

# I'M ABOUT TO GO EXTINCT, PLEASE HELP ME!



# MONITORING and PRESERVATION of ENDANGERED SEA TURTLES (CARETTA CARETTA AND CHELONIA MYDAS)

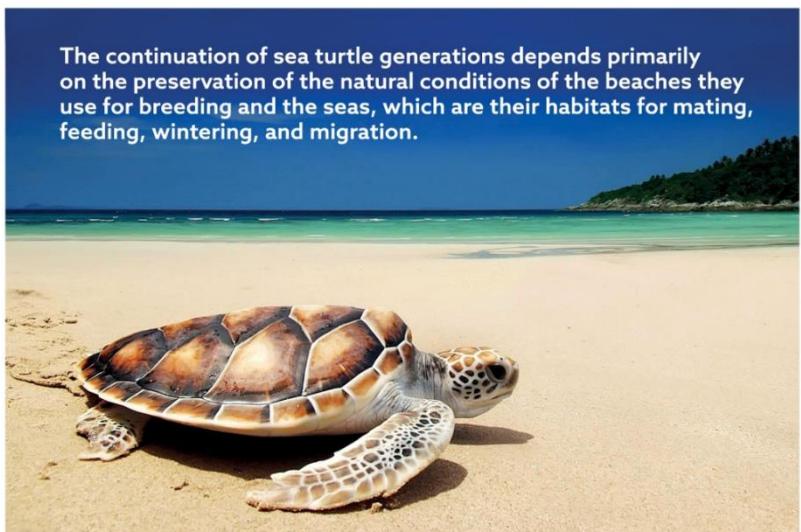
## Project Topic:

Installing a satellite tracker on endangered sea turtles (*caretta caretta* and *chelonia mydas*) aims at actively protecting marine protected areas and beach areas for sea turtles and determining their priorities for protection, by attaching satellite tracking devices to obtain information about the feeding, wintering and migration routes of the creature. Project also aims to create awareness about the endangered species not only in D2430, Turkey but also at those Mediterranean countries where these sea turtles nest.

## Project Goals:

Our goal is to learn about the feeding, wintering, and migration routes of endangered sea turtles, which are an important part of biodiversity and marine ecosystems, and gain awareness about their interesting life cycles. In this way, we aim at actively protecting marine and beach areas for sea turtles by determining their priorities regarding their survival and better understanding

The continuation of sea turtle generations depends primarily on the preservation of the natural conditions of the beaches they use for breeding and the seas, which are their habitats for mating, feeding, wintering, and migration.



the impact of climate change on sea turtles. These creatures, which are endangered due to human activities and biological characteristics, are also among the species that are facing a big threat as a consequence of global warming and climate crisis. Sea turtles do not have determined sex chromosomes, and the sex of the offspring actually varies depending on the temperature of the nest in the sand. Sand temperatures evidently get affected by climate change and in order to ensure the continuity of sea turtles in the coming years, it is also important to know to which regions these creatures tend to migrate due to warming. In addition to monitoring, research, and protection activities, it is also aimed at organizing training and awareness-raising activities for different target groups such as the locals, the fishermen, visitors, and tourism investors who actively use the coasts. Contributing to conservation activities and the positive orientation of beach users also constitute some of the other purposes of this project.



## Project Scope:

Today, the Mediterranean Sea and on the coasts of Turkey host 2 species of the 7 sea turtle species living in the world's seas: Caretta Caretta and Chenolia Mydas. There are 21 officially recognized nesting beaches on the Mediterranean coast of Turkey. 5 of these beaches are located in Mersin, the city the members of the Mersin Kızkalesi Rotary Club live in. In the sandy areas of Mersin Region, which covers the project area, purchasing and installing a satellite tracking device to be fitted to the sea turtles within the 2023 breeding period, determining the migration routes, feeding and wintering areas of the turtles, monitoring them via satellite, converting it to a map, monitoring the migration routes and depth from the web page information is planned. It is aimed to raise awareness by sharing the information obtained with the public, to take photos and videos, to inform and raise awareness among local and foreign tourists.

In order to attach these satellites to eight mother turtles, it is absolutely essential to carry out routine protection works day and night on the beaches between the second week of May and the last week of September. Data collected from these 8 satellite tracking devices will be published and streamed live on the web pages of the RI District 2430 Rotary Clubs and Mersin University. The information collected will then be used to inform and educate students, fishermen, tourism businesses, and the general public in order to protect and preserve the habitats of sea turtles.





Sea Turtles: Sea Turtles, the first fossils of which were found one hundred million years ago, are among the rare reptiles that have lived for around 100 million years and survived to the present day without undergoing any changes except for minor molecular differences. The distinguishing features of sea turtles that have allowed them to survive for this long is that, although they are marine creatures, they lay eggs on land and make their nests on the beaches they were born. Sea turtles have an indispensable and complementary role in the health of marine and coastal ecosystems. However, human activities over the last 200 years are reducing the chances of survival of these ancient seafarers in the years to come. Considering the late puberty of sea turtles and the natural threats posed to hatchlings, it can be said that only **one in every 1,000 eggs** reach adulthood. The continuation of sea turtle generations depends primarily on the preservation of the natural conditions of the beaches they use for breeding and the seas, which are their habitats for mating, feeding, wintering, and migration.

