

Art & Science across Italy

IV Edizione (2022-2024)

Il restauro delle coste rocciose

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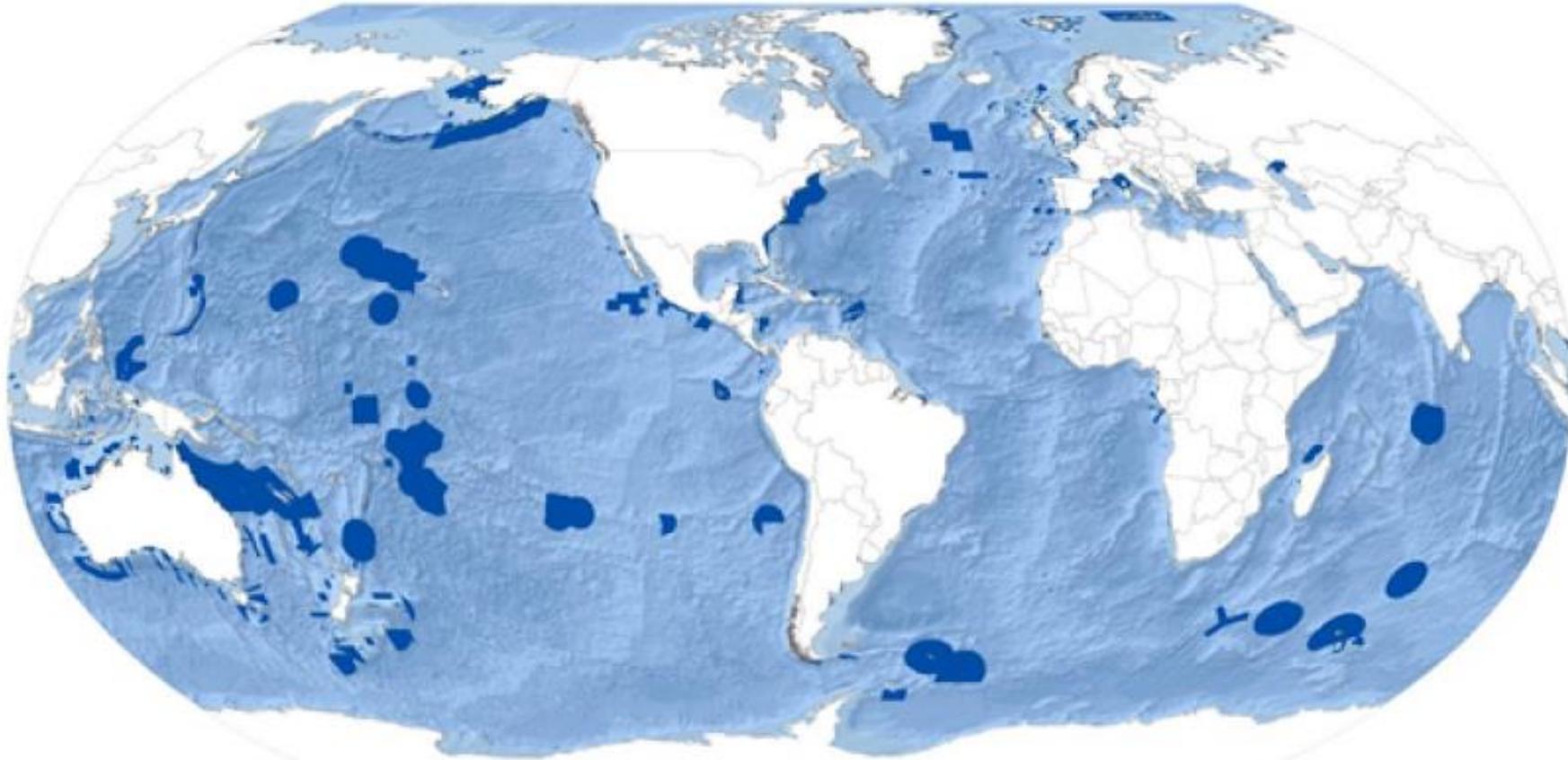


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di Genova

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DI SCIENZE DELLA TERRA,
DELL'AMBIENTE E DELLA VITA

Protezione e conservazione del mare

Official MPA Map



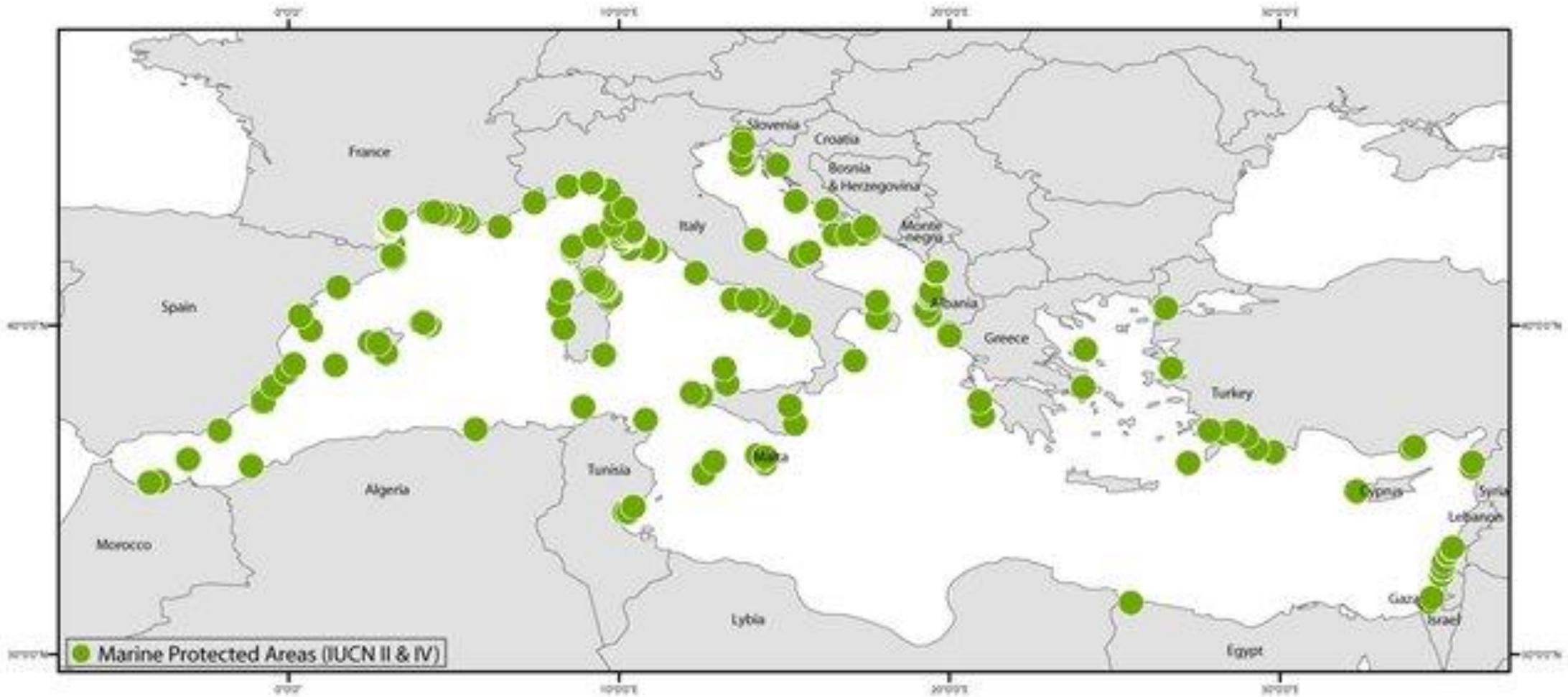
Source: UNEP-WCMC AND IUCN (2017). Protected Planet: The World Database on Protected Areas (WDPA) [On-line].
September, 2017, Cambridge, UK: UNEP-WCMC. Available at www.protectedplanet.net



