



Παρουσίαση Εκπαιδευτικών Πόρων για την Μπλε Εκπαίδευση

Σοφία Γιακουμή
Κατερίνα Αναστασοπούλου
Γιολάντα Κουλούρη



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Το Course του You4Blue είναι δομημένο σε 5 κύριες Ενότητες (Lessons/Modules) που περιέχουν **20** βίντεο-μαθήματα (Units/Lessons) στα αγγλικά

➡ How the oceans help us (Πώς μας βοηθούν οι ωκεανοί):

Lesson/Module 1: Biodiversity - Ecosystem services (Βιοποικιλότητα – Οικοσυστημικές υπηρεσίες) **4**

L/M 2: Marine resources exploitation (Αξιοποίηση θαλάσσιων πόρων) **3**

L/M 3: Culture, community and wellbeing (Πολιτισμός, κοινότητα και ευημερία) **4**

➡ How we can help the oceans (Πώς μπορούμε να βοηθήσουμε τους ωκεανούς):

L/M 4: Impacts on marine ecosystems (Επιπτώσεις στα θαλάσσια οικοσυστήματα) **5**

L/M 5: Conservative efforts (Προσπάθειες διατήρησης) **4**





Module 1: Biodiversity – Ecosystem services

Lesson 1a - Marine biodiversity (Yolanda Koulouri – HCMR)

Θαλάσσια βιοποικιλότητα




Marine Biodiversity
Yolanda Koulouri



pearly razorfish

Index

- Biodiversity from the coasts to the deep sea
- Biodiversity in the Mediterranean Sea
- Iconic species and habitats



wide-eyed flounder

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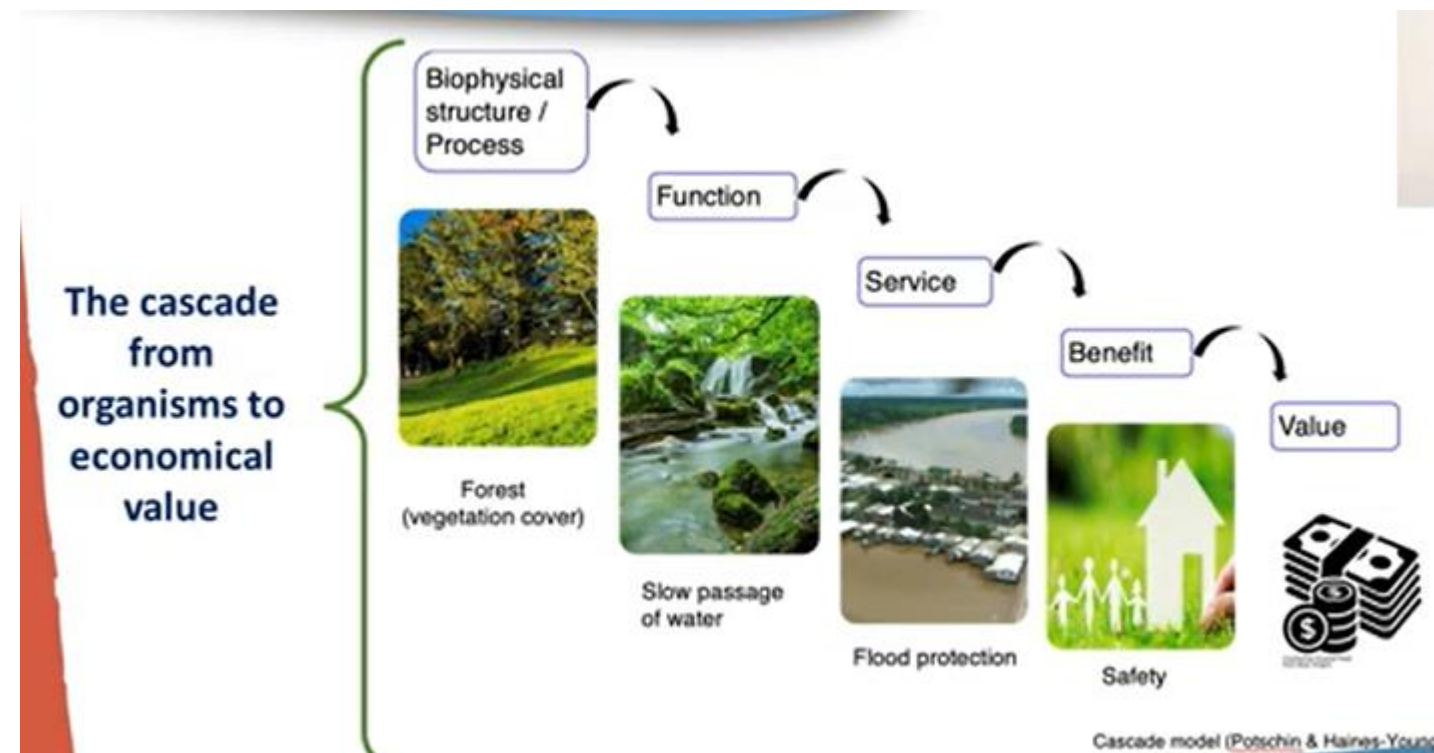
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Module 1: Biodiversity – Ecosystem services

Lesson 1b - Marine ecosystem provide services to society (Ana Ruiz-Frau – IMEDEA)

Το θαλάσσιο οικοσύστημα παρέχει υπηρεσίες στην κοινωνία



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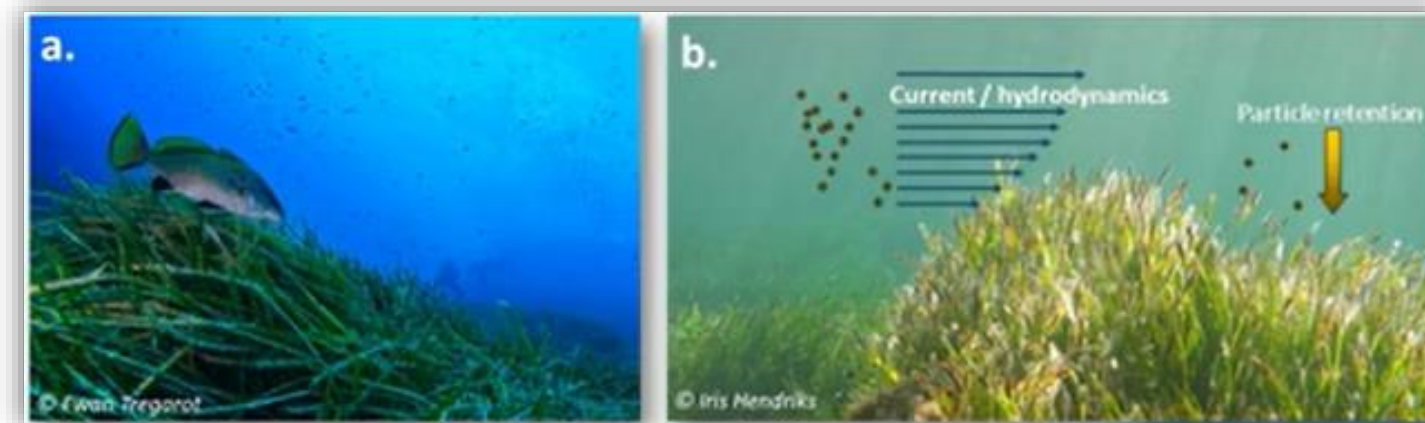
MARINE ECOSYSTEMS PROVIDE SERVICES TO SOCIETY
Ana Ruiz-Frau

