description: The purpose of this paper is to assist the offshore aquaculture by providing an inventory (non-exhaustive) of good practice as a means to prevent, reduce, monitor, quantify, remove and recycle marine litter in the Baltic, the Mediterranean and the North Sea basins. It builds on the assumption that adapting and replicating good practice in the management and recovery of aquaculture gear and other equipment, will have a direct impact on the amount of litter that ends up lost or discarded at sea.

Publication year: 2020

Authors: Iwona Gin., Guillaume Lheureux, *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports



Best practice factsheets

Description: The following best practices are a selection of many best practices collected from the collaboration with the aquaculture sector the Baltic, the Mediterranean and the North Sea basins, as means to prevent, reduce, monitor, quantify, remove and recycle marine litter. For reading the full report please visit <https://aqua-lit.eu/resources/deliverables/>

Publication year: 2020

Authors: Iwona Gin., Guillaume Lheureux, *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports

2018



List of showcases of Marine Litter measures in Marine Protected Areas

Description: This document includes a list of comprehensive list of showcases of applied marine litter measures. Special emphasis was placed to measures that can be implemented by managers in Mediterranean Protected Areas, which are at the forefront of the effects of marine litter. ACT4LITTER reviewed and selected more than 100 promising measures to effectively tackle the issue of marine litter including the port reception facilities and on-board waste management improvement.

Publication year: 2018

Authors / Project: ACT4LITTER

Language: English

Areas of knowledge: Cleaning the marine environment; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources

2015



Best practices for marine litter reduction in the EU

Description: This Best Practices catalogue evaluates the potential of voluntary institutional arrangements to reduce marine litter in the four European regional seas. Good practices were defined in this study as those arrangements that have proven to be effective in delivering a contribution to marine litter reduction. Best

practices were defined in this study as those good practices that demonstrate social, technological and/or institutional innovation in a specific category of the waste hierarchy. Understanding good and best practices and their conditions for success can help Europeans achieve litter-free seas.

Publication year: 2015

Authors / Project: CleanSea

Language: English

Areas of knowledge: Cleaning the marine environment; Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources

2013



Description of the MARLISCO Web database of brief and detailed Best practices

Description: This report describes the process of collecting best practice examples for marine litter from across the four European Seas and the technical aspects of presenting them on the MARLISCO website (www.marlisco.eu) to create a web-database. The MARLISCO consortium collected and recorded a total of 72 best practices, 61 brief ones and 11 detailed ones, from across the European Seas, which address the marine litter issue throughout its lifecycle. All the best practices are displayed on the MARLISCO website (www.marlisco.eu) where an interactive map gives an overview of the spatial distribution of the best practices within Europe.

Publication year: 2013

Authors: Demetra L. Orthodoxou, Matthias Mossbauer and Xenia I. Loizidou

Project: MARLISCO

Language: English

Areas of knowledge: Waste prevention & management from land-based sources; Waste prevention & management from fishing, aquaculture and ports; Awareness; Cleaning the marine environment; Fishing for litter; Impacts, reduction & retrieval of ALDFG; Monitoring of marine litter; Training and education



POLICY BRIEFS

2015



Policy brief: Best practice examples of existing economic policy instruments and potential new economic policy instruments to reduce marine litter and eliminate barriers to GES

Description: The main objective of this policy brief is to provide a critical review and assessment of potential measures to reduce marine litter. It focuses on existing economic instruments implemented in

Europe. It points critical factors which influence the appropriateness and effectiveness of economic instruments. It also shows where the scope of current economic instruments could be expanded to explore their capacity to reduce marine litter. Such an evaluation of existing economic instruments to reduce marine litter is essential to furthering the necessary steps to achieve Good Environmental Status (GES) and sustainable marine ecosystem management.

Publication year: 2015

Authors: Benjamin Boteler, Katrina Abhold, *et al.*

Project: CleanSea

Language: English

Areas of knowledge: Policy, governance and management; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources



Policy options for litter-free seas

Description: This brochure aims to provide policy makers, regional and local authorities, and other interest groups with practical policy options and co-management measures to support progress towards marine litter reduction. A set of practical and effective regulatory and economic instruments, co-management initiatives to address marine litter are presented in this document, organised in terms of targeting specific items that often end up in the sea as marine litter as well as in terms of specific sectors which can play key roles in mitigating marine litter. The options in both categories are organized across the stages of the product-to-waste chain.

Publication year: 2015

Authors / Project: CleanSea

Language: English

Areas of knowledge: Circular economy & recycling; Cleaning the marine environment; Policy, governance and management; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources

2013



How to improve EU legislation to tackle marine litter

Description: This study, conducted by the Institute for European Environmental Policy (IEEP), analyses many different pieces of EU legislation to determine their relevance to marine litter, examines their deficiencies and gaps, and proposes options for improvement. The policies examined include the Marine Strategy Framework Directive, the Waste Framework and Packaging Waste Directives, the Water Framework Directive, the Urban Waste Water Treatment Directive, the Cosmetics Regulation, the Common Fisheries Policy, and many more. Generally the gaps consist of the need for better implementation and enforcement, and increased ambition of current requirements.

Publication year: 2013

Authors: Stephanie Newman, Emma Watkins and Andrew Farmer

Organisations: IEEP

Language: English

Areas of knowledge: Circular economy & recycling; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources

REPORTS

2020



Study on circular design of the fishing gear for reduction of environmental impacts

Description: The objective of this work is to provide the background and information necessary in supporting the European Commission in requesting the European standardisation organisations to develop a harmonised standard and guidance relating to the circular design of fishing gear to encourage preparation for reuse and facilitate recyclability at End-Of-Life.

