

CleanAtlantic

Tackling marine litter in the Atlantic Area

Reducing Marine Litter

Workshop

4th December 2019. Galway (Ireland)



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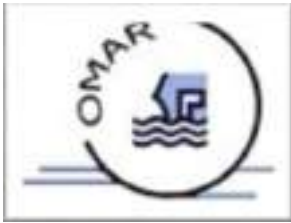


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Locating and Recovering marine litter

Previous Experiences



Nada pola Borda

Limpiando os fondos mariños



PESCAL

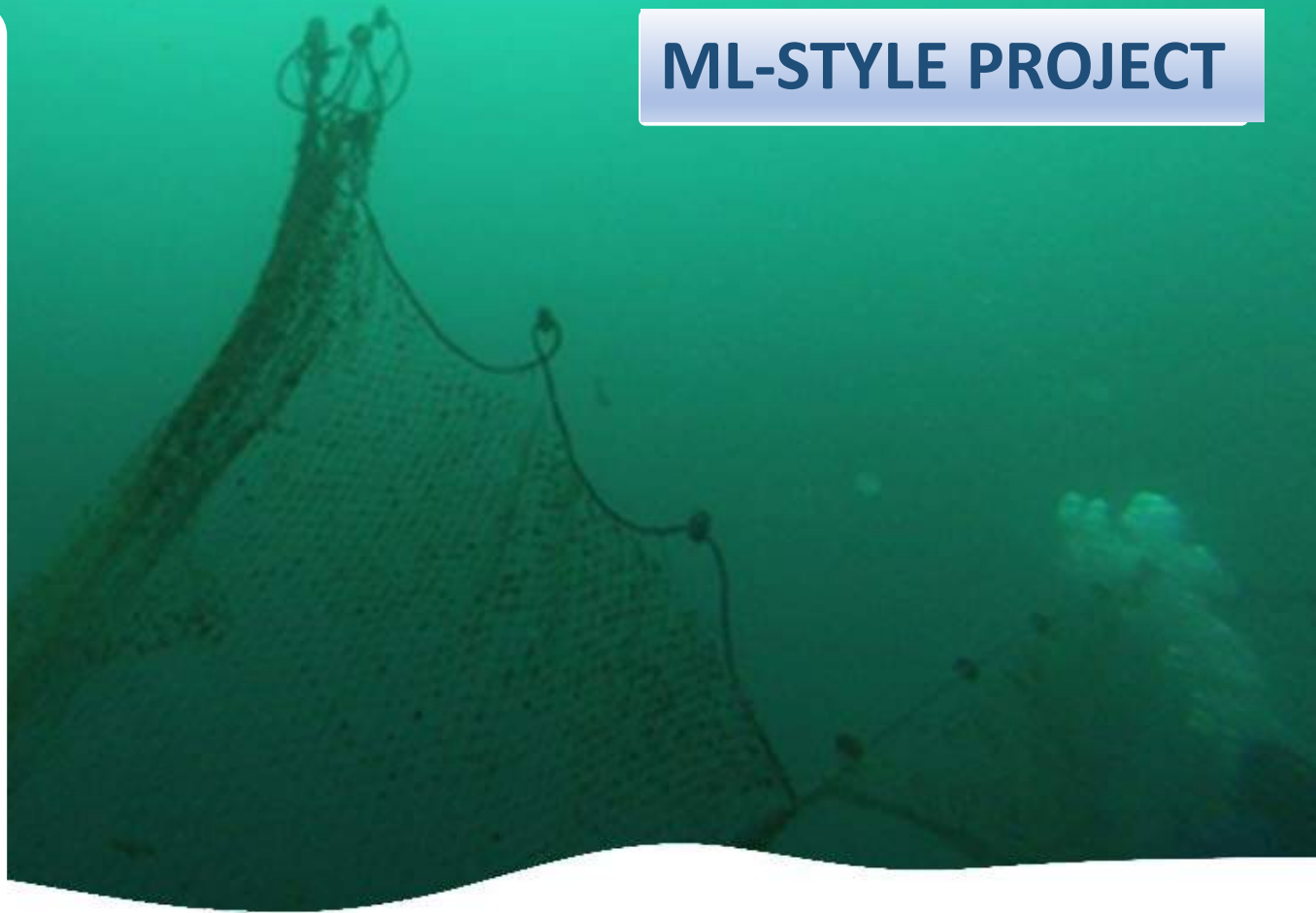
Pesca Sustentable en Caladeros limpios



CETMAR
CENTRO TECNOLÓGICO DEL MAR

Current initiatives

ML-STYLE PROJECT





Description: Study of waste generation in Galician ports, analysis of the situation, alternatives for sustainable management and recycling of fishing nets, lights + batteries and EPS



Duration: 2007 - 2009



Participants:

More than 30 Galician ports, Universities, Technological centers and private companies

Results/Outputs:

- "Diagnose" of waste generation and management in each port
- Waste managed during the period of the project

-EPS-boxes:	174 ton
-Batteries:	33.5 ton
-Fishing Nets:	900 ton

➔ *«Still in use in several Galician Ports»*



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Description: Fishing for Litter action developed in the Galician Rias which fishermen for different fleets brought ashore the litter collected in their gillnets & trawling nets during ordinary fishing operations.

Duration: 2009 – 2010

Participants: Involved Fleets → 152 artisanal boats + coastal trawlers) 600 fishermen. 11 ports

Results/Outputs: ≈ **34** ton marine litter collected



All ports	Weigh (Kg)	Litter type								
		Fishing gears (nets, ropes, wires, floats, etc.)			Plastic	Metal	Textile	Rubber	Wood - timber	Other
		Gillnets	Trawl nets	Traps-pots						
Total	≈ 34 ton	7,399	3620	4201	3720	4087	1814	1223	925	6890
Percentage %		20	12	14	11 %	12 %	5 %	4 %	3 %	20 %
		45%								

Specific aims:

- To reduce the amount of marine litter. Collect data about location, typology, quantities, sources and trends
