4th ESP EUROPE CONFERENCE 2022

10-14 OCTOBER
HERAKLION, GREECE

ECOSYSTEM SERVICES EMPOWERING PEOPLE
AND SOCIETIES IN TIMES OF CRISES

ESP
Ecosystem Services Partnership

HAROKOPIO UNIVERSITY
GEOGRAPHY DEPARTMENT

UNIVERSITY OF PATRAS

SEAFOREST LIFE ecosystem services from the conservation of carbon sinks of posidonia meadows

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Posidonia meadows as carbon sink of the Mediterranean

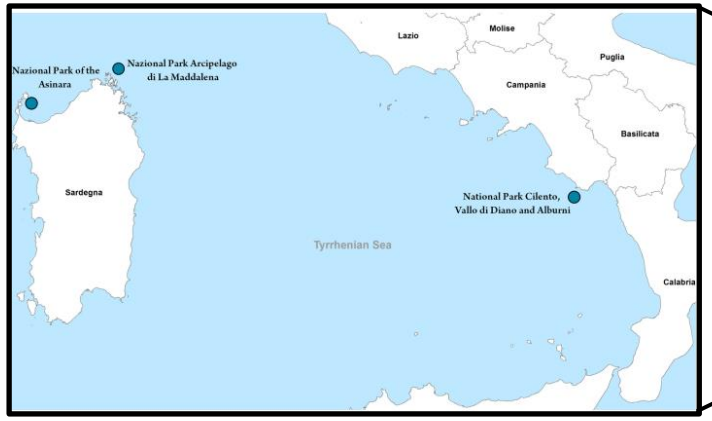
SEA FOREST LIFE - LIFE 17 CCM/IT/000121

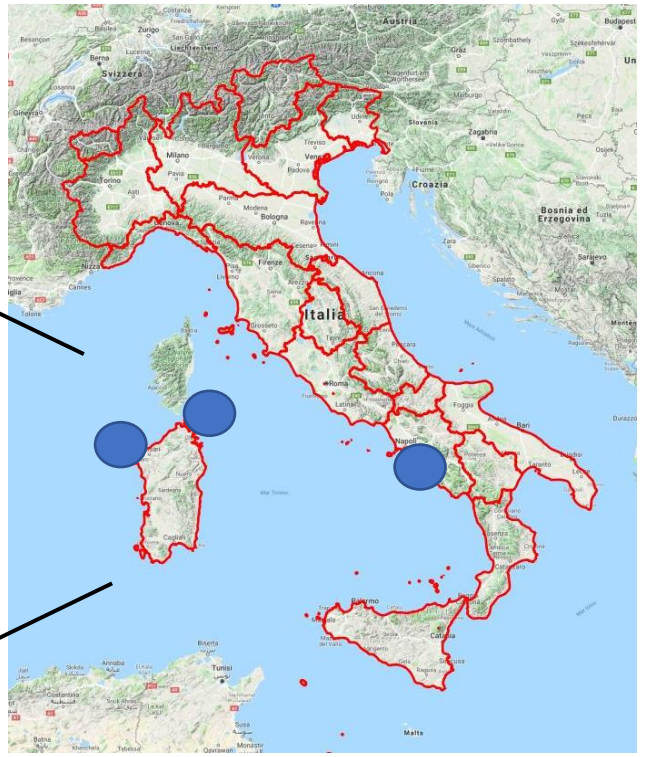
BUDGET INFO:

Total amount: 3,025,382 Euro

% EC Co-funding: 60,00 %

DURATION: Start: 01/09/18 -End: 31/12/23





PROJECT'S IMPLEMENTORS:

Coordinating Beneficiary: D.R.E.AM. Italia

Associated Beneficiary(ies):
CNR, ISPRA, PN MADDALENA, PN ASINARA, PN CILENTO, UNI TUSCIA, PARAGON, CARBONSINKGROUP

