

Marine Turtle Newsletter

Sea Turtle Nesting on Texas Beaches in 1987

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Records of sea turtles nesting on the Texas coast are rare. Only a few records of Kemp's ridley (*Lepidochelys kempi*), loggerhead (*Caretta caretta*), and leatherback (*Dermochelys coriacea*) turtles nesting in south Texas have been confirmed (Hildebrand 1979, 1983). Neck (1978) and Doughty (1984) reported sightings by Penrose of numerous green colored turtles "sometimes three or four feet long" nesting on the banks of the Rio Grande River, in extreme south Texas, in 1889. The species of these turtles is in question (Neck 1978; Hildebrand 1979; Hildebrand pers. comm.). In 1987 the first confirmed nesting of a green sea turtle (*Chelonia mydas*) on the Texas coast was recorded. Although not confirmed, it is possible that Kemp's ridley, loggerhead and hawksbill (*Eretmochelys imbricata*) sea turtles also nested along the lower Texas coast in 1987.

On 13 July 1987 two green sea turtle eggs were collected from a nest located in Kenedy County, Texas on Padre Island National Seashore (PAIS). Although the nesting female was not seen, her tracks, made the previous night, were found. They extended from the high tide line to the embryonic dune area. A depression and mound of sand were located at the termination of the tracks. Both were excavated to a depth of 1.2 meters by seashore personnel. Only two eggs were found, in the center of the mound, 10 cm apart, at a depth of 38 cm. It appeared that they were oviposited on the sand surface at the bottom of the mound and covered with sand from the depression. The eggs were removed from the nest, packed in sand from the nesting area in a styrofoam box and taken to the national seashore incubation facility and laboratory. The facility is used to incubate Kemp's ridley eggs for the ongoing international program to restore and enhance this species.

One of the eggs began to hatch on 10 September, after 60 days of incubation. The young turtle was taken to the beach at 1930 h on 12 September to be "imprinted" in the same manner as are Kemp's ridleys hatched at the incubation facility. After release on the beach and recapture in the surf, the hatchling was returned to the laboratory where it was weighed (28.86 g), measured (5.43 cm SLCL, 4.13 cm SLCW) and held overnight in a tub of seawater. It was then sent to the University of Texas at Austin, Marine Sciences Institute (UTMSI) located in Port Aransas, Texas for approximately 7 months of head starting. The hatchling was active and gained weight while held. However, it was never able to seize and swallow food, even when force fed, and died on 3 October. The carcass was necropsied and it was found that the internal choanae were irregular, the right being in the form of a cleft which almost reached the maxilla and the left much smaller than the right. The congenital deformity may have prevented normal swallowing of food. *Aeromonas* spp. was isolated from cultures of lung tissue and body cavity fluid. It could not be

determined if *Aeromonas spp.* was the primary pathogenic agent or a secondary invader. The embryo inside the other egg was found to be dead on 14 September. It was preserved in 10% buffered formalin and classified as stage 28, approximately 49 days of development (Miller 1985).

Several plausible explanations can be advanced as to why this turtle nested on the Texas coast and why it laid only two eggs. It is possible that she was a stray. She could have been one imprinted to nest on Padre Island since green turtles may have nested on the Texas coast in the past but escaped detection (Hildebrand pers. comm.). Also, she could have been one of the 327 hatchlings released on Padre Island by Hildebrand (pers. comm.) in 1962. She may have laid only two eggs because it was her first nesting. However, no signs of any disturbance were found around the nest. It is also possible that she had nested in another location, perhaps in northern Mexico, had been disturbed, and emerged on the shores of Padre Island to deposit her two remaining eggs.

During 1987 no nesting of Kemp's ridley females, tracks or nests, were found along the Texas coast. However, four hatchlings (4.40-5.20 cm SLCL, 20-22 g WT) were found stranded between 25 July and 29 August on Padre, Mustang and Matagorda Islands. Two were missing portions of one or more flippers and one had tar on its plastron. All were alive and are currently being held at UTMSI. Due to the small size of the hatchlings and pattern of currents at the time it is likely that they emerged from one or more undetected nests on south Texas beaches. If true, it is possible, but not probable, that these nests were constructed by head started Kemp's ridleys. The international program to restore and enhance the Kemp's ridley population and establish a secondary breeding population of the species at Padre Island has been ongoing since the summer of 1978. It is not known at what age Kemp's ridleys mature but estimates range from 8-15 years. Hence, it is possible that individuals from the early years of the project may be sexually mature and may be returning to Padre Island to nest. To date, no confirmed nestings of head started Kemp's ridleys have occurred. During 1985 and 1986 a few sightings of adult turtles and tracks were reported, but in all instances the turtles were not examined for the presence of tags or tag scars. These records of nesting adult and stranded hatchling *L. kemp* from south Texas beaches during the last three years should not be considered as conclusive evidence that head started ridleys are now returning to Padre Island to nest. Similar numbers of confirmed records of nestings and strandings also occurred in the 1970's and early 1980's (Francis 1978; Rabalais 1983; Rabalais and Rabalais 1980), before head started ridleys could have been sexually mature.

A dead loggerhead hatchling, missing the tips of all four flippers, was found on PAIS, 1 km north of the Malaquite Pavillion, on 3 August 1987. The turtle measured 4.36 cm SLCL, 3.32 cm SLCW and weighed 16.22 g. The umbilical closure was relatively recent and the egg tooth and a large amount of internal yolk were still present. After histological analysis of the gonads, the hatchling was found to be female. Due to its small size, the large amount of undigested yolk material and current patterns at the time, it is virtually certain that the hatchling emerged from a nest on the south Texas beach.

A loggerhead was reported to have emerged from the Laguna Madre, crawled up the shore on the mainland side of the Texas coast near the Land Cut, excavated a nest cavity and deposited eggs on 28 August. A Texas Parks and Wildlife Department employee relayed information about the

sighting that day. However, due to inclement weather and rough waters the reported nest location, accessible only by boat, could not be investigated until 4 September. A 1.6 km long area was searched at the site but no signs of the nest or tracks were found. Despite heavy rainfall during the week between the report and the investigation, the tracks probably should have been visible since human footprints obviously made there before the rains had remained apparent. If a nest had actually been constructed there, the eggs probably would have perished due to tidal inundation. The laying of eggs in this area would have been extremely unusual. No confirmed nesting by any sea turtle species has been reported from either the mainland or Padre Island shores of the Laguna Madre. However, it is remotely possible that the nesting occurred in the lower Laguna Madre area historically. An 1884 magazine article described it as an area where turtles "herd in thousands" and "females visit the shore to lay and deposit their eggs" (Doughty 1984).

A live hawksbill hatchling was found stranded on the beach at Mustang Island near Port Aransas on 27 August. The turtle measured 5.46 cm SLCL, 4.47 cm SLCW, weighed 28 g and still possessed an egg tooth. Again, due to the size of the hatchling and current patterns during August, it is possible that it emerged from a south Texas nest.

Probably some sea turtle nests go undetected along the Texas coast each year. Patrols are infrequent or nonexistent in many areas. Hildebrand (1979) stated that the beaches of south Texas are now and apparently always were of minor importance as nesting beaches. Nevertheless, the low population levels of all sea turtle species and the possibility of returning head started *L. kemp*i predicate the need to intensify patrols, investigate all reports of nestings, protect all eggs and increase public education efforts.

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