- To evaluate the feasibility of implementing a sustainable scheme in Galician Ports

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Description: Initiative to implement passive litter collection and specific campaigns directed to remove litter/retrieve fishing gears from coastal sites using fishing ships as operators (active).

Duration: 2012 – 2014 **Participants:** Involved fleets → 67 vessels, 235 fishermen, 4 ports

Results/Outputs:

-Passive Litter collection

45.075 kg => 13.642 kg (30%) fishing gear + 31.433 kg (70%) of “other”

-Active removal of litter: **2.000 kg** (75% fishing gear)



Creeper



Trawl

Specific aims:

- To remove litter (with fishermen involvement) and gain data
- To design and test a specifically-designed gears to remove litter from the seabed

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Ongoing initiatives

ML-STYLE PROJECT



EU Circular Economy
principles + Blue Growth
Promoted by the APV

July 2018 – July 2020

- **The general aim:** protecting the sea and its resources by reducing marine litter and by establishing an integrated management system to improve recycling and valorisation of Marine Litter (ML) and Port Wastes (PW) as raw material for textile industry.



Active Involvement of Galician artisanal and littoral trawler fleets, shellfish gatherers and Port Authorities

• Implementation of different removal schemes:

- “Fishing for litter” by fishermen and shellfish gatherers during fishing and shellfisheries activities (passive scheme).
- Marine litter collection actions addressed to hotspots (active scheme)
- Harbour basin clean-ups



Partners



Collaborators





CleanAtlantic ➡ Tackling Marine Litter

Objective: *Collaboration with marine stakeholders*

To advance in the reduction of the presence of marine litter in the Atlantic Area

- Reducing the inputs from sea and port based sources
- Improving capabilities to remove marine litter from coastal and marine environment