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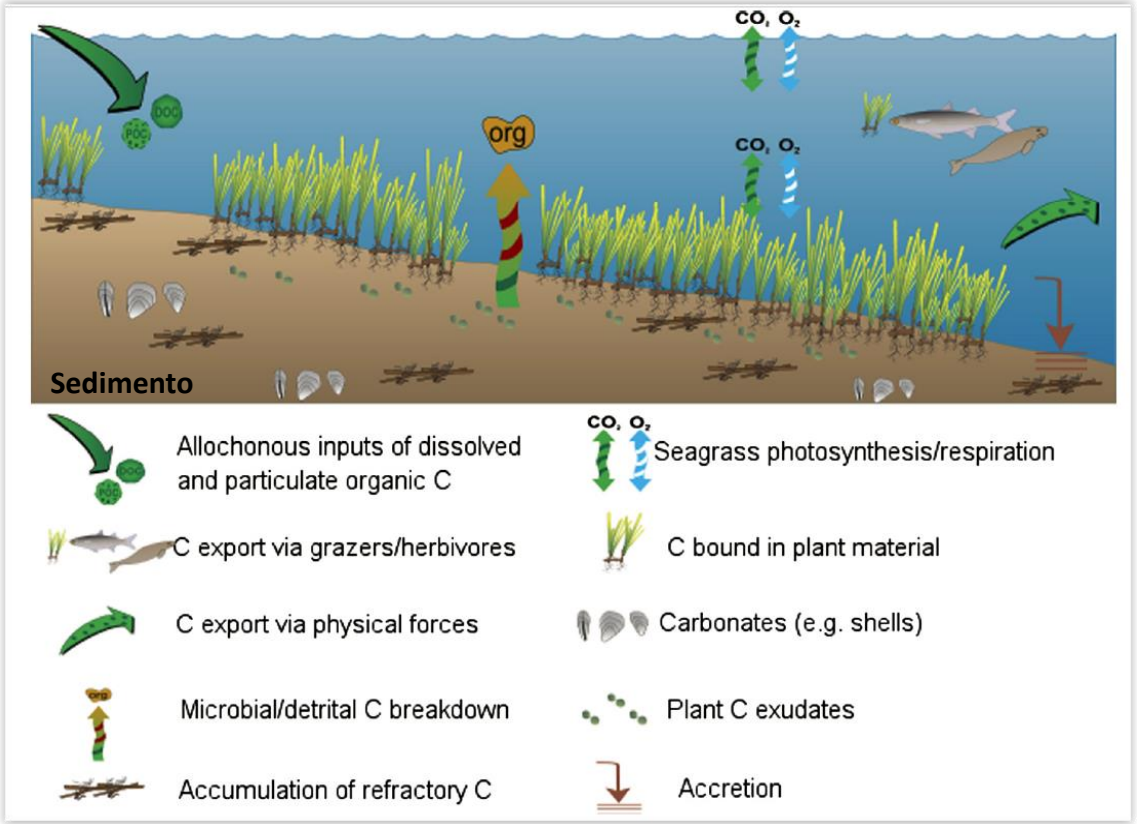
OBJECTIVES & SCOPE

Increase the capacity of the carbon reservoirs of Posidonia meadows through erosion reduction and subsequent consolidation of the habitat 1120*: Posidonia meadows (Poseidonia oceanicae)

