PHAROS
INNOVATION FOR OCEAN RESTORATION

ATLANTIC AND ARCTIC SEA BASIN LIGHTHOUSE

NATURE-BASED SOLUTIONS

FOR **ECOSYSTEM RESTORATION** & OCEAN SUSTAINABILITY

BY: **PABLO RECHE**, PROJECT MANAGER, **PLOCAN**
DATE: **September 3, 2025**

ABOUT PHAROS

- **EU-funded project** led by Canary Islands Ocean Platform (**PLOCAN**), involving 24 European organisations.
- **Nature-based solutions for ecosystem restoration** in the Atlantic and Arctic regions
- Supports the EU Ocean Mission objectives
- Duration: **September 2024 – August 2029**

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EU MISSIONS
RESTORE OUR OCEAN & WATERS

Financed by European Union through the GRANT AGREEMENT no 101157936 within HORIZON-MISS-2023-OCEAN-01 Climate, Energy and Mobility Programme.

Funded by the European Union

CONSORTIUM PARTNERS

PLOCAN

CMC
CLÚSTER MARÍTIMO DE CANARIAS

Gobierno de Canarias
Consejería de Universidades, Ciencia e Innovación y Cultura

ICRSA
INTERNATIONAL CONSORTIUM OF RESEARCH STAFF ASSOCIATIONS

ULPGC
Universidad de Las Palmas de Gran Canaria

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KEY OBJECTIVES

The project supports the EU Ocean Mission's goals of restoring marine ecosystems, eliminating pollution, and fostering a sustainable blue economy.

1

RESTORE MARINE ECOSYSTEMS

Implement innovative NBS to repair damaged ecosystems and promote biodiversity.

2

COMBAT OCEAN POLLUTION

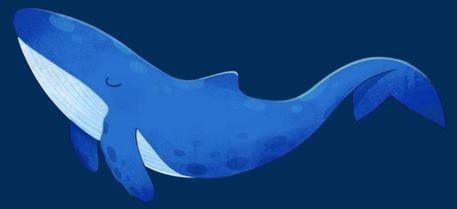
Deploy solutions like Integrated Multitrophic Aquaculture (IMTA) systems and artificial reefs to reduce pollutants.

3

FOSTER A SUSTAINABLE BLUE ECONOMY

Develop carbon-neutral and circular economic models for ocean industries.

WORK PACKAGES



1

METHODOLOGY DEVELOPMENT

Develops project-wide methodologies and baseline data collection frameworks for demos

(Deltares)

2

STAKEHOLDER ENGAGEMENT

Implements Living Labs for co-created solutions involving local communities.

(CSIC)

3

DEMO IMPLEMENTATION

Executes the four demonstrations across the Atlantic-Arctic basin.

(ULPGC)

4

DIGITAL TWIN & MPA PLATFORM

Builds DTO models, monitor demos and expands MPA networks.

(BLUEOASIS)

5

REPLICATION & EXPLOITATION

Creates strategies for scaling solutions across regions.

(PLOCAN)

6

COORDINATION & MANAGEMENT

Oversees project administration and risk management.

(PLOCAN)

7

DISSEMINATION & COMMUNICATION

Promote the project and its results towards target audience.

(ICORSA)

WORK PACKAGES

1 → **3** → **4**

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DEMO IMPLEMENTATION

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DIGITAL TWIN & MPA PLATFORM

Builds DTO models, monitor demos and expands MPA networks.

FOUR DEMOS

- Four innovative **demonstrations (demos) in the Atlantic and Arctic** basins, showcasing cutting-edge **Nature-Based Solutions** tailored to local contexts.
- These demos aim to **restore biodiversity, reduce pollution, and address invasive species**.

