



AQUATIC LIFE LAB

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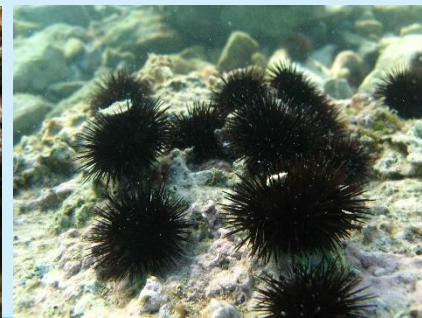
Bioindicators and target marine species



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BIOINDICATORS

- "There is no better indicator of the status of a species or a system than a species or system itself." Tingey, David T. (1989)
- The biological indicator is any species that can be a good tool to assess the state of health of a marine ecosystem and to check for possible alterations

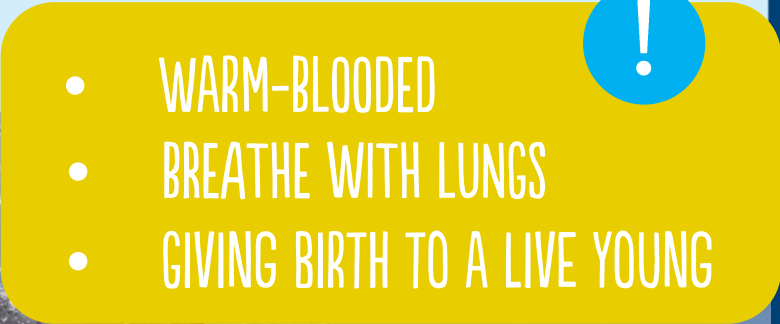


TARGET MARINE SPECIES

- Species that can highlight macroscopically alterations of marine ecosystem through the study of abundance, distribution and status of their populations, i.e. large predators as cetaceans, sea turtles and sharks



