THE LIFE OF THE LOGGERHEAD TURTLE IN THE MEDITERRANEAN SEA:
A CYCLE INTERACTING WITH PLASTICS

NAVARRO, MARINA - Tutor: Ivan Nadal - Institut Carles Vallbona - Barcelona, Spain

Marine pollution is a current environmental problem and has a negative effect on all species that inhabit the planet's waters. Within the framework of an interdisciplinary context, the cycle of the loggerhead sea turtle has been analysed, from its birth to its death, focused on its interaction with plastic waste, including a study of the analysis of its presence on some beaches on the coast. Catalan both in sand and water, on the behaviour of turtles when faced with different shades of plastic, or the analysis of defecated samples.

Keywords: loggerhead turtle, plastics, biological cycle, pollution, Mediterranean Sea.

OBJECTIVES

- Analyse sea pollution in the areas where turtles live, observing which are the most abundant plastics, as well as their physical characteristics.
- Assess the impact caused by plastic and other waste in the marine environment.
- Specify measures that can be taken to avoid or minimise pollution, specifically that caused by plastics.

Source: https://encrypted-tbn3.gstatic.com/images?q=tbn:ANd9GcRfYiCFqDW_pc-DAN32T68lx0f9211akAmV1OAWSEVa-Z3ed8sO

HYPOTHESIS

- Plastic could pose a significant risk to the planet and its abuse could cause a serious impact.
- The presence of these materials could be observed on the beaches.
- The granulometry of the beaches could affect the presence of sea turtle nests.
- The most abundant plastics could be PET.

MATERIALS AND METHODOLOGY

MATERIALS

Some of the materials used in study 2: plankton net.

Containers used in the ethological study of resident turtles.

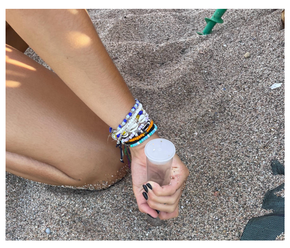
FT-IR IR spectrograph used to classify the samples.

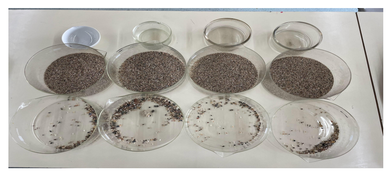
Some of the materials used to carry out study 1: sieves, scale and cylinder ("core").

App used to create the Audiobook, called "Book Creator": https://bookcreator.com/

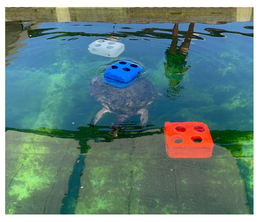
METHODOLOGY

Procedure for calibrating the spectrograph to begin the analysis.





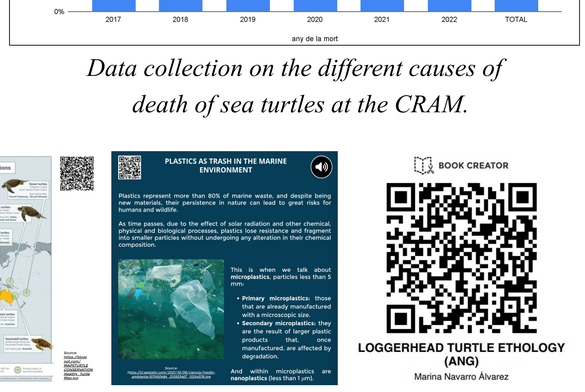
Granulometric blocks obtained.



Interactions were recorded in an ethogram every minute.

RESULTS

Relative importance of granulometry in the beaches studied.



Example of how information for each nest is displayed as a pop-up window on the interactive map.

Percentage of plastic samples studied and identified.

Data collection on the different causes of death of sea turtles at the CRAM.

BOOK CREATOR

LOGGERHEAD TURTLE ETHOLOGY (ANG)

Marina Navarro Álvarez

CONCLUSIONS

- Granulometry plays an important role in observing the presence of plastics on the analysed beaches; larger fragments have been found on beaches with larger grains.
- We can affirm that the colour white attracts their attention a little more than the other colours.
- The most abundant plastic was Polyethylene (PE).
- The majority cause of turtle death is decompression syndrome.
- Finally, indicate that this work complies with SDGs 4, 13 and 14 of the United Nations.

4 EDUCACIÓN DE CALIDAD

13 ACCIÓN POR EL CLIMA

14 VIDA SUBMARINA

BIBLIOGRAPHY

- Green Ecology (2021). **Causes and consequences of sea pollution.** [Consulted on June 25, 2023] Available at: https://www.ecologiaverde.com/causas-y-consecuencias-de-la-contaminacion-del-mar-1539.html
- United Nations Environment Program (n.d.). **The Clean Seas campaign promotes the right to a healthy environment, including plastic-free oceans.** UNEP. [Consulted on June 15, 2023] Available at: https://www.unep.org/es/noticias-y-reportajes/reportajes/la-campana-mares-limpios-promueve-el-derecho-un-medio-ambiente