Publication year: 2020

Authors: AZTI TECNALIA, CEFAS, DTU, Executive Agency for Small and Medium-sized Enterprises (European Commission), IPMA, Marine Institute, MRAG, Thünen Institute, Wageningen University & Research

Organisations: EASME

Language: English

Areas of knowledge: Circular economy & recycling; Waste prevention & management from fishing, aquaculture and ports



Sea-based sources of marine litter-A review of current knowledge and assessment of data gaps. Second Interim Report of GESAMP Working Group 43

Description: This second interim report builds on content initially presented in a first interim report on progress made by WG 43 from June – December 2019. Herein, WG43 fully addresses Term of Reference (ToR) 1 of the WG43: Identify sources of marine litter from sea-based sources, including but not limited to fishing operations, aquaculture, shipping, dumping of waste and other matter at sea and other sea-based sources (e.g. recreation). This second interim report also presents new and further work on WG43 ToR 2: Estimate the relative contribution and impacts of different sea-based sources of marine litter; ToR 4: Assess data gaps as identified under ToRs 1 to 3 and prioritize for further work; and ToR 6: Quantify the environmental, social and economic impacts of ALDFG.

Publication year: 2020

Authors: Kirsten V.K. Gilardi (WG 43 Chair), Kyle Antonelis, *et al.*

Organisations: FAO; GESAMP

Language: English

Areas of knowledge: Impacts, reduction & retrieval of ALDFG; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports

[Links to resource](#)



Marine Debris Program Accomplishments Report 2020

Description: Review of the progress of the Marine Debris Program during 2020. The Program's vision is a global ocean and its coasts free from the impacts of marine debris through prevention, removal, research, emergency response, and regional coordination. Despite the unique challenges of 2020, the program remained committed to our mission through close coordination and flexibility, to continue addressing and raising awareness about the global debris issue. A snapshot of some of NOAA accomplishments across the country include removing thousands of derelict crab traps from Lake Pontchartrain Basin in Louisiana, and working with partners to engage with students in an underserved San Diego, California community to provide experiential learning opportunities, and exploring if freshwater mussels in a Wisconsin estuary could be used as a potential monitoring tool for microplastics in the Great Lakes.

Publication year: 2020

Authors / Organisations: NOAA Marine Debris Program

Language: English

Areas of knowledge: Cleaning the marine environment; Fishing for litter; Impacts, reduction & retrieval of ALDFG; Microplastics; Monitoring of marine litter; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Awareness



Policy Recommendations to tackle Aquaculture Debris

Description: The 'AQUA-LIT Policy Recommendations' report examines how to avert the discarding of litter in the marine environment related to the aquaculture industry. This document provides a set of recommendations to improve decision-making and to overcome the existing gaps, being its main objective to provide information to support policy-making of the marine litter problem in the aquaculture sector. This deliverable was elaborated having in consideration the main key findings and results of each of the three sea basins AQUA-LIT focuses on (the Mediterranean Sea, the Baltic Sea and the North Sea), as well as the project's products and deliverables produced along the project.

Publication year: 2020

Authors: Hipólito, C., Vale, M., *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports



Potential Future Impacts

Description: The Potential Future Impacts report, developed under the AQUA-LIT project, is a preliminary

approach for the evaluation of the potential impacts that the aquaculture sector might face by 2025 regarding the non-organic marine litter. The main objective of this report, is foreseeing the potential increase and decrease of nonorganic marine litter derived from the aquaculture activities in a short term future. This report is based on literature research and on the information that was gathered from the more than 120 aquaculture stakeholders during the four AQUA-LIT Learning Labs and interviews that were carried out in the Mediterranean Sea, North Sea and Baltic Sea regions.

Publication year: 2020

Authors: Vidal M., Alomar C., *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Toxicity and impact of meso and macro marine litter



Learning Lab Report North Sea

Description: The AQUA-LIT project has conducted three regional and one virtual Learning Labs to engage with stakeholders and to identify the existing knowledge, expertise, tools, and best practices to help the aquaculture sector tackle the problem of marine littering. The aim of this report is to provide an overview of the stakeholders' needs in the North Sea region in preventing, reducing, monitoring, quantifying, removing and recycling aquaculture installations, gear or equipment that are lost or carried away by the sea. This report combines the outcome of two types of stakeholder engagement: an interactive workshop held on November 26th, 2019 in Ostend, Belgium, and 15 targeted stakeholder interviews from five different countries in the North Sea region

Publication year: 2020

Authors: De Raedemaeker F., Sandra M., *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports



Baltic Sea Learning Lab Report

Description: The AQUA-LIT project has conducted three regional and one virtual Learning Labs to engage with stakeholders and to identify the existing knowledge, expertise, tools, and best practices to help the aquaculture sector tackle the problem of marine littering. The aim of this report is to provide an overview of the stakeholders' needs in the Baltic Sea region in preventing, reducing, monitoring, quantifying, removing and recycling aquaculture installations, gear or equipment that are lost or carried away by the sea. This report combines the outcome of two types of stakeholder engagement: an interactive workshop held in October 2019 in Berlin, Germany, and 15 targeted stakeholder interviews from companies and organizations working and/or located in different countries in the Baltic Sea region (Denmark, Germany, Finland, Latvia, Sweden and Norway as non-Baltic country)

Publication year: 2020

Authors: Altvater S., De Raedemaeker F., *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: • Policy, governance and management • Waste prevention & management from fishing, aquaculture and ports



Learning Lab Report Mediterranean Sea

Description: The AQUA-LIT project has conducted three regional and one virtual Learning Labs to engage with stakeholders and to identify the existing knowledge, expertise, tools, and best practices to help the aquaculture sector tackle the problem of marine littering. The aim of this report is to provide an overview of the stakeholders' needs in the Mediterranean Sea region in preventing, reducing, monitoring, quantifying, removing and recycling aquaculture installations, gear or equipment that are lost or carried away by the sea. This report combines the outcome of two types of stakeholder engagement: an interactive workshop held on February 4th, 2020 in Valencia, Spain, and 16 targeted stakeholder interviews from companies and organizations working and/or located in different countries in the Mediterranean Sea region (Spain, Italy and Greece).