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1. What are ecosystem services?
2. Types of ecosystem services
3. What do oceans offer us?
4. Summary of key points

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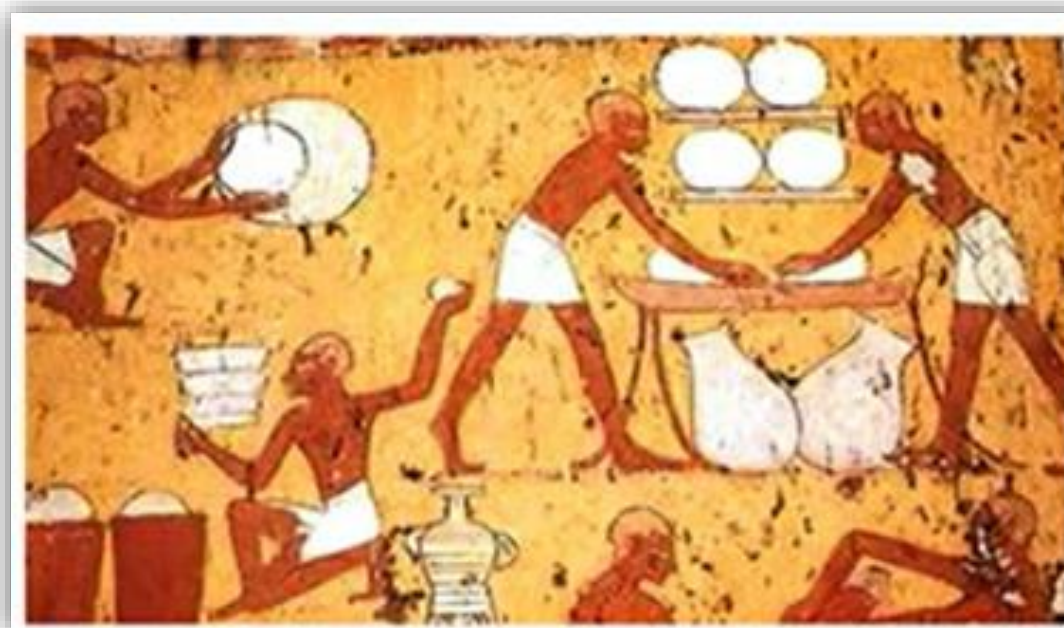


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Module 1: Biodiversity – Ecosystem services

Lesson 1c - Provisioning services (Silvia de Juan – IMEDEA)

Υπηρεσίες παροχής



PROVISIONING SERVICES
Silvia de Juan - IMEDEA (CSIC) -



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1. Provisioning services
2. The ocean as a source of food
3. Historical importance of Mediterranean fisheries
4. Non-living resources provided by the sea
5. Summary of key points

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Module 1: Biodiversity – Ecosystem services

Lesson 1d - Supporting services and ecosystem functions (Andrea Anton – IMEDEA)

Υποστηρικτικές υπηρεσίες και λειτουργίες οικοσυστήματος

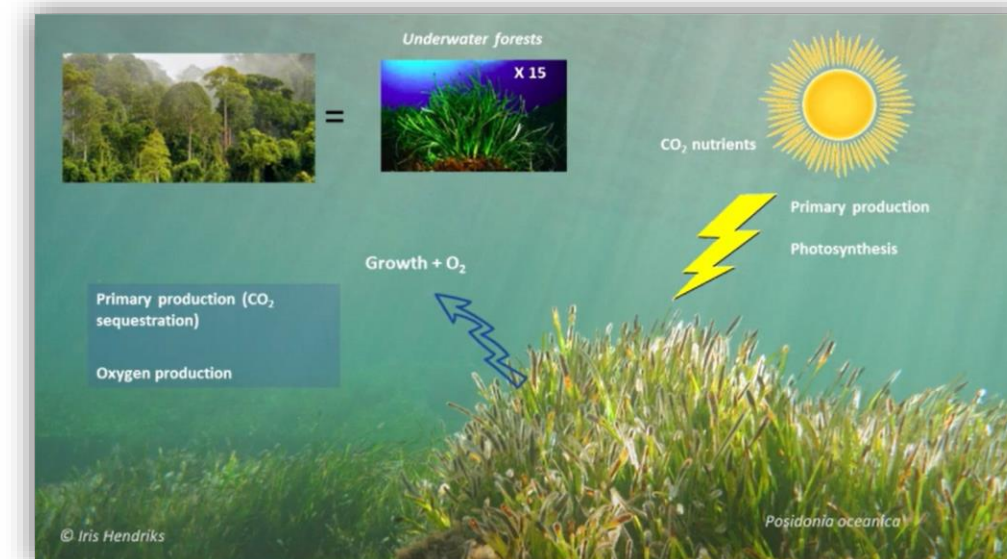
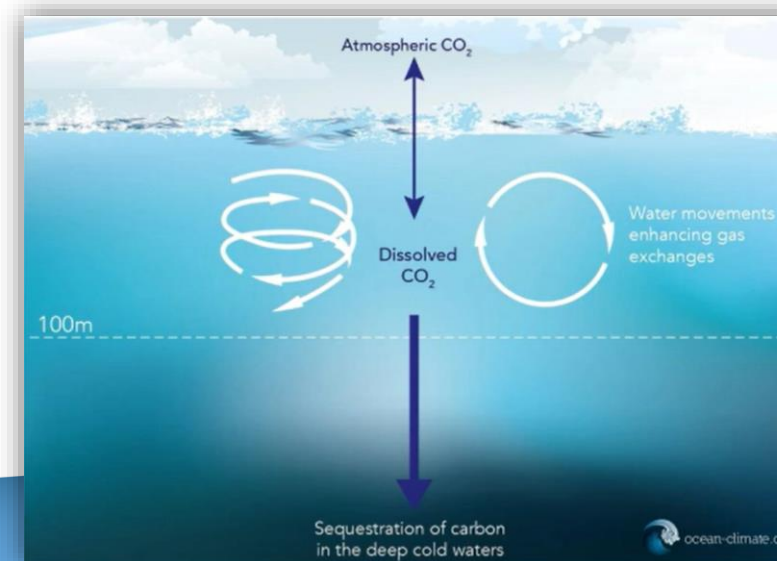
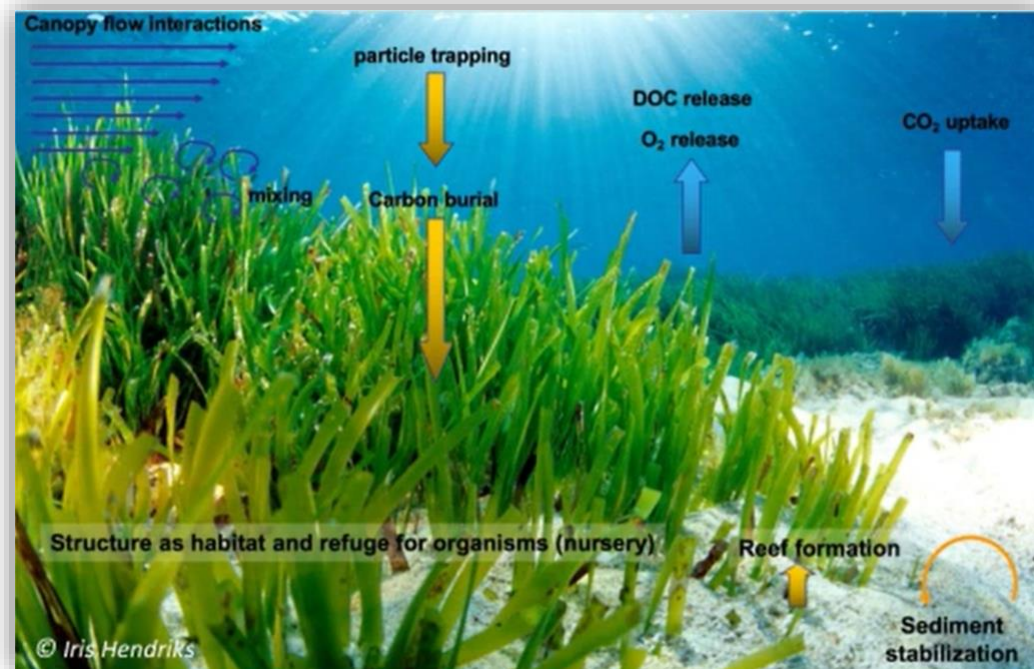
SUPPORTING SERVICES AND ECOSYSTEM FUNCTIONS
Andrea Anton