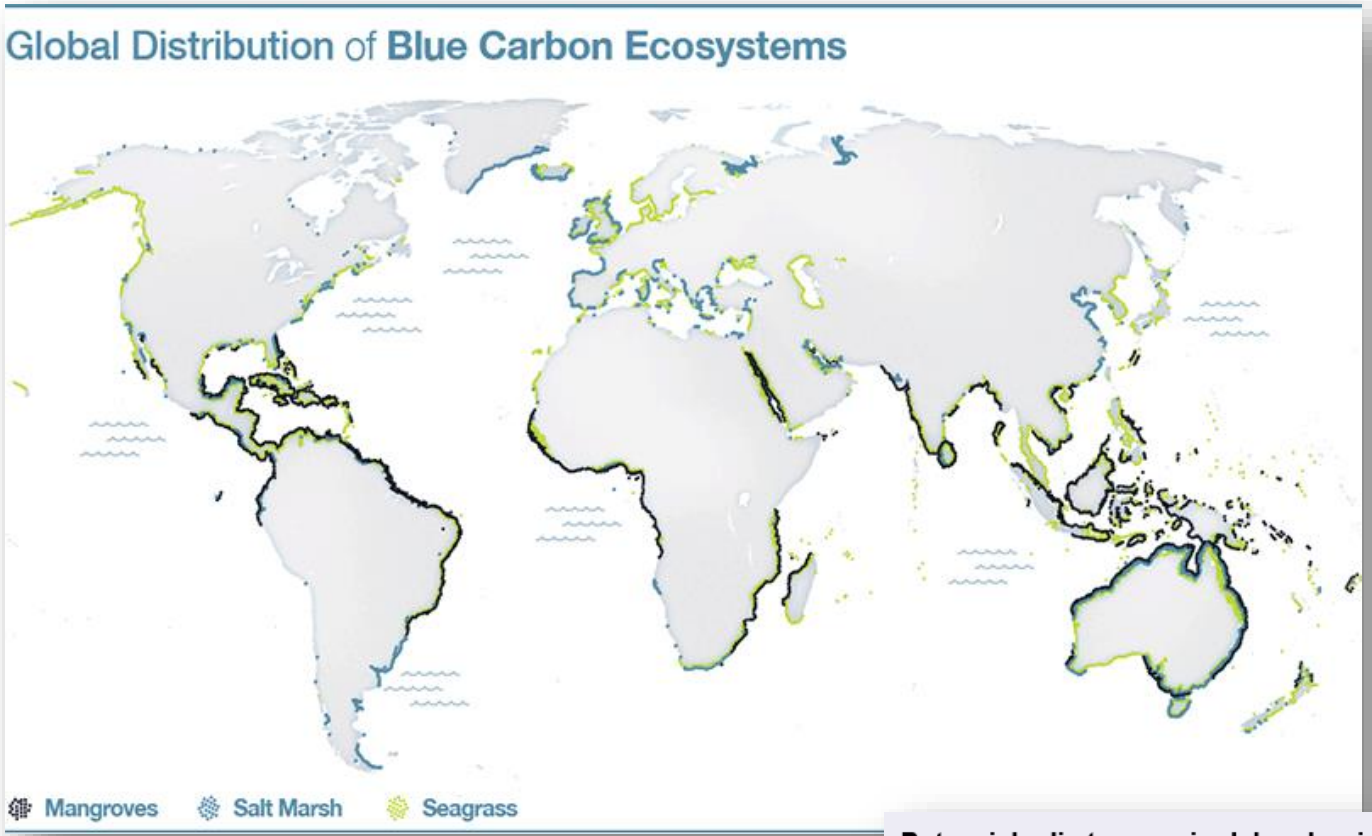
Why it is important to protect Posidonia meadows?

Carbon flow in the Posidonia meadows



high oxygen production, ability to sequester large amounts of carbon, breeding and first growth area for many fish species, biodiversity hub

stabilisation and consolidation of the seabed, increased transparency of coastal waters, reduction of the effects of waves and large storm surges, protection of beaches from erosion (banquette);



Estimates of carbon stock for Mangroves, Salt Marsh and Seagrass

Potenziale di stoccaggio del carbonio degli ecosistemi costieri e marini

	Estensione geografica	*Carbonio totale sequestrato annualmente*	*Stima media globale stoccaggio Carbonio*	**Tasso conversione*	**Emissione potenziale*
	Milioni ettari (ha)	*Milioni Mg C yr^{-1}*	*Totale (milioni Mg C)*	*% yr^{-1}*	*Milioni Mg CO_2*
Mangrovie	13.8–15.2	31.2–34.4	5617–6186	0.7–3.0	144.3–681.1
Paludi Salmastre	2.2–40	4.8–87.2	570–10,360	1.0–2.0	20.9–760.4
Fanerogame marine	17.7–60	41.4–82.8	4260–8520	0.4–2.6	62.5–813.0

Main project activities

1. Definition of a standard protocol for estimating fixed carbon

- Estimates of **carbon deposits** and their rate change in relation to degradation of habitat 1120 *
- Definition environmental services generated from habitat 1120 * for **climate change mitigation**