Partners: **CETMAR**, CEDRE, IFREMER, CEFAS, DGRM, IST, MI

- **CleanAtlantic Knowledge Tool [3 sections] & 3 electronic booklets**

-Compilation of relevant information on waste management and marine litter removal actions from other projects/programmes

- **Fishing for litter and ALDFG Pilot actions in the Atlantic Area**

To implement FfL (passive & active schemes) and ALDFG actions in UK and **Galicia (NW Spain)**



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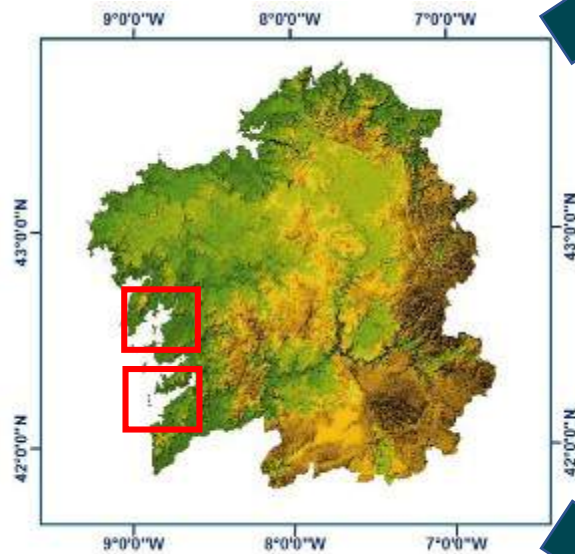
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CleanAtlantic ➔ Tackling Marine Litter

- Fishing for litter and ALDFG Pilot actions in Galicia [NW Spain]



- Extensive aquaculture [Mussel Rafts]
- Small scale fleets and shellfish gatherers

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Ongoing and finalized actions

► Fishing for Litter actions (passive scheme):

- Arousa Island Fishing Guild. Since May 2019



Fleets

Shellfish gathering



Small scale fishing



Logistic arrangements



ML quantification/classification



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Ongoing and finalized actions

► Fishing for Litter actions (passive scheme):

Collaboration with Galician fishing and shellfish gathering sector

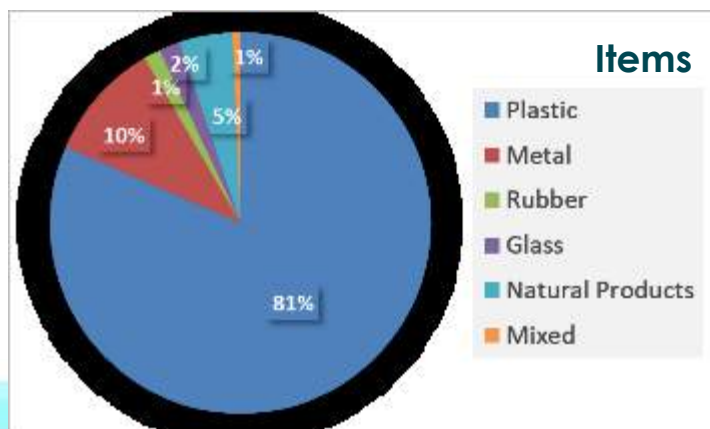
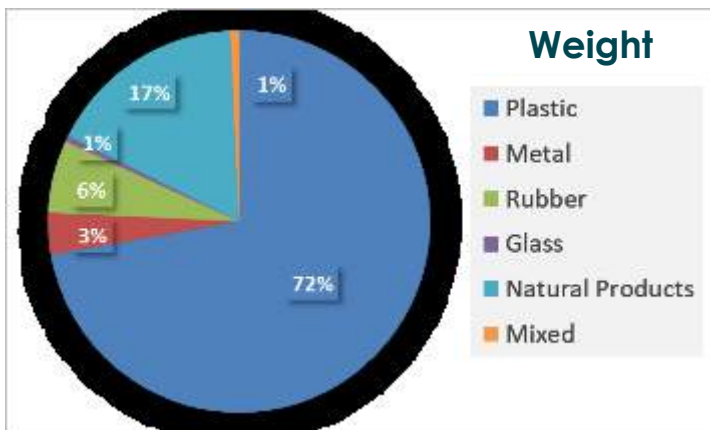
- Arousa Island Fishing Guild. Since May 2019