GRAN CANARIA

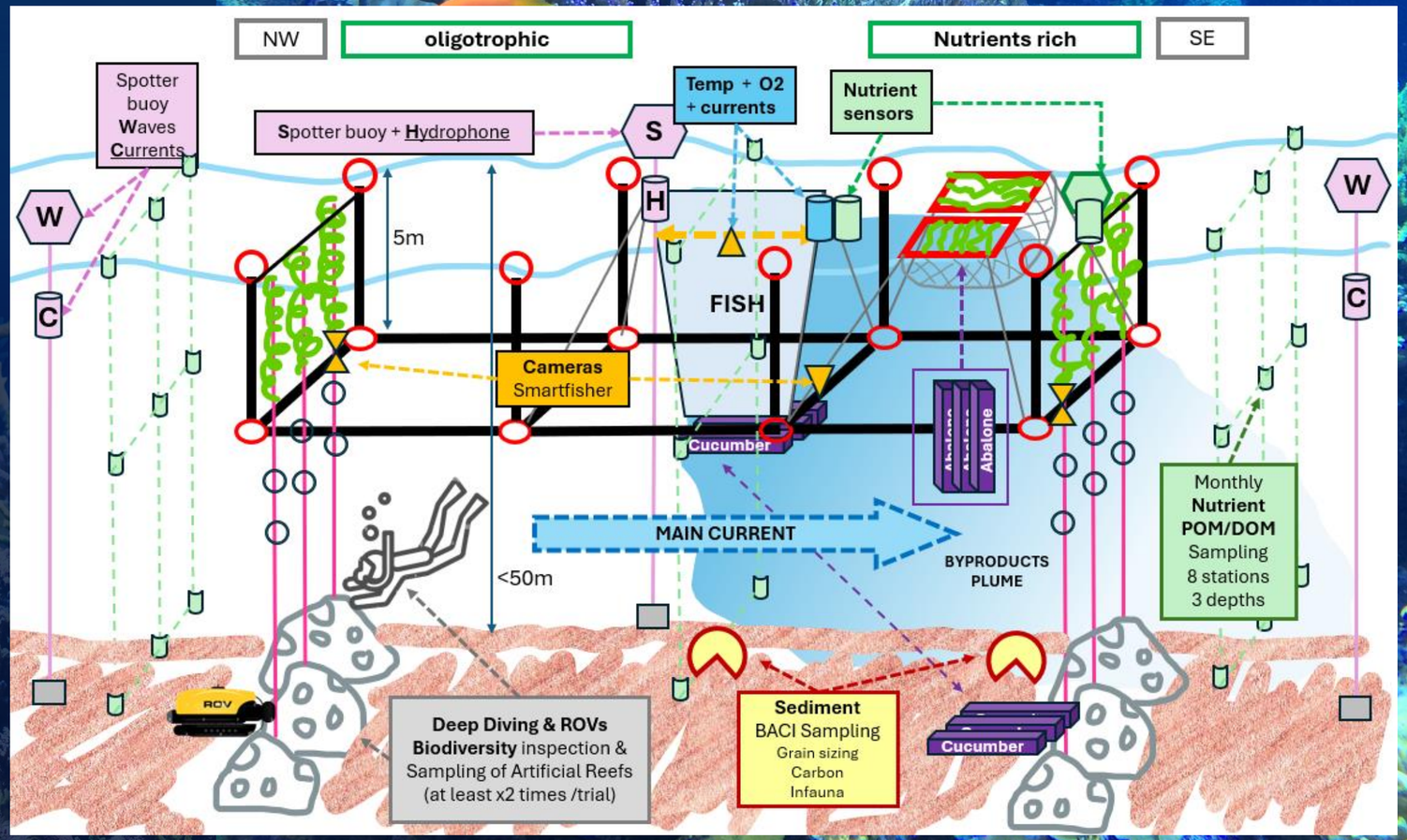
Integrated Multi-Trophic Aquaculture (IMTA)

