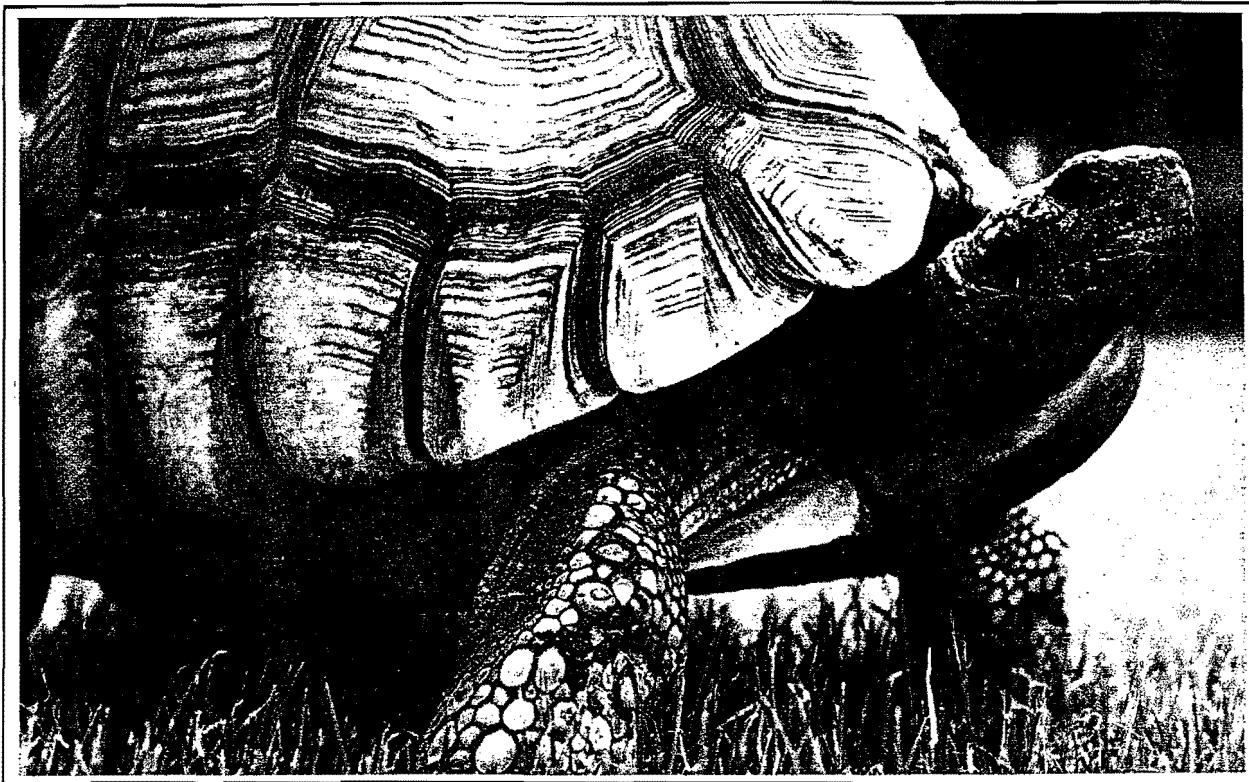


INTERNATIONAL CONGRESS OF CHELONIAN CONSERVATION

FRANCE - GONFARON - Tortoise Village - 6th to 10th of July 1995

Proceedings



Astrochelys yniphora is the rarest tortoise in the world. Reared at Ampijoroa, in Malagasy, and at St Catherine Island (in this photo), its total strength never exceed a few ten individuals in captivity and a few hundred ones in the wild. An excellent conservation programme concerns this animal, leaded by the Jersey Wildlife Conservation Trust and the Wildlife Conservation Society. Nevertheless, at the beginning of may 1996, part of the tortoise populations (adults and juveniles) have been stolen at Ampijoroa, flying specialists into a rage and disappointment. So, this tortoise is a symbol, by its scarceness, by the efforts made to protect it, and by the threats which hang over it, of the difficult conservation of the tortoises in the world.

THE MARINE ANIMAL RECOVERY CENTER OF CATALONIA (C.R.A.M.C.): AN EXPERIMENT IN MARINE TURTLE CONSERVATION

*El Centre de Recuperació d'Animals Marins de Catalunya (C.R.A.M.C.): Una
experiència en la conservació de las tortugas marinas*

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Abstract

The Marine Animal Recovery Center of Catalonia (C.R.A.M.C.) was created in 1994 a contribution to marine turtle conservation on the Mediterranean coast of NE Spain. The objectives and main activities are described. Future perspectives of work are also discussed.

Resumen

El Centre de Recuperació d'Animals Marins de Catalunya (C.R.A.M.C.) fue creado en 1994 para contribuir a la conservación de las tortugas marinas en la costa mediterránea de NE ibérico. Se exponen sus objetivos y principales actividades, así como las perspectivas de trabajo en el futuro.