2. Improvement of the conservation status of Habitat 1120 * and reduction of the greenhouse gas emissions:

- **3 Anchoring and mooring management plans** in critical areas for Posidonia
- Installation of **150 sustainable moorings**
- Actions pilot **of revegetation of Posidonia**

Main project activities

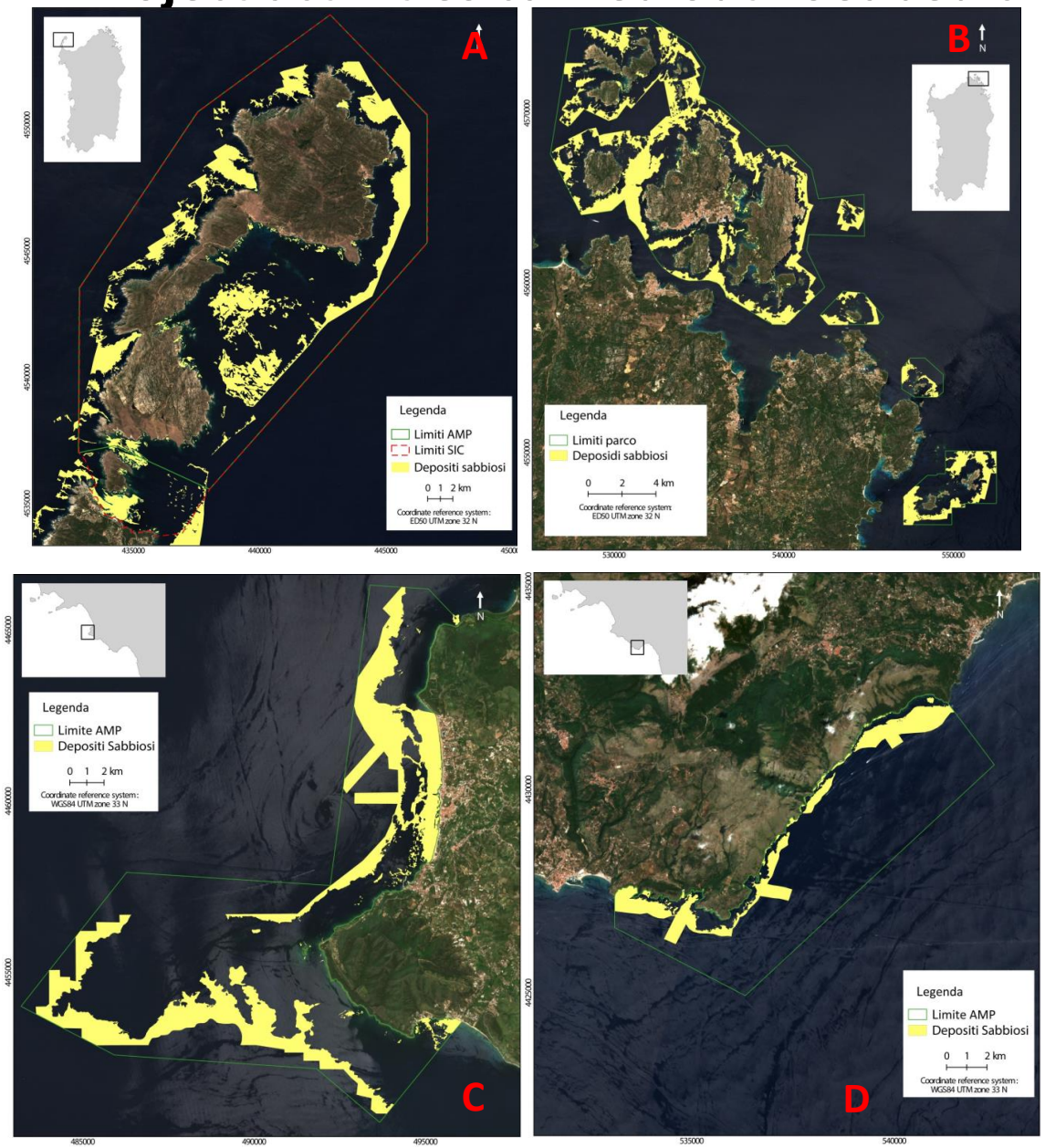
3. Creation of a portal for the carbon credit market SEA FOREST LIFE , through a national IT platform for the purchase of the carbon credits generated