DEMO 1

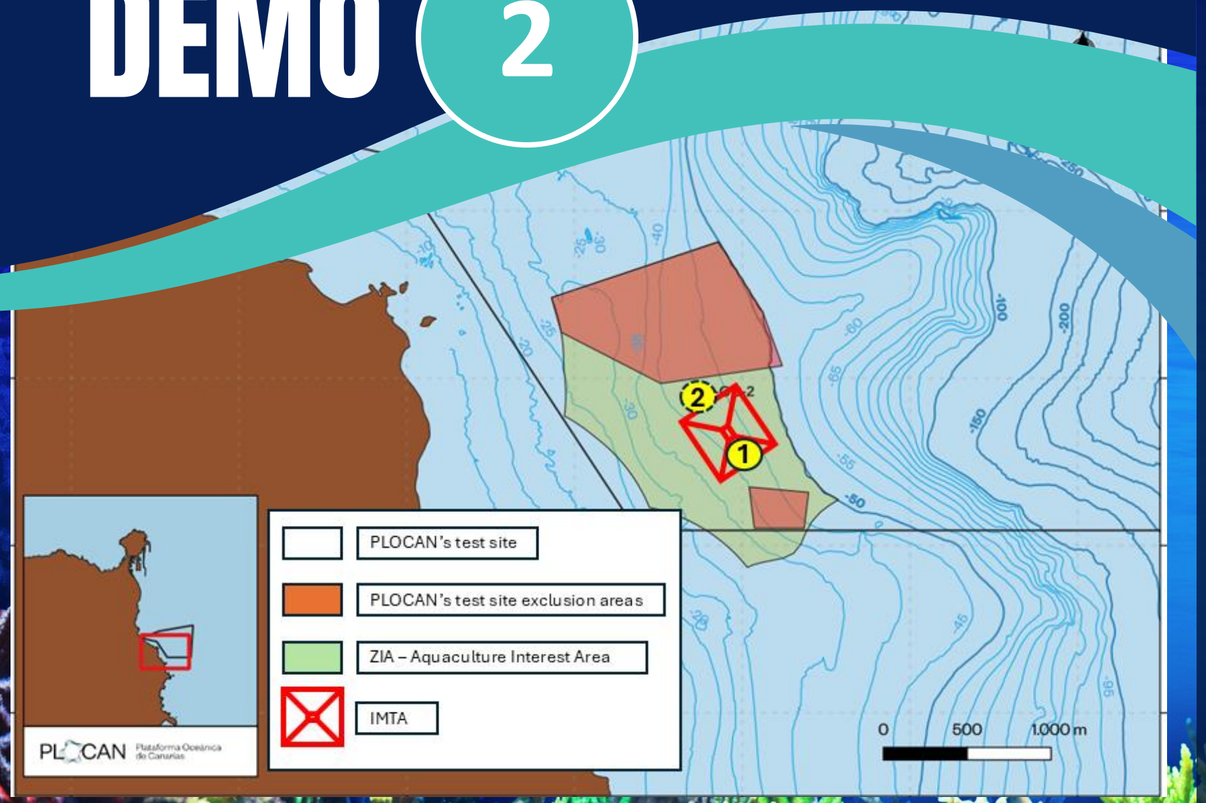
- Starts: November 2026 – February 2027
- 2-year trial

Investigate how combining aquaculture of finfish with macroalgae, abalone, sea cucumbers, and artificial reefs can reduce pollution and enhance biodiversity.

- Surrounds aquaculture cages with nutrient-absorbing macroalgae.
- Use of high-value species like abalone and sea cucumbers for bioremediation of organic matter accumulation.
- Deploys artificial reefs (demo 2) to improve habitat complexity.



DEMO 2



GRAN CANARIA

Marine Forests & Artificial Reefs

Restore marine biodiversity by deploying macroalgae forests attached to artificial reefs in oligotrophic waters.

- Provides shelter and breeding grounds for marine life in barren biotopes.
- 2D (for attachments to mooring blocks) and 3D artificial reefs on seafloor + mid water artificial reefs
- Reduces nutrient levels in water through macroalgae uptake, what in turn captures CO2 to combat ocean acidification.