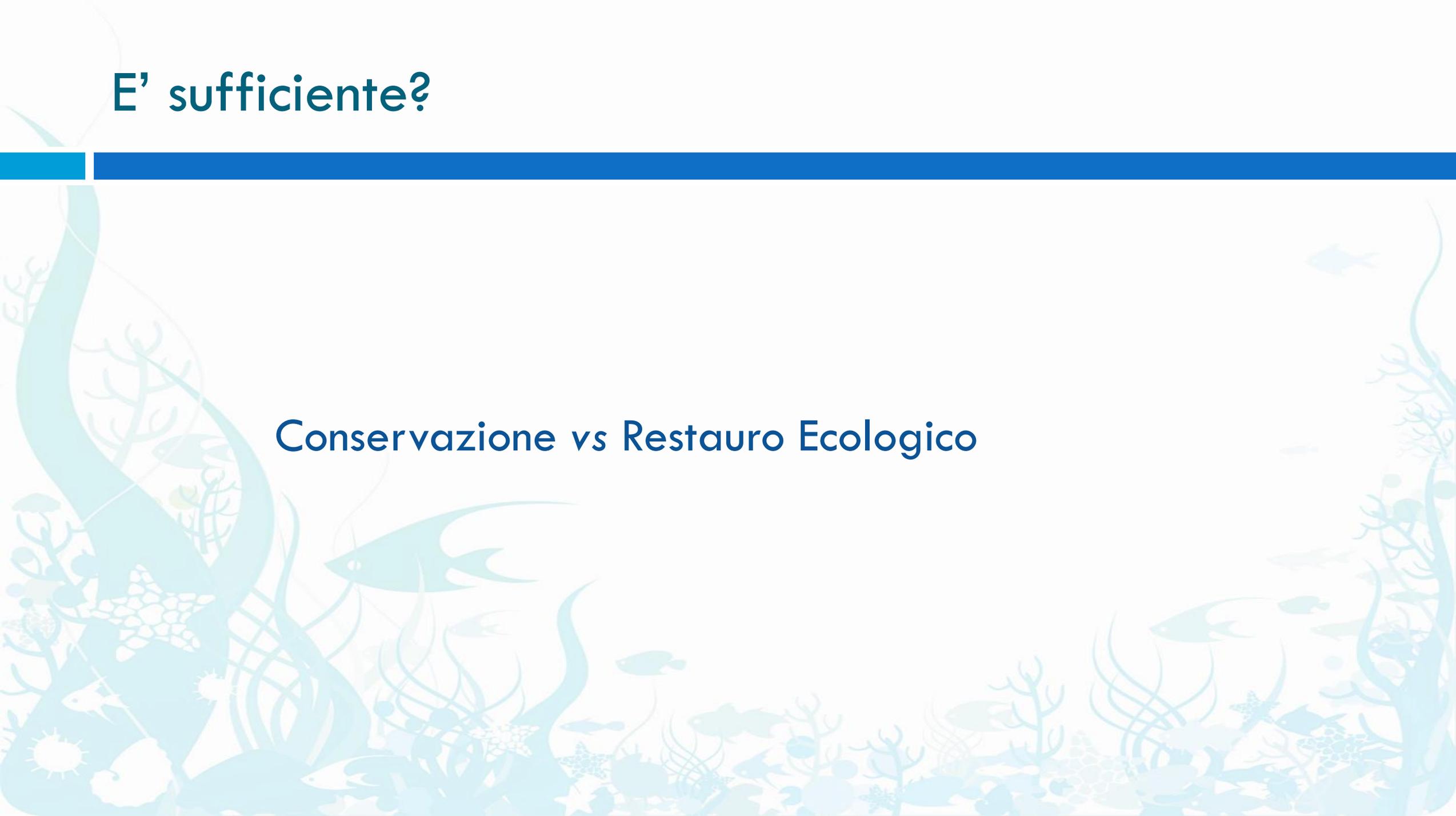
6.35% of the Global Ocean covered by protected areas
1.89% exclusively no-take.



II Mediterraneo



E' sufficiente?

An illustration of an underwater scene with various fish, coral, and seaweed. The scene is rendered in shades of blue and green, with a light blue background. The fish are of various sizes and species, swimming in different directions. The coral and seaweed are detailed and colorful, adding to the underwater atmosphere.

Conservazione vs Restauro Ecologico

EU Environmental Legislation

Year	Policy	Scope (exact extracts from policy text)
1979	Birds Directive	<ul style="list-style-type: none"> • conservation of all species of naturally occurring birds • measures to maintain the population of the species referred to in Article 1
1992	Habitats Directive	<ul style="list-style-type: none"> • measures ... to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora
2000	Water Framework Directive	<ul style="list-style-type: none"> • prevents further deterioration and protects and enhances the status of aquatic ecosystems • achieve the objective of at least good water status
2002	Working document Natura 2000 network	<ul style="list-style-type: none"> • community-wide network of nature protection areas • ... to assure the long-term survival of Europe's most valuable and threatened species and habitats.
2006	Proposed Soil Framework Directive	<ul style="list-style-type: none"> • preservation of soil functions • current scientific knowledge on soil biodiversity and its behaviour is too limited to allow for specific provisions
2008	Marine Strategy Framework Directive	<ul style="list-style-type: none"> • applying an ecosystem-based approach to the management of human activities while enabling a sustainable use of marine goods and services

conserving
single
species

conserving
status of
communities
of species

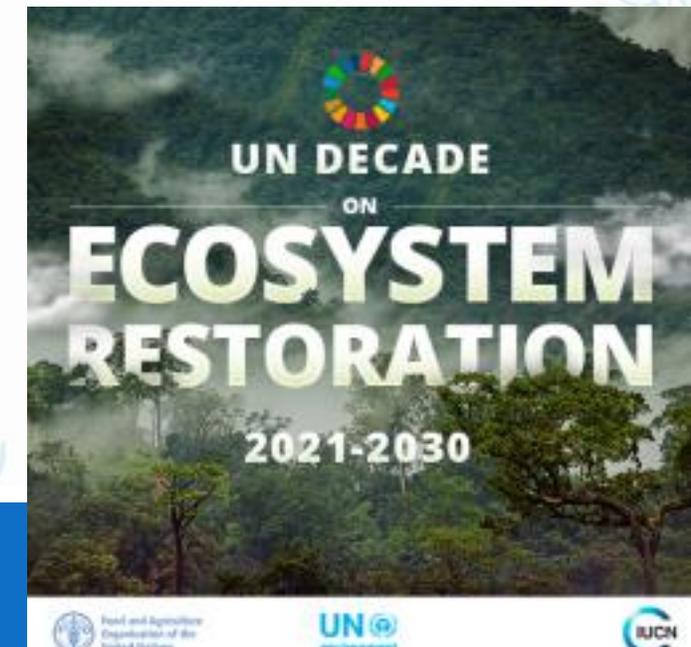
enhancing
connectivity

sustaining
Ecosystem
Services

Dalla Conservazione al Restauro

EU and UN Environmental policies for Coastal and Marine Ecosystems

- Biodiversity Strategy to 2030
- UN Sustainable Development Goal 14, Target 14.2
- 2021-2030 UN Nation Decade of Ocean Science for Sustainable Development
- 2021-2030 The UN Decade on Ecosystem Restoration
- **2022: The Nature Restoration LAW**



Il restauro ecologico

- is the practice of renewing and restoring degraded, damaged, or destroyed ecosystems and habitats in the environment **by active human interruption and action**

The image shows a screenshot of the Society for Ecological Restoration (SER) website. At the top left is the SER logo, which includes the text 'SER SOCIETY FOR ECOLOGICAL RESTORATION'. To its right is the logo for the 'UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030', with 'GLOBAL PARTNER' written below it. A green button labeled 'NEWSLETTER SIGN UP' is positioned on the right side of the header. Below the header is a navigation menu with the following items: ABOUT, MEMBERSHIP, GET INVOLVED, PROFESSIONAL DEVELOPMENT, RESOURCES, NEWS & EVENTS, and PARTNERS. The main content area features a large background image of a field of tall, yellowish-brown plants. Overlaid on this image is the text: 'SER is the leading international organization working on the science, practice, and policy of ecological restoration'. At the bottom of the page, there are three distinct sections: a teal box on the left with the text 'Become a Certified Ecological Restoration Practitioner (CERP/CERPIT)' and an 'Apply Now' button; a central image showing a person working in a field; and a purple box on the right with the text 'Committed to advancing the science, practice, and policy of ecological restoration?'.

