



UNIVERSITY OF THE  
**AEGEAN**

SCHOOL OF THE ENVIRONMENT  
DEPARTMENT OF MARINE SCIENCES

## EUSAIR Pillar 1 (Blue Growth)

Sustainable Development of Coastal Communities through  
Blue Upskilling of Local Populations

“Blue Economy and Blue Carriers upskilling in  
the framework of Sustainable Development  
Goals and the EU’s Blue-Growth Strategy  
Initiatives”

**Prof. DROSOS KOUTSOUBAS**

Dept. Marine Sciences, University of the Aegean  
(<https://www.mar.aegean.gr>)



# 10<sup>th</sup> EUSAIR Forum

**Georgioupolis, Crete**

**6-7 May 2025**



# Blue Economy Overview

The **Blue Economy** refers to the **sustainable use of ocean resources** for

- **Economic growth**
- **Improved livelihoods, and**
- **Environmental health**

It encompasses a wide range of economic activities linked to oceans, seas, and coastal areas, while emphasizing **conservation and sustainable practices** to ensure long-term benefits.



# Key Sectors of the Blue Economy

## 1. Fisheries & Aquaculture

- Sustainable fishing and seafood production
- Responsible aquaculture practices to reduce environmental impact

## 2. Marine Renewable Energy

- Offshore wind farms
- Wave and tidal energy projects

## 3. Tourism & Recreation

- Eco-tourism and sustainable coastal tourism
- Marine Protected Areas (MPAs) as tourism attractions

## 4. Maritime Transport & Ports

- Green shipping and fuel-efficient vessels
- Sustainable port management and logistics

## 5. Biotechnology & Marine Resources

- Marine-based pharmaceuticals and bio-products
- Seaweed farming and algae-based biofuels

## 6. Coastal Protection & Climate Adaptation

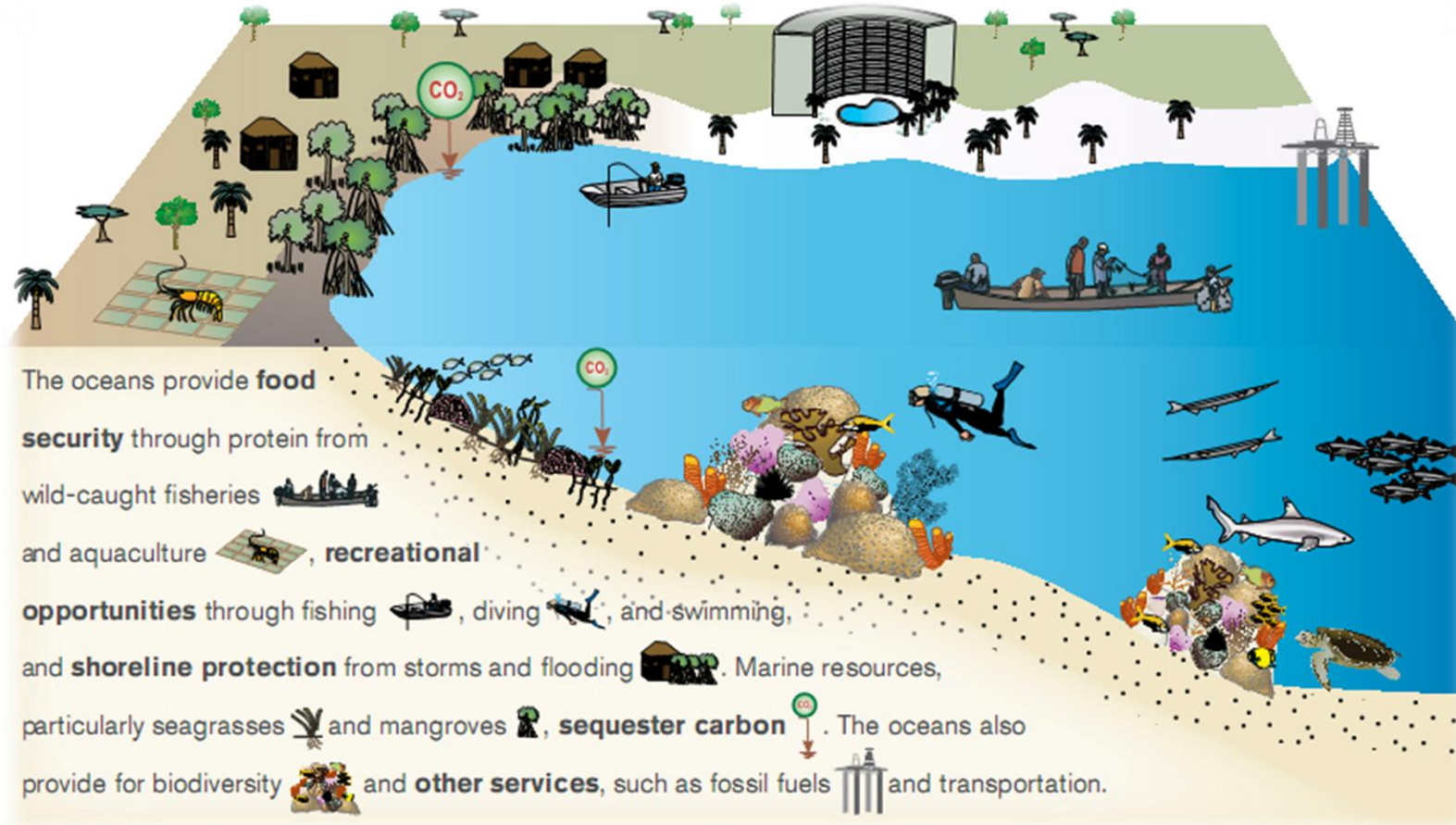
- Restoration of mangroves and coral reefs
- Marine spatial planning and disaster risk reduction



# The Importance of the Blue Economy

## Environmental Sustainability

- Focus on reducing **marine pollution** and **overfishing**
- Promotes **carbon sequestration** through ocean-based solutions



## Economic Growth & Job Creation

- The ocean economy is projected to be worth **\$3 trillion by 2030**
- Supports **over 150 million jobs globally**

## Social & Community Well-being

- Supports **coastal communities** and **small-scale fisheries**
- Enhances **food security** and **climate resilience**




# Challenges - What is the impact of human noise to the oceans?

**14** LIFE BELOW WATER


Life below water

**Challenges**


Over **THREE BILLION PEOPLE** depend on **MARINE AND COASTAL BIODIVERSITY** for their livelihoods. **POLLUTION THREATENS** the world's largest source of protein