« The carbon credit is a real unit of a financial nature that represents the removal of one tonne of CO2 equivalent from the atmosphere. It represents the carbon that has been avoided or reduced through a project and which can be purchased as a means to offsetting emissions "

4. A replication of the project organized in **Malta** and others Mediterranean areas

Anchoring and mooring management plans

1.Project activities carried out…Seabed characterisation

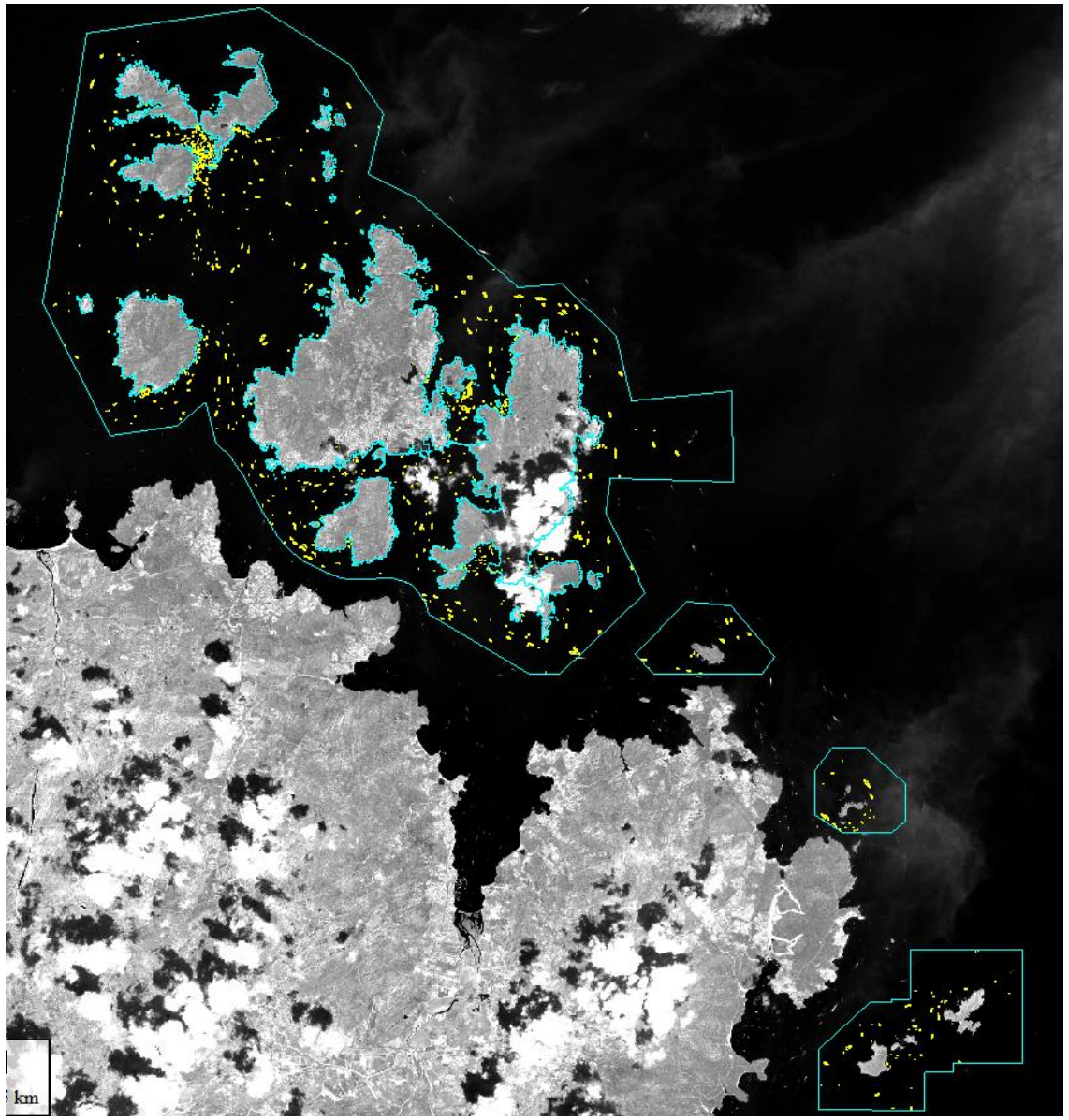


Seabed characterisation of the study areas:

- Identify areas to be protected with respect to anchoring;
- Identifying areas suitable for free anchoring

Mapping the sandy seabed of Asinara Island (A), La Maddalena Archipelago (B) and the MPAs of Castellabate (C) and Infreschi (D).