Publication year: 2020

Authors: Vidal M., Alomar C., *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports



Assessing prototypes of bio-sourced and compostable nets used in mussels' aquaculture

Description: This report explains the complexity for manufacturers to offer bio-based and compostable nets with mechanical properties close to those of conventional polymer nets. These first results obtained within the framework of the BIOFILET project as well as the final results of the project should allow manufacturers to adjust the prototypes of bio-based and compostable nets to meet the expectations of mussel farmers. Adaptations to the practices of mussel growers will probably have to be made in order to guarantee the good functionality of the net.

Publication year: 2020

Authors: Julie Maheut, SMIDAP

Project: BIOFILET

Language: French

Areas of knowledge: Bioplastics; Waste prevention & management from fishing, aquaculture and ports

2019



Scoping study to identify key waste items from the fishing industry and aquaculture - Marine Litter Regional Action Plan Action 35

Description: This scoping study identifies different options to handle and manage plastic waste items from the fishing industry and aquaculture - old fishing nets, oyster bags, cones, crates and mussels' nets – in France

and in Europe. This report aims at sharing the work in progress of the Marine Cooperation on the French national project PECHPROPRE for recycling fishing gear, initiating data collection on plastic marine litter from aquaculture and evaluating potential options to tackle the issue.

Publication year: 2019

Authors / Organisation: OSPAR Commission

Language: English

Areas of Knowledge: Waste prevention & management from fishing, aquaculture and ports



Marine Litter and Aquaculture Gear - White paper

Description: The Aquaculture Stewardship Council's (ASC) current standards set criteria for dealing with plastic with requirements for certified farms to implement policies for waste reduction and recycling; and ensuring responsible storing and disposal of waste. ASC is reviewing the need for additional criteria to address the issue of plastics and marine litter, and is in the process of creating a Technical Working Group (TWG) on Marine Litter and Ghost Gear to provide input on future revisions of its standards or guidance documents. The key objective of this White Paper is to present the ASC with an authoritative discussion on the threat posed by plastic pollution in the marine environment and the potential contribution of aquaculture-derived debris to this problem. This will then enable ASC to determine the scope and nature of amendments to the ASC Principles and Criteria to address this global issue.

Publication year: 2019

Authors: Tim Huntington, Poseidon Aquatic Resources Management Ltd.

Organisations: GGGI & ASC

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



End-Of-Life Management of Fibre Reinforced Plastic Vessels: Alternatives to At Sea Disposal

Description: The main objective of the report is to provide an overview of the current state of knowledge regarding the end-of-life management of fibre-reinforced plastic (e.g. fibreglass) vessels, and on alternatives to disposal at sea and therefore provide the LC/LP governing bodies with a better understanding of the scale of the issue, the options for disposal and recycling, and the potential impacts of fibreglass in the marine environment enabling them to determine if any further guidance needed to be developed.

Publication year: 2019

Authors / Organisations: IMO

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



Moving forward on EU measures for proper waste management of fishing gear

Description: The Commission has adopted a number of proposals for appropriate collection and treatment of fishing gear and fragments of fishing gear once it is damaged beyond repair. Based on these proposals, Council and Parliament are close to signing them into EU law.

On 26 February 2019 DG MARE organized an informal meeting with Brussels-based plastic producers to answer questions about upcoming legislation in order to understand their experience on challenges, solutions and best practices on recycling of fishing gear (including different components) and listen to their views and suggestions on the move towards circular use of end of life fishing gear. Representatives from the fishing sector – fisheries advisory councils as well as WWF representative were present

Publication year: 2019

Authors / Organisations: DG MARE

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



Knowledge wave on marine litter from aquaculture sources - report

Description: The aim of this report is to provide an overview of the available knowledge on marine litter originating from the aquaculture sector and reported in the marine environment of the North Sea region, the Mediterranean region, and the Baltic region. It presents the mapping of aquaculture facilities, and a description of all aquaculture related items that can be observed as litter in the marine and coastal regions. The litter inventory was generated by a genuine screening of the available literature and litter databases (e.g. OSPAR, HELCOM, Marine Litter Watch) and is being extended during the course of the AQUA-LIT project on the basis of discussions with stakeholders and aquaculture farmers.

Publication year: 2019

Authors: Sandra M., Devriese L., *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Mapping of marine litter



AQUA-Lit Available tools and measures

Description: The AQUALIT report 'Available Tools and Measures' gives an overview of the global, regional, European and national action plans and documents that contain measures to reduce or avoid marine litter from the aquaculture sector. The document also provides a review on needs, research gaps, actions and strategies.

Publication year: 2019

Authors: Devriese L., De Raedemaeker F., *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports



Commission Staff Working Document – Impact Assessment -Reducing Marine Litter: action on single use plastics and fishing gear

Description: This Impact Assessment supports a legal initiative aiming to reduce marine litter, as part of an integral and complementary part of a much wider, comprehensive approach, namely the Plastics Strategy, the Circular Economy Action Plan and the revised waste legislation. It directly addresses the two main sources of marine litter in Europe – i) single use plastics and ii) fishing gear. Together, these constitute 84% of plastic marine litter items, among them the most environmentally harmful items in the marine environment.