MARINE MAMMALS

- 
- 
- WARM-BLOODED
 - BREATHE WITH LUNGS
 - GIVING BIRTH TO A LIVE YOUNG

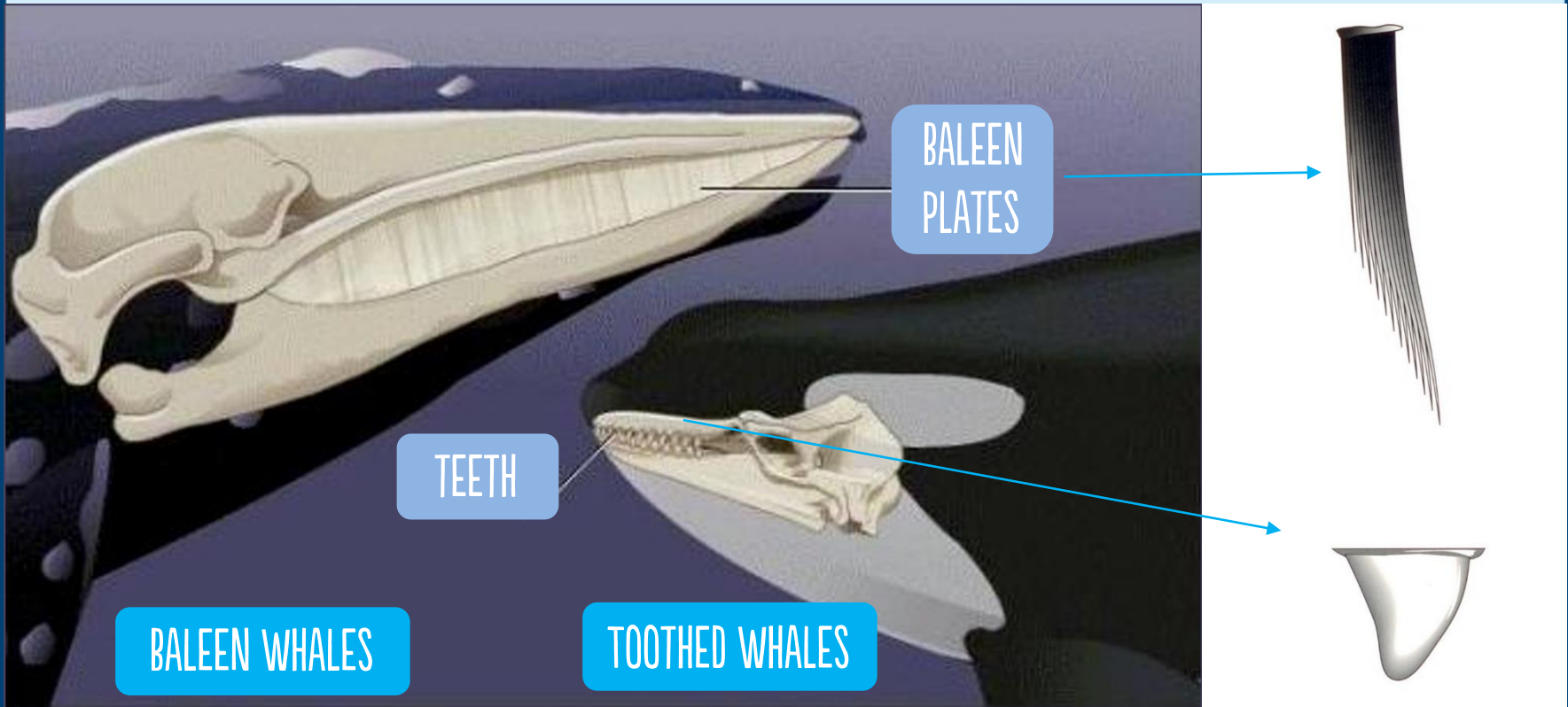
TAXONOMY



- MYSTICETES (BALEEN WHALES)
- ODONTOCETES (TOOTHED WHALES)