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1. Introduction
2. Key marine habitats
3. *Posidonia oceanica* in the Mediterranean
4. Climate change mitigation
5. Blue carbon habitats
6. Summary of key points

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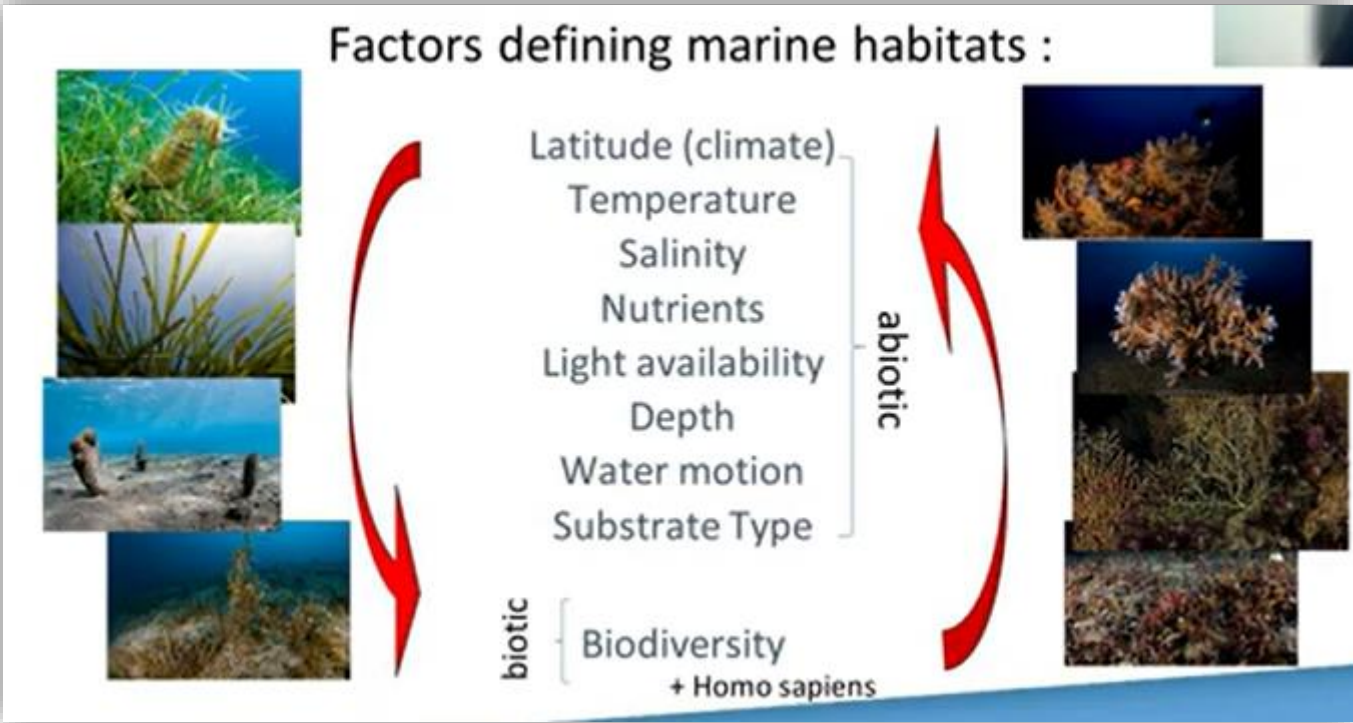
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Lesson 2a - Mediterranean Seabed Habitats (Dr. Maria Salomidi – HCMR)

Ενδιακτήματα στον βυθό της Μεσογείου



Mediterranean Seabed Habitats
Dr. Maria Salomidi, HCMR

What is a habitat?

Although the classical definition of *habitat* has been “the locality in which plants, animals and other organisms naturally live” (Darwin, 1859) today the term is rather defined as an organism-environment complex, a distinct **ecosystem unit** which, *sharing common biotic and abiotic characteristics, may be collectively considered for management and conservation purposes*

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Pollution – Turbidity

Illegal Fishing for date mussels

MAJOR THREATS

Trophic cascades due to overfishing esp. of keystone predators

Coastal Works



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Module 2: Marine resources exploitation

Lesson 2b – Fisheries & Sustainable Fishing (Dr. Aikaterini Anastasopoulou HCMR) Αλιεία & Βιώσιμη Αλιεία

FISHERIES AND SUSTAINABLE FISHING
Aikaterini Anastasopoulou

Index

- Introduction
- Definitions of fishery and fisheries resources
- Fishery overview
- Type of fisheries
- Type of fishing gears
- Importance of Fisheries
- Fisheries impact
- Need for sustainable fishery
- Sustainability and conservation solutions

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Lesson 2c – Aquaculture (Ioannis Nengas, George Rigos – HCMR)

Υδατοκαλλιέργειες

Aquaculture
Ioannis Nengas

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- What is Aquaculture
- Why Aquaculture
- Reproduction
- Larval rearing
- Growout
- Nutrition
- Diseases & Therapy
- Environment
- Consumer Safety




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Aquaculture
Rigos George


Diseases






Viruses



Parasites




Bacteria



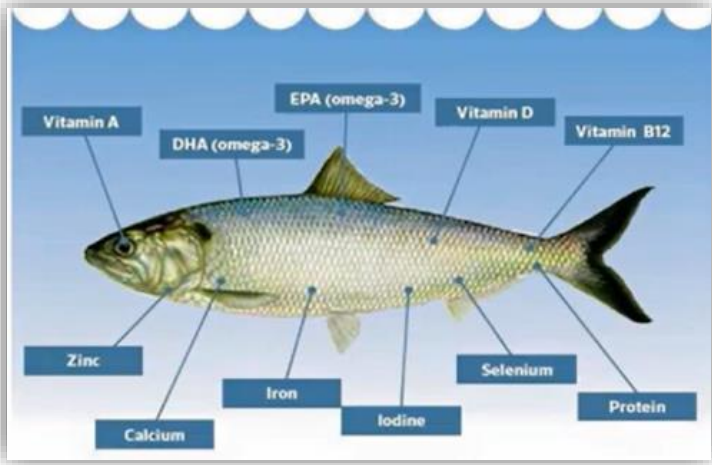
➤ Globally in aquaculture, the annual damage only from parasites has been estimated at >12 billion €