Publication year: 2018

Resource type: Reports

Authors / Organisations: DG MARE

Language: English

Areas of knowledge: Impacts, reduction & retrieval of ALDFG; Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports



Cost-effective combination of measures to reduce the loads of plastic marine litter in urban areas: Case Turku region

Description: The objective of this study is to define a cost-effective combination of marine litter reduction measures to reduce the loads of plastic marine litter in Turku area, located on the southwest coast of Finland. The data used in this report was based on beach litter surveys on the Ruissalo beach in Turku. Cost and impact data of marine litter reduction measures were studied using an optimization model to choose the set of measures that reaches the litter reduction target with the lowest costs.

Publication year: 2018

Authors: Liisa Saikkonen

Project: BLASTIC

Language: English

Areas of knowledge: Monitoring of marine litter; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources



OSPAR background document on Sustainable Fishing Education at fishing academies in OSPAR countries

Description: This background document forms the basis of an OSPAR Recommendation and sets out a clear step-wise approach to develop and implement sustainable fishing educational programmes at fishing academies in OSPAR countries. The proposal for a Recommendation includes four elements: an overarching course framework, the development and execution of a country specific course, an international network of fishing academies and an international standard for sustainable fishing training at the policy level. Sustainable fishing training covers a wide variety of subjects including marine litter.

Publication year: 2018

Authors / Organisations: OSPAR

Resource type: Reports

Language: English

Areas of knowledge: Policy, governance and management; Training and education; Waste prevention & management from fishing, aquaculture and ports



Shellfish Aquaculture Gear Management Workshop 2018

Description: This document includes information about the training workshop hosted by the Florida Department of Agriculture and Consumer Services, Division of Aquaculture (FDACS) targeting the aquaculture industry and shellfish farmers in Cedar Key (Florida). The workshop discussed the importance of environmental stewardship and provided practical management techniques to farmers, such as proper gear anchoring methods and severe-storm preparation strategies.

Publication year: 2018

Authors: Florida Department of Agriculture and Consumer Services Division of Aquaculture (FDACS)

Resource type: Reports

Organisations: NOAA Marine Debris Program

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Impacts, reduction & retrieval of ALDFG; Socioeconomic analysis & impact; Awareness

2017



National marine plastic litter policies in EU Member States: an overview

Description: The aim of this report is to provide an overview of national legal instruments in all European Union Member States related to protection of the marine environment from plastic pollution. The report is based on information collected from EU Member States on existing policies directly tackling marine litter at national level.

Publication year: 2017

Authors: A. Arroyo Schnell, E. Gómez Girón, *et al.*

Organisations: IUCN

Language: English

Areas of knowledge: Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources



Harbour Reception Survey

Description: This report describes the survey carried out within the scope of the MARELITT Baltic project, in the framework package 4, for assessing the readiness, capability and capacity of Baltic Sea fishing harbours

to receive, separately collect and sort the derelict fishing gear (DFG) collected from the sea as well as end-of-life fishing gear.

Publication year: 2017

Authors: Marek Press, Keep the Estonian Sea Tidy

Project: MARELITT Baltic

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



National marine plastic litter policies in EU Member States

Description: The aim of this study is to provide an overview of national legal instruments in all European Union Member States related to protection of the marine environment from plastic pollution, and to support upcoming European policy efforts such as the EU Strategy on Plastics, but also other future efforts to tackle this global environmental challenge. However, it is important to note that this report does not claim to give a comprehensive overview of all EU Member States' existing national policies related to marine litter. The report is based on information collected during first half of 2017 from EU Member States on existing policies directly tackling marine litter at national level.

Publication year: 2017

Authors: A. Arroyo Schnell, E. Gómez Girón, *et al.*

Organisations: IUCN

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Socioeconomic analysis & impact; Waste prevention & management from land-based sources

2016



GHOST Layman's report

Description: Layman's report produced by the GHOST project (2013-2016) that focuses on techniques to reduce the impacts of ghost fishing gear and to improve biodiversity in North Adriatic coastal areas. The main project objectives were to assess the presence and impact of ALDFG on the biodiversity, to promote recovery and conservation measures for the habitats studied, to improve ecosystem biodiversity, to calculate the economic value resulting from their removal and to put forward proposals for the correct landfilling and disposal of recovered/disused nets through their recycling.

Publication year: 2016

Authors: Loredana Alfari

Project: GHOST

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Impacts, reduction & retrieval of ALDFG



GHOST Final Publication

Description: This report describes the results of the three-year project GHOST, and provides a general overview of the ghost net phenomenon and its impact on the sea environment and associated economic activities. It examines the operational procedures used both to assess the magnitude of the problem in the North Adriatic, and to recover ghost nets effectively, with no further damage to the ecology of affected areas.

Publication year: 2016

Authors: Da Ros L., Alfarè L., *et al.*

Project: GHOST

Language: English

Areas of knowledge: Impacts, reduction & retrieval of ALDFG; Waste prevention & management from fishing, aquaculture and ports



Sources and pathways of marine litter - Background report

Description: The aim of this report is to compile a list of defined land-based sources and pathways of plastic marine litter relevant to the local context (at the municipal level). The study focuses mainly on plastic marine litter as this is the dominant fraction of all litter existent in marine environment according to many published works in the subject. Special focus is given to urban areas, as these are the places where people are living in high-density.