Cetaceans

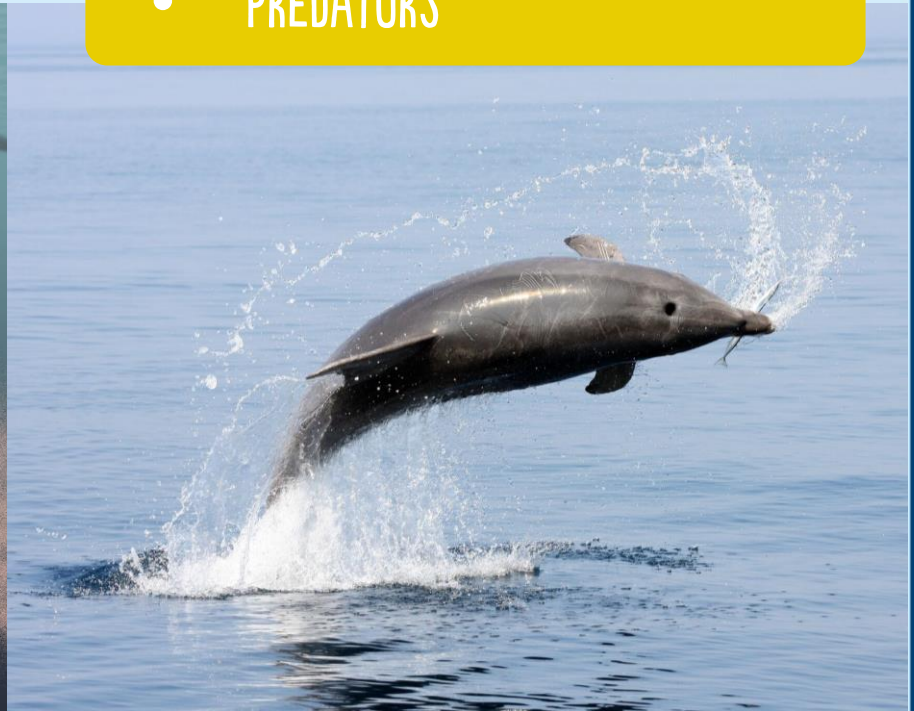


FEEDING HABITS

- FILTER-FEEDERS



- PREDATORS



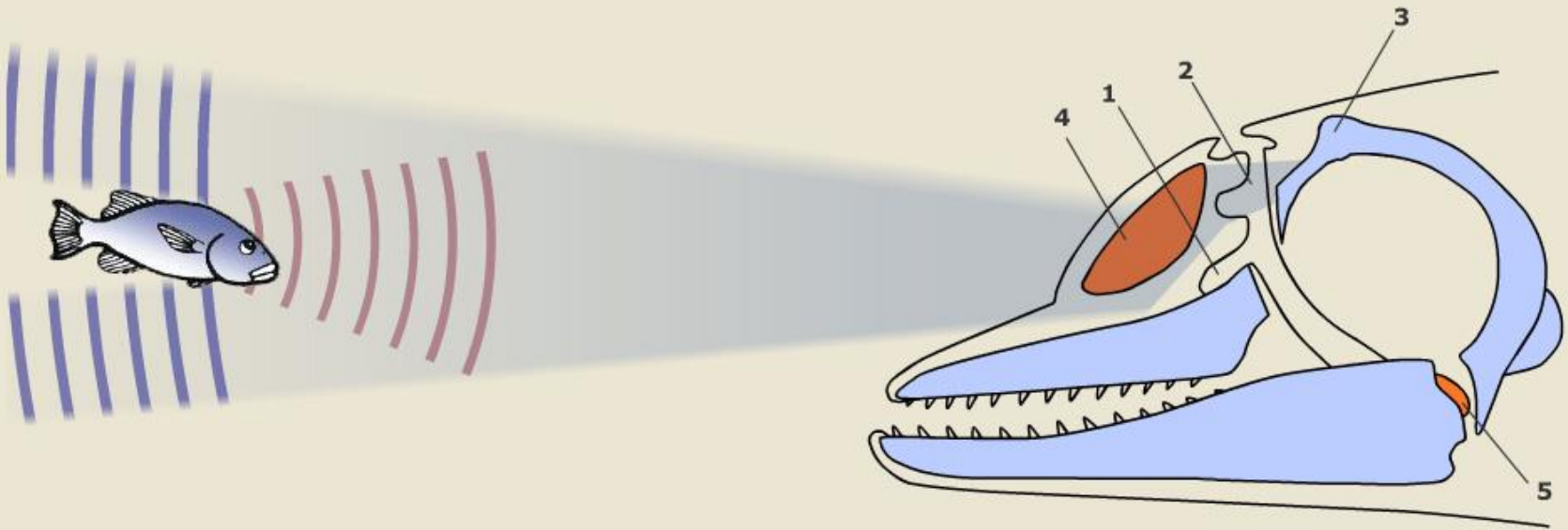
REPRODUCTION



- GESTATION PERIOD: 10-14 MONTHS
- 1 OFFSPRING
- LACTATION
- TAKING CARE OF THEIR OFFSPRING



ECHOLOCATION



1 - prednji nosni sinus 2 - nosni sinusi 3 - čeona kost 4 - melon 5 - bulla tympani

SPECIES IN THE MEDITERRANEAN



STRIPED DOLPHIN
(STENELLA COERULEOALBA)

!

- THE MOST ABUNDANT
CETACEAN SPECIES IN THE
MEDITERRANEAN

SPECIES IN THE MEDITERRANEAN



BOTTLENOSE DOLPHIN
(*TURSIOPS TRUNCATUS*)



COMMON DOLPHIN
(*DELPHINUS DELPHIS*)