➤ Sea lice alone in Norway, the biggest salmon producer, cause economic annual losses of around 0.5 € per kg fish



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Module 3: Culture, community and wellbeing

Lesson 3a – Environmental education & The Museum as one example of sea culture awareness (Carmelo Isgrò – UCSC)

Η περιβαλλοντική εκπαίδευση & το Μουσείο ως παράδειγμα ευαισθητοποίησης για τον θαλάσσιο πολιτισμό

Environmental education and the Museum as an example of sea culture awareness
Carmelo Isgrò

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- Topic 01: the MuMa Sea Museum
- Topic 02: environmental education
- Topic 03: sea culture awareness

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MU
MA
MUSEO DEL MARE
MILAZZO



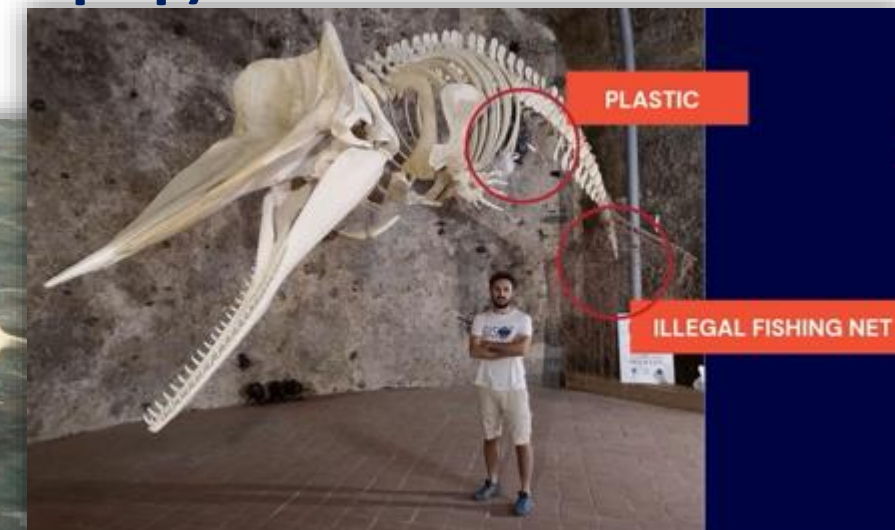
Milazzo Castle



Plastic that I found in his stomach



1527: Church
1600: Fortress
1830: Prison
2019: Museum



PLASTIC

ILLEGAL FISHING NET



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Lesson 3b – Uniting the community through Citizen Science: the City Nature Challenge (Carmelo Isgrò – UCSC)

Ενώνοντας την κοινότητα μέσω της
Επιστήμης των Πολιτών



What is the City Nature Challenge (CNC)?

is an international initiative of Citizen Science to promote biodiversity



The CNC is a friendly competition between cities, focused on biodiversity data all over the world



Hyla intermedia (Italian tree frog)



Echinops spinosissimus (Desert Thistle)

How to use iNaturalist:



1,694,887
Observations



50,176
Species



67,220
People



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- What is the Citizen Science?
- What is the City Nature Challenge (CNC)?
- Goals of the CNC
- How to join the Challenge



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Module 3: Culture, community and wellbeing

Lesson 3c – Wellbeing of environment and society: Initiative of beach cleaning promoting (Carmelo Isgrò – UCSC)

Environmental wellbeing,
social initiatives and beach cleaning
Carmelo Isgrò UCSC

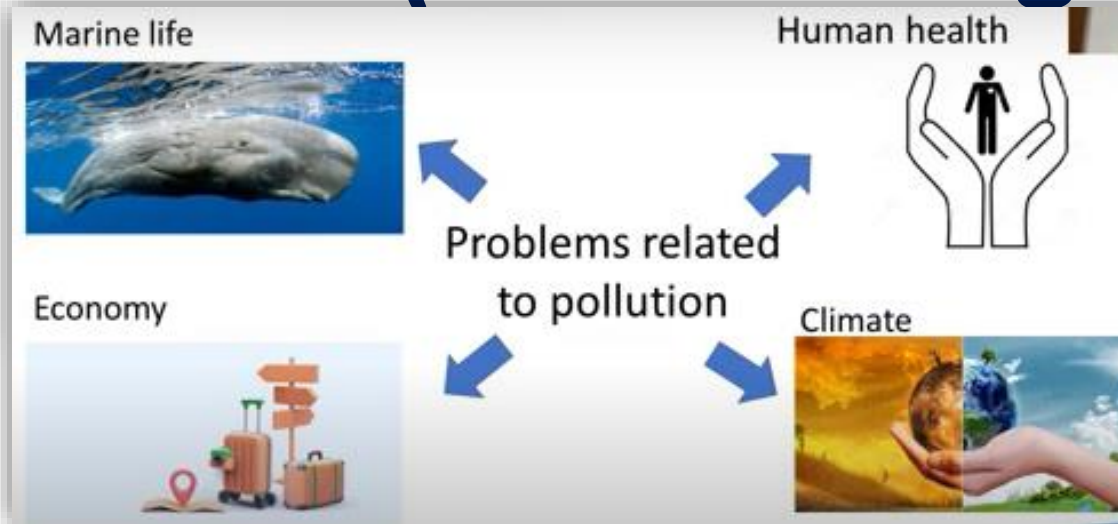
INDICE

- The impact of plastic and its consequences.
- Social implication.
- Planet wellbeing

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73 % of beach waste worldwide is plastic.



Plastic bag takes 12 minutes, taking a thousand to decompose.



Every week each of us ingest 5 grams of plastic.



GREENPEACE



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Lesson 3d – The sea in us (Paolo Marabotto – CEAS Laguna di Nora)



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- How art transforms nature into an emotional, psychological experience and a spiritual category.



Module 4: Impacts on marine ecosystems

4a – Renewable resources in the Mediterranean (Christina Pomilla – IMEDEA)

PROS

- ✓ Wind platforms can help **reduce our reliance on fossil fuels.**
- ✓ These platforms often create **new habitats** for marine life, similar to the creation of artificial reefs.