Publication year: 2016

Authors: Harri Moora and Evelin Piirsalu

Project: BLASTIC

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Mapping of marine litter;



Identifying Sources of Marine Litter

Description: This report provides a brief overview of the main methods used and outlines one of the most promising approaches for determining sources of marine litter – a Matrix Score Technique based on likelihoods, which considers the possibility that specific items originate from more than one source. Furthermore, it presents a series of other parameters that can be used to analyse data-sets, with regard to the use, origin and risk of items recorded in the marine or coastal environments. These can further support decision-making when considering preventive measures. Finally, recommendations to help the process of identification of sources are given, from the early stage of data collection and site characterization to bringing in the knowledge of local stakeholders to better determine where litter is coming from and what needs to be done to prevent it.

Publication year: 2016

Authors: Veiga Joana Mira, Fleet David, *et al.*

Organisations: JRC

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Monitoring of marine litter



Study to support the development of measures to combat a range of marine litter sources

Description: This study investigates two key areas of marine debris research: litter from sea-based sources and microplastic litter from cosmetic products. The aim is to help the European Commission develop measures, including reduction targets, to combat marine litter. The work reviews the scale and nature of each of these sources as well as the measures to reduce them. This process reveals what is known and what is unknown in this field of research.

Publication year: 2016

Authors: Chris Sherrington, Chiarina Darrah, *et al.*

Organisations: DG ENVIRONMENT

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Microplastics; Socioeconomic analysis & impact



Report of the expert consultation on the marking of fishing gear

Description: This document summarizes the outcome of the Expert Consultation on the Marking of Fishing Gear held in Rome, Italy, from 4 to 7 April 2016. The Consultation was convened by the Director-General of FAO to develop draft guidelines on the application of a system for the marking of fishing gear, to be submitted for consideration at the Thirty-second Session of the Committee on Fisheries (COFI) in 2016. The Consultation also made recommendations regarding further development of the draft guidelines.

Publication year: 2016

Authors / Organisations: FAO

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Impacts, reduction & retrieval of ALDFG

2015



Summary of Marine Litter Policy Options

Description: This portfolio was developed by the CleanSea project, and describes policy options for relevant authorities in the four EU marine regions: the Mediterranean Sea, Black Sea, Baltic Sea and North-East Atlantic Ocean. The resulting policy options aim to prevent and reduce marine litter and, in particular, to support the implementation of the Marine Strategy Framework Directive (MSFD). They include not only those measures and practices that can be implemented quickly within the first MSFD cycle (before 2018), but also longer-term options to address structural gaps and shortcomings in the policy framework and institutional set-up.

Publication year: 2015

Authors / Project: CleanSea

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Circular economy & recycling; Policy, governance and management



Review of the Commission Decision 2010/477/EU concerning MSFD criteria for assessing Good Environmental Status: Descriptor 10: Properties and quantities of marine litter do not cause harm to the coastal and marine environment

Description: This report represents the result of the scientific and technical review of Commission Decision 2010/477/EU in relation to Descriptor 10. The review has been carried out by the EC JRC together with the MSFD Technical Group on Marine Litter, and has considered contributions from the GES Working Group in accordance with the roadmap set out in the MSFD implementation strategy (agreed on at the 11th CIS MSCG meeting). The report is one of a series of reports (review manuals) including Descriptor 1, 2, 5, 7, 8, 9, 10 that conclude phase 1 of the review process and, as agreed within the MSFD Common Implementation Strategy, are the basis for review phase 2, towards an eventual revision of the Commission Decision 2010/477/EU. The report presents the state of the technical discussions as of 30 April 2015, as some discussions are ongoing, it does not contain agreed conclusions on all issues.

Publication year: 2015

Authors: Hanke Georg, Galgani Francois, *et al.*

Organisations: JRC

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Toxicity and impact of meso and macro marine litter; Socioeconomic analysis & impact; Monitoring of marine litter; Microplastics

2014



Regional Workshop Report Nesebar, Bulgaria

Description: The Union of Bulgarian Black Sea Local Authorities (UBBSLA) organised a project workshop in Nesebar on 26 September 2014, to meet the local stakeholders (the municipal administrations, fishermen, public institutions and organizations, port authorities, business and NGO) and discuss the marine litter problem in Bulgaria. The workshop entitled 'Keeping the sea clean - everyone's responsibility' was launched by the mayor of Nesebar, Mr. Nicolay Dimitrov, and included presentations from the FLAG Pomorie-Nesebar, which presented its past activities, the Executive Agency for Fisheries and Aquaculture and the Marine Administration.

Publication year: 2014

Authors: Milieu Ltd.

Project: MARELITT

Language: English

Areas of knowledge: Impacts, reduction & retrieval of ALDFG; Fishing for litter; Waste prevention & management from fishing, aquaculture and ports; Awareness



Regional Workshop Report Croatia

Description: The Center for Marine Research (CMR) organised a workshop in Rovinj on 30 and 31 October 2014 gathering potential project participants and policy makers to discuss the implementation of a MARELITT project in Croatia. The first day was marked by interventions from fishermen, the city of Rovinj and the regional and national governments; the second day was focused on awareness-raising with the NGO Zelenalstra. The workshop resulted in an action plan for the preparatory phase of the project. OLPA presented the Italian MARELITT project and a representative of DEFISHGEAR presented their marine litter removal activities in the Adriatic Sea. Further cooperation between CMR, OLPA and DEFISHGEAR was also discussed.

Publication year: 2014

Authors: Milieu Ltd.