SPECIES IN THE MEDITERRANEAN

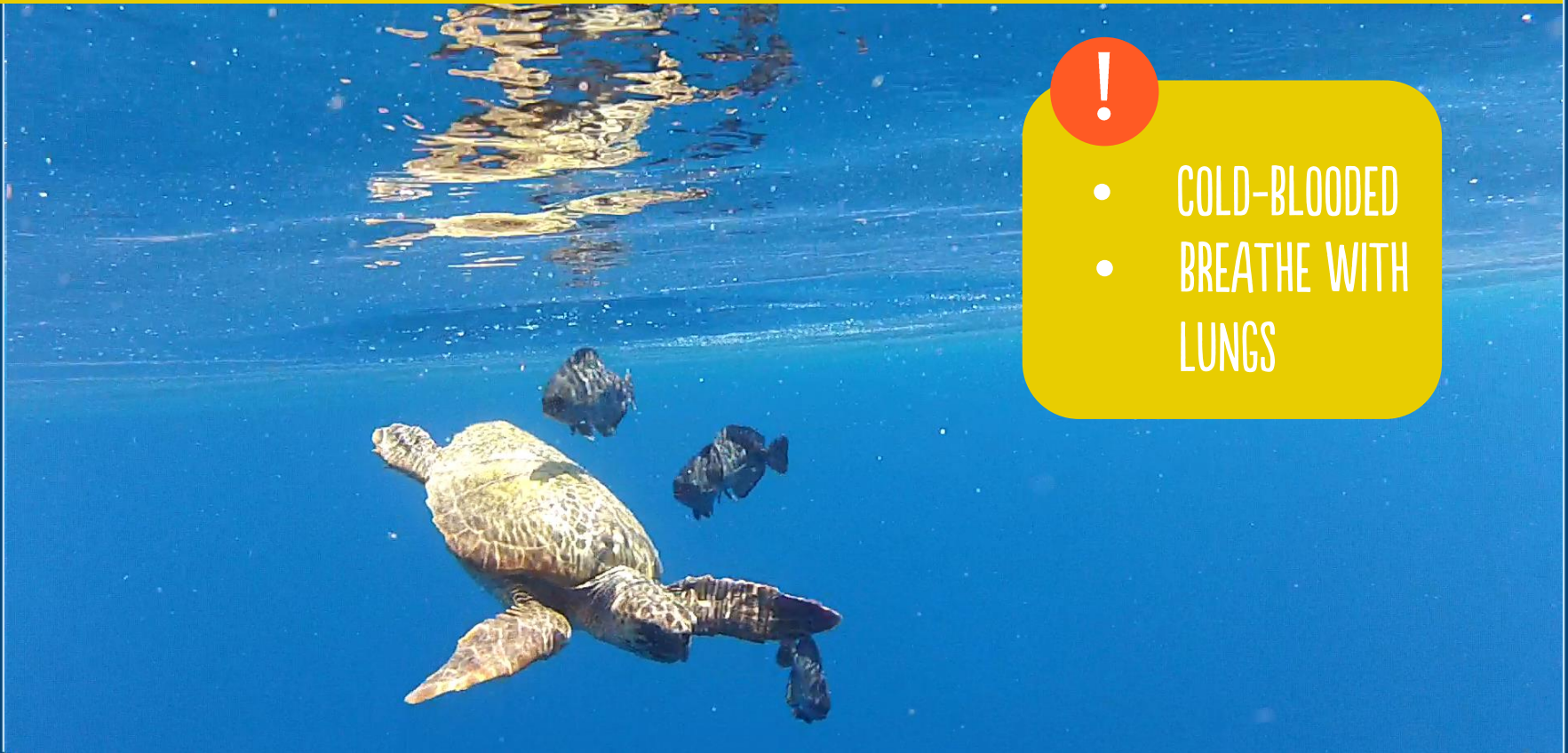
FIN WHALE
(BALAENOPTERA PHYSALUS)



-  SECOND LARGEST ANIMAL ON EARTH

Sea turtles

REPTILES



!