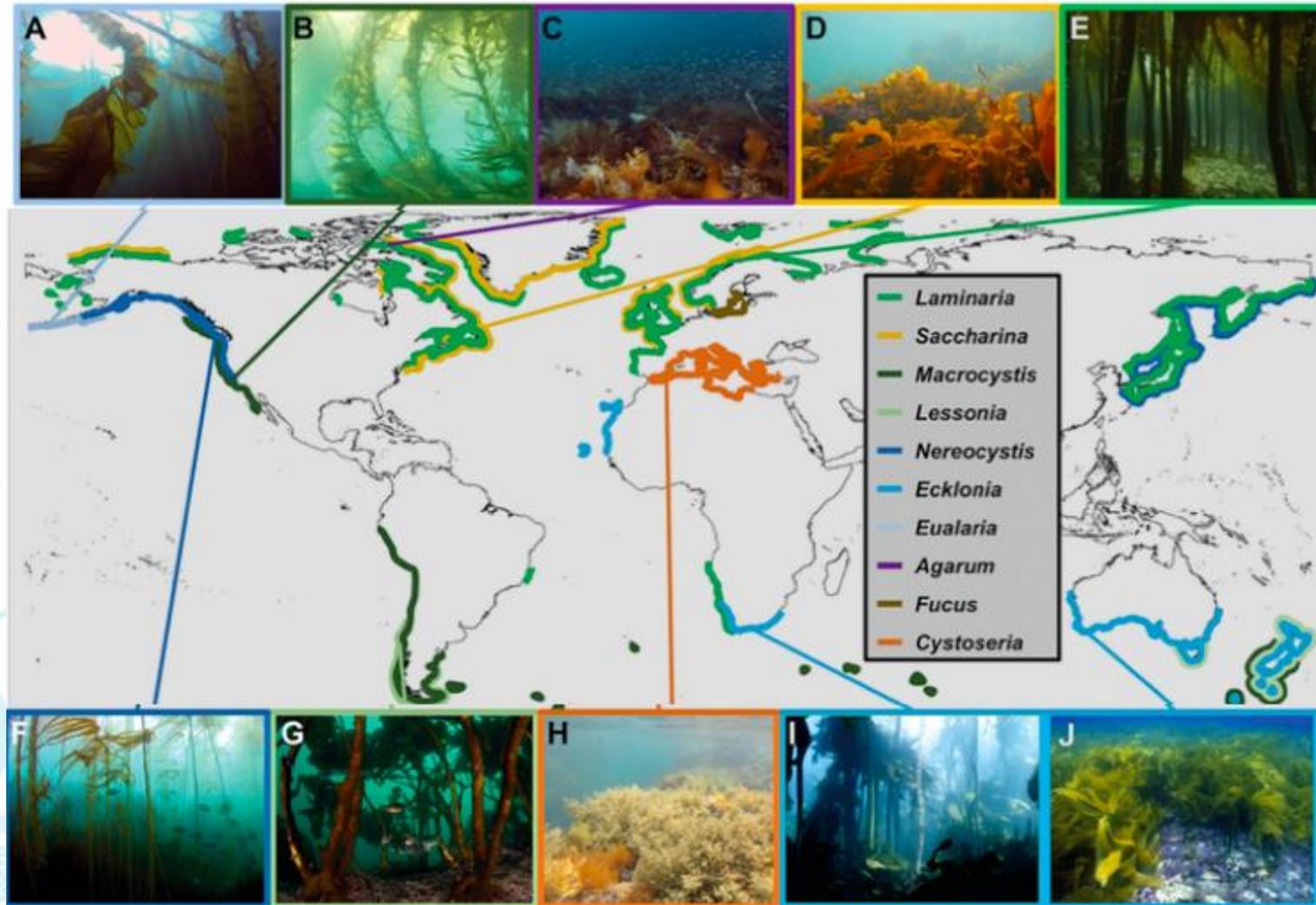
Qualche esempio dal nostro mare



Le foreste algali

Perchè importanti?

- ✓ Costruttori di habitat
- ✓ Ospitano alta biodiversità
- ✓ Forniscono rilevanti funzioni e servizi ecosistemici

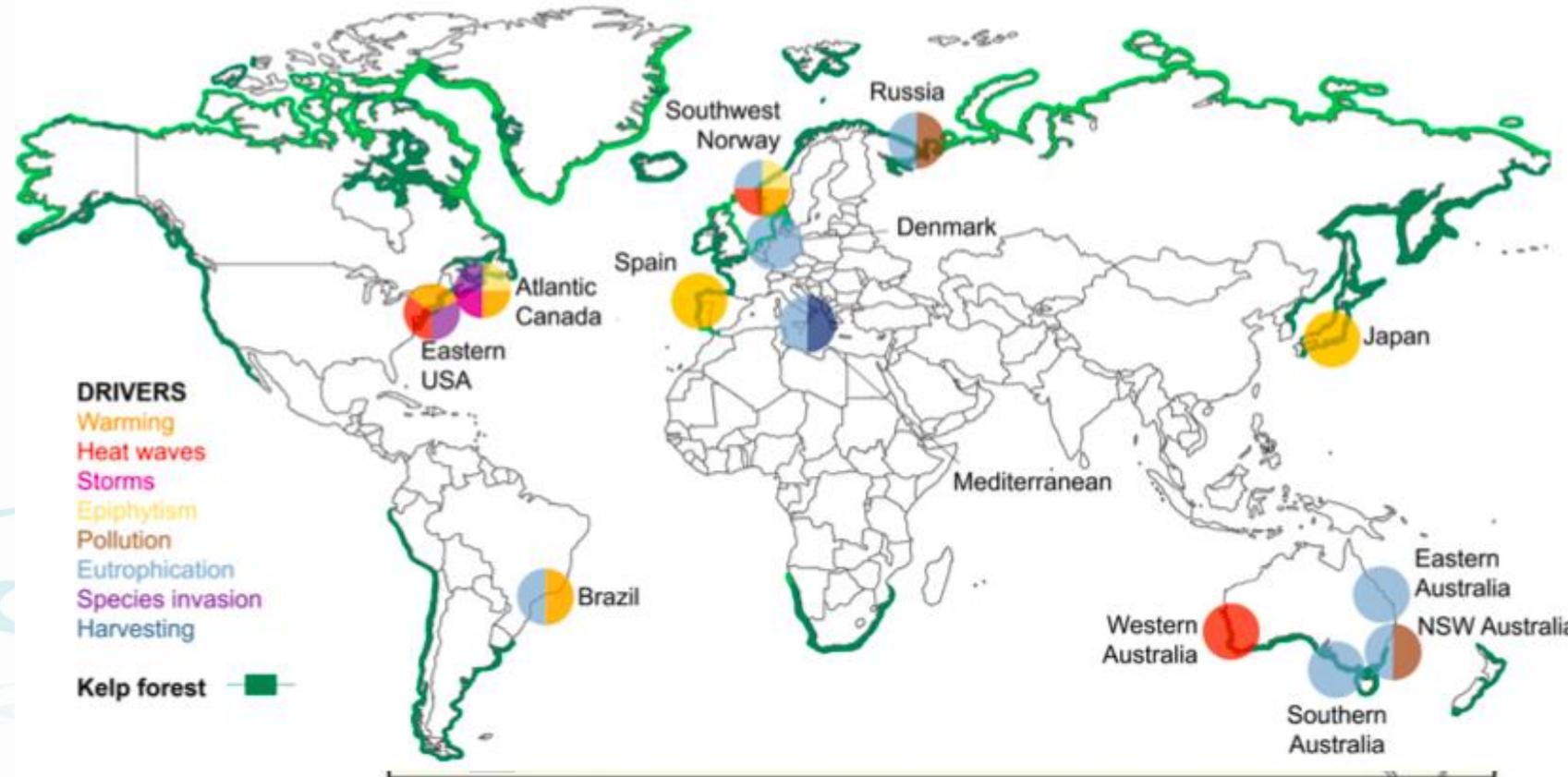


Le foreste algali

Minacciate dai cambiamenti globali

E da impatti locali

- ✓ Inquinamento
- ✓ Sedimentazione
- ✓ Turismo (ancoraggi, calpestio)



Filbee-Dexter and Wernberg 2018

Cystoseira sensu lato

- ✓ **Il Mediterraneo: un hot-spot per il genere**

Circa 40 specie

0-40 m di profondità

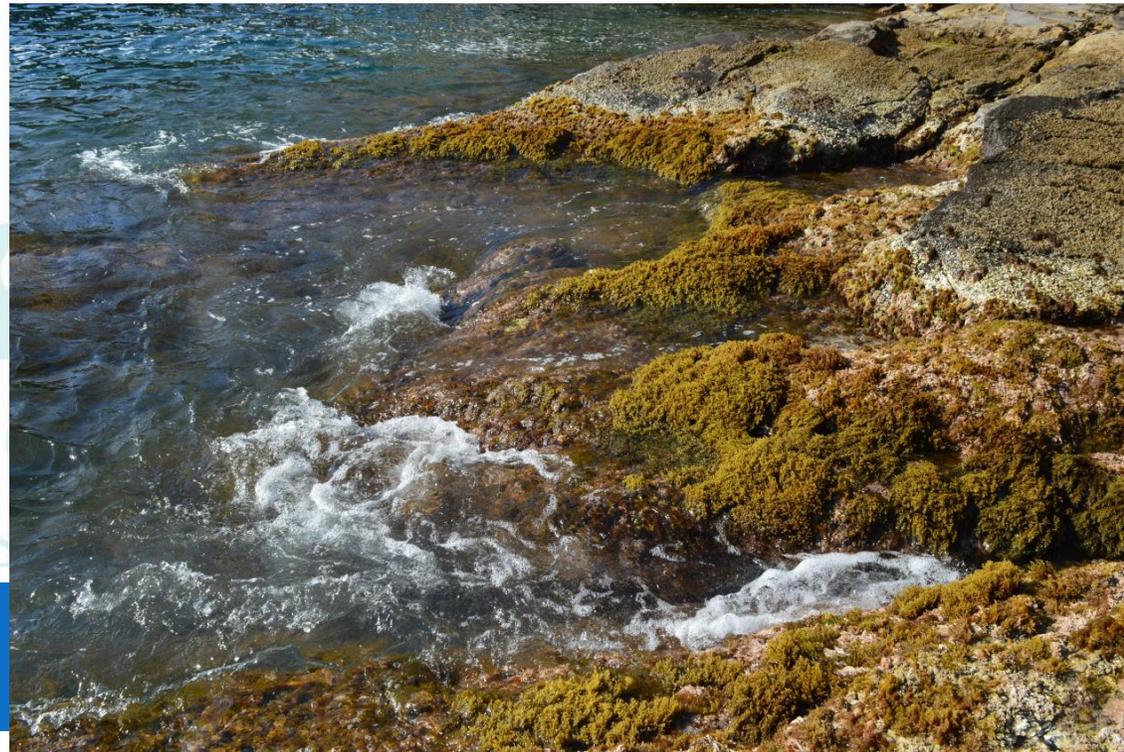
- ✓ **Regressione/perdita**

- ✓ **Conservazione**

Habitat Directive: 1170 (Reef)