**40% OF WORLD'S OCEANS** suffer from **OVERFISHING, POOR FISHING PRACTICES** and **POOR WASTE MANAGEMENT**




**CORAL REEFS** which provides a home to 25% of all marine life **ARE BEING DESTROYED** at an alarming rate




**Solutions**


Reduce pollution and **PROTECT MARINE AND COASTAL ECOSYSTEMS**



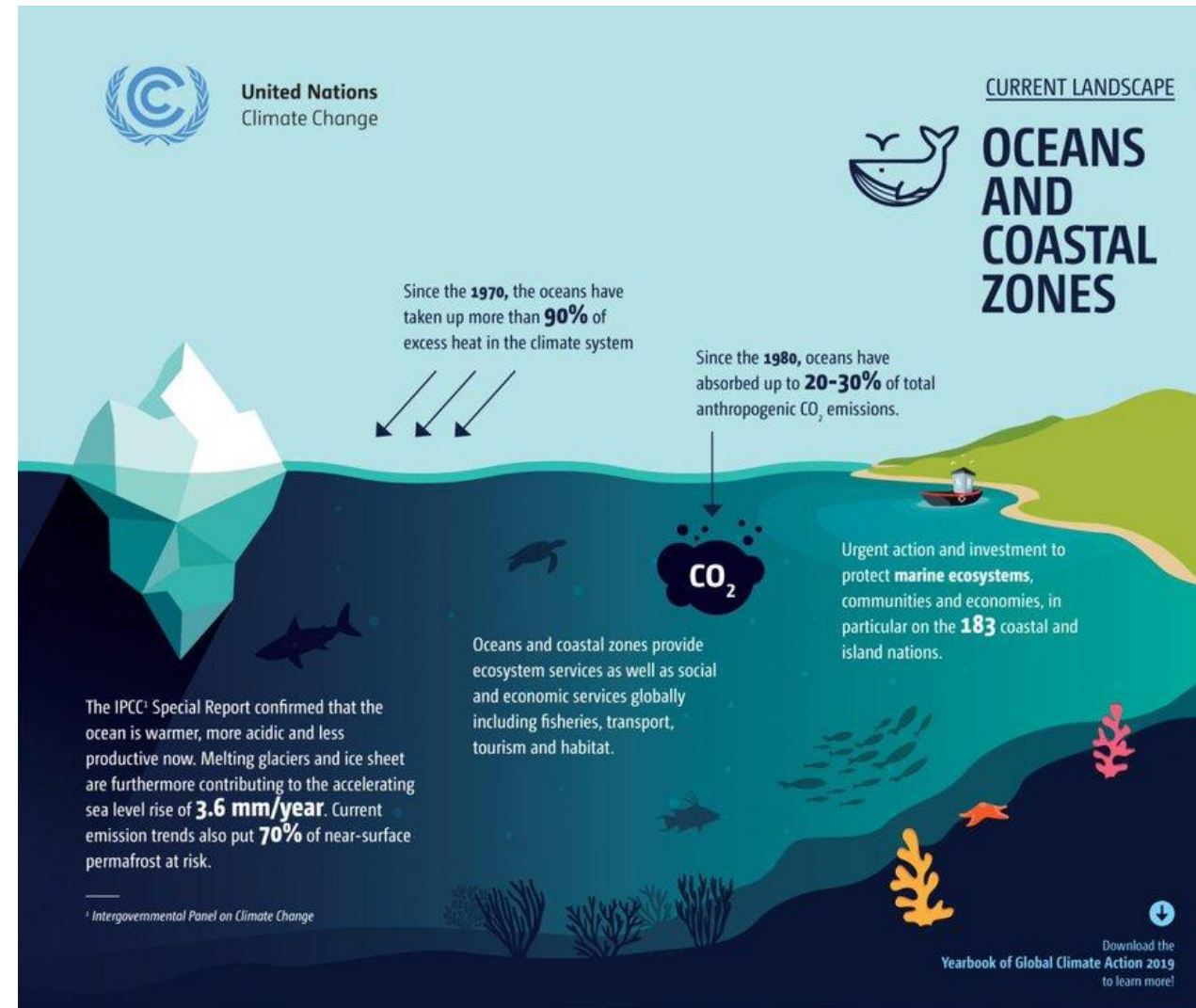
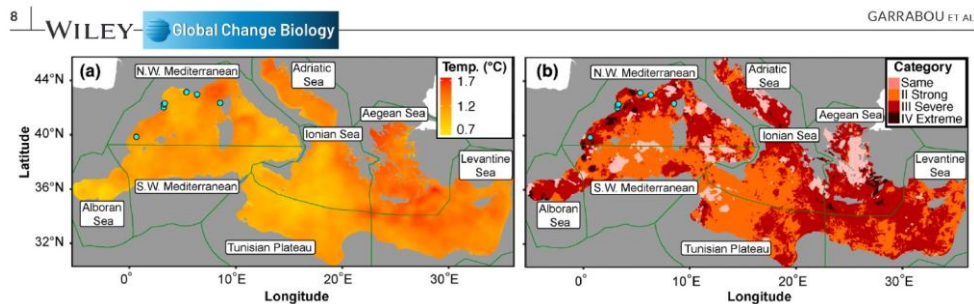
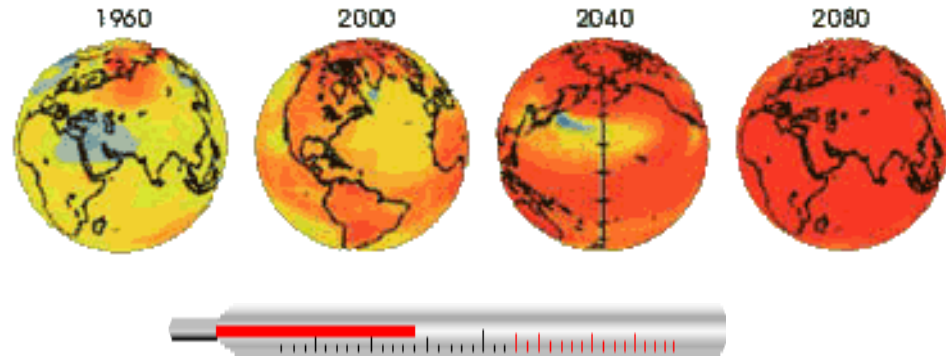
**END HARMFUL FISHING SUBSIDIES** and stop unreported, unregulated and destructive fishing practices



**FIGHT CLIMATE CHANGE**, reduce sedimentation, stop coral mining and promote sustainable tourism

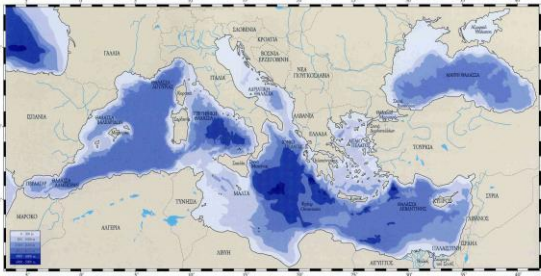
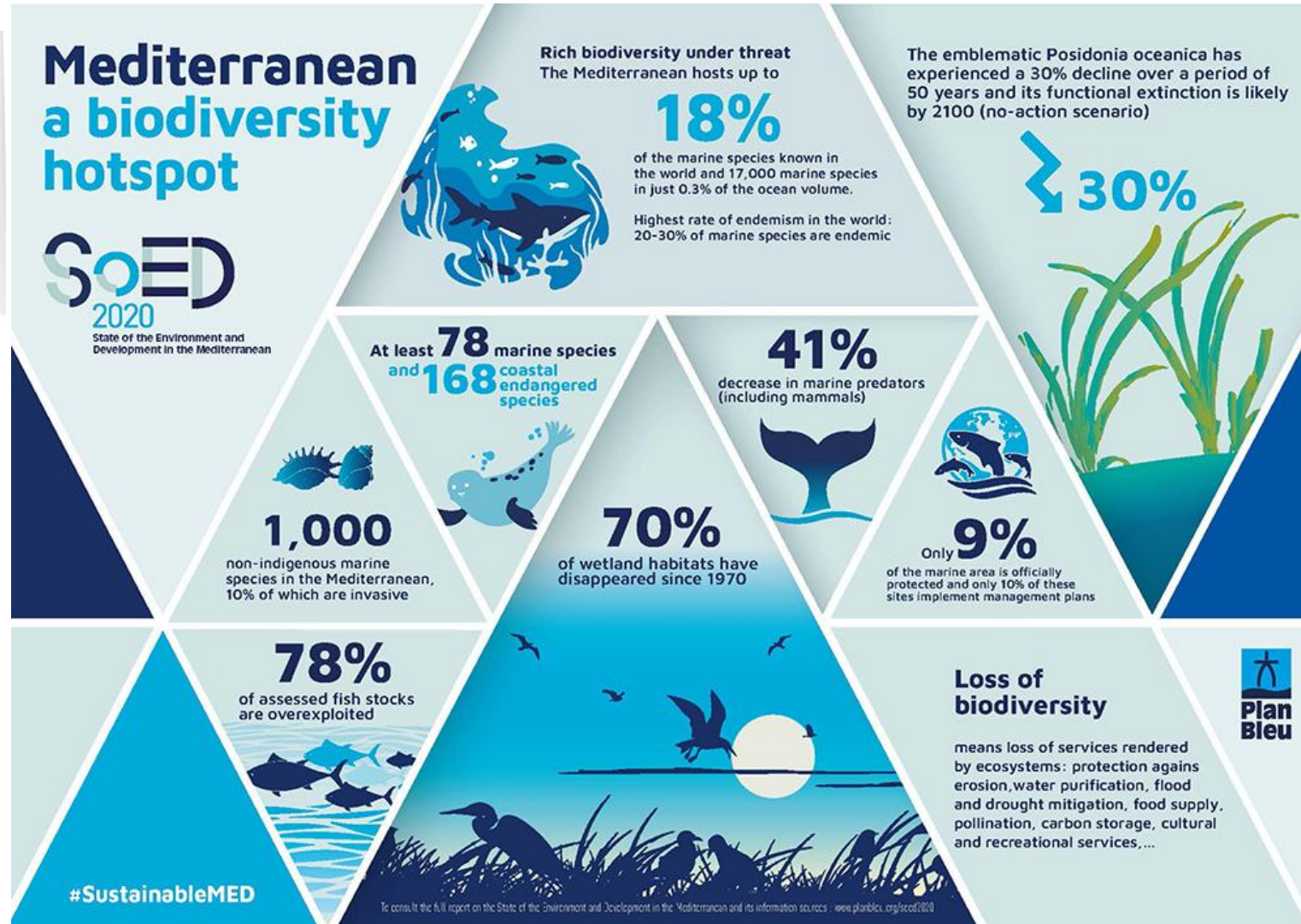