Introduction

As reported by AGUILAR *et al.* (1992), more than 20,000 subadult loggerhead turtles (*Caretta caretta*) could be captured incidentally every year as a consequence of the Spanish longline fishery activities in the Western Mediterranean. Unfortunately, little is known about the populations or the impact of fisheries in the coast of NE Spain, since no specific studies have been reported. However, incidental information indicates that this area could be of great importance for subadults in spring and summer and that the number of individuals captured is considerable (pers. obs.). These animals belong to the Atlantic population which breeds in the Caribbean Sea (BOWEN *et al.*, 1993) which seems to be genetically isolated from those of the Eastern Mediterranean (LAURENT *et al.*, 1993). Moreover, an isolated nesting of *Caretta caretta* has been reported in this South Catalonia (LLORENTE *et al.*, 1992/93) and the other turtle species also appear on the coast (PEREZ *et al.*, 1994; LLORENTE *et al.* 1995). So, it is necessary to analyze the status of the marine turtles and to minimize the effect of captures in this area if this basic phase of the biological cycle is to be preserved.

The C.R.A.M.C. was created on June 12th, 1994 in order to fulfil this function. It is situated in the coastal locality of Premià de Mar (Catalonia, NE Spain) and occupies premises provided by the City Council, with the collaboration and support of the autonomous Government of Catalonia (Spain).

Objectives

Their aims of the Center are as follows:

1. The recovery of endangered marine species, including marine turtles and mammals.
2. The development of projects on conservation and study of these species.
3. The social education and information about marine environment.

Organization

A rescue operation begins when the presence or accidental capture of a turtle (or any other marine animal) on the coast is reported by any of the sources previously alerted. In fact, the background work of the C.R.A.M.C. consists of informing the public about the problems of the endangered marine species and about its existence as a recovery center. A 24 hour telephone (nat. 93-5740036, int. 34-3-5740036) is available to anyone who wishes make a report. The coastguard, the local police and the environmental guard as well as associations of fishermen, diving clubs and the general public are the usual collaborators. When a report is received, a group of volunteers go to the sighting point. A fully-equipped van is available for the recovery of the animal, which is transported to the Center.

After the arrival at the Center, if the animal is dead a necropsy is carried out in order to determine the causes of the

death. Mainly, fat and liver samples are extracted and subsequently analyzed in a toxicology laboratory. In the case of a live animal, a general exploration is made in search of possible injuries. Basic biometrical data are also registered. The next step is a complete clinical examination. Two radiographies (dorsal-ventral and cranial-caudal) are taken in search of osseous anomalies. An electrocardiogram is also carried out. Finally, an ecography of the general cavity is made to search hooks or other objects. Additionally, neck ecography locates the venous sinus for blood extraction, since several blood parameters are measured (hemogram, levels of metabolites).

The animal is maintained in an isolation tank specially designed to preventing auto-injuries (soft walls) and with a shaded area. The turtle is kept in the tank for two weeks under observation. Food (sardine and skid) is provided *ad libitum*. After this period the animal is released if there is no indication on the contrary.

In the case of serious injuries (hooks, nets around the flippers, ...), surgery may be needed. Hooks are extracted from the oesophagus with minimal difficulties. In one case of serious injury by nets, a front flipper was amputate because of the necropsy. The recovery period lasts from one to six months, keeping the water temperature over 18°C in order to allow the animal an active metabolism and to be able to feed by itself.

Before release, the turtles are doubly marked. A metal tag is fixed to the right front flipper. However, since some failures have been detected in this system (tag lost) a subcutaneous microchip is also inserted in the neck. In contrast to metal tags, the microchip is permanent. Nevertheless, it cannot be detected visually and both systems are complementary now. In the next future, the systematic scanning by chip reader should be desirable to worldwide level if a marking agreement is reached.

The animal is preferably released in the area where it was captured. The release can take place in two ways. First, if the area is free of long-lining or any other fishing activities the animal is directly set free on beach in order to allow it the free access into the water. Second, if the area is affected by intensive fishing activities, the turtles are released more than four miles from the coast line in order to avoid long-line fisheries.

Perspectives

It should be borne in mind that the activities of the C.R.A.M.C. are just beginning. Nevertheless, eleven loggerhead turtles have already been recovered, operated, kept in observation and released. These preliminary results demonstrate the operativity of the Center and its abilities to achieve the objective number 1.

With regard objective number 2, a survey on the sanitary condition and the degree of pollutants in the turtles is being carried out in order to monitor the condition of the turtle population. It also is planned to develop new methods of line-fishery and to promote alternative techniques like fish-culture.

Finally, the objective number 3 is also being carried out, starting with the environmental education of children and adults. The so called "Ajudem-la" ("help it") project is now in progress, giving information to the fishermen associations in the ports and to the boatskippers. The aim is to involve them not only in the detection but also in the recovery of animals captured accidentally. The information for the schools is also another part of this project. More than 1,000 schoolchildren and members of the general public have visited the Center and they have been taught by monitors about the conservation issues of the activities of the Center.

In conclusion, the altruistic involvement of volunteers from different fields (amateurs, students, fishermen, environmental authorities, ...) has developed a framework which also collaborates with technical commissions composed of researchers from University Departments allowing to reach highly good results.

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