Project: MARELITT

Language: English

Areas of knowledge: Fishing for litter; Impacts, reduction & retrieval of ALDFG; Waste prevention & management from fishing, aquaculture and ports; Awareness



Regional Workshop Report - Warsaw, Poland

Description: This MARELIT Workshop took place on the 5-7 November 2014. The main objective of this workshop was the set-up of the project, and also to raise awareness and understanding of the issue of derelict fishing gear. The report summarizes a series of DFG activities carried out by the project. A wide group of stakeholders, such as certain authorities, politicians, industries or environmental NGOs, were invited.

Publication year: 2014

Authors: Milieu Ltd.

Project: MARELITT

Language: English

Areas of knowledge: Fishing for litter; Impacts, reduction & retrieval of ALDFG; Waste prevention & management from fishing, aquaculture and ports

2013



Policies that may be applied to mitigate the impact of marine litter

Description: This report reviews the existing policies that directly or indirectly may be applied to mitigate the impact of marine litter in order to identify where policy gaps might. It also examines which actions and policies specifically designed to deal with marine litter reduction may be associated with legally-binding or 'hard' mechanisms (implemented under international, regional, EU or national legislation) or non-legally-

binding 'soft' mechanisms, under a range of formal or informal agreements. Information about EU legislation related, directly or indirectly, to management and control of marine litter is gathered and highlighted in this document.

Publication year: 2013

Authors: Peter Kershaw, Luigi Alcaro, *et al.*

Project: MARLISCO

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Socioeconomic analysis & impact; Waste prevention & management from land-based sources



Analysis of the processes and solutions involved in the best practices

Description: This report provides an analysis of the main characteristics of the best practice examples recorded within MARLISCO and introduces the reader to them. The analysis offers a useful snapshot into what is happening around Europe to address the issue of marine litter, and can serve as the starting point and a learning platform for anyone wishing to take action against this important environmental, economic and social problem.

Publication year: 2013

Authors: Demetra L. Orthodoxou, Xenia I. Loizidou and Michael I. Loizides

Project: MARLISCO

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Awareness; Cleaning the marine environment; Fishing for litter; Impacts, reduction & retrieval of ALDFG; Monitoring of marine litter; Waste prevention & management from land-based sources



Reducing ship generated marine litter

Description: The study provides an analysis of the Reception Facility Directive, which discusses the situation in Member State ports regarding ship waste handling, and provides examples of ports with efficient systems and 'best practices'. The study makes recommendations for the improvement of the implementation of the Directive. The study has been based on literature reviews, phone interviews and meetings.

Publication year: 2013

Authors: Jens Peter Øhlenschläger (Port Environment), Stephanie Newman and Andrew Farmer

Organisations: IEEP

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



MSFD Advice document on Good environmental status - Descriptor 10: Marine Litter (A living document - Version of 17 January 2012)

Description: This OSPAR Commission report outlines the good environmental status (GES) indicators and the advice on parameters, targets and preferred approach for target setting. The table is based on responses to a questionnaire, returned by all Contracting Parties except Portugal and Iceland and a subsequent discussion at the Intersessional Correspondence Group on Marine Litter (CG-ML).

Publication year: 2012

Authors: Inter correspondence Group on Marine Litter of the OSPAR Committee of the Environmental Impact of Human Activities (EIHA)

Organisations: OSPAR

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Policy, governance and management; Socioeconomic analysis & impact



Study on characterization and waste streams in aquatic environments

Description: This study, which is part of the work of the Operational Committee "Macro-waste funds" (constituting the "Group 14" of the Grenelle de la Mer) contributes to the improvement of the knowledge of flows and stocks of macro litter in aquatic environments. It provides a summary of national and international texts dealing with the issue of the quality of aquatic environments, focusing on litter aspects. It constitutes a base of technical, financial and organizational references, for any actor wishing to manage floating litter issues, and it led to the development of a characterization grid for all types of macro-litter in the marine and freshwater environment.

Publication year: 2012

Authors: Study realised for the ADEME by SAFEGE

Organisations: ADEME

Language: French

Areas of knowledge: Cleaning the marine environment; Policy, governance and management; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources;



3RFISH Layman's report

Title (original): Informe Layman del proyecto 3RFISH

Description: The 3RFish Layman's report provides a synthetic view of the project, showing its main objectives, actions, tasks' implementation and results of the project. The project aimed at preventing the three main

waste materials generated from fish farming, fishing and port operations (discarded fishing nets and fishing gear, expanded polystyrene (EPS) packaging and batteries) were discharged on the sea during fishing and aquaculture operations. It also worked on the treatment of these materials, implementing a recovery policy by means of a correct management and a recycling model.

Publication year: 2011

Authors / Project: 3RFISH

Language: English; Galician; Spanish

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



3RFISH White book

Description: This 3RFISH report provides a synthetic view of the project, showing the technical implementation of actions, process and results. Also it intends to raise awareness on stakeholders from the fishing or port sector. The main goal of the project was to prevent waste materials generated from fish farming, fishing and port operations (discarded fishing nets and fishing gear, expanded polystyrene (EPS) packaging and batteries) to be discharged on the sea during the fishing and aquaculture operations, and to promote a different treatment for the when arriving at port.

Publication year: 2011

Resource type: Reports

Authors / Project: 3RFISH

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Circular economy & recycling

2010



Marine Debris Prevention Projects and Activities in the Republic of Korea and United States

Description: This document is a compilation of summary reports highlighting nine successful marine debris prevention projects and activities in the Republic of Korea and United States. These summary reports were prepared and shared during the Marine Debris Abatement Workshop: Strategies and Activities for the Prevention of Nearshore Marine Debris held on August 12-13, 2009 in Honolulu, Hawai'i. Waste management is addressed as part of the topics covered by projects and initiatives collected in this report.

Publication year: 2010

Authors: Carey Morishige (Ed.)