- COLD-BLOODED
- BREATHE WITH LUNGS

Sea turtles

SPECIES

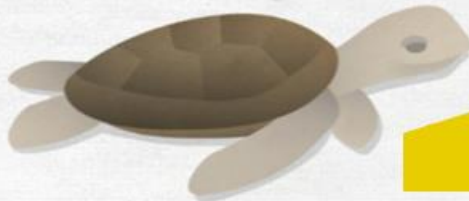


ADAPTATIONS FOR LIFE IN THE SEA

HEAD



SHELL

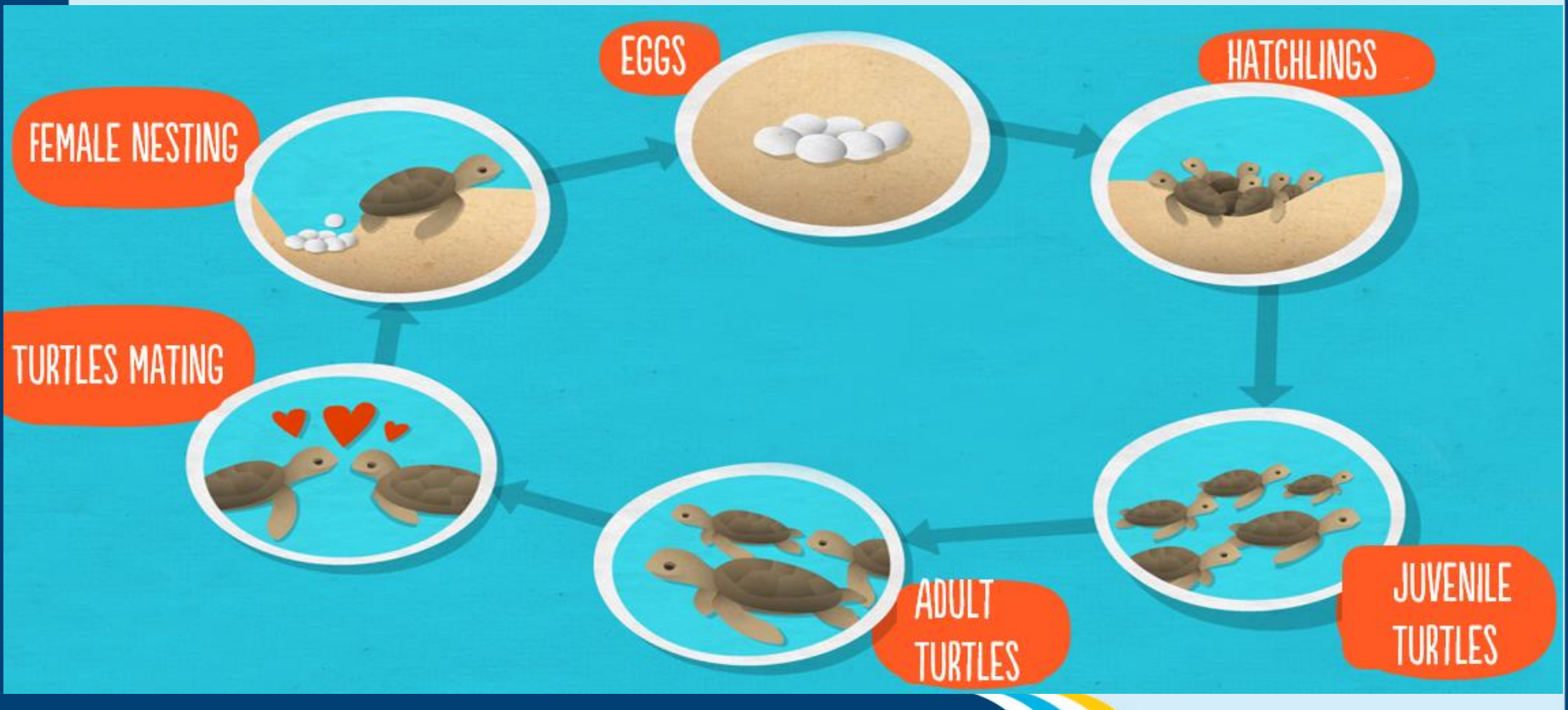


FLIPPERS



Sea turtles

LIFE CYCLE



LOGGERHEAD SEA TURTLE (CARETTA CARETTA)



- THE MOST COMMON SPECIES IN THE ADRIATIC
- NORTHERN ADRIATIC IS AMONG THE MOST IMPORTANT AREAS FOR THESE SPECIES IN THE MEDITERRANEAN

GREEN SEA TURTLE (CHELONIA MYDAS)



- ADULT GREEN TURTLES ARE FEEDING ON ALGAE AND SEA GRASS
- GREEN COLOUR OF THE SHELL COMES FROM CHLOROPHYLL IN THE FOOD



Sea turtles

LEATHERBACK SEA TURTLE (*DERMOCHELYS CORIACEA*)



- THEY DO NOT HAVE A BONY SHELL LIKE OTHER SPECIES OF SEA TURTLES

CARTILAGINOUS FISH



- CLASS CHONDRICHTHYES
 - SUBCLASS ELASMOBRANCHII
- NO SWIM BLADDER
- 5-7 PAIRS OF GILL
- PLACOID SCALES ON THE SKIN
- 370 SPECIES OF SHARKS



SPECIES IN THE MEDITERRANEAN

Great white shark (*Carcharodon carcharias*)

Blue shark (*Prionace glauca*)

Thresher shark (*Alopias vulpinus*)

Hammerhead shark (*Sphyrna lewini*)

Basking shark (*Cetorhinus maximus*)

Giant devil ray (*Mobula mobular*)

...



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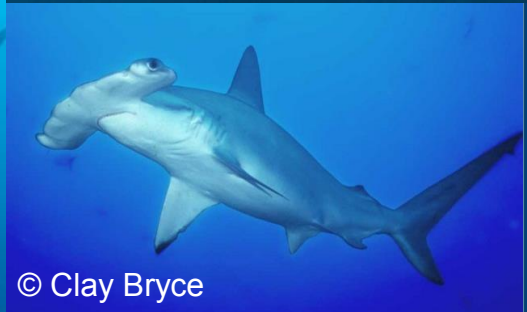
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SPECIES IN THE MEDITERRANEAN

GIANT DEVIL RAY
(MOBULA MOBULAR)



