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Sea Turtle Research and Rehabilitation Centre (DEKAMER), Dalyan, Mugla, Turkey

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Five of the world's seven species of marine turtle occur in the Mediterranean sea, but only two of them nest regularly on the beaches along the Mediterranean coasts: the loggerhead turtle, *Caretta caretta*, and the green turtle, *Chelonia mydas*. The non-nesting leatherback turtle, *Dermochelys coriacea*, is regularly reported in the Mediterranean, while the hawksbill turtle, *Eretmochelys imbricata*, and the Kemp's ridley turtle, *Lepidochelys kempii*, are reported occasionally (Margaritoulis et al. 2003). All five are recognized as globally threatened species, ranked as "Endangered" or "Critically Endangered" (IUCN 2010). According to recent estimates, there may be 2280-2787 female *Caretta caretta* and 339-360 *Chelonia mydas* nesting annually in the Mediterranean (Broderick et al. 2002).

On the Turkish coast, using both unpublished information and published data, Türkozan & Kaska (2010) calculated that 769-3521 *Caretta caretta* nests and 452-2051 *Chelonia mydas* nests are laid annually on 25 different beaches that total 290 km of nesting habitat in Turkey. It is estimated that each female lays an average of 3 nests in a breeding season with each female nesting every 2-3 years (Groombridge 1990). From these statistics it can be estimated that there are approximately 450-900 *Caretta caretta* and 230-400 *Chelonia mydas* reproductive females annually visiting the beaches of Turkey. In addition to these nesting females, the bays near the beaches represents feeding grounds for both juvenile loggerhead and green turtles (Türkozan & Durmus 2000). Approximately 2500 km of the south-west coastline of Turkey may hold large numbers of juvenile turtles. In the Mediterranean, an estimated 50,000-100,000 adult and juvenile turtles are caught each year on longline hooks and in nets set for fish (Groombridge 1990). It seems that mortalities in the offshore environment is a major problem threatening these animals and precautions should be taken immediately to prevent extinction.

In the 1995-1996 fishing season, Oruç et al. (1996) carried out a preliminary study on the impact of fisheries on sea turtles between the Mersin and Samandağ areas with 5 trawl boats. They reported a total of 26 loggerheads trapped in the nets. Of the 26 turtles, 42% were caught at depths between 11 and 30 m. In the following season (Oruç et al. 1997), 116 loggerheads were caught by 12 trawl boats.

The majority (61%) of the turtles (n=82) measured 31-60 cm, and 89% of the turtles (N=70) were caught at depths of 11-30 m. Ghost nets and fishing lines, and speed boats create threats to both juvenile and adult turtles in the sea as they may become entangled and drown. In Turkey, seasonal stranding numbers are 50 injured and 100 dead turtles found on the beaches in recent years (Y. Kaska, per. observ.). In an effort to protect the declining numbers of turtles, it is most important to ensure both the survival of as many offspring as possible and reduce these mortalities and cause of injuries.

The reported number of injured sea turtles in Turkey and the growing public demand for treatment and rehabilitation of injured or sick turtles dictated the need for a Sea Turtle Rescue Center (Kaska 2005; Kaska et al. in press). As a result of the second national symposium (Kaska 2008), a protocol was agreed upon between the Directorate of the Conservation of Nature and National Natural Parks and the Environmental Protection Agency for Special Areas of Turkish Ministry of Environment of Forestry, the Municipality of Dalyan, and Pamukkale University. The first official sea turtle rescue center was established in 2009 in Dalyan, Mugla-Turkey. Later in the year, the Higher Educational Council of Turkey officially recognized the rescue center and its constitution was published in the Turkish Official Newspaper. Despite having nesting and foraging grounds along the Mediterranean coast of Turkey, only one turtle rescue centre in the country has been established following the RAC/SPA (2004) guidelines. This center has been set up for year-round activity related to marine turtle rehabilitation and to help educate the public about conservation efforts. Here we present our initial results regarding the main causes of injuries to the sea turtles and how to treat them at the Rescue Centre.

When first alerted about a live but injured turtle, either a team from Ministry of Environment and/or a team from Rescue Center respond and arrange transport for the turtle. During transport, all turtles are kept wet to minimize the dehydration. Upon arrival to the rescue center, turtles are weighed, standard morphometric measures and collected and a body condition score is assigned. A unique file is also created for each individual turtle and updated daily with treatments and lab results. All wounds are assessed based on

the depth and the extent of damage and subsequently debrided and disinfected. Fractures or deep lesions are given first priority. The turtles that have significant injuries are placed in a tank without water to avoid contamination of open wounds. Antibiotics and additional vitamins are administered if deemed necessary. The turtles are fed in the mornings and the water in their tanks is changed daily. The water level is adjusted for each turtle to ensure that each could easily take a breath.

Additionally, injured turtles are cleaned of all external epibionts and later cleaned with Betadine. Depending on the injury, antibiotic creams are used externally, and Vitamin B complex and pain killers are given as IM injection. Also, if deemed necessary we administer antibiotics (enraflaxacin, ampicilin, etc.) for around one week (Mader 2005). If the turtle does not eat by itself, we force-feed the turtle by pushing small pieces of fish and squid into the esophagus. Ringer and/or Dextrose are given to injured turtles that did not eat. Blood samples of injured turtles are collected further assessment and study.

Through the end of October 2009, there were 14 injured turtles admitted to the rescue center. The main problems found on these injured turtles were propeller cuts from boats (n=5), fishing line cuts (n=3), fishing hook ingestion (n=3), speed boat collisions (n=2) and a gun shot wound (n=1). The cure and rehabilitation of the injured turtles took around 6 months, although cases of head injuries take slightly longer.

Fishing hooks and foreign bodies are a common medical problem in sea turtles, especially due to the presence of keratinized papillae in their esophagus. Hooks were removed only if they were causing an obstruction; the rest, including those that were not causing extensive damage to the surrounding soft tissue, were left to be passed naturally through the turtle's GI tract.

A large effort is underway to increase public awareness because its importance to the overall goal of sea turtle protection is crucial to the survival of the species. An outreach program to the locals, students, tourists and tourist companies was created by DEKAMER. The center provided information to approximately 30,000 visitors during the year of 2009.

In addition to the treatment of sick or injured turtles, the DEKAMER Sea turtle rescue center recognizes that protection of nests on the beach remains vital for the survival of the diminishing numbers of Mediterranean Sea turtles. Therefore, DEKAMER Sea turtle rescue center coordinates regular monitoring of nearby Dalyan beach for nesting activities by accepting volunteers from all around the world. Participating volunteers gain the experience of both helping the injured turtles and protecting nests and hatchlings on the beach during the summer period. Additionally, the DEKAMER center is open to all types of scientific studies, and has the advantage of holding facilities close to a nesting beach.

Overall, this centre provides medical treatments to injured and sick sea turtles and provides an efficient environmental education program. Transport of turtles to the Centre is facilitated by its location adjacent to the sea and harbor. There is also an airport just

45 minutes drive-away in Dalaman. The Center is located under the pine trees just behind the beach and a stabilized road access to the Center.

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