Bern & Barcelona Conventions

WFD



Il progetto ROCPOP-Life

Life projects experience



Call: LIFE-2021-SAP-NAT
(Nature & Biodiversity - Standard Action Projects (SAP))

Topic: LIFE-2021-SAP-NAT-NATURE

Type of Action: LIFE-PJG

Proposal number: 101074309

Proposal acronym: REEForest

Type of Model Grant Agreement: LIFE Action Grant Budget-Based

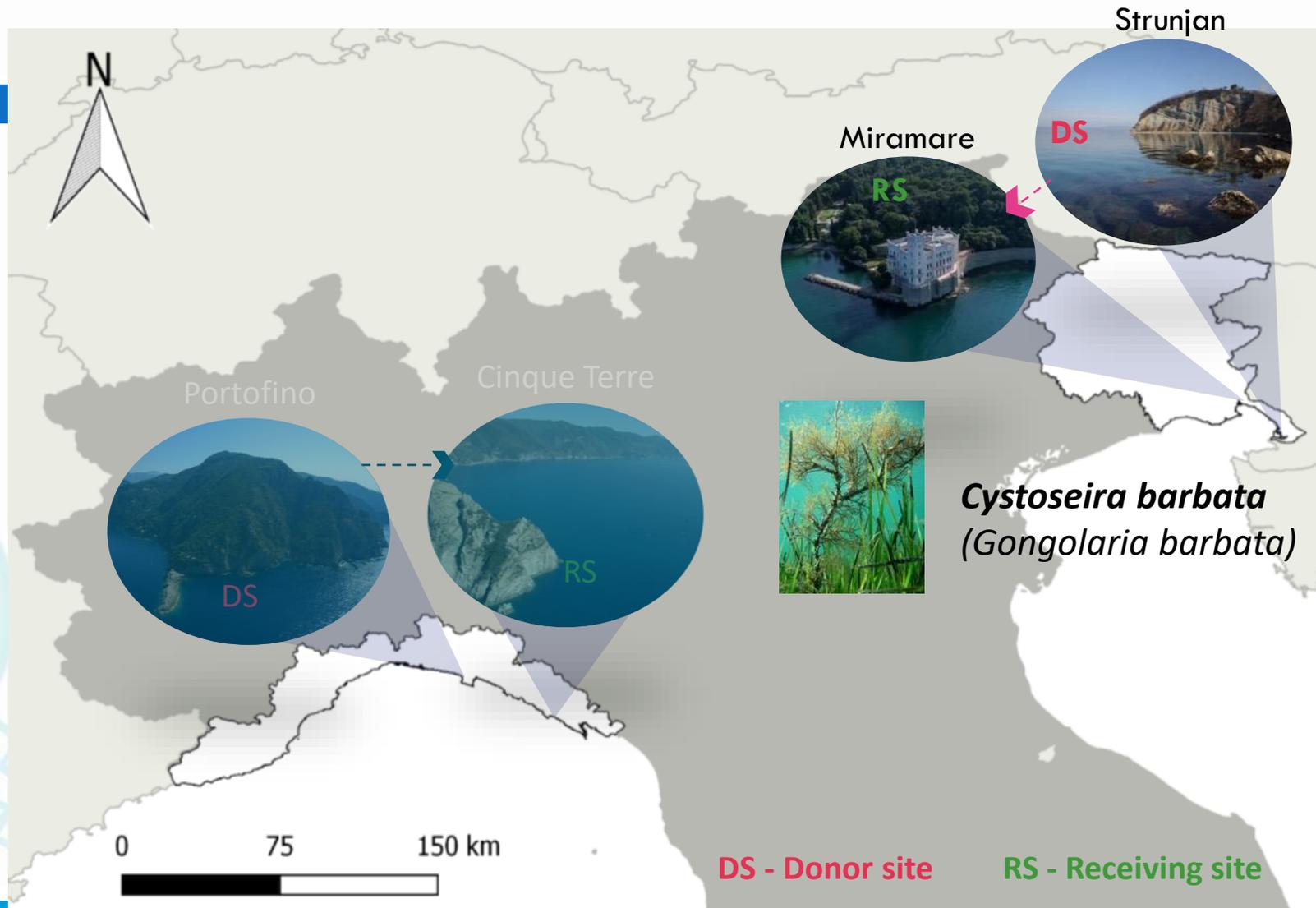


Cystoseira sensu lato

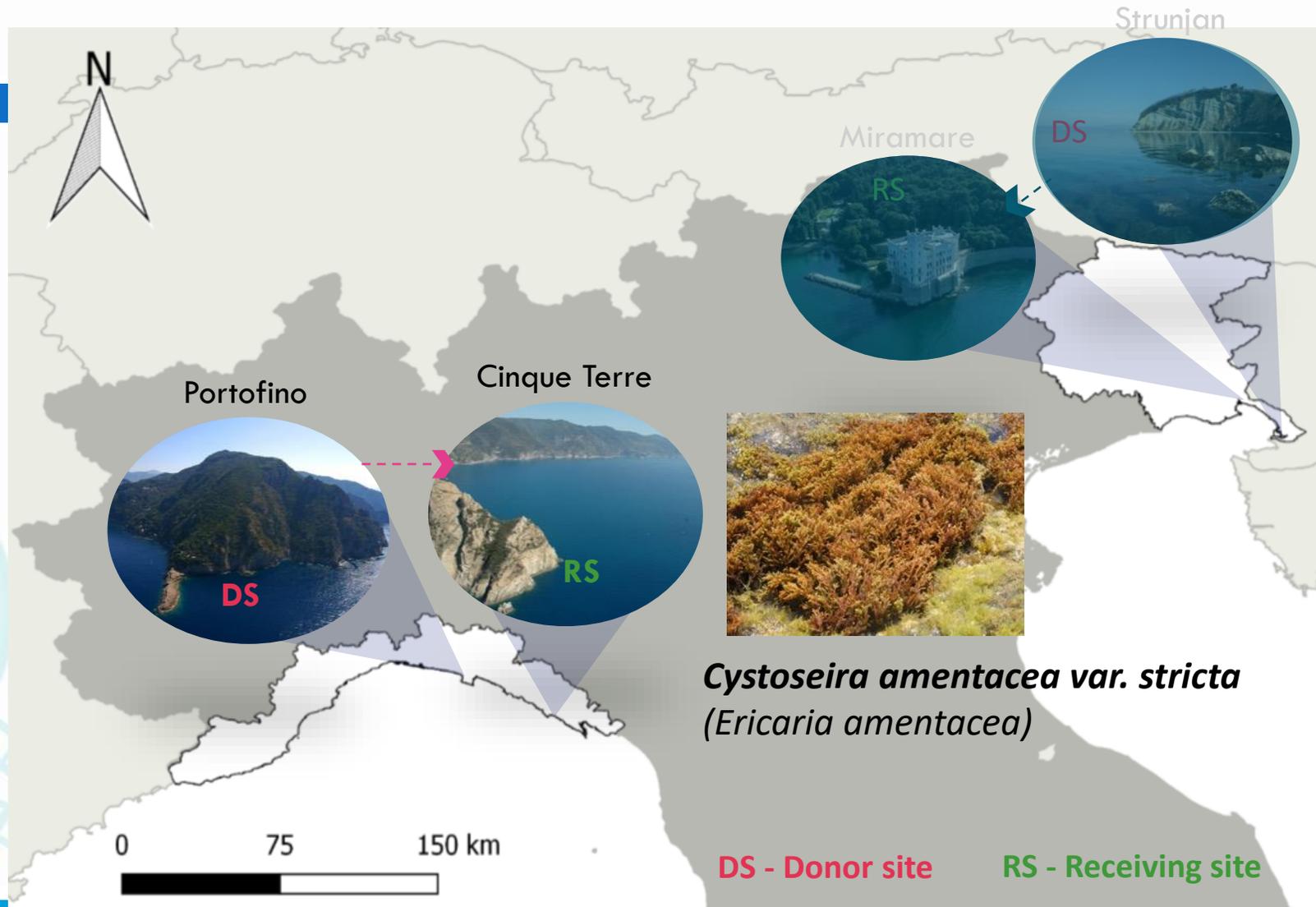


- ❑ Specie subtidali e intertidali: *Ericaria amentacea* e *Gongolaria barbata*
- ❑ Differenti sfide