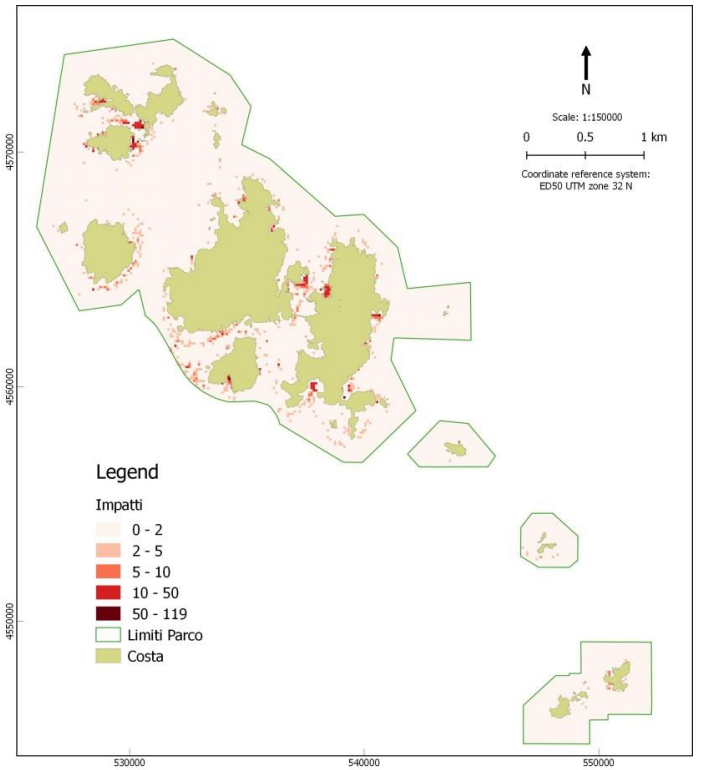
2. Project activities carried out…detecting boat flows



Analysis of boat flows

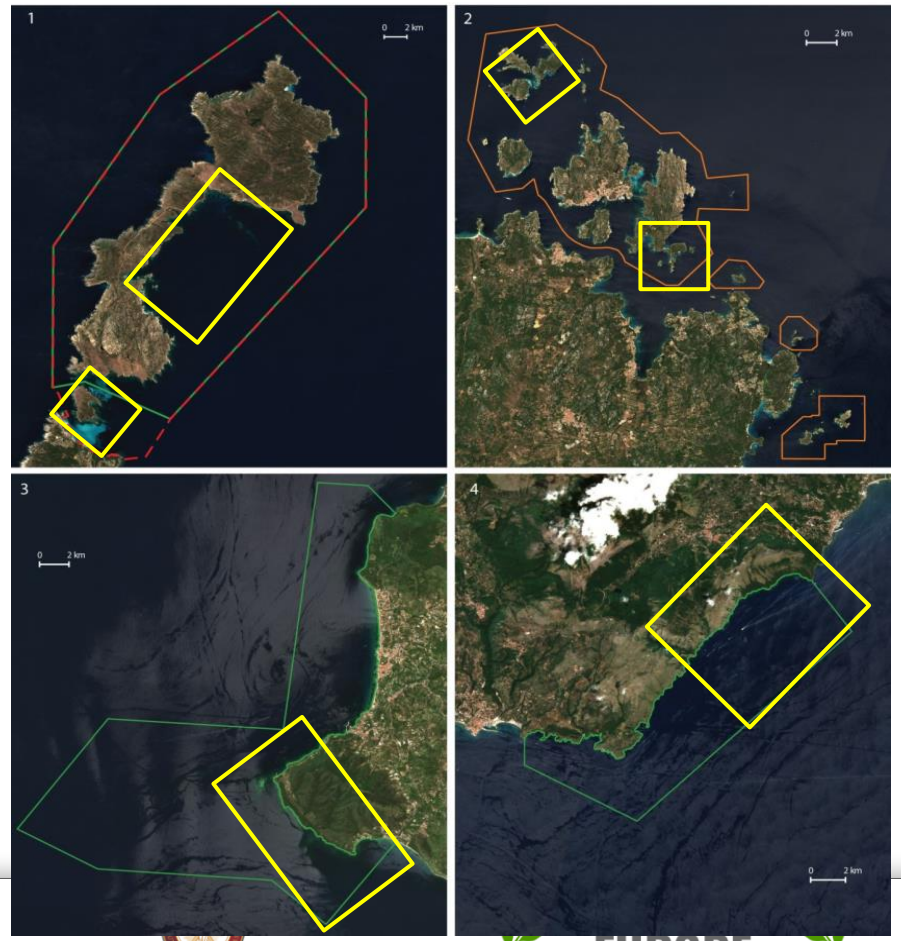
- Identifying the most frequented areas
- Database for the assessment of anchoring pressures