# Challenges - What is the impact of human noise to the oceans?



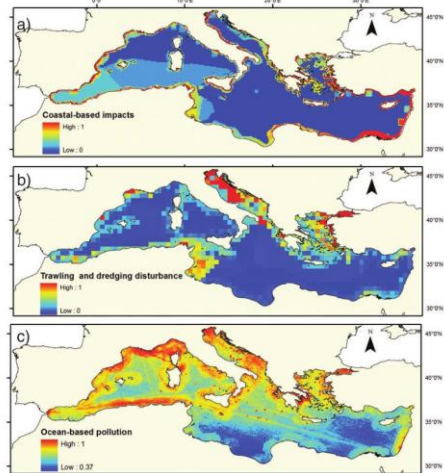


# Challenges - What is the impact of human noise to the oceans?

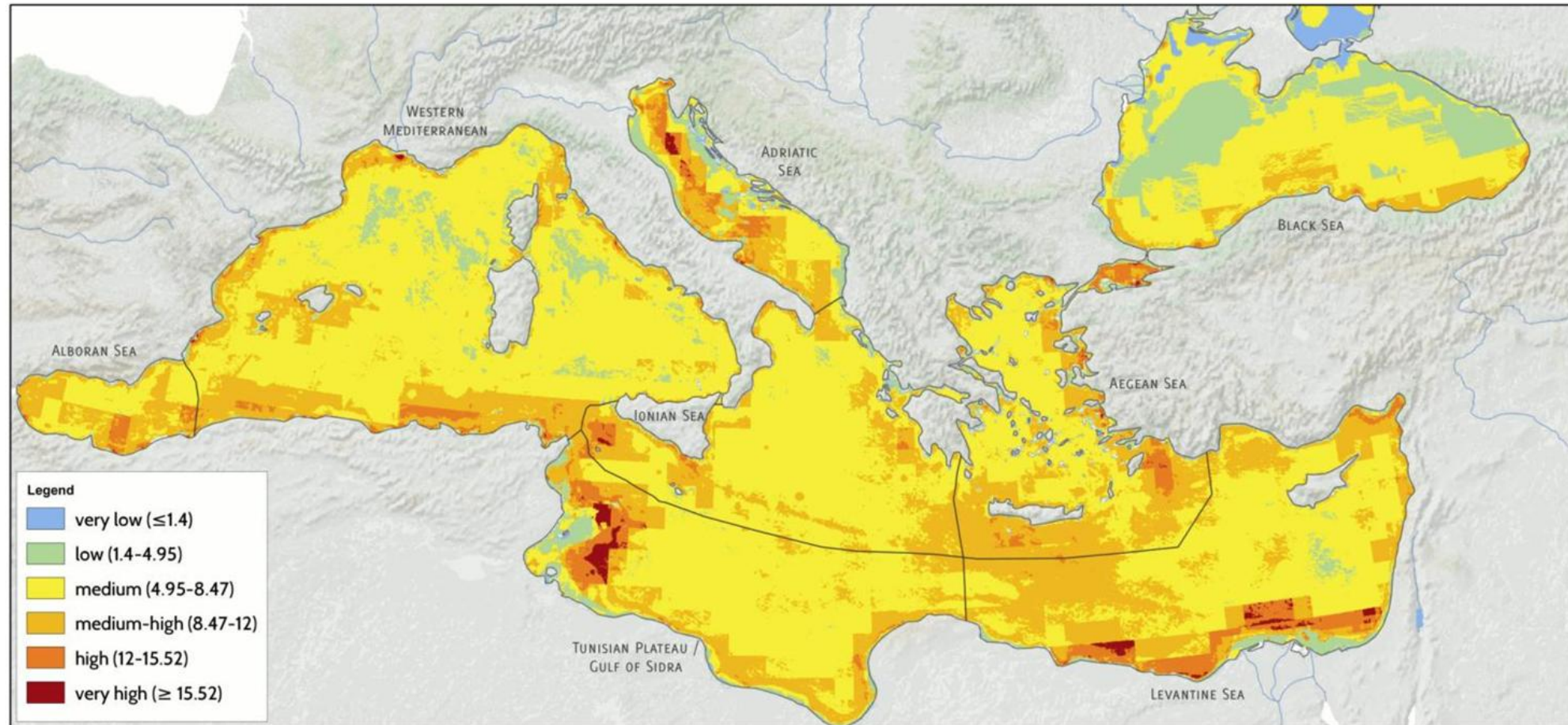
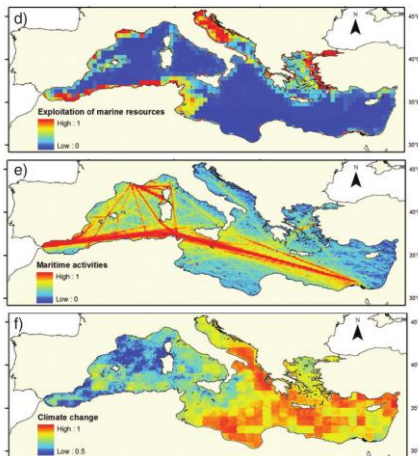




## Challenges - What is the impact of human noise to the oceans?



Coll et al. 2011. The **Mediterranean Sea under siege**: spatial overlap between marine biodiversity, **cumulative threats**



Micheli et al. 2013. **Cumulative human Impacts** on Mediterranean and Black Sea ecosystems



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10th EUSAIR Forum  
Georgiopolis, Crete 6-7 May 2025





# Challenges – ACTIONS to reverse the Impacts

United Nations –  
**SUSTAINABLE DEVELOPMENT**



**ΣΤΟΧΟΙ** **ΒΙΩΣΙΜΗΣ**  
**ΑΝΑΠΤΥΞΗΣ**

17 ΣΤΟΧΟΙ ΓΙΑ ΝΑ ΑΛΛΑΞΟΥΜΕ ΤΟΝ ΚΟΣΜΟ ΜΑΣ



**THE GLOBAL GOALS**  
For Sustainable Development



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## Future Outlook – BLUE ECONOMY/ACTIONS to reverse the Impacts

- The **Blue Economy** sectors face challenges in aligning with Global Sustainability Goals, including the SDGs and the EU’s Blue-Growth strategy. The **Blue Economy industries** require **skilled professionals trained in an international and interdisciplinary context**.
- The **European institutions** have yet to fully integrate **skills development** that **meets industry needs**, limiting growth, competitiveness, and opportunities within these sectors. Addressing these gaps requires a **coordinated approach** that **enhances curriculum development, fosters innovation, and ensures graduates are equipped with relevant expertise** to support sustainable economic development in blue economy industries.