Siti donatori e riceventi



Siti donatori e riceventi



Raccolta degli apici



L'avvio delle colture



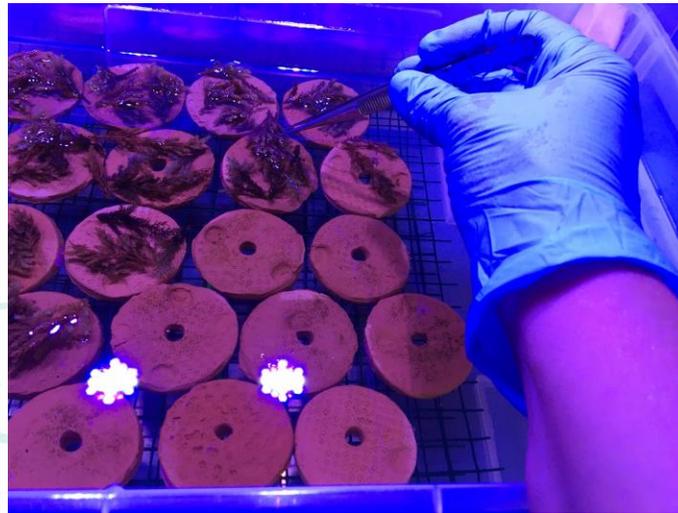
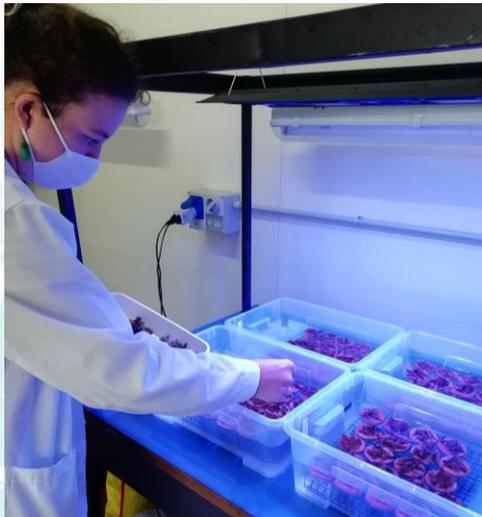
24h



Gametes are released and fertilized, and zygotes settle



Ericaria amentacea: la fase di coltura



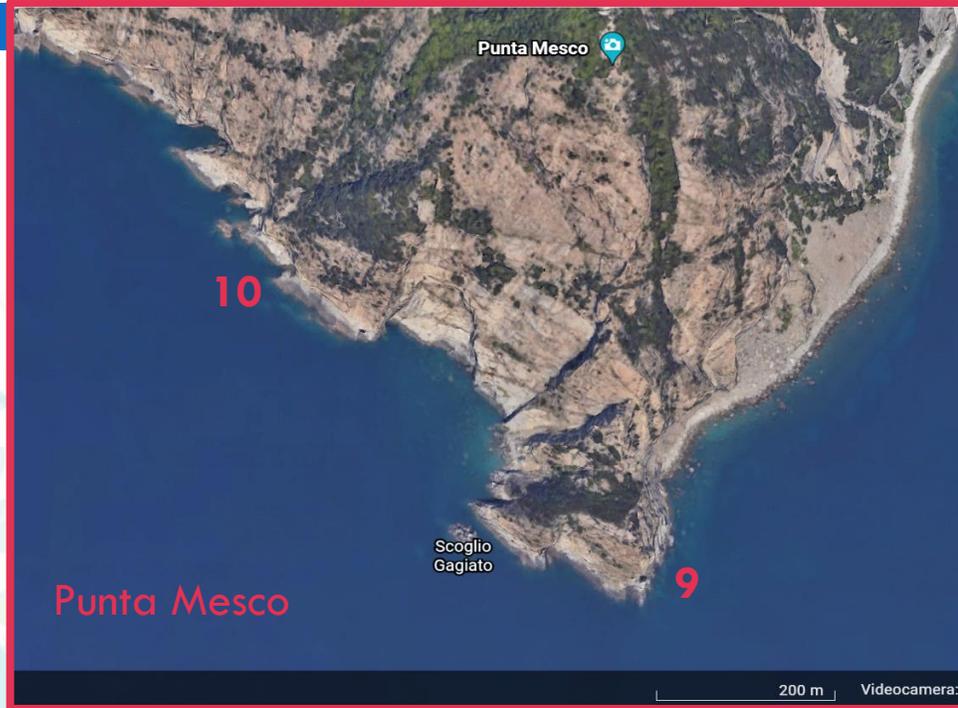
6 eventi

2044 piastrelline

Ericaria amentacea: la fase dell'outplanting



Ericaria amentacea: la fase dell'outplanting



10 siti riceventi nell'AMP Cinque Terre

650 m di costa restaurati



Ericaria amentacea: outplanting



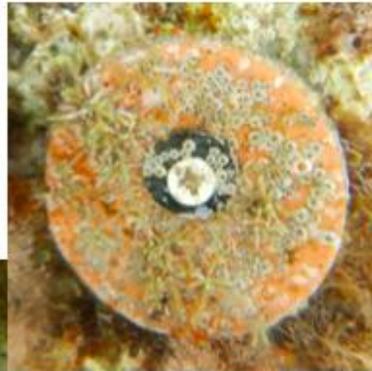
Ericaria amentacea: il monitoraggio



Time 0



3 weeks



6 weeks



15 weeks



20 weeks

...da un anno all'altro





ReLife

**Re-establishment of the Ribbed Limpet (*Patella ferruginea*) in Ligurian MPAs by restocking and controlled reproduction
LIFE15 NAT/IT/000771**