- LARGE EPIPELAGIC BATOID FISH (DW UP TO 5,2 M)
- ENDEMIC ELASMOBRANCH IN THE MEDITERRANEAN

HIPPOCAMPUS: A PECULIAR FISH



- BONY FISH
- MALE PREGNANCY
(THE MALE SEAHORSE HAS A POUCH ON THE VENTRAL
SIDE FOR CARRYING EGGS)
- 2 SPECIES:
 - SHORT-SNOURED SEAHORSE (H. HIPPOCAMPUS)
 - LONG-SNOURED SEAHORSE (H. GUTTULATUS)



THREATS – CETACEANS

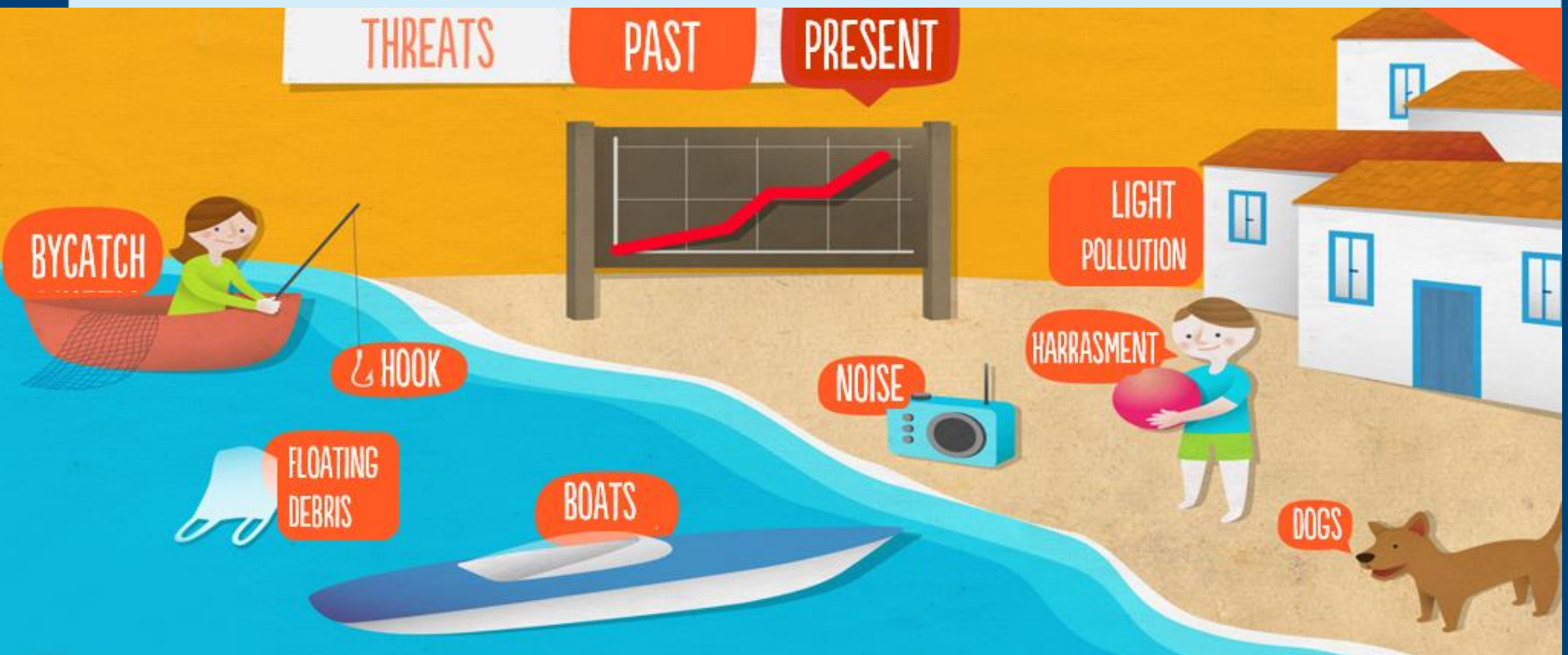


- MARINE TRAFFIC AND UNDERWATER NOISE
- REDUCED PREY AVAILABILITY
- BYCATCH IN THE FISHING NETS
- MARINE POLLUTION
- TOURISM
- OIL AND GAS EXPLOITATION





THREATS – SEA TURTLES



THREATS - SHARKS



- SHARKS ARE HIGHLY SENSITIVE TO ANTROPOGENIC THREATS
- HEAVILY EXPLOITED



THANK YOU FOR ATTENTION