## Future Opportunities – BLUE ECONOMY/ACTIONS to reverse the Impacts

The Blue Careers in Europe initiative highlights the shortage of skilled professionals in maritime industries; urgent need for educational programs to support employability.

### OPPORTUNITIES (indicative)

- The Expansion of **marine renewable energy** projects
- Development of **blue carbon initiatives** to combat climate change
- Innovation in **circular economy solutions** for plastic waste and **ocean conservation**
- Strengthening **international cooperation and governance** for sustainable ocean biological resources management

# Challenges – ACTIONS to reverse the Impacts

United Nations –  
SUSTAINABLE DEVELOPMENT



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<b>TARGET</b> 14-1	<b>TARGET</b> 14-2	<b>TARGET</b> 14-3	<b>TARGET</b> 14-4	<b>TARGET</b> 14-5
REDUCE MARINE POLLUTION	PROTECT AND RESTORE ECOSYSTEMS	REDUCE OCEAN ACIDIFICATION	SUSTAINABLE FISHING	CONSERVE COASTAL AND MARINE AREAS
<b>TARGET</b> 14-6	<b>TARGET</b> 14-7	<b>TARGET</b> 14-A	<b>TARGET</b> 14-B	<b>TARGET</b> 14-C
END SUBSIDIES CONTRIBUTING TO OVERFISHING	INCREASE THE ECONOMIC BENEFITS FROM SUSTAINABLE USE OF MARINE RESOURCES	INCREASE SCIENTIFIC KNOWLEDGE, RESEARCH AND TECHNOLOGY FOR OCEAN HEALTH	SUPPORT SMALL SCALE FISHERS	IMPLEMENT AND ENFORCE INTERNATIONAL SEA LAW



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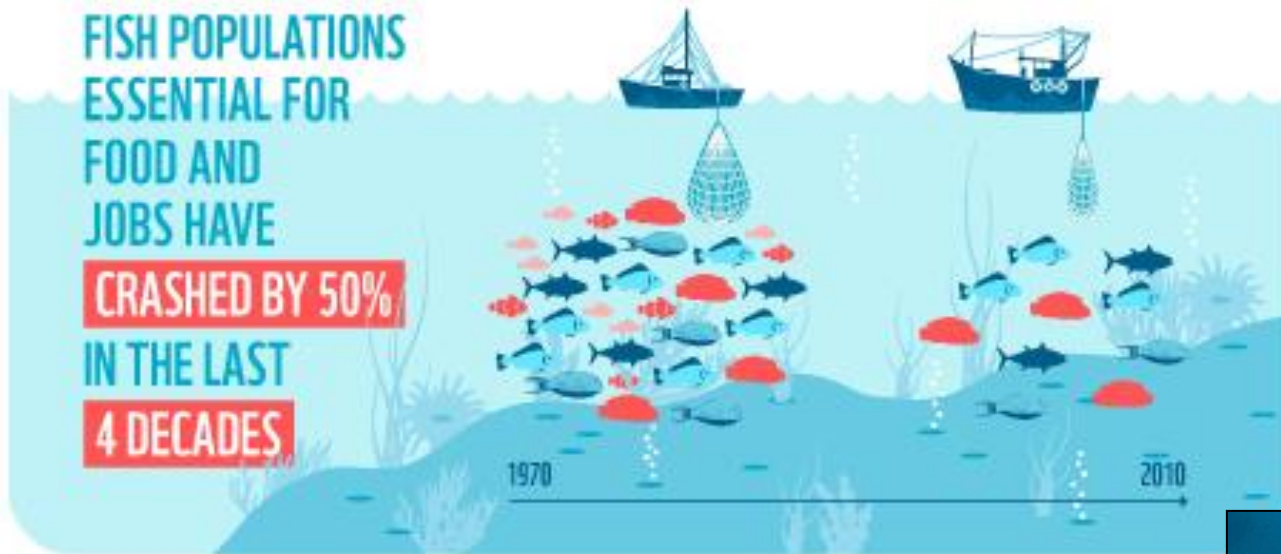
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## Future Opportunities – BLUE Careers

### Overexploitation of fish stocks / over-fishing – Direct



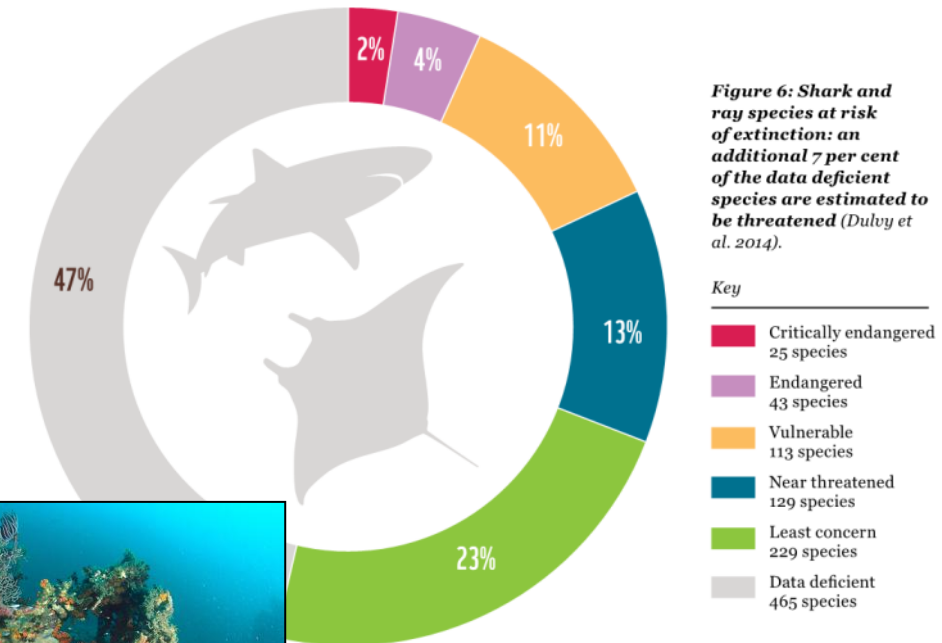
### Overexploitation of fish stocks / over-fishing – Indirect