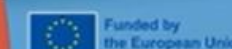
CONS

- ✗ **Whales and dolphins** can be harmed by underwater noise.
- ✗ **Birds** can collide with wind turbines.
- ✗ Can disrupt the **migratory patterns** of marine species.
- ✗ The use of underwater cables to transport electricity can cause **damage to the seafloor.**



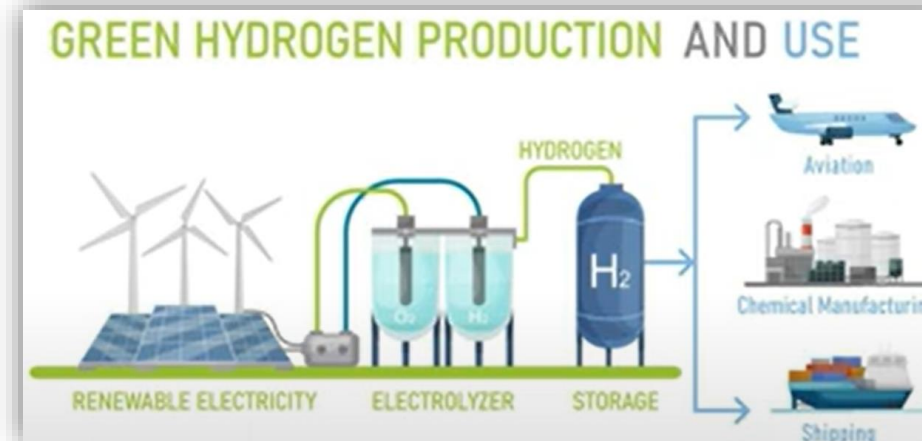
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1. Introduction: Oceans as a source of energy
2. Offshore wind platforms
3. Renewable energies in a sustainable future
4. Summary of key points



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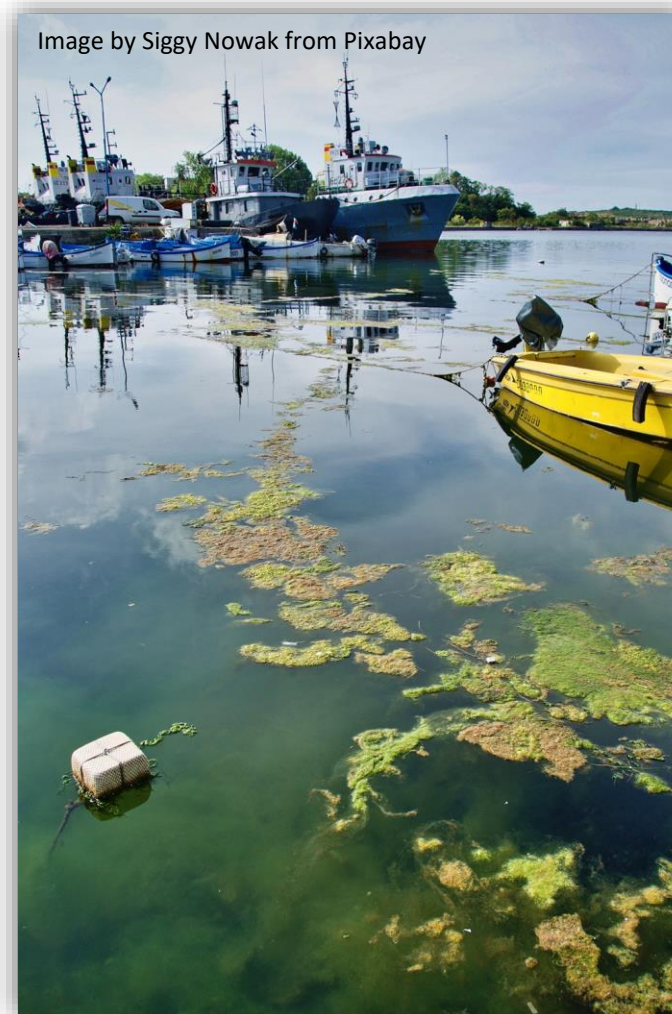
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Module 4: Impacts on marine ecosystems

4b – (Human) Impacts on marine environment (S. Giakoumi & A. Andriopoulou – HCMR)



IMPACTS ON MARINE ENVIRONMENT
Sofia Giakoumi & Roula Andriopoulou

Index

- Marine litter
- Chemical pollution
- Noise pollution
- Light pollution





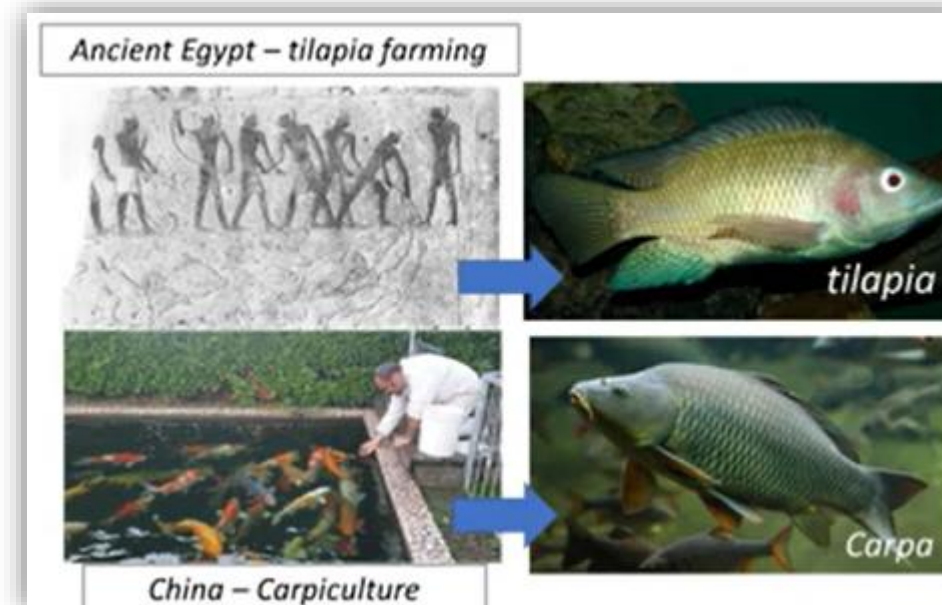

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Module 4: Impacts on marine ecosystems

4c – Impacts of overfishing and aquaculture (Carmelo Isgro – UCSC)



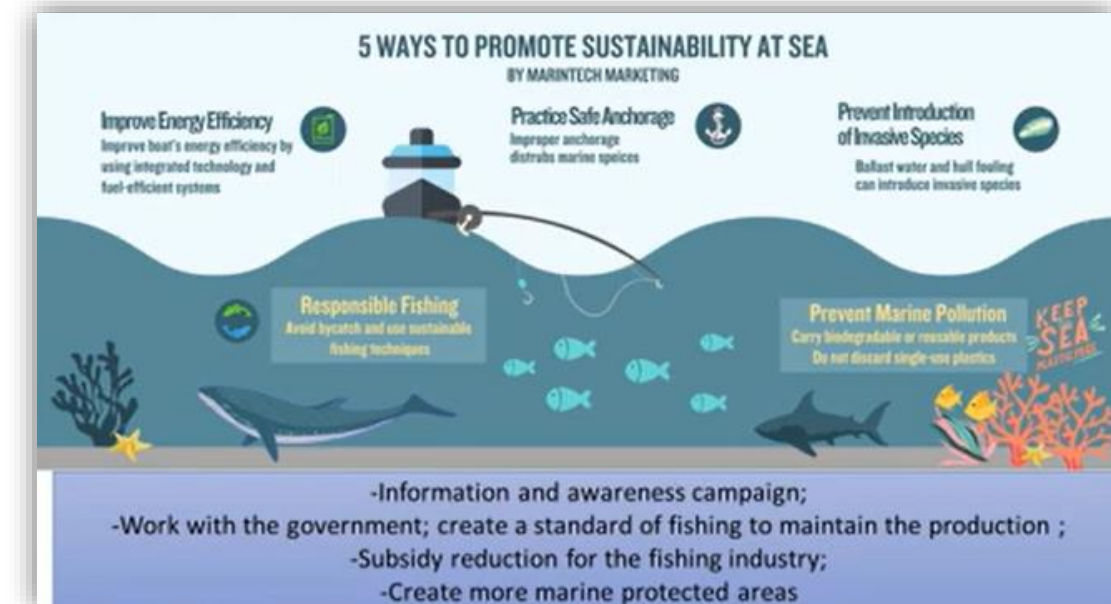
Impacts of overfishing and aquaculture
Carmelo Isgro