RELIFE



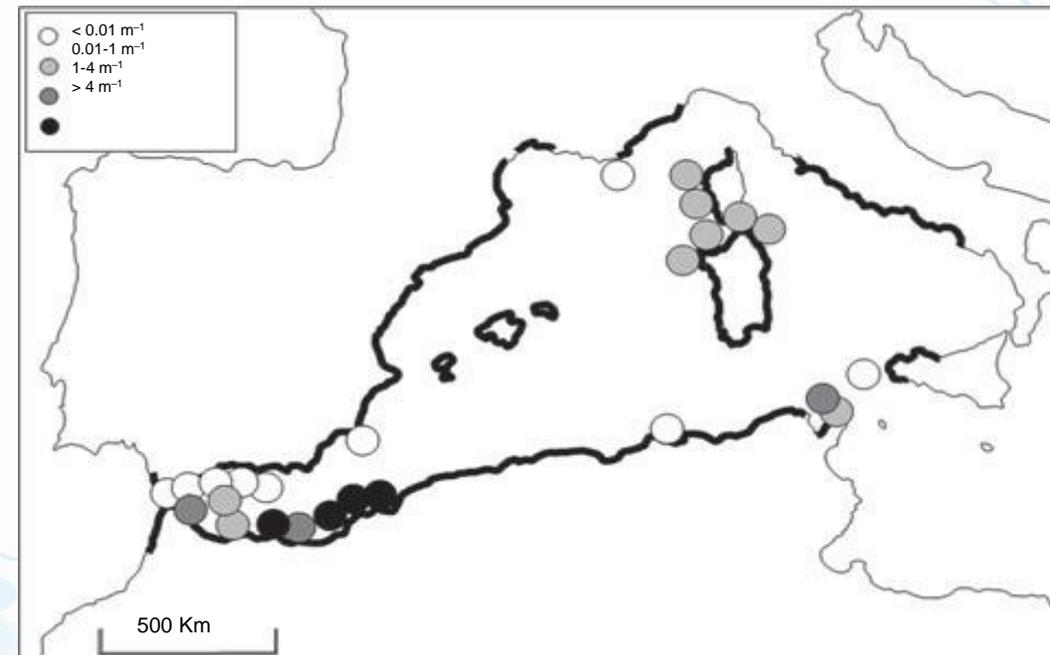
Patella ferruginea



Patella ferruginea



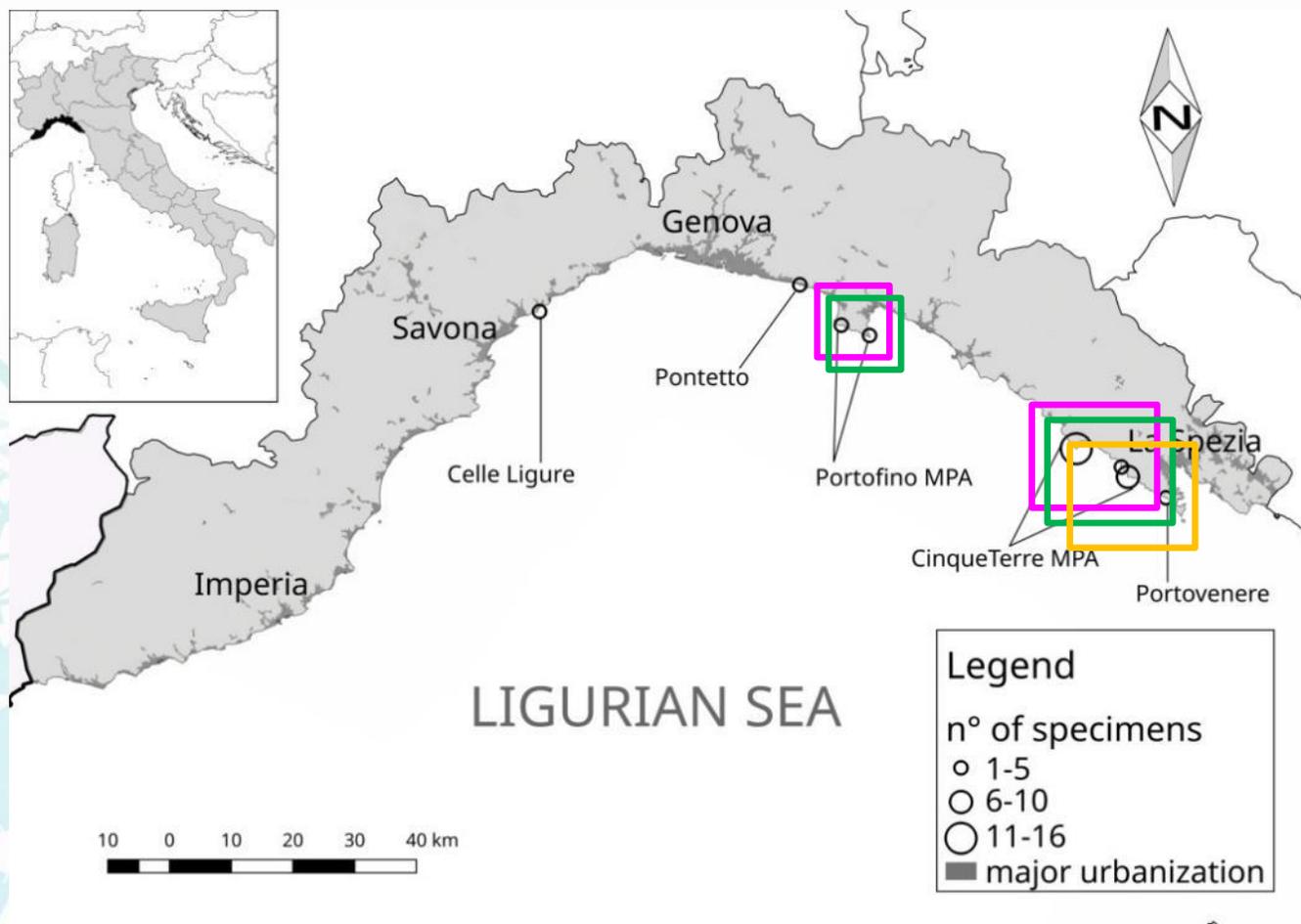
- Mollusco gasteropode, endemico del Mediterraneo Occidentale
- *Endangered species*, secondo SPAMI, Bern Convention e Habitats Directive (ECD 92/43/EEC, 1992)
- Protetta ma ancora illegalmente prelevata



Restauro tramite produzione di giovanili



Aggiornamento della distribuzione



2019 (15 esemplari)

- 12 Punta Mesco
- 1 Levante
- 1 Portofino
- 1 Camogli

2020 (18 esemplari)