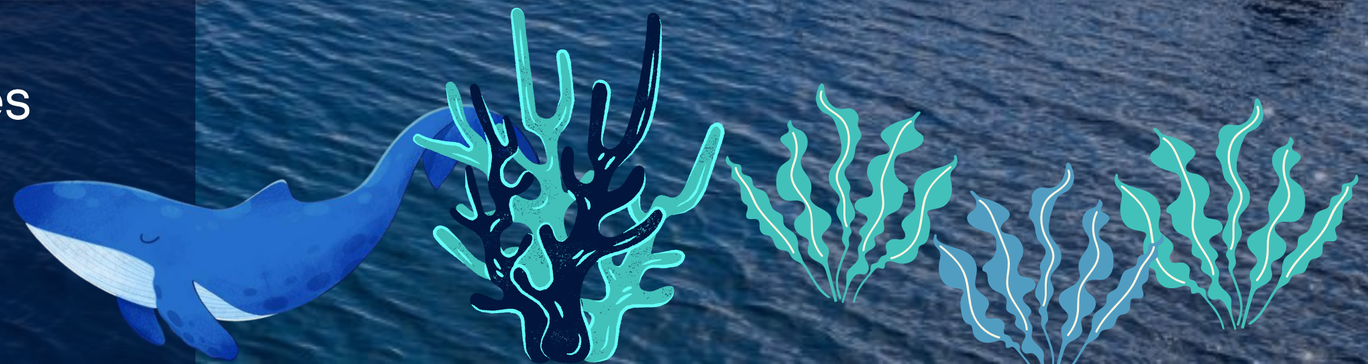
IRELAND

Salmon Farming & Macroalgae Integration

DEMO 3

Enhance biodiversity and reduce nutrient waste by integrating macroalgae cultivation with salmon farming.

- Co-locates large salmon farms with polyculture macroalgae species like kelp.
- Improves water quality by absorbing excess nutrients.
- Creates habitats for marine species while sequestering carbon.



DEMO 4

ICELAND

Invasive Pink Salmon Reduction

Detect, monitor, and control invasive pink salmon using advanced eDNA technologies.

- Tracks invasive species through real-time eDNA monitoring. eDNA sampler filters water and analyses them in-situ for specific DNA markers and transmit the data to researchers in real time.
- Focuses on rivers critical for native Atlantic salmon populations.
- Develops scalable methods for invasive species management.

STAKEHOLDER ENGAGEMENT

LIVING LABS

> “Living Labs are open innovation ecosystems in real-life environments based on a systematic user co-creation approach that integrates research and innovation activities in communities and/or multi-stakeholder environments, placing citizens and/or end-users at the centre of the innovation process.”
>
> *- Definition by the European Network of Living Labs (ENoLL) -*

CITIZEN SCIENCE: helped by the MINKA platform, which will be the core for biodiversity data collection and local community engagement through all living labs

MPA MANAGERS: adaptation of the Blueprint Platform to provide valuable tools and information for a better management and decision making of MPAs

BLUE SCHOOLS: connects school communities with marine and coastal issues through experiential learning. Guidance to become part of the Network of European Blue Schools reinforces long-term behavioral change of next generations

FISHER GUARDIANS: engaging professional fishermen communities to the adoption of best practices for waste management both on board fishing vessels and at ports, preventing the loss of fishing gear using tagging systems and promoting the recycling of end-of-life fishing gear.

LITTER ENTREPRENEURS: engages citizens through webinars and hackathons to design and testing micro-businesses and awareness campaigns focused on reducing marine litter. will encourage collaboration between investors, large and small business and innovation communities to derive economic value from pollution prevention and reduction.

A LITTER ENTREPRENEUR PROGRAM

FRAMING THE CHALLENGE:

THE STATE OF THE OCEAN ECONOMY

PHAROS · zoom REGISTER · Funded by the European Union · PREPARED BY: IMPACT HUB Athens · IC RSA

25th September 10:00 AM CET

Link → https://pharosproject.eu/demos/

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EXPECTED IMPACTS

- Strengthened implementation of the **EU Biodiversity Strategy** by restoring degraded ecosystems.
- Enhanced cooperation between Atlantic-Arctic regions through Living Labs.
- 4 Demo sites: deployment of scalable NBS solutions to **combat climate change** impacts.
- 5 Replication sites: roadmaps + business models to implement NBS solutions
- Support for **EU Green Deal** objectives by fostering sustainable blue economies.

Join Us in Restoring Our Oceans

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