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- Aquaculture
- Overfishing
- Problems & solutions

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Module 4: Impacts on marine ecosystems

4d – Recreational activities impacting ecosystems (Hilmar hinz– USIC)

RECREATIONAL ACTIVITIES
Hilmar Hinz



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1. Introduction
2. Boat anchoring on Posidonia meadows
3. Vulnerability of wildlife
4. Summary of key points



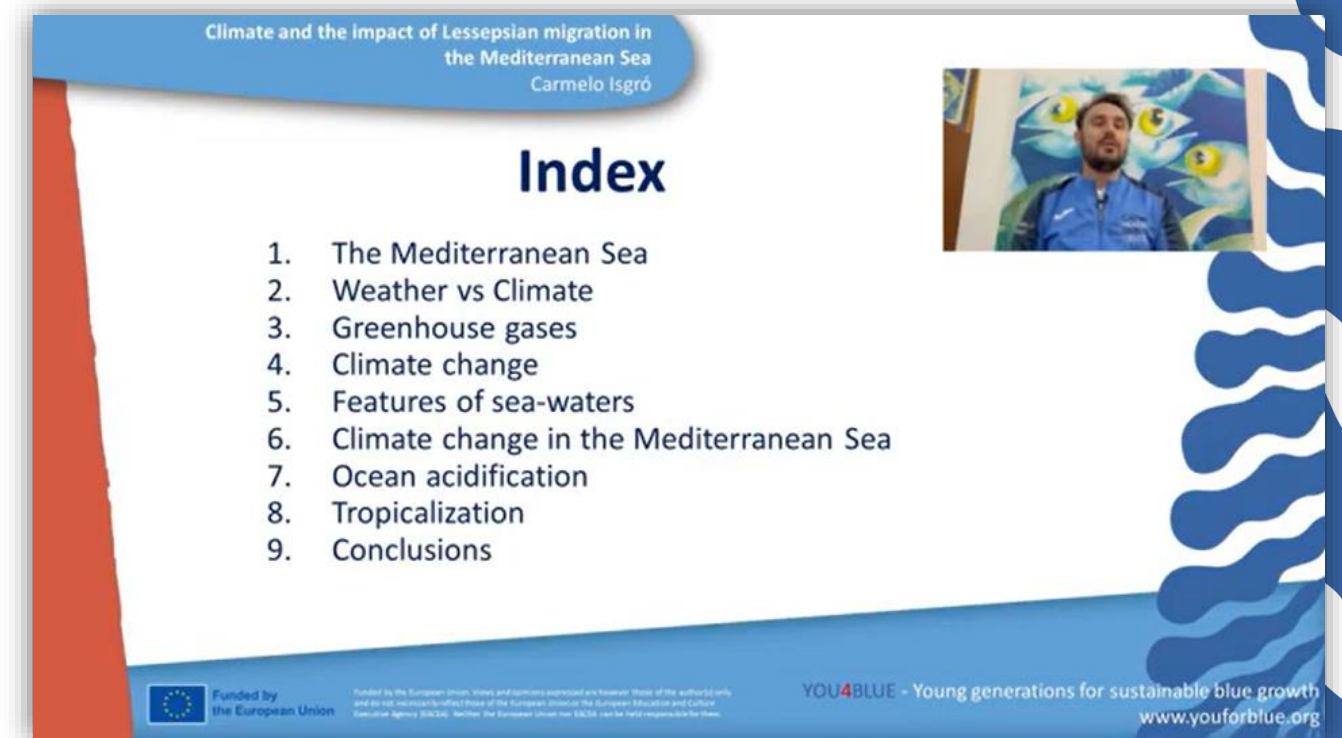
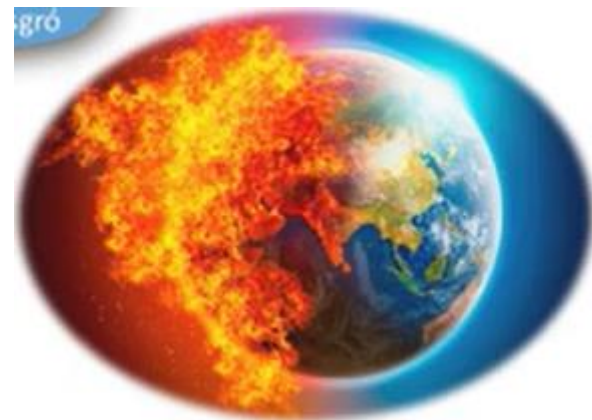
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Module 4: Impacts on marine ecosystems

4e – Climate change and the impact of Lessepsian migration in the Mediterranean Sea (Carmelo Isgro – UCSC)



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Module 5: Conservative efforts

Lesson 5a - Responsible resource management measures (Andrea Orrù– CEAS Laguna di Nora)

RESPONSIBLE RESOURCE MANAGEMENT MEASURES

Andrea Orrù



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- The Sustainable Development Agenda 2030 and Goals-Life below water the SDG 14
- FAO Code of Conduct for Responsible Fisheries
- Regulations in Mediterranean Sea
- Marine Protected Areas

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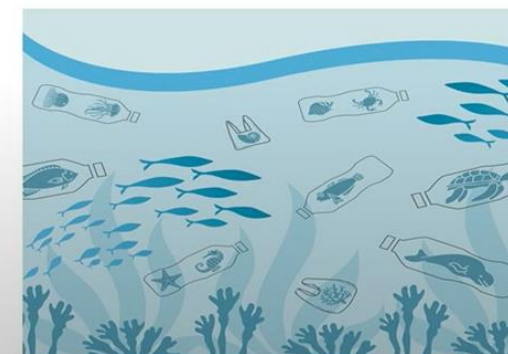
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Intensive exploitation of fish resources



Pollution



Climate Change



FAO Code of Conduct for Responsible Fisheries

What is it?

Principles and role models for responsible fishing and aquaculture practices

Who is it addressed to?

- States of the world, entities or organisations in the fisheries sector
- Fishermen and fish farmers
- Fish product processing and marketing operators



Structure of Marine Protected Areas

Zona A

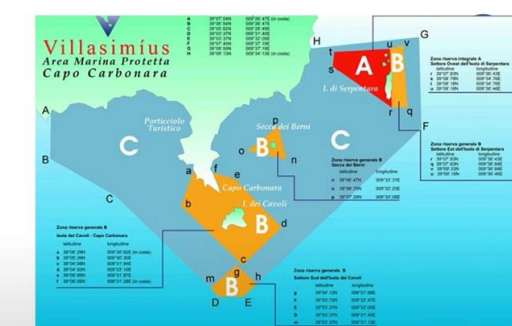
Maximum protection.
Human activities prohibited; scientific research permitted and encouraged.