- 14 Punta Mesco
- 4 Punta Chiappa

2021

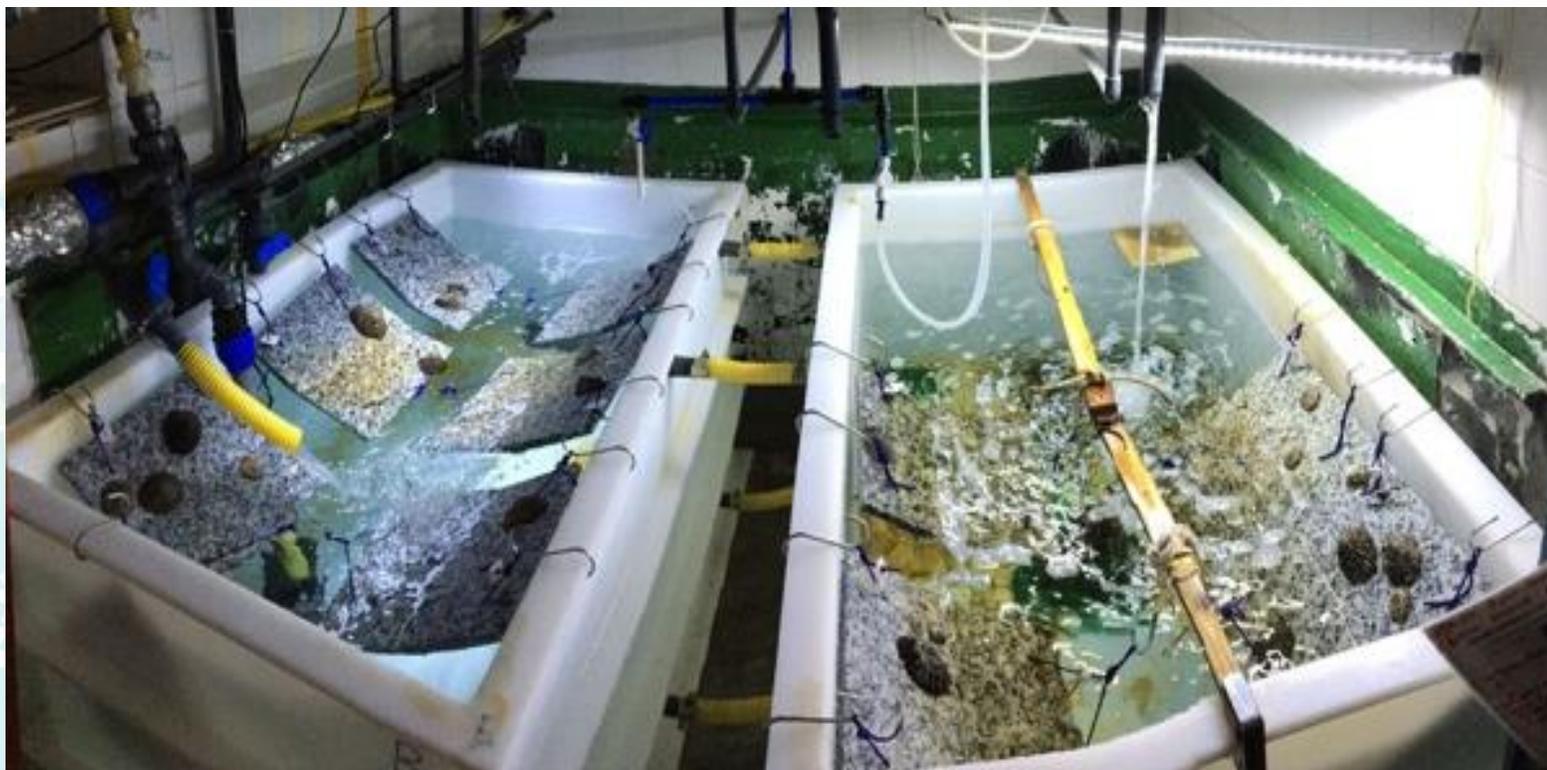
- 7 AMP Cinque Terre



**+ 40
esemplari**

TOT. 72 *P. ferruginea* individuati lungo la costa ligure

Il laboratorio di Camogli



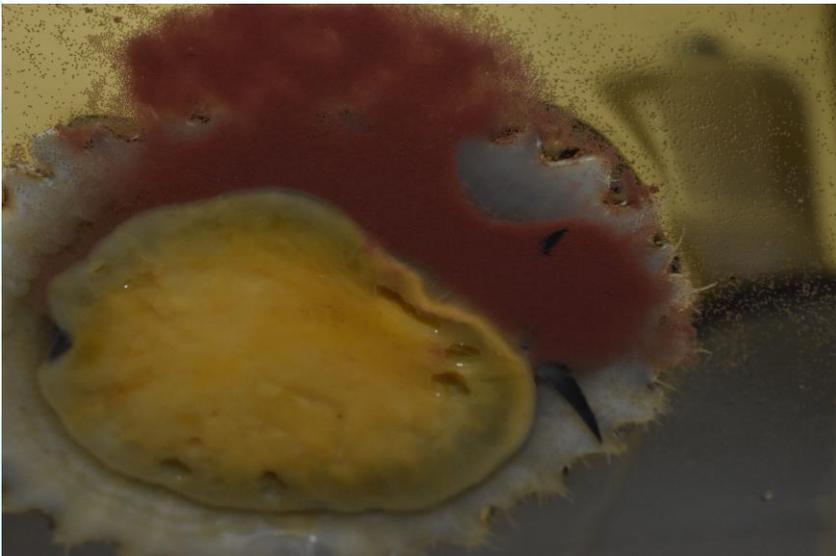
CNR-IBF/Unige - Camogli lab

L'emissione dei gameti

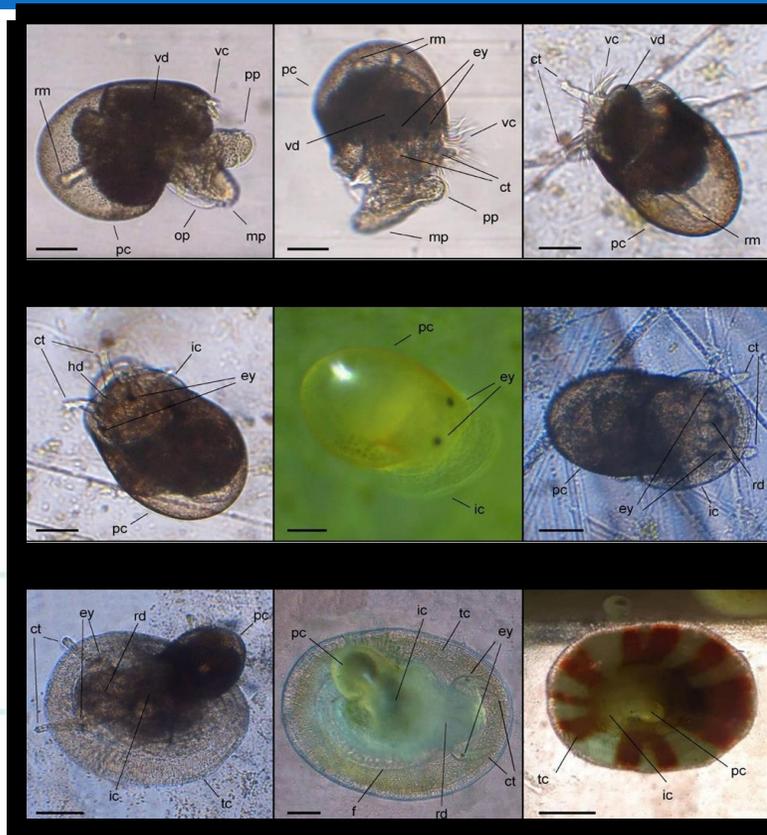
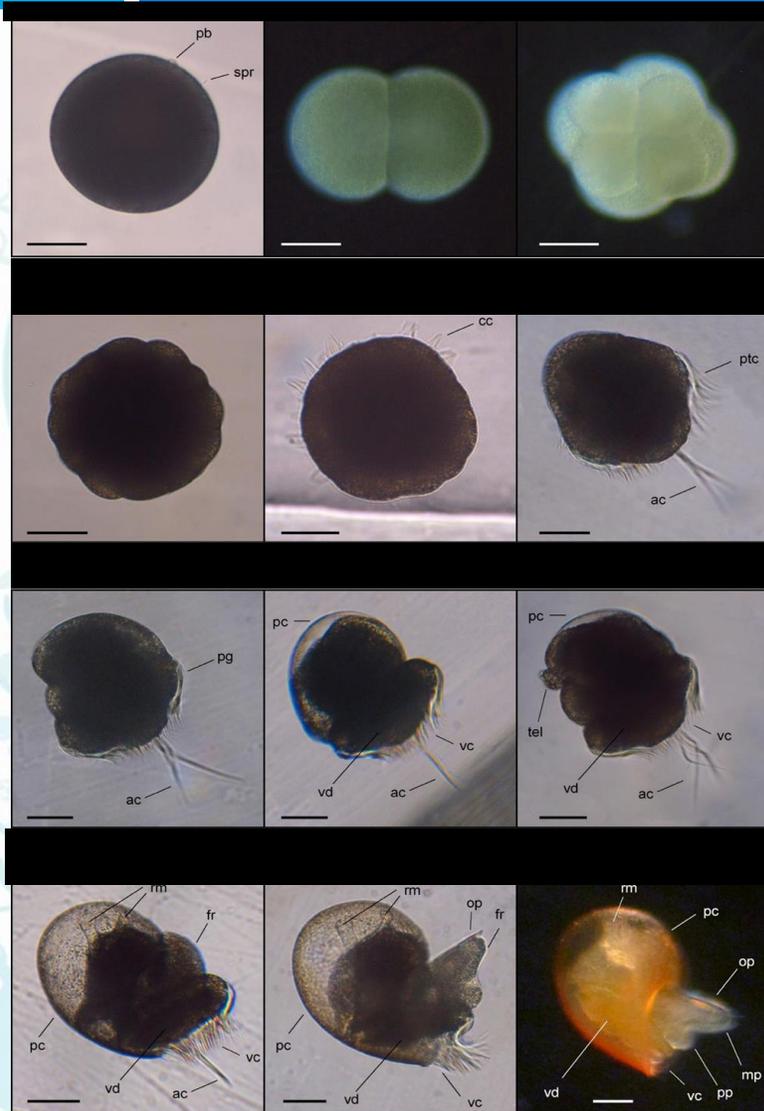
♀



♂

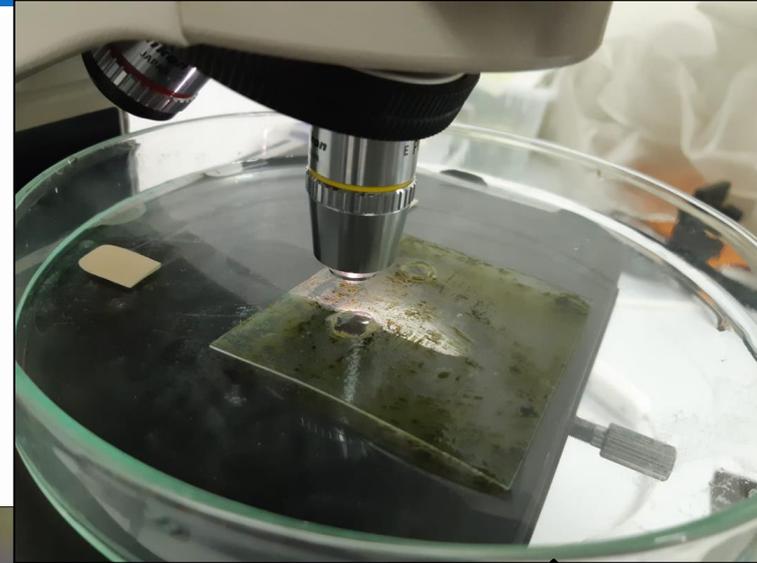


Fertilizzazione, sviluppo larviale e insediamento



Abbreviations list: ac: apical cilia; cc: ciliated cell; ct: cephalic tentacle; ey: eye; fr: foot rudiment; ft: foot; hd: head; ic: "intermediate conch"; mp: metapodium; op: operculum; pb: polar body; pc: protoconch; pg: prototrochal girdle; pp: propodium; ptc: prototrochal cilia; rd: radula; rm: larval retractor muscle; spr: spermatozoid; tc: teleoconch; tel: telotroch; vc: velar cilia; vd: velar disk. Scale bar: A to R = 50 μ m, S and T = 100 μ m, U = 500 μ m.