ML quantification/classification

Total amount [wet weight]: **298.2 Kg**

Total N° items: **1,190**



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Ongoing and finalized actions



COFRADÍA DE PESCADORES DE
CAMBADOS

► Fishing for Litter actions (passive scheme):

Collaboration with Galician fishing and shellfish gathering sector

- **Cambados Fishing Guild**. 4th -8th Nov 2019: the 1st week of the fishing campaign

Fleets Small trawler fleet that operates inside the Ria of Arousa

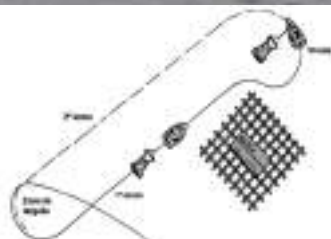


Target species:

Queen scallop, sepia, hake, spider crab, flat fishes, velvet crab, flatfishes, octopus, etc.



Bou de Vara



Fishing haul operation



Total Fleet: 23 vessels

Participating Fleet: 10 vessels (average 4 days)

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Ongoing and finalized actions

► Fishing for Litter actions (passive scheme):

Collaboration with Galician fishing and shellfish gathering sector

- Cambados Fishing Guild.

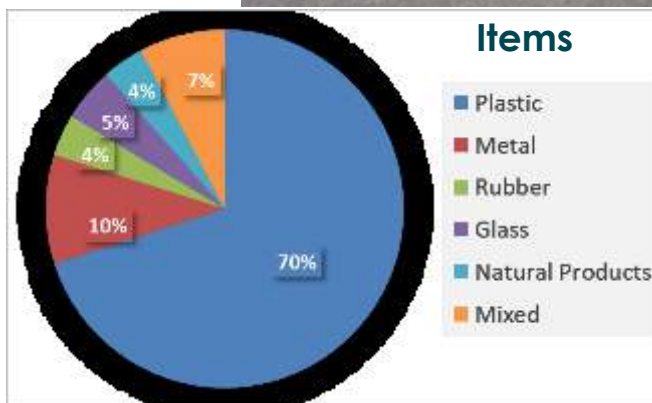
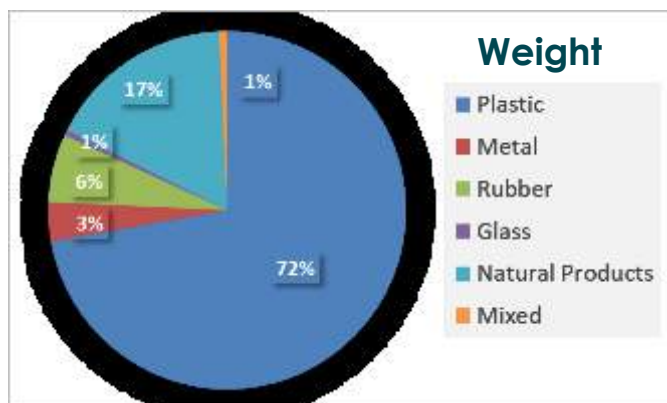
Support vessel were the marine waste retrieved was discharged during four days

Total amount[wet weight]: **2,800 Kg**

Total N° items: **477**



CLASSIFICATION & WEIGHING



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Ongoing and finalized actions



Fishing net manufacturer

► Fishing for Litter actions (active scheme):

Collaboration with Galician Coastguards Service

«A selective bottom trawl net was specifically designed to avoid the catch of fishes and other animal species»