Zona B

Bearing Area.Sustainable and responsible human activities, artisanal fishing with selective fishing gear and sustainable tourism permitted.

Zona C

Gradual approach to the core marine protected area



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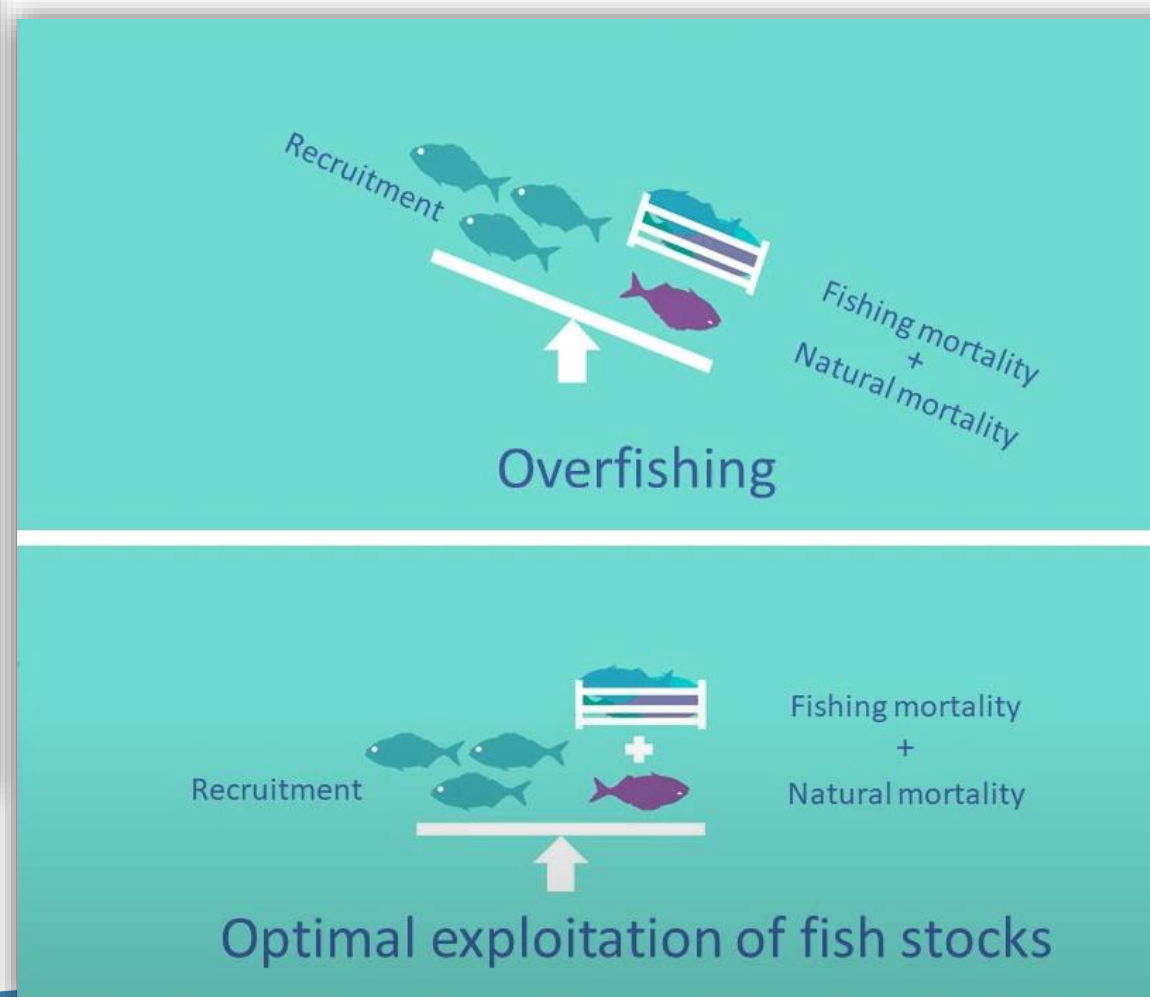
Module 5: Conservative efforts

Lesson 5b – Seafood and Marine Biodiversity (Andrea Orrù– CEAS Laguna di Nora)



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LESSON 5B – Seafood and marine biodiversity
Andrea Orrù



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- Topic 01 *Responsible purchasing choice*
- Topic 02 *Fish stocks and fishing effort*
- Topic 03 *Traceability of fish products*
- Topic 04 *IUCN Mediterranean fish Red List*

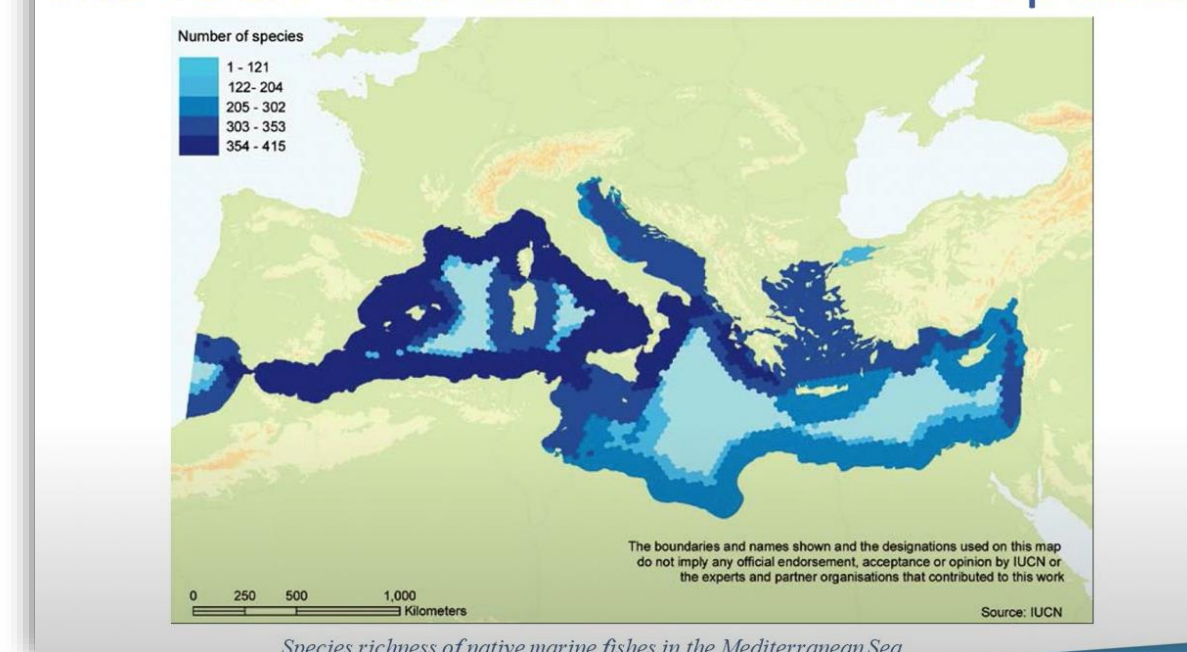


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The IUCN Red List of threatened Species