Organisations: NOAA Marine Debris Program

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Awareness; Circular economy & recycling; Cleaning the marine environment; Impacts, reduction & retrieval of ALDFG; Training and education

2009



Marine litter in the North-East Atlantic Region with addendum

Description: The objectives of this OSPAR Commission's report are to assess the amounts, types and sources of marine litter, investigating their environmental and socio-economic impacts and to draw together information on legislation, programmes and measures and organisations involved with marine litter issues in the North-East Atlantic Region. Cost and regulations of management of marine litter at the community level are also addressed in this report.

Publication year: 2009

Authors: Rebeca Lopez Lozano and John Mouat

Organisations: OSPAR

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources; Monitoring of marine litter; Policy, governance and management; Socioeconomic analysis & impact; Toxicity and impact of meso and macro marine litter

DATABASES

2020



Marine Litter inventory

Description: This database includes information on the main types of debris as well as the quantities in which they occur in the marine environment, identifying specific sources of marine littering coming from aquaculture activities. This litter inventory was generated by a genuine screening of the available literature and litter databases (e.g. OSPAR, HELCOM, Marine Litter Watch) and on the basis of discussions with stakeholders and aquaculture farmers.

Publication year: 2020

Authors / Project: AQUA-LIT

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



Regional maps of aquaculture litter

Description: Sea basin maps generated for visualising information on the geographic position of aquaculture facilities, in combination with the quantitative data of aquaculture-related litter. These maps are provided for the three sea basins and give an initial indication of the source-sink story of aquaculture-related litter,

which are a useful tool for the various stakeholders and policy makers. These maps are a result of the collection of results from these three different databases (OSPAR, HELCOM and Marine LitterWatch) where the information was recalculated per category to an average number of collected items per 100 meter beach, and was later transformed into its visualization on three regional maps representing the North Sea, Baltic Sea and the Mediterranean Sea basins.

Publication year: 2020

Authors / Project: AQUA-LIT

Language: English

Areas of knowledge: Mapping of marine litter; Waste prevention & management from fishing, aquaculture and ports



Players at play

Description: The AQUA-LIT project conducted an analysis of relevant actors with the overall aim to gain a better understanding of the various actors relevant in the context of marine aquaculture litter and advise an effective stakeholder engagement strategy in the project. Based on the resulting information, a country profile was compiled for the two most extensively studied countries in each of the studied sea basins. The AQUA-LIT country profiles present a description of the different aquaculture stakeholders, categorised by the four different stages in the life cycle of an aquaculture farm: 1) Initiation, 2) Development, 3) Operation and 4) End of life, and at a variety of spatial and governance scales.

Publication year: 2020

Authors / Project: AQUA-LIT

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports



SERVICES/TOOLS/MODELS

2020



The AQUA-LIT Toolbox

Description: The AQUA-LIT Toolbox aims at being considered the most important knowledge repository for aquaculture-marine litter related information across Europe. The AQUA-LIT Toolbox is the result of the compilation of the information provided by the stakeholders in the frame of the project, the state of play regarding the aquaculture marine litter management in 2019 and 2020 and the input of the experts that have been part of or have worked closely together with the AQUA-LIT team.

Publication year: 2020

Authors / Project: AQUA-LIT

Language: English

Areas of knowledge: Circular economy & recycling; Monitoring of marine litter; Waste prevention &

management from fishing, aquaculture and ports

2019



Knowledge wave on marine litter from aquaculture sources - website

Description: This website provides an overview of the available knowledge on marine litter originating from the aquaculture sector and reported in the marine environment of the North Sea region, the Mediterranean region, and the Baltic region. In order to understand the potential sources of aquaculture litter, this section provides a profound overview of the different types of aquaculture facilities in these areas and the important stakeholders active in the sector. It includes a marine litter inventory, regional maps on aquaculture litter and player at play.

Publication year: 2019

Authors: Sandra M., Devriese L., *et al.*

Project: AQUA-LIT

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports; Mapping of marine litter

2018



Checklist and prioritisation tool

Description: This Excel file includes a methodology that helps to map the sources and pathways of plastic litter in a municipal area. The results of the mapping provide a basis for developing local action plans for marine litter prevention and reduction. The methodology consists of the checklist of mapping the potential sources of marine litter and prioritisation tool for choosing the most critical areas that need to be addressed in the local action plan for reducing marine litter.

Publication year: 2018

Authors / Project: BLASTIC

Language: English; Estonian; Finnish; Latvian; Swedish

Areas of knowledge: Monitoring of marine litter; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources



ACT4LITTER Decision-making tool

Description: This innovative systems, developed in the framework of ACT4LITTER project, provides essential support to Marine Protected Areas (MPA) managers in order to address marine litter including ALDFG. The decision making tool was elaborated in close collaboration with MPA managers and marine litter experts, building upon the ACT4LITTER list of some 100 showcases of best practice marine litter measures. The novelty of this tool is that it helps to identify the most effective and feasible marine litter measures for their specific

context.

Publication year: 2018

Authors / Project: ACT4LITTER

Language: English

Areas of knowledge: Awareness; Fishing for litter; Mapping of marine litter; Modelling marine litter; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources

BOOKS / REVIEWS



Review of the current State of Knowledge regarding Marine Litter in wastes dumped at sea under the London Convention and Protocol

Description: The IMO Contracting Parties have completed a review of the state of knowledge with respect to how the dumping of wastes may contribute to the presence of marine litter, in particular plastics, in the marine environment. Dredged materials and sewage sludge are thought to be the most likely of the waste streams to contribute to the presence of marine litter.

