



**NOAA Technical Memorandum NMFS-SEFSC-415**



**PROCEEDINGS OF THE  
SEVENTEENTH ANNUAL  
SEA TURTLE  
SYMPOSIUM**

**4-8 March 1997  
Orlando, Florida, U.S.A.**

**Compilers:  
Sheryan P. Epperly  
Joanne Braun**

**December 1998**

**U. S. Department of Commerce  
National Oceanic and Atmospheric  
Administration  
National Marine Fisheries Service  
Southeast Fisheries Science Center  
75 Virginia Beach Drive  
Miami, FL 33149**

and the formation of a research strategy aimed at collecting and analyzing country-wide sea turtle data in Guatemala.

## **AFTER 3 YEARS AT THE SEA TURTLE RESCUE CENTRE, GREECE - THE CASE OF "IKAROS"**

---

**M. Kallonas, D. Dimopoulos and D. Margaritoulis**

Sea Turtle Protection Society of Greece, 35 Solomou St., Athens, GR-106 82

---

### **ABSTRACT**

Since 1994, the Sea Turtle Protection Society of Greece (STPS) in cooperation with the Municipality of Glyfada has been operating the Sea Turtle Rescue Centre near Athens. Injured and sick sea turtles from all over Greece are brought here to be treated by specially trained personnel under the supervision of three veterinarians. Most turtles admitted are *Caretta caretta* (there have also been two juvenile *Chelonia mydas*) suffering mainly from entanglement in fishing nets, deliberate human attack, speedboat injuries and ingestion of fishing hooks and other material. Of the 47 turtles received at the Centre, 27 have been rehabilitated and released into the sea. Special emphasis will be given to the case of "Ikaros", a juvenile loggerhead that suffered from severe head injuries and managed to recover after many months of intensive care.

### **INTRODUCTION**

Since 1983, the Sea Turtle Protection Society of Greece has been carrying out beach monitoring and public awareness programmes on the last most important loggerhead nesting areas in the Mediterranean, as well as an environmental education programme for Greek school children across the country.

Since 1984, the STPS has been operating a Rescue Network, in coordination with the Ministry of the Environment and the Ministry of Mercantile Marine. The Port police send us reports of both live and dead strandings. Many turtles were treated at the animal hospital in Aegina, but the increasing number of sick and injured turtles necessitated the setup of a Rescue Centre for sea turtles.

In 1994, the STPS set up a Rescue Centre in Athens, with the support of the Municipality of Glyfada, the Ministry of Agriculture, the Ministry of Mercantile Marine and the Ministry of the Environment. The Greek Railway Company kindly donated train wagons to be transformed into different facilities. Injured and sick sea turtles are brought to the Centre from all over Greece. This is done in coordination with the Port Authorities and Olympic Airways, who do not charge for the transport. The most common injuries are from entanglement in nets, deliberate human attack, ingestion of fishing lines, hooks and from boat propellers. The treatment of the turtles is carried out by volunteers, under the supervision of trained staff and the Centre's vets. As soon as the turtle has recuperated, a release is arranged. From the 47 loggerhead and 2 green turtles that have been taken care of at the Centre, we have successfully released 27.

At present we are taking care of a juvenile loggerhead with a severe head injury. The recovery process of Ikaros is an exciting one to follow because of the 12 head injury turtles that have been admitted to the Centre, only one has previously survived. The swimming and feeding capabilities of Ikaros have changed dramatically over the last months.

### **THE CASE OF "IKAROS"**

When Ikaros first arrived at the Centre, on 30 June 1996, he was very weak and floated on the pool's surface with no movements. He had been washed up onto the shore of a crowded beach at Kavouri (on the coast near Athens), he was taken in by a tavern owner, who contacted the local port authorities. The turtle was then brought to the Centre by two STPS volunteers.

There were fresh wounds to the head and carapace (from human action) and a deep cut (1.5cm) between the eyes and nostrils. The head injury had a surface area of 4.5cm x 3.0 cm. Ikaros is a juvenile turtle, on arrival weighing 8kg, with a curved carapace length of 41.5cm and curved carapace width of 37.5cm. He has 6 vertebral scutes and 6 right costal scutes.

On admission to the Centre, Ikaros was placed in freshwater for 24 hours (then transferred to sea water) and antibiotic medication commenced. After a few days, a surgical procedure was also performed by the Centre's vet, placing two stitches in the head wound. This helped to close the deep cut to a certain extent, even though the stitches came out at a later date.

Over the seven months since Ikaros has been at the Centre, his condition has improved greatly - from complete inactivity to swimming, diving, as well as eating on his own. Ikaros has been kept in sea water pools, with the temperature ranging from 15-27°C, depending on the time of year and Ikaros' condition.

### **THE RECOVERY PROCESS OF IKAROS OVER THE LAST MONTHS**

The healing of the head wound. The dead tissue is slowly coming off from the wound, revealing healed tissue underneath.