### 1. Fisheries & Aquaculture

- Sustainable fishing and seafood production

- Fisheries bycatch



- Ghost fishing

# Future Opportunities – BLUE Careers

## 1. Fisheries & Aquaculture 🐟

- **Responsible aquaculture practices to reduce environmental impact**

### Aquaculture

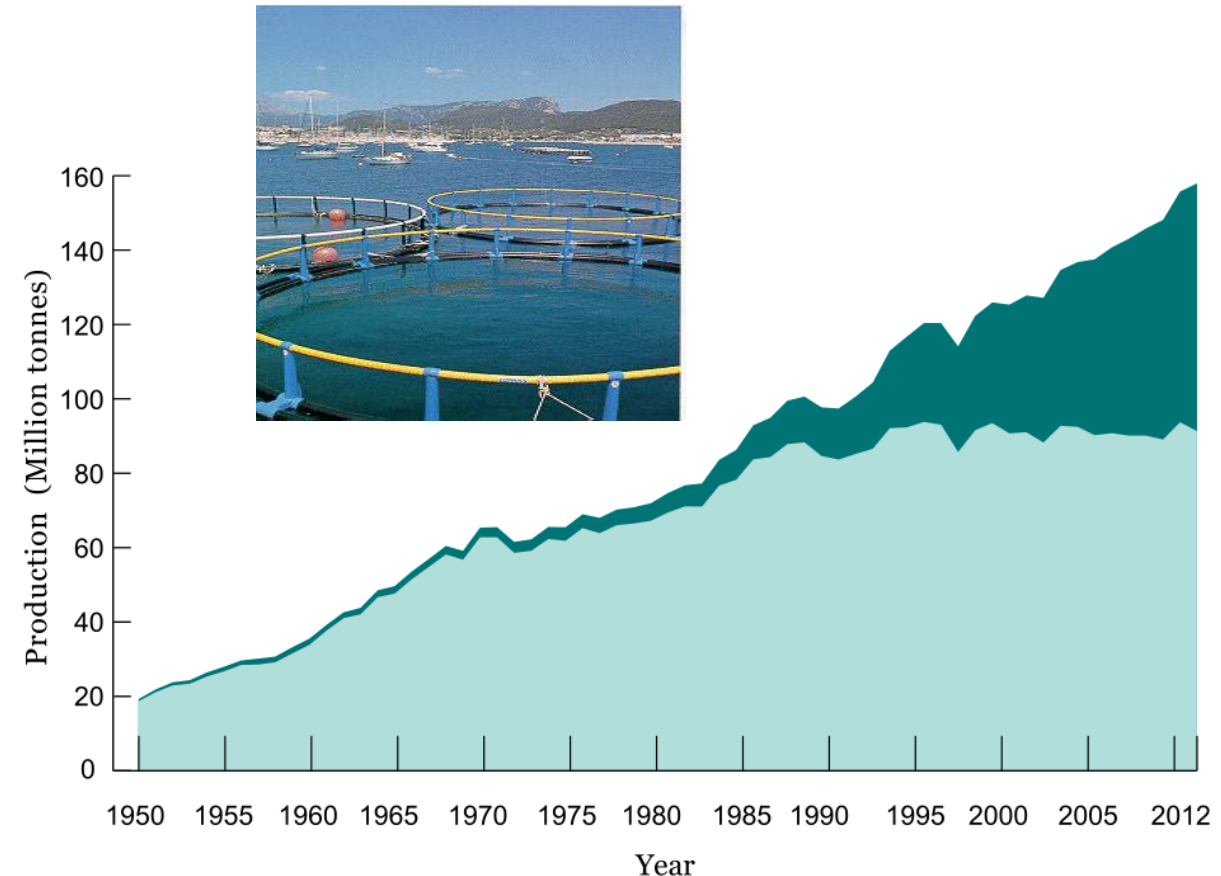
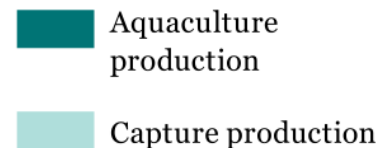
- **Increase of 8.6% per year** over the last 30 years.
- Provides **58% of fish** we eat.

BUT:

- Common cause for: **habitat destruction**
- **Pollution & Eutrophication** - e.g. through fish-feed, fish excretes, fish, drugs, and debris - spreading of disease & pathogens, spreading of invasive species

*Figure 21: The continued increase in seafood production in the last 30 years is almost entirely due to aquaculture (FAO, 2014b).*

Key





## Future Opportunities – BLUE Careers

### Renewable sources of Energy

BUT:

- Problems

**AVIFAUNA** (Migrating species)

**CETACEANS** – sea corridors



### 2. Marine Renewable Energy ⚡

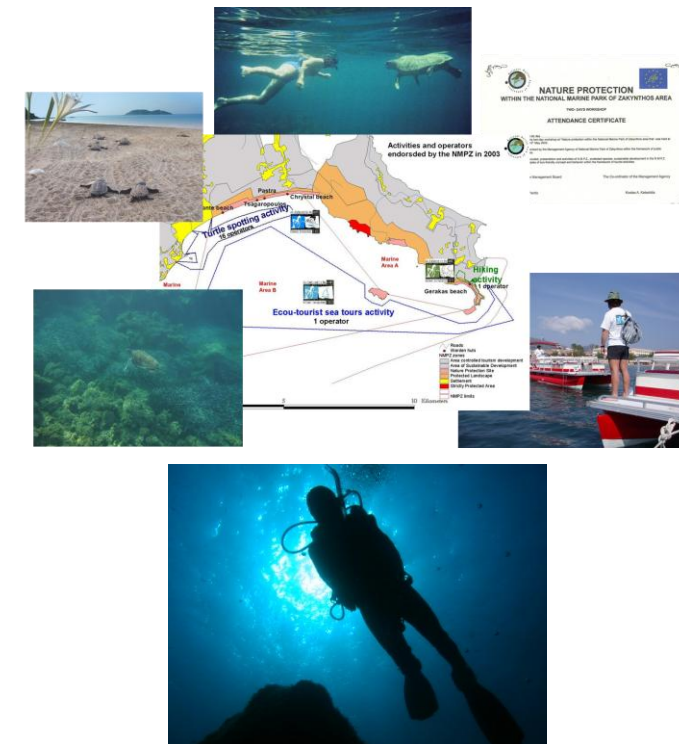
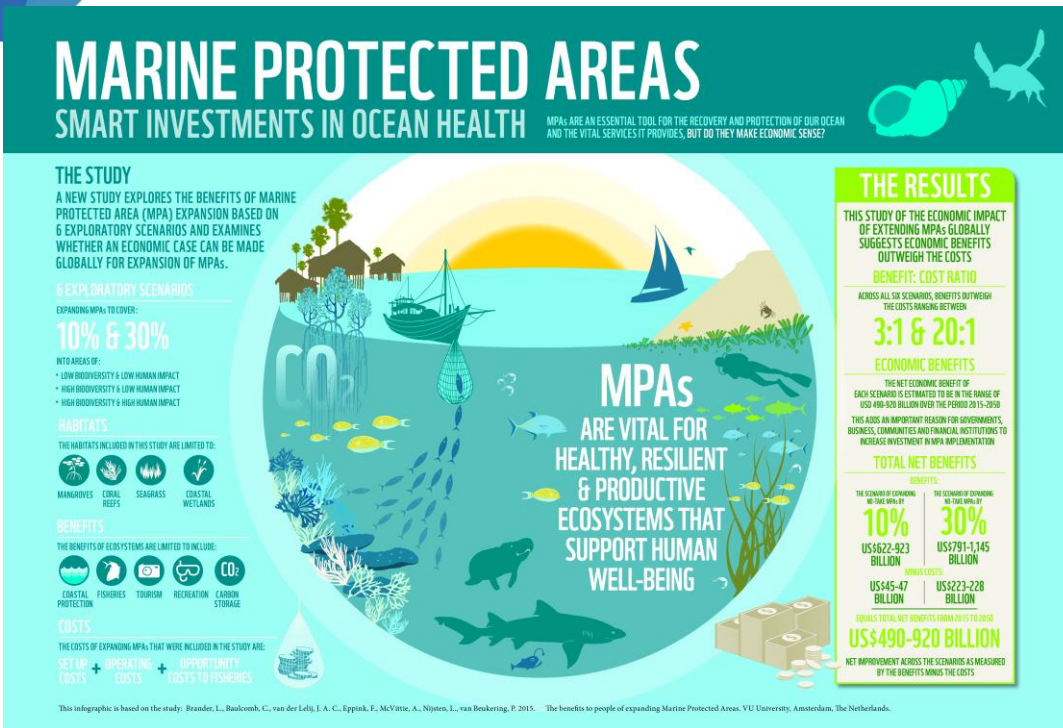
- Offshore wind farms
- Wave and tidal energy projects



