

# Reduction of the impact of human activity on *Caretta* and *Tursiops* spp. and their conservation in Sicily - IT

## 1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Sound use of resources and promotion of less resource intensive processes/products

## 2. Key Approaches

- Participation
- Socio-economic

## 3. Experiences that can be exchanged

Co-operation with fishermen to change their fishing gear in order to help conserve the loggerhead turtle and bottlenose dolphin. Stimulating the local economy by changing fishermen's and visitor's perceptions about the need to conserve these endangered animals.

## 4. Overview of the case

On Sicily, the Province of Agrigento has taken urgent conservation measures with a wide-ranging awareness campaign, the results of which have seen turtles returning to previously abandoned beaches to nest. Fishermen are now using modified fishing gear and conducting whale-watching tours.

## 5. Context and Objectives

### a) Context

Urgent conservation measures for the loggerhead turtle *Caretta caretta*, by the province of Agrigento on the south coast of Sicily between 1999 – 2003, targeted two Natura 2000 sites in the Pelagian islands, Lampedusa and Linosa. A rescue centre and veterinary laboratory for the loggerhead sea turtle was set up, and an awareness campaign, aimed in particular at local fishermen, started. A priority species, this turtle is often the by-catch of commercial sea fishing. More than 350 turtles were rescued and returned to the sea during this period. The species is also threatened by disturbance of nesting sites by visitors, in particular during the summer season. Another species threatened by fishing and sea traffic problems is the EU-listed bottlenose dolphin (*Tursiops truncatus*). According to Agrigento province there were more than 200 sightings of this species between 2001 and 2002.

### b) Objectives

The initiative planned to improve the existing rescue centre and create a new one on the Sicilian coast. The Province also foresaw the organisation of fishermen to promote conservation-friendly fishing practices and dolphin watching as a new commercial activity. Fishing gear, modified to reduce by-catches of the loggerhead turtle, was tested at sea. An action plan for the bottlenose dolphin was to be prepared for implementation in the Pelagian Islands Protected Marine Reserve.

## 6. Implementation of the ICZM Approach (i.e. management, tools, resources)

## a) Management

The Province of Agrigento, comprising 44 Municipalities with a total population of about 500,000 and including the Pelagian Islands (Lampedusa, Linosa and Lampione) which lie farther south, were responsible for the activities.

## b) ICZM tools

The use of "circle hooks" was introduced for the first time in the Mediterranean. These hooks reduce the by-catch of sea turtle without decreasing the catches of the target, swordfish. Three sea turtle recovery centres were set up. Other measures included the summer monitoring of egg deposition on beaches of Lampedusa and along the southern coast of Sicily, the annual monitoring of turtle sightings around Lampedusa and the monitoring of boat traffic and of the interaction with fishing activities. At Spiaggia dei Conigli, Lampedusa, measures to reduce soil erosion on the steep slopes were also carried out. Acoustic monitoring, an innovative system never tested before in Italy, which used special underwater sound recorders, called acoustic buoys, were positioned in a number of locations across the archipelago. An action plan for turtles in the Pelagian islands areas was drawn up.

Stakeholders (fishermen, tourists, local administrators, teachers and students) were directly involved in the activities and awareness campaign. Training days were organised to show how tourism (dolphin watching and the monitoring of the nesting egg deposition beaches through volunteers summer camps) can stimulate the economy locally. The use of compatible fishing tools and techniques also has an economic incentive by reducing damage to the fishing nets as well as reducing by-catch. The maintenance of interventions at the Spiaggia dei Conigli will be ensured by the staff of the Reserve, with financing by the region and the collaboration of the Regional Forest Service. An agreement has already been established with the University of Palermo for monitoring the restoration measures.

The province of Agrigento used satellite data to identify the main habitats of the bottlenose dolphin, monitor their population and analyse its interaction with fishing activities. Furthermore, the area visited by the cetaceans was also observed from the sky, with Telespazio providing essential satellite remote sensing data obtained via a MODIS sensor. Use of an acoustic deterrent system linked to fishing nets to ward off dolphins was used. Awareness-raising activities aimed at local fishermen, tourists and local administrations, started in the previous project, would be continued.

The famous Spiaggia dei Conigli in Lampedusa, managed by Legambiente within a nature reserve, was also the centre of a re-naturalisation initiative to combat the erosion that was putting the beach at risk. Fencing, anti-erosion coatings made of biomat and geojute, as well as hundreds of plants sown over a 12,245 m<sup>2</sup> area, now protect this beach.

## 7. Cost and resources

The total budget was € 2,236,865.00 of which there was a Life contribution of € 1,228,039.00.

## 8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

Effective conservation measures for the two target species in the Pelagian Islands and in the southern coast of Sicily were implemented. Marine turtles have returned to nest in the Pelagic islands after an absence of a number of years. During the summer months, between 2004 and 2006, they dug 19 nests in Lampedusa, Linosa and along the southern coast of Sicily, with 11 more nesting attempts being observed; hundreds of newborn turtles returned to the sea.

## 9. Success and Fail factors

The fishermen belonging to AGCI AGRITAL - coordinated by the University of Turin, in charge of the scientific supervision of the project - played a leading role in the protection of the turtle. They decided to replace the traditional J-hooks used in swordfish trawl fishing with circular hooks, which are proving just as effective, but less dangerous and more difficult to ingest by turtles. This method was previously tested in open waters by NOAA, the National Oceanic and Atmospheric Administration, USA, that registered a 60% reduction in accidental sea turtle bycatch. Testing continues to be carried out by Italian fishermen. Local authorities, ecologists, researchers, schools and volunteers were engaged in a number of activities aimed at treating

wounded turtles and at raising awareness on this subject among the general public and citizens alike.

## 10. Unforeseen outcomes

A number of international and national research groups have already shown an interest in the acoustic monitoring system.

## 11. Prepared by

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## 12. Verified by

It has not been possible to verify this case.

## 13. Sources

- Delfino e tartaruga protetti obiettivi e risultati del progetto (undated) Layman's report Progetto LIFE 2003 NAT/IT/000163 "Riduzione impatto attività umane su Caretta e Tursiope e loro conservazione in Sicilia".



Reduction of the impact of human activity on Caretta and Tursiops (1.37 MB)