Map of anchoring pressures

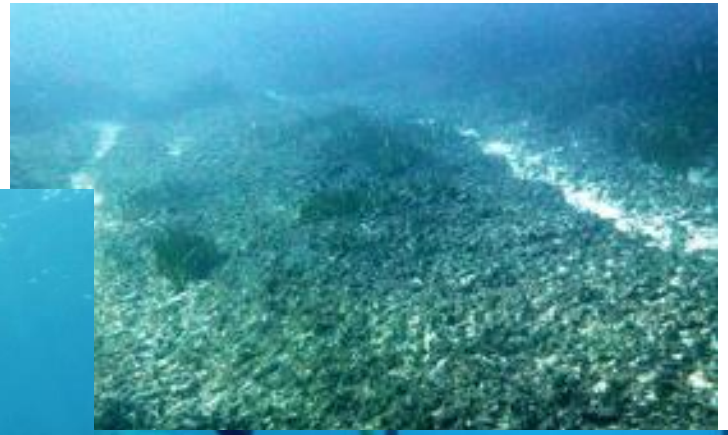


3. Publication of Anchoring and mooring management plans

- Compatible areas for anchoring - suitable sandy deposits
- Use of non-impact anchoring systems



Conservation actions: revegetation of Posidonia



Irregular anchorages degrade the posidonia by tearing leaf bundles and rhizomes, but also whole plants

Conservation actions: revegetation of Posidonia

Project activities carried out…

collection of beached seeds and cuttings

↓

storage and cultivation of material

↓

Revegetation of degraded Posidonia meadows

Conservation actions: revegetation of Posidonia

Project activities working progress…a citizen science approach

Diving centres: diving centres can contribute either by reporting any prairie blooms (September-December, depending on depth) or by reporting the discovery of floating fruits or eradicated cuttings.

Boaters: boaters can help by reporting the discovery of floating fruits or eradicated cuttings.

Volunteers: Citizens can help by reporting the discovery of beached fruits and cuttings and helping during the material recovery phase