Swimming progress. At first, Ikaros was only at the surface. After four months (from 3 November 1996) he started making diving attempts. He is now able to rest on the bottom of the pool (from 2 December 1996), coming up to the surface to breathe.

Feeding progress. At first, Ikaros was fed via a drip and by tube feeding into the stomach. As he became stronger (from 3 August 1996), this progressed to force feeding - first with liquid fish and then small pieces of fish (from 10 October 1996). Ikaros is now able to eat on his own (from 4 January 1997)- his diet is varied and includes small non-oily fish, mussels, shrimps and squid.

Medication. Intramuscular antibiotic injections (Baytril, dosage of 0.1ml/kg) were given for the first month. In addition the head wound is cleaned daily, by flushing with fresh water and spraying with the antibiotic Oxyvet. Ikaros also receives vitamin injections every ten days (Zingul, which contains vitamins A, D and E).

Blood analysis. Blood is taken from the turtle on a monthly basis. This gives us valuable information on the turtle's physiology, for example, letting us know if we need to change the diet. At present, the blood values of Ikaros are within the normal range for sea turtles.

Behavioural observation. For the last two years we have monitored and recorded the behaviour of each turtle at the Centre - from which we learn about feeding, swimming, resting and respiratory patterns. This is carried out once every two weeks for each turtle. As described, the swimming and feeding abilities of Ikaros have altered. The respiratory pattern of Ikaros has changed as well. In the beginning, the respiratory frequency was very low (around 7 breaths/hour). As Ikaros gained strength and became more active, there was a marked increase in his respiratory frequency.

### **WHEN WILL IKAROS BE READY FOR A RELEASE?**

Although Ikaros is able to rest on the bottom of the pool and able to eat on his own, this behaviour is not always consistent. On some days, Ikaros is floating on the surface and makes diving attempts but is unable to reach the bottom of the pool. Sometimes Ikaros will only eat if the food is offered near his mouth. This feeding behaviour

maybe due to Ikaros becoming too accustomed to human presence. Therefore human contact with Ikaros, as with any turtle, will be limited to as little as possible. Another factor that has to be considered before a release can be arranged is the temperature of the sea. The temperature of Ikaros' pool is controlled to be closer to that of the sea, so that he will be acclimated prior to release. Once Ikaros is acclimated and as soon as we are confident that he will be able to survive in the wild, he will be released back into his natural environment at the location where he was found.

## HATCHING SUCCESS OF GREEN AND LOGGERHEAD TURTLE NESTS AT THE WEST COAST OF NORTHERN CYPRUS

---

Yakup Kaska<sup>1,2</sup>, Roger Downie<sup>1</sup>, Roger Tippett<sup>1</sup>, and Robert Furness<sup>1</sup>

<sup>1</sup>Division of Environmental and Evolutionary Biology, Univ. of Glasgow, Glasgow G128QQ, U.K.

<sup>2</sup>Pamukkale Universitesi, Fen Edebiyat Fakultesi, Biyoloji, Bolumu, Denizli, Turkey

---

Nesting of loggerhead and green turtles, at the west coast of Northern Cyprus, was studied in summer 1995. One hundred eighteen (75 loggerhead and 43 green) nests hatched and 50 (40 loggerhead and 10 green) failed. Nest failures were mainly due to predation by foxes. 27 nests were totally destroyed by foxes and another 51 were partly destroyed. A total of 77 nests were caged. Caging improved hatching success. Though loggerhead nests faced predation during the whole of the incubation period, predation occurred on green turtle nests mainly around the hatching period. The majority of embryonic mortalities were found in the second half of the incubation period. Early embryonic mortalities were found in inundated and early predated nests.

### INTRODUCTION

About 2000 female loggerhead turtles *Caretta caretta* and about 350 female green turtles *Chelonia mydas* nest each year in the Mediterranean (Groombridge, 1990). The main nesting grounds in the Mediterranean are in the beaches of Cyprus, Turkey, Greece, Croatia, Israel and Libya. Broderick and Godley (1995) estimated that between one quarter and one third of the green turtles and one tenth of the loggerhead turtles in the Mediterranean nest in Northern Cyprus. Although there are other factors affecting the turtle population in the Mediterranean, nest predation is one of the main factors decreasing the hatching success of sea turtles in Northern Cyprus (Godley and Broderick, 1994).

This study was conducted on five beaches on the west coast of Northern Cyprus to examine predation patterns, to assess the success of caging to protect nests, and to examine embryonic mortalities.

### MATERIALS AND METHODS

Beaches were patrolled during daylight, from 20 May to 5 October 1995, and all turtle and predator activities and on the beaches were recorded. Accurate positioning of the turtle activity and egg chamber was possible by triangulating from fixed marker posts behind the beach.

Species identification was possible using the criteria of track and nest pit morphology (Groombridge, 1990). Finding the exact places of the egg chamber is very important in order to mark and cage the nest correctly. Miscaging a nest may not protect the nest from predators and wrong marking may not allow us to get detailed information on hatching, predation, clutch size and incubation period. A 30 cm. long metal probe was used in