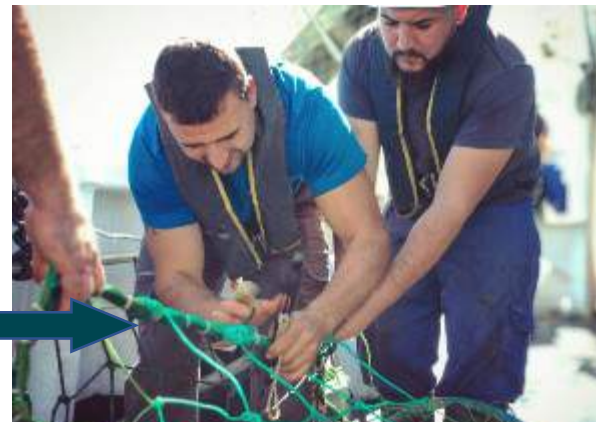
Barrido aparejo: 36 mts
Largo aparejo: 59 mts
Perímetro: 34 mts.

- Large mesh panels
- Headline with floats and footrope with weights disposition → fish escape upwards

Speed: 2-3 knots

NET Main Characteristics:

- Sweep surface: 36 m
- Length: 59 m
- Perimeter: 34 m



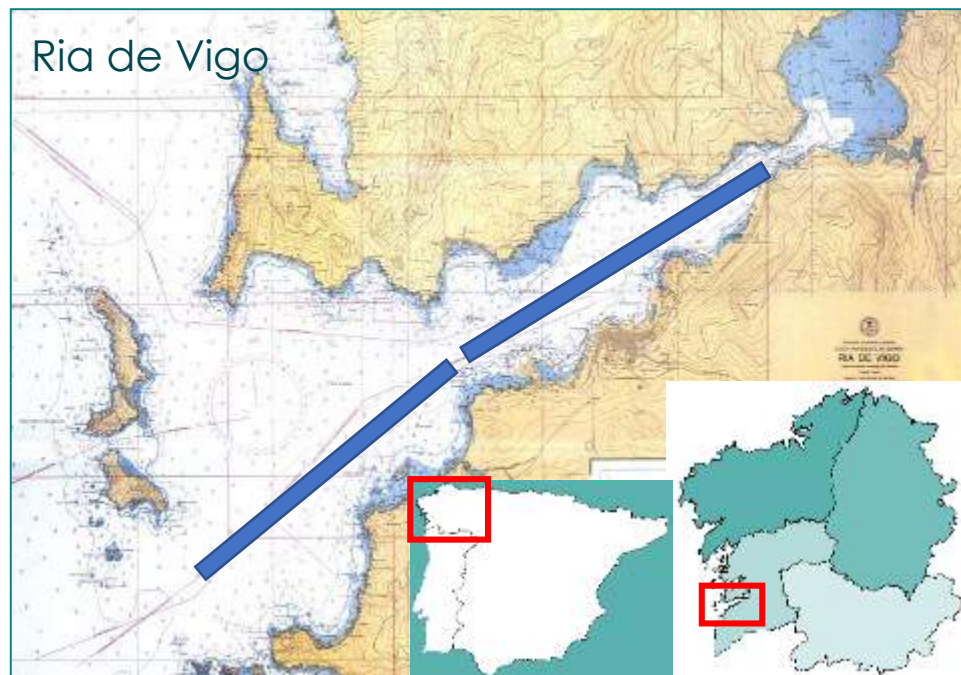


Ongoing and finalized actions



► Fishing for Litter actions (active scheme):

Collaboration with Galician Coastguards Service



-3 Days (September – October 2019)

-7 Hauls: 30-45 min trawling at 3-2 knots

-Outer (Southern mouth) and middle part of the ria → Navigation channel

-20 -45 m depth

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Fishing trawl operation: shooting and hauling aboard the fishing net

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Ongoing and finalized actions