# Future Opportunities – BLUE Careers

## 3. Tourism & Recreation 🌴

- **Eco-tourism** and sustainable coastal tourism
- **Marine Protected Areas (MPAs)** as tourism attractions

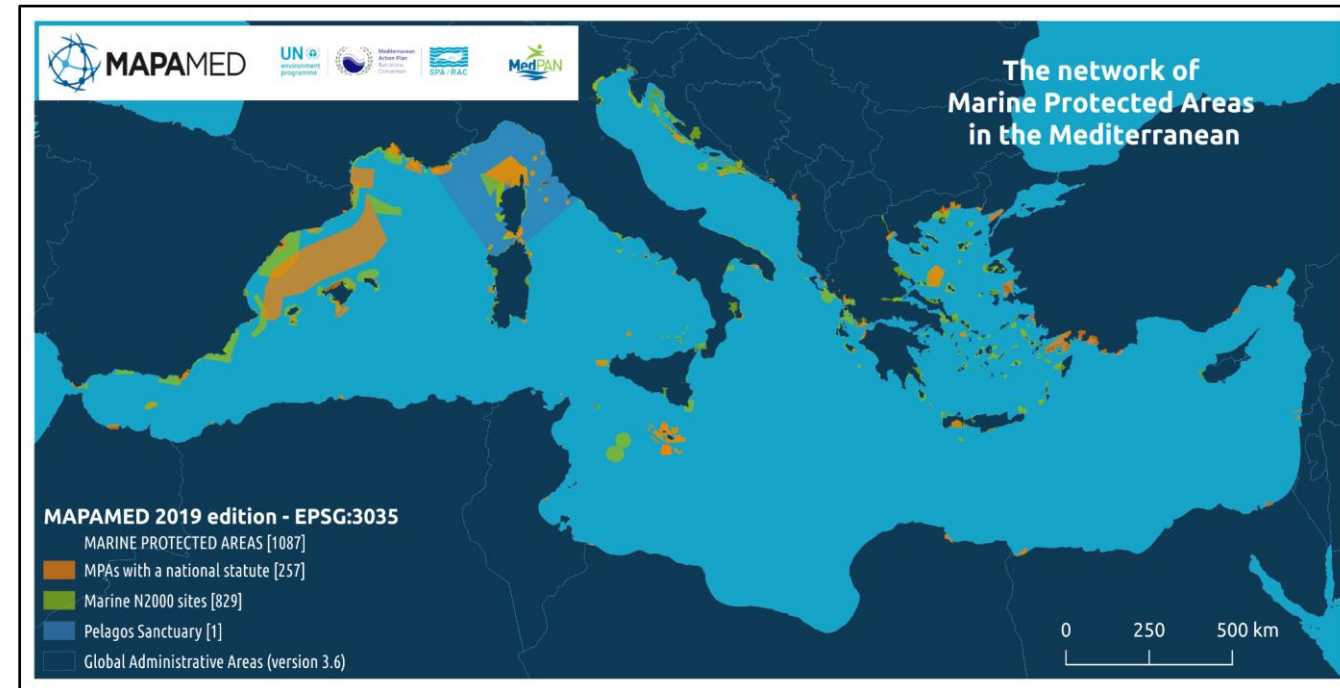
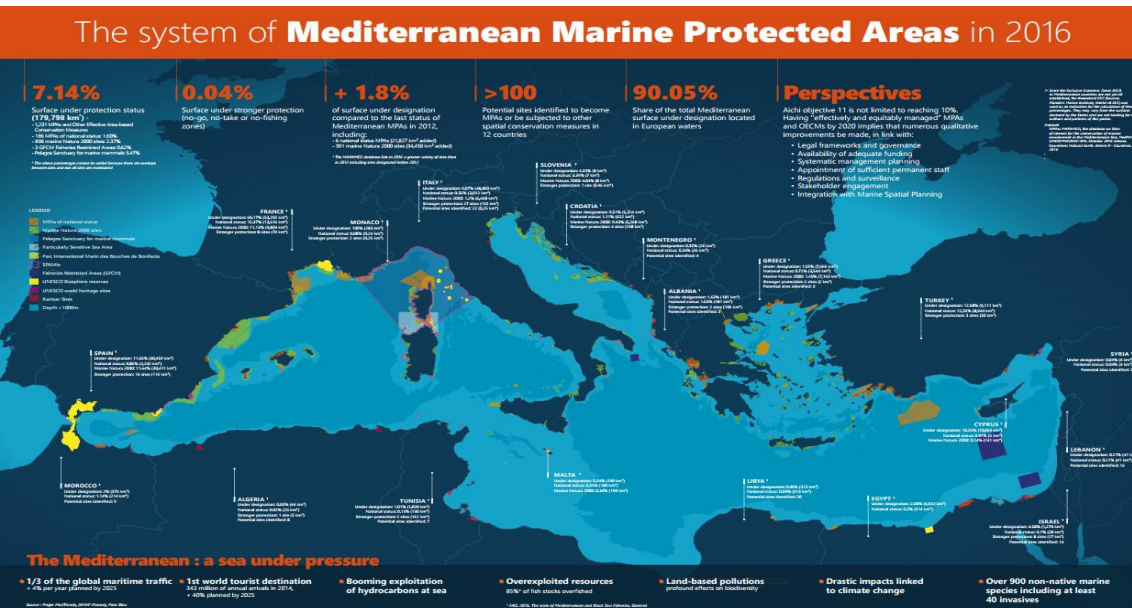




## Future Opportunities – BLUE Careers

### 3. Tourism & Recreation 🌴

- Marine Protected Areas (MPAs) as tourism attractions



Since the end of 2016, **163 new MPAs** have been designated in the Mediterranean and contribute to a **2 points overall net gain** in the percentage of surface under designation. A total of 23 nationally designated MPAs have been declared in 9 Mediterranean countries covering 48,764 km<sup>2</sup>, or 1.9 % of the Mediterranean and a total of **140 new marine Natura 2000 sites** have been created in 3 Mediterranean countries, covering about 17,782 km<sup>2</sup>, or **0.7 % of the Mediterranean**.

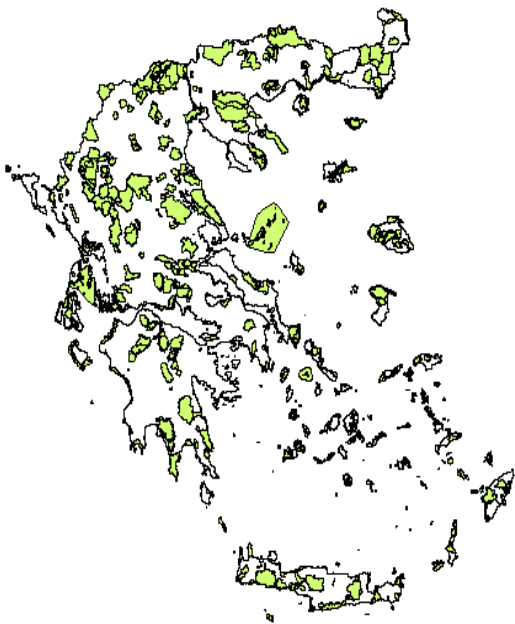
# Future Opportunities – BLUE Careers

## 3. Tourism & Recreation 🌴

### The Ocean Dimension of the 2030 Agenda

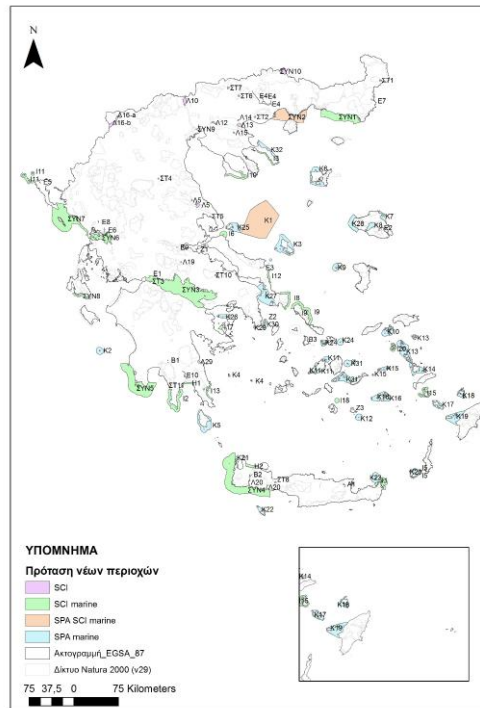
- **Marine Protected Areas (MPAs)** as tourism attractions