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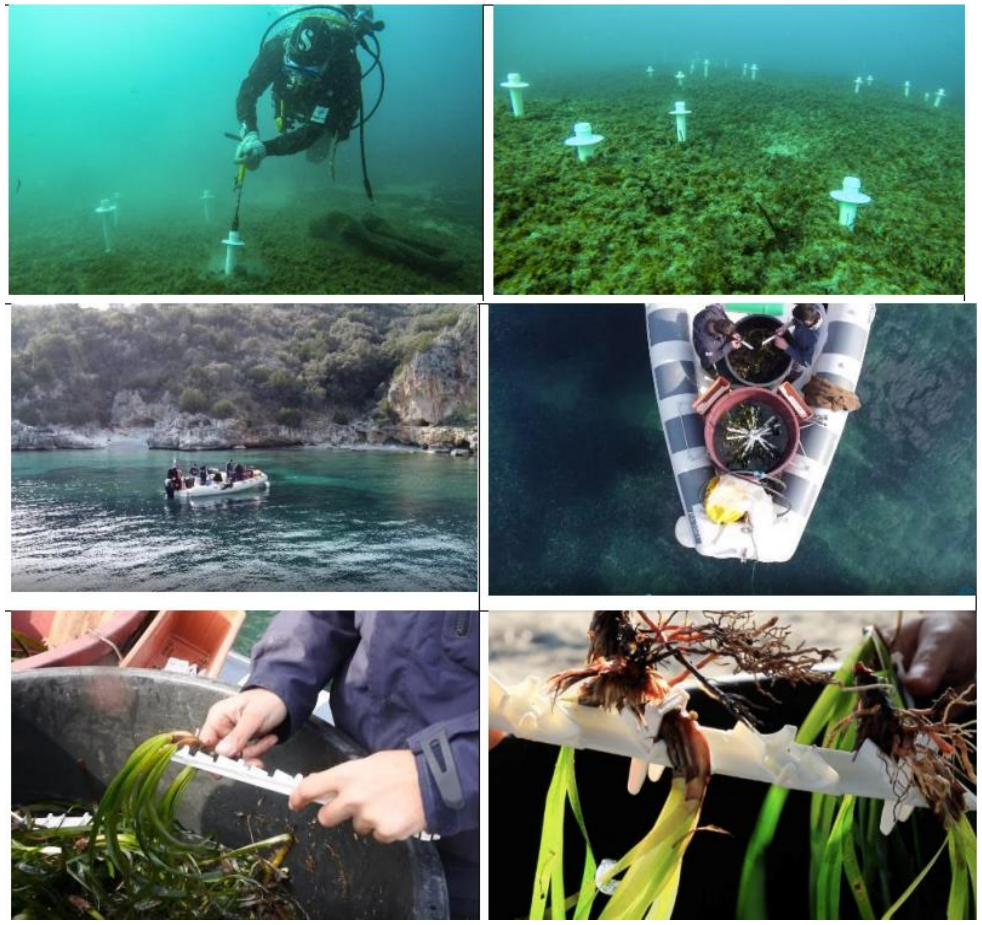
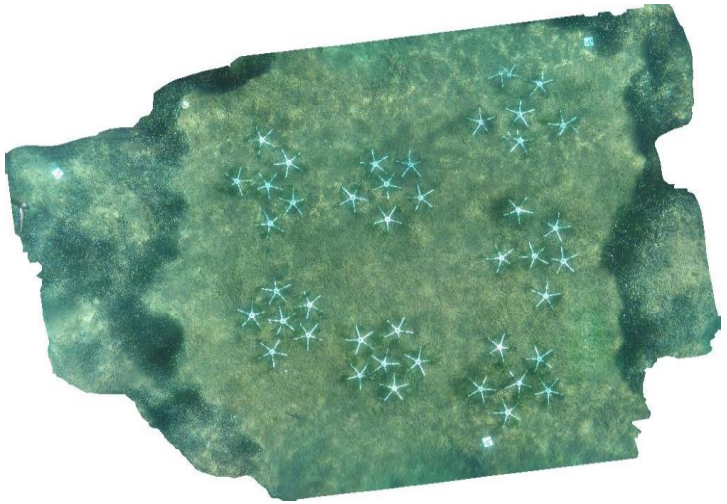
Conservation actions: revegetation of Posidonia

Project activities carried out…



The found cuttings were attached to a purpose-built structure made of biodegradable plastic and anchored by means of a screw to the substrate in an area with little interference from currents and anthropogenic disturbances. The researchers are monitoring the growth of the new posidonia seedlings in an area where the seagrass had been degraded by anchoring.



Estimates of carbon deposits and creation of a carbon credit market

Project activities working progress...

Sustainable managemet

Voluntary reduction and compensation of emissions

Credits

PROTOCOLS OF ACCOUNTING & MONITORING

Carbon accounting (sustainability indicator)

GREEN MARKETING

THANK YOU

Sea Forest Life

ESP Ecosystem Services Partnership

University of Patras

4th ESP Europe Conference

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