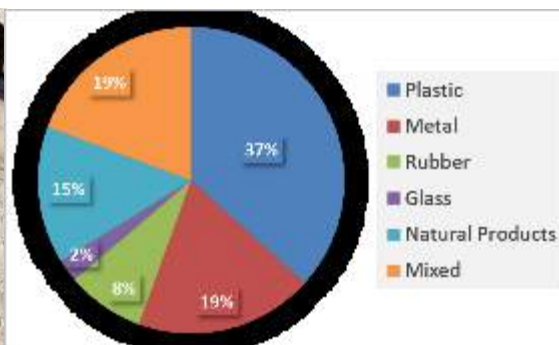
► Fishing for Litter actions (active scheme):

Collaboration with Galician Coastguards Service

Marine litter retrieval and storage

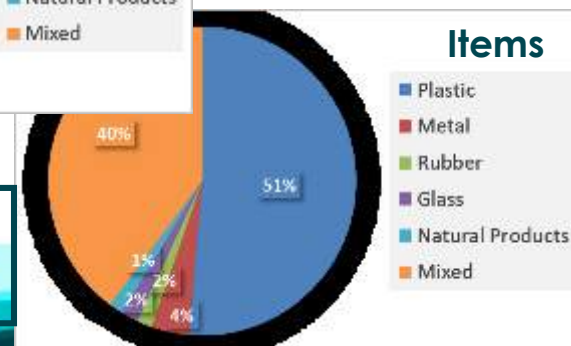


Classification and weighing



Total amount[wet weight]: **207 Kg**

Total N° items: **611**



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Ongoing and finalized actions



► Fishing for Litter actions (active scheme):

Collaboration with Galician Coastguards Service

In collaboration with the
Spanish Institute of
Oceanography



Installation of a camera with autonomous light
system in the fishing net:

- Go-pro camera
- Waterproof housing
- Submersible spotlight
- Protection frame



Camera installation
net headline

Accessible cheap technology to check the net performance

1st Test:
19/10/2019



Further improvements and tests:

- Other vessels (small scale, littoral trawlers....)
- Other parts of the net (codend...)

► Diving for litter action (active scheme):

Collaboration with Galician institute of Aquaculture Training (Scuba diving and underwater department)

[illegible]

Participation of teachers and students

Coupled with the Training Practical sessions:

- Snorkeling
- Scuba-diving

Two surveys → October 2019:
Quantification of number of items recovered



Data-sheet for monitoring ML on the
seafloor: Prepared and agreed
Master list categories and subcategories



way (Ireland)

Further dives: 2019 -2020
Other coastal areas around the island

► Fishing for Litter actions and reducing ALDFG:



Acquisition tuning up and first tests with ROV for locating underwater hotspots



ROV will be used to document the presence of marine litter in collaboration with:

- Galician Coastguards Service
- National Park of the Galician Atlantic Islands
- Local fishing guilds

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First test Port of Vigo

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Lessons Learnt

• LITTER COLLECTION

- ✓ Passive Litter collection: The operational scheme fits well with the normal fishing operations. Adequate collections systems (big bags, bins/containers) should be provided.
- ✓ The active removal of litter technical protocol and the equipment developed performed well, but the costs of the operations are high (staff required, vessel, technical measures...). Effect on the carbon footprint and environmental impact of waster removal .

• WASTE MANAGEMENT

- ✓ Logistic support at the port and adequate port reception facilities are key issues.
- ✓ Correct handling, identification, classification and quantification are necessary to gather valuable information about the waste typology.



• LEARNING, AWARENESS AND DISSEMINATION ACTIVITIES

- ✓ Seafarers involvement is essential. Meetings, training and awareness activities (when feasible “at pier”) will contribute to create a common goal and vision of healthier seas.
- ✓ Fishermen efforts should be made visible to the society to improve their image and promote their active role as “guardians of the sea”.

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Thank You

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