#### NETWORK OF PROTECTED AREAS IN GREECE - 1996

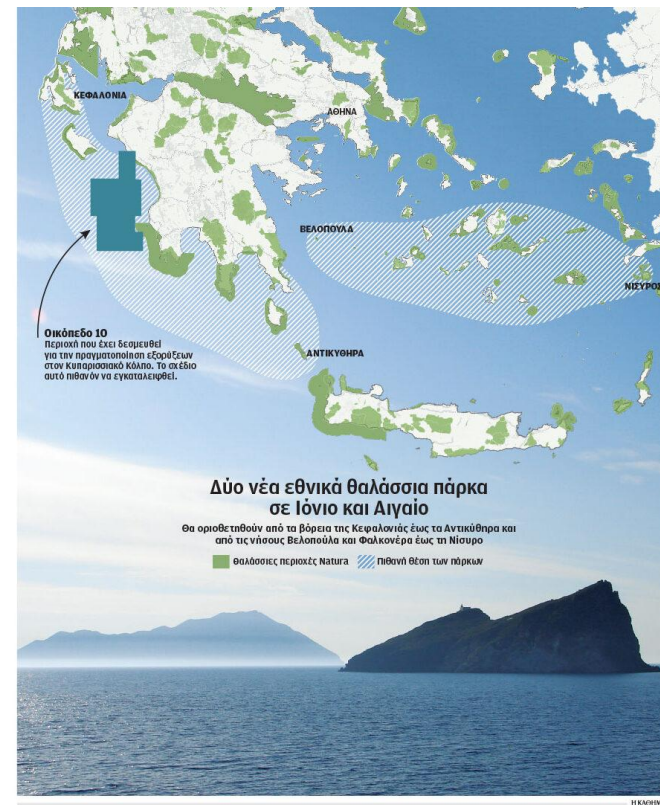


#### NETWORK OF PROTECTED AREAS . 2017

- 100 NEAreas
- MPAs from 6% σε > 20%)



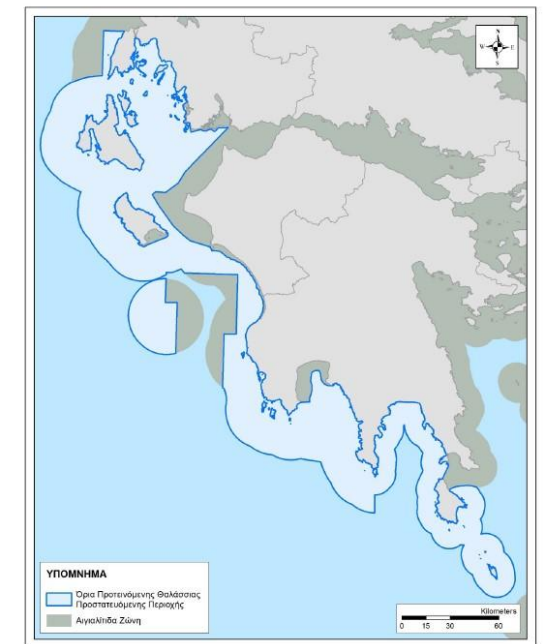
#### NATIONAL MARINE PARK – S AEGEAN SEA



#### NATIONAL MARINE PARK – IONIAN SEA

«Ειδική Περιβαλλοντική Μελέτη για το Θαλάσσιο Πάρκο του Ιονίου»  
Κεφάλαιο 1. 2. 3

διαχείρισης και διατήρησης, όπως περιορισμοί στην καταστροφική αλιεία και η ρύθμιση της ναυσιπλοΐας, ώστε να μειωθούν οι επιπτώσεις στις προστατευόμενες περιοχές.



Εικόνα 1.2.1-1: Περιοχή μελέτης (Θαλάσσιο Πάρκο Ιονίου)