## Materials and Methods:

- 1- Factors that negatively affect nesting on the beaches will be determined and activities will be carried out to make the beaches suitable for nesting.
- 2- The distribution and density of the nesting sites in the activity area will be determined, the conditions that adversely affect the nest and eggs in each area of the beach will be monitored, and the beach will be scanned regularly at intervals where sufficient data can be collected, and the adult turtles will be marked if possible.
- 3- For Chelonia mydas and Caretta Caretta sea turtles the following will be tracked and collected: -The date and location of the adult female individuals leaving the beach (determination of their coordinates by GPS) -The distribution of slotless (track) and slotted exits by months and their percentages -The distribution of slotless (track) and slotted exits according to the distance from the sea and their percentage ratios -Nest depth, brood size, and incubation period -Predation, hatching, and deterioration in nests -The rate of hatchlings staying at the nest mouth and leaving the nest -Death and vitality status of the offspring left in the nest mouth -The number of the babies dying on the way to the sea and reaching the sea -Continuous wet area and semi-wet area lengths on the beaches (meters) -Comparison of nest density in 2023 with nest density in previous years for Kazanlı Beach (nest/km) -Number of dead and injured turtles - During the nesting period, adult female turtles who were found to have been marked in the past years
- 4- Factors and predators that harm sea turtle eggs and babies on the beaches will be determined, and nests will be protected with cages against the predators in order to increase the survival rate of the hatchlings.
- 5- In order to minimize possible damage to sea turtle nests in built-in beach areas where the beaches are heavily populated by humans, the nests in these areas will be caged so that they can be seen from the outside.

- 6- Considering the scientific research and literature in recent years, monitoring studies will be carried out in order to determine the population status; existing and destroyed habitats will be determined, and evaluations and suggestions for the rehabilitation of the areas will be included.
- 7- Giving information about the biology of sea turtles and the emergence of adults that resulted in egg-laying and the emergence of adults that did not result in egg-laying will be evaluated.
- 8- The effects of environmental factors on sea turtles will be determined.
- 9- Education and information materials (brochure or booklet) containing the promotion of sea turtles, activities that adversely affect the species, and protection measures will be prepared and distributed to the public.
- 10- Education will be provided to different target groups (local people, fishermen, students, tourists, tourism investors, etc.) who actively use the beach in the region.
- 11- The project team that will carry out monitoring and protection work on the beach will detect the female sea turtle that has completed nesting. These turtles will be kept in a suitable environment and sent to their natural environment after attaching a satellite device (SEATRKR-4370 GPS / Iridium Instrumentation for Sea Turtle). The ordering, purchasing, and installation phase of the satellite device will cover a period of approximately 5 (five) months. However, data monitoring and evaluations will continue until the satellite tracking process ends.
- 12- The coordinates of the sea turtles on the beaches obtained via satellite will be converted into a map and shared on our web page.
- 13- Information regarding migration routes and distance traveled, number of dives and duration of dives, etc. will be programmed.



**"We owe it the turtles to swim in the clean sea"**

## The Team:

This study will be conducted by the academician group led by Professor Serap Ergene at Mersin University who have worked on issues related to sea turtles and conducted research projects on these issues, from the Geographic Information System Specialist, biologist profession group, who have a university education or master's, doctoral degrees on these issues or has professional experience in the subject. A team of experienced researchers will take charge in nest moving and caged areas.



## Timeline

The project will start in April 2023 and monitoring will continue until the end of October 2023. Satellite operations will continue until the signal can longer be received.

## The Budget

Item	Description	Pieces	Unit Price	Total Price
SeaTrkr-4370-4 GPS/Iridum	Marine type GPS tracker	6	2,500.USD	15,000.USD
Telonics Data Converter	Software to convert the GPS data	1	495.USD	495.USD
Shipping, customs		1	3,000.USD	3,000.USD
Professional staff (3 excluding volunteers)	Staff is required to monitor the beaches for 5 months, price given for 5 month total	3	9,000.USD	27,000.USD
Minibus rental	This is required for Transportation of the staff to the beaches	5	1,400.USD	7,000.USD
Cages, signs	Items to protect the nests of the turtles	50	200.USD	10,000.USD
Other	Unpredicted costs and other small supplies			3,000.USD
<b>TOTAL</b>				<b>65,495.USD</b>

## The Motivation

Sea turtles have an indispensable and complementary role in the health of marine and coastal ecosystems. The continuation of sea turtle generations depends primarily on the preservation of the natural conditions of the beaches they use for breeding and the seas, which are their habitats for mating, feeding, wintering, and migration. Sea turtles, which have traveled many kilometers in the world's oceans for more than 100 million



years, have an indispensable and complementary role in the health of marine and coastal ecosystems. However, human activities that have increased over the last 200 years are reducing the chances of survival of these ancient seafarers.

Based on these facts, the district has a vast interest in the project as it will be our first environmental Global Grant. Our DRFC PDG Canan Ersoz is a quilling artist, and she has expressed her feelings in her art with the art piece on the right and her feelings below.

"I love this ancient paper art, named paper quilling. I do quilling since many years as a hobby. As soon as I heard my district's project regarding MONITORING & PRESERVATION of ENDANGERED SEA TURTLES, I wanted to quill a sea turtle as a possible symbol of this unique environmental project" – PDG Canan Ersoz



Sea turtles, which have traveled many kilometers in the world's oceans for more than 100 million years, have an indispensable and complementary role in the health of marine and coastal ecosystems. However, human activities that have increased over the last 200 years are reducing the chances of survival of these ancient seafarers.