Fertilizzazione, sviluppo larviale e insediamento

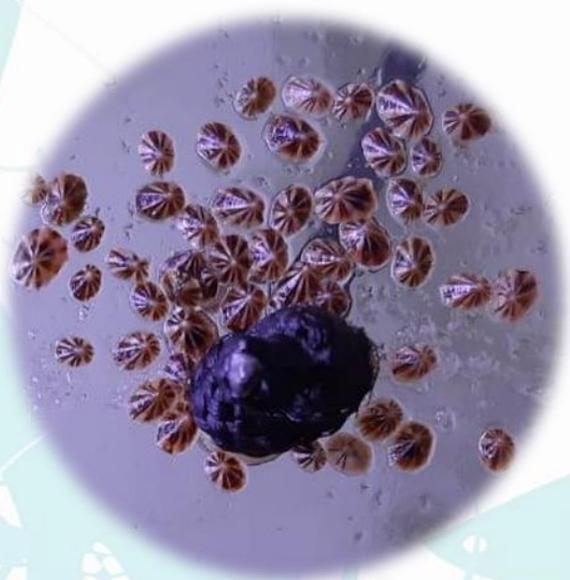


Post-larva



Insediamento e metamorfosi

Crescita dei giovanili



Marzo 2021
(2.2 -3.7 mm)



Agosto 2021
(3.1 – 13.8 mm)



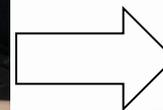
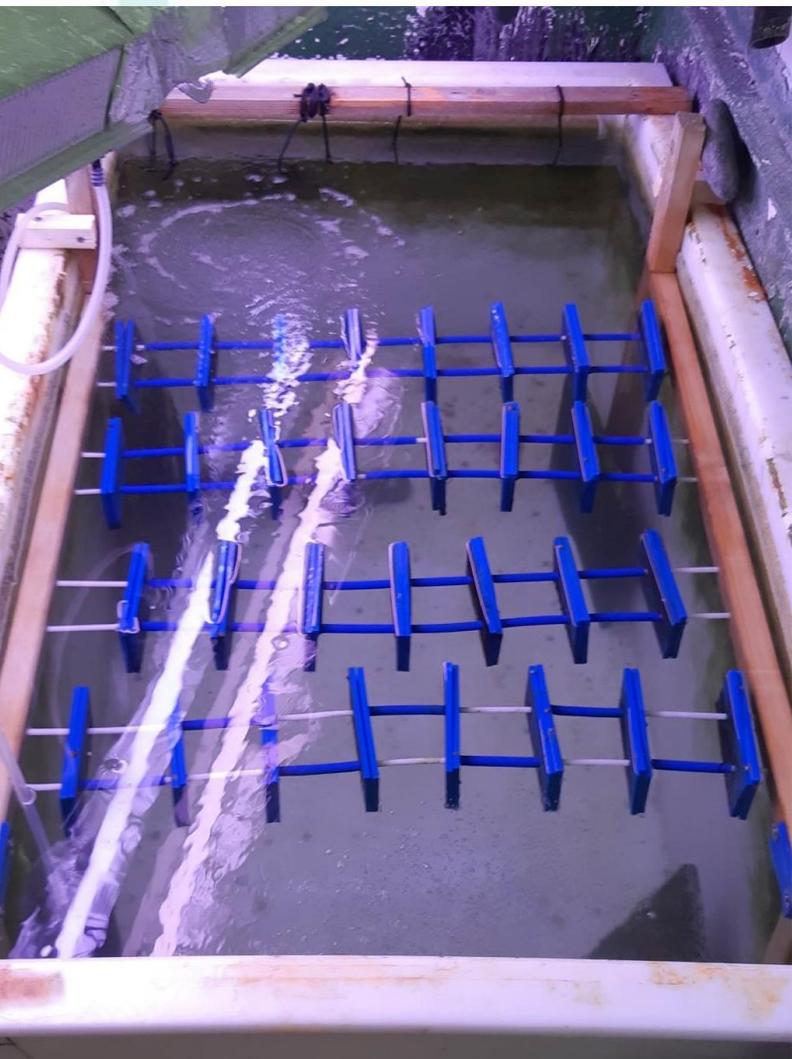
Febbraio 2022
(3.9 – 26.1 mm)

Ø: 15 mm

+ 9 mesi

Ø medio: 7 mm

Posizionamento in mare



Life-Pinna



Un progetto europeo per *Pinna nobilis*



NIB NACIONALNI INŠTITUT ZA BIOLOGIJO
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Shoreline



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Life-Pinna

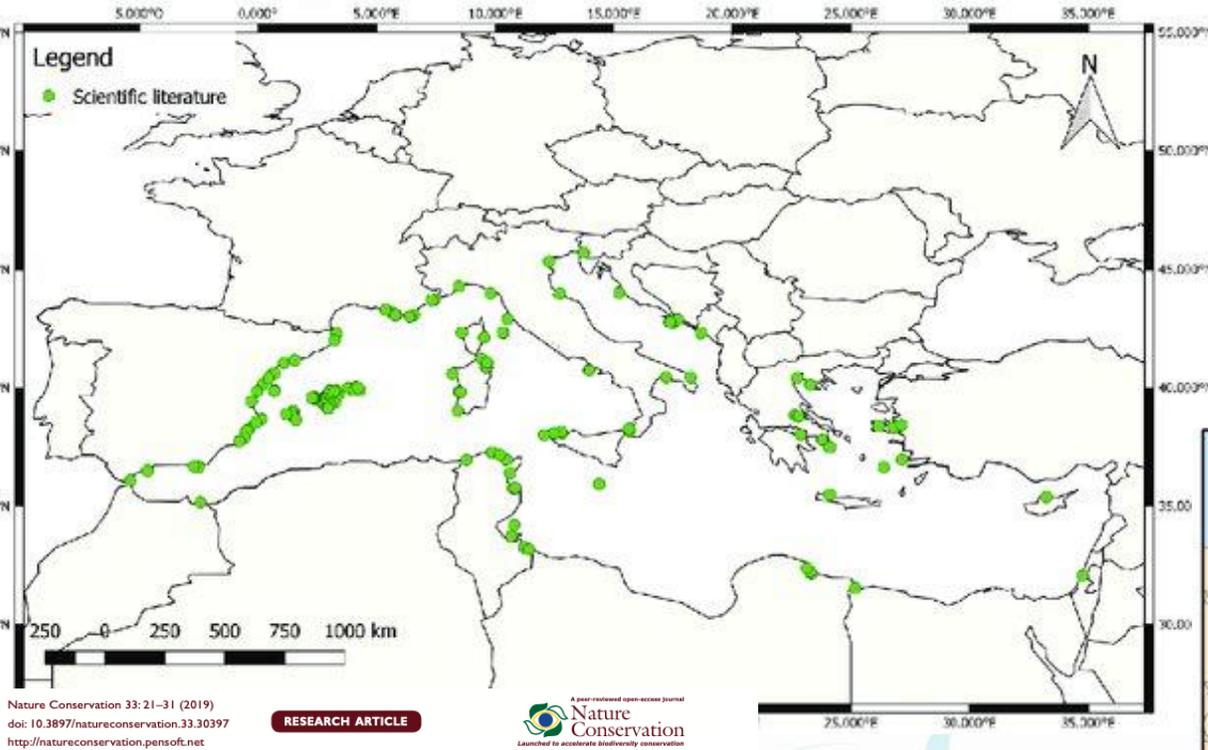
- ✓ monitorare e proteggere gli individui sopravvissuti di *Pinna nobilis* nel Mediterraneo occidentale e nel Mare Adriatico
- ✓ mettere a punto tecniche di allevamento in cattività per ripopolare alcune aree specifiche con individui resistenti alle malattie



Life Pinna



Life-Pinna



The Mediterranean Fan Mussel - *Pinna Nobilis* - enters IUCN's Red List as Critically Endangered (CR)



A scaling down mapping of *Pinna nobilis* (Linnaeus, 1758) through the combination of scientific literature, NATURA 2000, grey literature and citizen science data

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Corresponding author: Maurizio Pinna (maurizio.pinna@unisalento.it)

A brevissimo... lancio di attività di Citizen Science

- ✓ Aiutateci, segnalando possibili esemplari superstiti della specie



Live Binn



www.rocpoplife.eu



LATEST NEWS



I giovani e la ricerca sul mare
Promoting biodiversity enhancement by



BioMA Meeting
ROC-POP-LIFE meets students from



Kick-off meeting
ROC-POP-LIFE Kick-off Meeting AGENDA 04-05/11/2017 Santa Margherita Ligure
Administrative and management Session
Welcome and project summary
Presentation 14.15 Partnership Agreement
14.30 Review of management
... and decision making mechanism



[@ROCPopLife](#)



www.re-lifeproject.eu



@ReLife





Life Pinna

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Invia messaggio

Laboratorio di
Ecologia del
Benthos



Mariachiara Chiantore



Valentina Asnagli



Maria Paola Ferranti &
Javier Guallart



Rachel Clausing



Jacopo Cimini



Lorenzo Meroni



Monica Montefalcone



Alice Oprandi



Centro del Mare



Outdoor Portofino

SPORT, NATURE, EDUCATION



BLOG, FILOSOFIA & LIFESTYLE, NATURA & EDUCAZIONE AMBIENTALE, SPORT

25 Febbraio 2022

OUTBE: NASCE LA STARTUP CHE FA CITIZEN SCIENCE





Parco Nazionale
Cinque Terre
Area Marina Protetta



Area Marina Protetta
Isola di Bergeggi



AREA MARINA PROTETTA
TAVOLARA
PUNTA CODA CAVALLO



Javni zavod Krajinski park Strunjan
Istituto pubblico Parco naturale Strunjan

portofino



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