## Future Opportunities – BLUE Careers

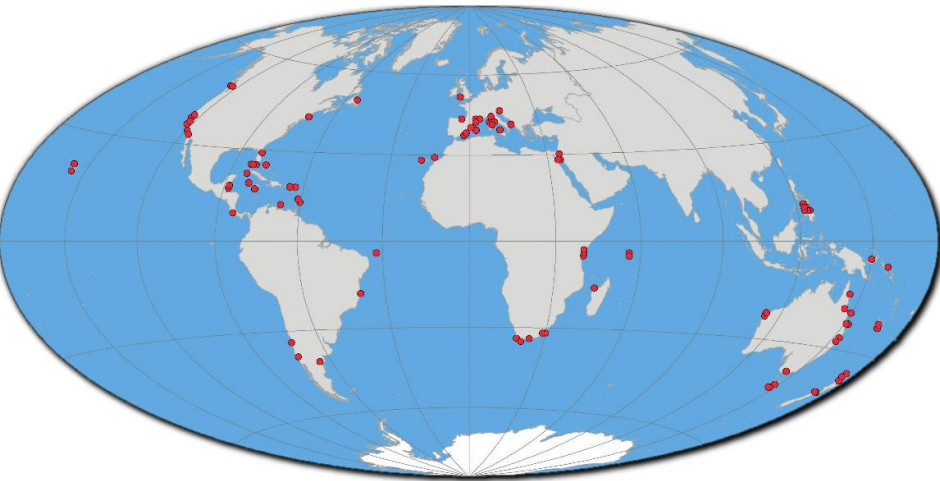
### 3. Tourism & Recreation 🌴

#### • Marine Protected Areas (MPAs)

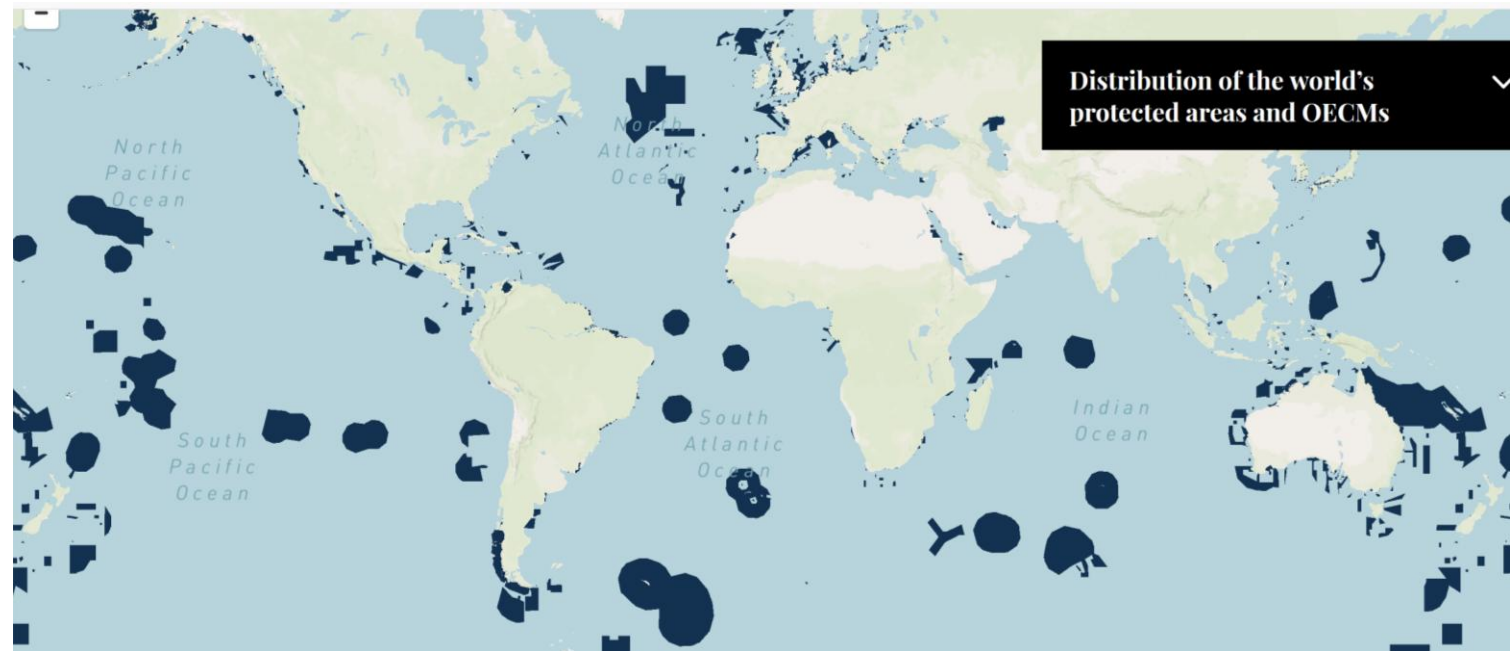
- In **2015** at least 11.300 MPAs existed worldwide, covering **3.7% of the ocean**, in **2021 7.7%** of the ocean (But only a **small number** of them were Marine Reserves = 1.4% of the global seas receive complete and permanent)

**Goal = protect at least 10% of the oceans and seas** through the establishment of MPAs by 2020! (*Convention on Biological Diversity - IUCN*) **not achieved**

### The Ocean Dimension of the 2030 Agenda



- **Next Goal = From 7.7% now-days to 30% in 2030 (The Ocean Dimension of the 2030 Agenda: Conservation and Sustainable Use of the Ocean, Seas, and Marine Resources for Sustainable Development)**





## Future Opportunities – BLUE Careers



### 4. Maritime Transport & Ports

- **Green shipping and fuel-efficient vessels**
- **Sustainable port management & logistics**

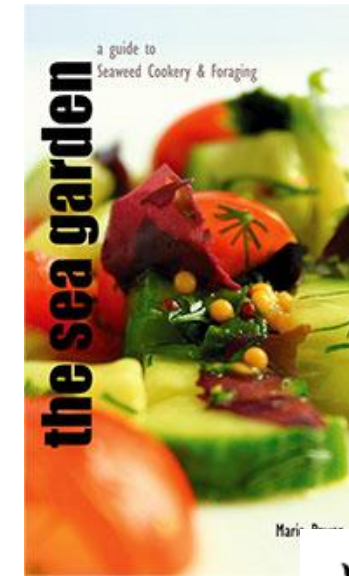
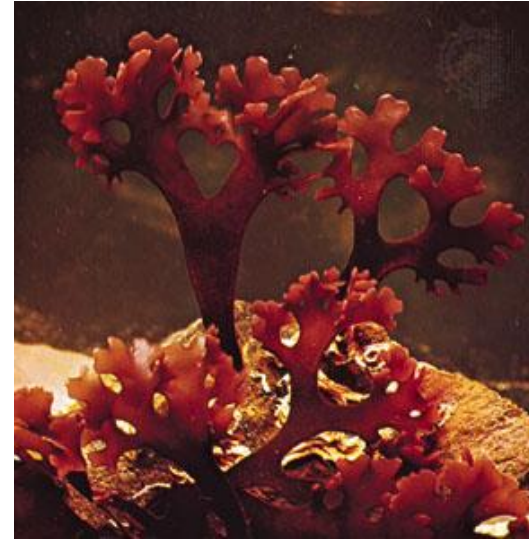




## Future Opportunities – BLUE Careers

### 5. Biotechnology & Marine Resources

- Marine-based pharmaceuticals and bio-products
- Seaweed farming and algae-based biofuels





## 6. Coastal Protection & Climate Adaptation

### Future Opportunities – BLUE Careers • Restoration of Mangroves and Coral Reefs

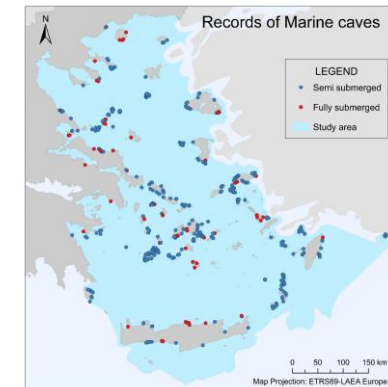
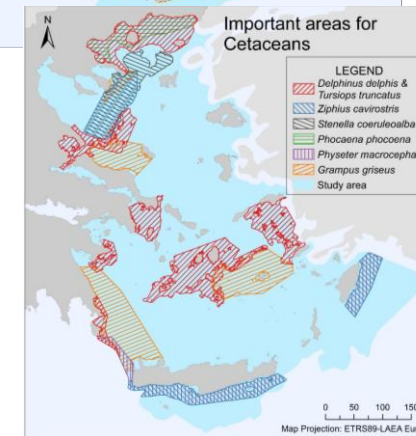
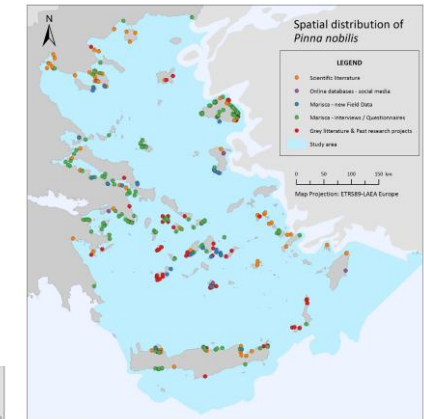
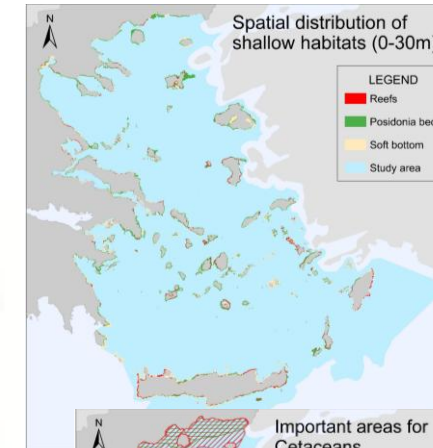




## Future Opportunities – BLUE Careers

### 6. Coastal Protection & Climate Adaptation

- Marine Spatial Planning and disaster risk reduction



## BLUE ECONOMY ..... In conclusion

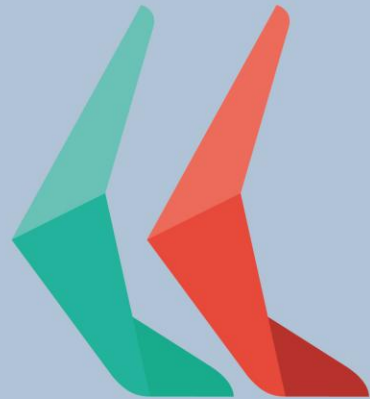
- The **Blue Economy** presents a **transformative approach** to managing ocean resources **sustainably**, balancing **economic development** with **environmental protection**.
- By **investing in sustainable ocean industries**, implementing **strong policies**, and fostering **global cooperation**, we can ensure a **prosperous and healthy future for our oceans and communities**.



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# Thank you