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Module 5: Conservative efforts

Lesson 5c – Sustainable management of sandy shores (Andrea Orrù– CEAS Laguna di Nora)

SUSTAINABLE MANAGEMENT OF SANDY SHORES
Andrea Orrù



Index

- 1) Elements and factors that contribute to the formation of a beach: sediment, wind, and wave motion
- 2) The emerged and submerged beach as a habitat for animal and plant species
- 3) The fragile balance of the beach system and the disturbing factors due to anthropogenic pressure

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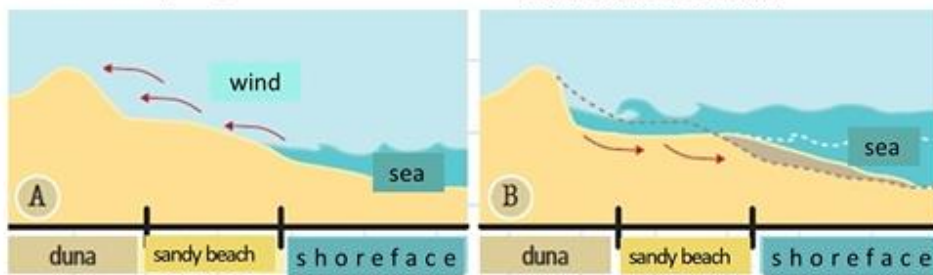
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- the contribution of sediment (grains)
- wave motion and sea currents

The first factor is the availability of "grains"

The second factor is the action of water and wind

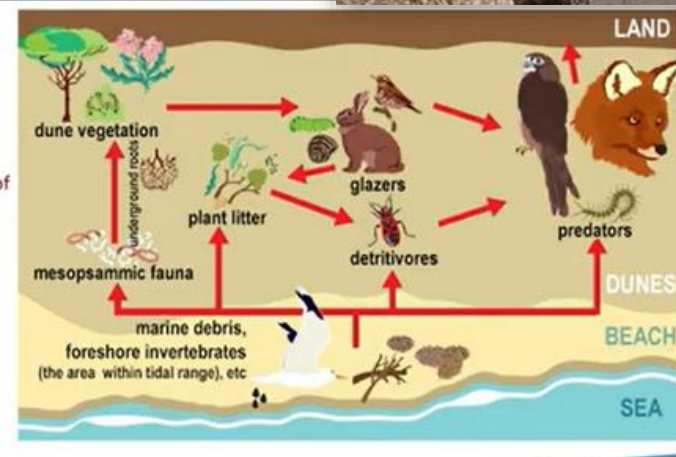


The submerged beach posidonia



BEACH ECOSYSTEM

The beach is an ecosystem consisting of a physical environment (sand, wind, sea water, etc.) and a community of animals and plants that live there.



bathing activities



abandonment of waste



MY COMMITMENT

But what can we do about it?

We avoid parking our cars, motorcycles or bicycles near the beach and, in particular, the dunes.

To get to the beach we use the appropriate walkways if present.

We have set up umbrellas, beach towels and games away from the dunes

Let's take away the waste we produce

Here are some small suggestions:

If we go boating, we do not anchor where the bottom is covered with Posidonia oceanica

We avoid trampling and carrying away any plants on the dunes, especially avoid damaging the juniper

Leave the sand and shells at the beach, choose another souvenir

We contribute to the protection of our beaches by avoiding taking away residual sand. Just think that each person unintentionally carries away about 25 g of sand at a time, 2.5 kg for every hundred people!



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Module 5: Conservative efforts

Lesson 5d – Charismatic Marine Megafauna (Andrea Orrù– CEAS Laguna di Nora)

Lesson 5d – Charismatic Marine Megafauna
Andrea Orrù



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- Topic 01 Who they are and their ecological role
- Topic 02 How we relate to them
- Topic 03 Species of our seas and their vulnerabilities
- Topic 04 Common threats
- Topic 05 What can you do for them

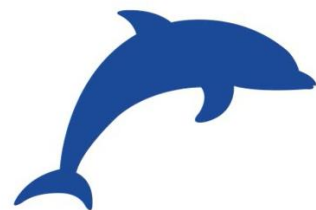
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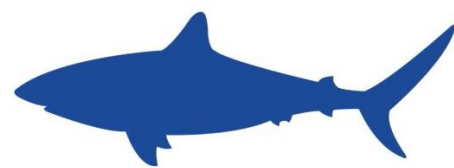
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Sea turtles

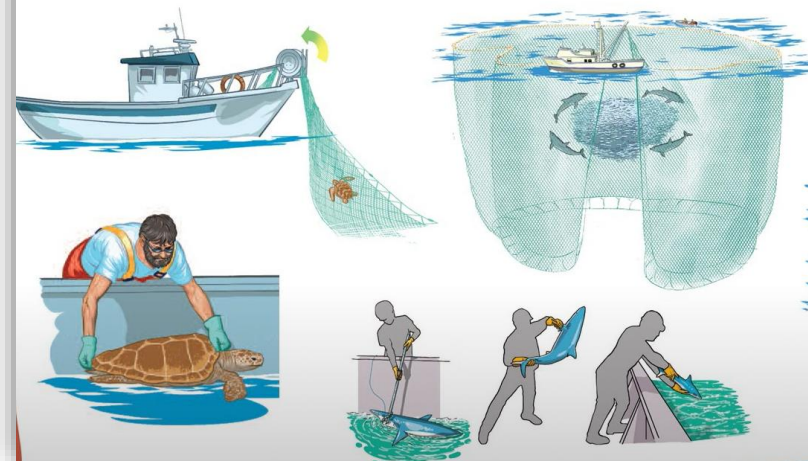


Cetaceans and Pinnipeds



Sharks and Rays

Common threats: bycatch



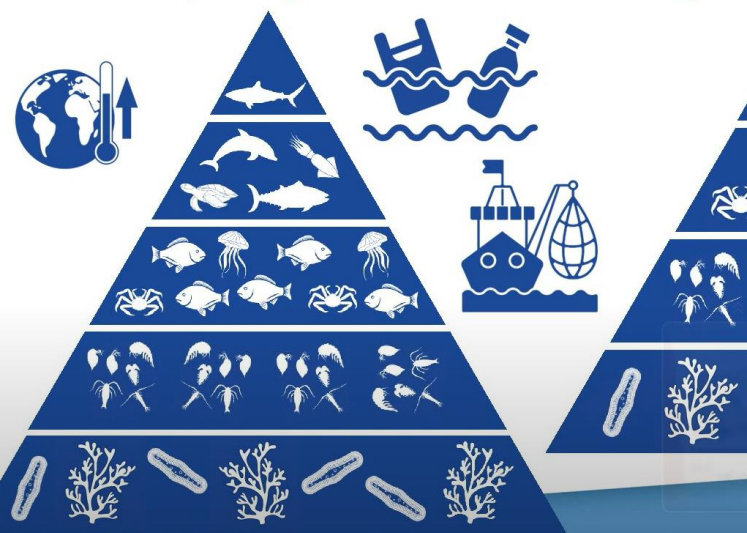
Common threats: collisions and perturbances



Common threats: climate change



Apex organisms are the most fragile



Common threats: pollution and diseases



What can you do for them: spread knowledge & good practices



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Thank you !!!