Publication year: 2016

Authors / Organisations: IMO

Language: English

Areas of knowledge: Waste prevention & management from fishing, aquaculture and ports

SCIENTIFIC PUBLICATIONS

2016



Prevention through policy: Urban macroplastic leakages to the marine environment during extreme rainfall events

Description: In this work, the authors explore why and how coastal cities can reduce macroplastic leakages during extreme rainfall events. Using nine global cities as a basis, they establish that while cities actively create policies that reduce plastic leakages, more needs to be done. The authors recommend cities to incentivize citizen and municipal engagement with responsible usage of plastics, cleaning the environment and preparing for future extreme rainfall events. They also consider that a better waste management is a focal point in reducing plastic in the environment.

Publication year: 2016

Author: Charles Axelsson and Erik van Sebille

Project: TOPIOS

Language: English

Areas of knowledge: Circular economy & recycling; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources

2014



Economic instruments and marine litter control

Description: Literature review of economic and other instruments to reduce marine litter in the four regional seas. They were analysed following effectiveness multi-criteria (cost, effectiveness, and indirect effects).

Publication year: 2014

Authors: Frans Oosterhuis, Elissaios Papyrakis and Benjamin Boteler

Project: CleanSea

Language: English

Areas of knowledge: Circular economy & recycling; Cleaning the marine environment; Policy, governance and management; Socioeconomic analysis & impact; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources

2013



Marine litter within the European Marine Strategy Framework Directive

Description: This article is based on the activities of the Marine Strategy Framework Directive (MSFD) task group 10 and the good environmental status (GES) -Technical Subgroup on Marine Litter (TSG-ML). GES is based on 11 qualitative descriptors, of which descriptor 10 (D 10) concerns marine litter. The role of TSG ML is to support Member States through providing scientific and technical background s for the implementation of the MSFD requirements for marine litter. It summarizes the available information on monitoring approaches and preventing further inputs of litter. Also identifies research needs, priorities and strategies in support of the implementation of D 10 and the development of monitoring protocols for litter in the different marine compartments, and for microplastics and litter in biota. Other priorities include the identification of sources of marine litter and a better understanding of the harm caused by marine litter.

Publication year: 2013

Authors: Galgani Francois; Hanke Georg, *et al.*

Organisations: JRC

Language: English

Areas of knowledge: Fishing for litter; Cleaning the marine environment; Waste prevention & management from land-based sources; Waste prevention & management from fishing, aquaculture and ports; Mapping of marine litter; Microplastics; Modelling marine litter; Monitoring of marine litter; Socioeconomic analysis & impact; Toxicity and impact of meso and macro marine litter

MULTIMEDIA

2018



Ecoalf - Upcycling the Oceans

Description: Video describing the Upcycling the Oceans project (UTO) carried out by ECOALF that aims at collecting marine litter and turns it into top-quality yarn to produce fabrics and products. As a result of this project ECOALF created a new 100% recycled filament, UTO Yarn, which is made of plastic bottles recovered from the bottom of the Mediterranean Sea.

Publication year: 2018

Authors / Organisations: ECOALF FOUNDATION

Language: English

Areas of knowledge: Awareness; Circular economy & recycling; Cleaning the marine environment; Fishing for litter; Microplastics; Training and education; Waste prevention & management from fishing, aquaculture and ports;



Fishing for Litter (FfL) Hub

Description: This is an open access resource that serves to encourage all Fishing for Litter (FfL) projects and initiatives, to join and share information on marine litter. It is designed to be a "one stop shop" for all things to do with FfL and to bring the FfL community together to share knowledge, experience and best practices: It also makes possible to fishing vessels and skippers from different harbours join the existing the FfL scheme or to explore options for setting up a new scheme.

Publication year: 2018.

Authors / Organisations: KIMO

Language: English

Areas of knowledge: Fishing for litter; Cleaning the marine environment; Waste prevention & management from fishing; Aquaculture and ports

2015



CleanSea final symposium & Film première

Description: Through this link you can access the videos of the presentations carried out during the CleanSea Marine Litter Symposium & Film Premiere held at the EYE Film Institute in Amsterdam on December 3, 2015. In this event, the interdisciplinary research performed during the CleanSea Project time life was presented, along with a film produced as part of the project. All this information is also available in the CleanSea Project

YouTube Channel.

Publication year: 2015

Authors / Project: CleanSea

Language: English

Areas of knowledge: Microplastics; Socioeconomic analysis & impact; Toxicity and impact of meso and macro marine litter; Waste prevention & management from fishing, aquaculture and ports; Waste prevention & management from land-based sources

DISSEMINATION MATERIALS



System for collecting and recycling discarded equipment from fishing and fish farming industry

Description: This leaflet contains a summary of the EUFIR System. This eco-innovative solution is the output from the project titled “EUFIR” co-funded by the European Commission within the framework of the Competitive and Innovation Program. The eco-innovative solution consists of a European system for collecting and recycling discarded equipment from the fishing and fish farming industry. Discarded equipment and other plastic waste from the fishing industry will be dismantled and the different elements will be recycled. The technology owner collects both at fixed sites, waste facilities, fish net producers and fishing vessels, providing all participants the possibility to use the Nofir take back scheme, regardless of quantities and location. The materials will be transported to dismantling factories in Lithuania or Turkey and plastic waste will be transformed into a new product.

Publication year: 2015

Authors: Norsk Fiskeriretur/Nofir (N), UAB Nofir (LT), Qualchem Vegyiaru (HU) and UAB Egersund Net (LT).

Project: EUFIR

Language: English

Areas of knowledge: Circular economy & recycling; Waste prevention & management from fishing, aquaculture and ports