

A Brighter Future for the Kemp's Ridley

by the Kemp's Ridley Recovery Team¹

Once described as the most imperiled of all marine turtles, the Kemp's ridley sea turtle (*Lepidochelys kempii*) plunged to less than one percent of its historical population within a few decades. Intensive exploitation of turtle eggs and the drowning of adults in shrimp trawls were responsible for most of the decline. The Kemp's ridley has been protected by the United States since 1973 under the Endangered Species Act and by Mexico since 1994. The International Union for the Conservation of Nature lists the Kemp's ridley as critically endangered. Thanks to a bi-national conservation and recovery program, the future for this species now appears to be much brighter.

The Kemp's ridley ranges widely, swimming throughout the Gulf of Mexico,

the northwestern Atlantic Ocean, and adjacent sounds, but most nesting occurs on the beaches of the western Gulf, primarily in the Mexican state of Tamaulipas. In the U.S., most Kemp's ridley nests are found in Texas, but they have been recorded infrequently elsewhere along the Gulf and Atlantic coasts. Based on a 1947 film by Andres Herrera, biologists estimate that approximately 40,000 Kemp's ridley females nested at Rancho Nuevo in Tamaulipas, Mexico, on a single day. By the late-1970s and mid-1980s, however, fewer than 400 females nested there in an entire season.

Due to an extensive international conservation partnership spanning decades, the situation has improved dramatically. The number of nests observed at Rancho Nuevo and nearby beaches has increased

more than 10 percent per year since the mid-1980s. During the 2009 nesting season, approximately 21,000 Kemp's ridley nests were recorded in Mexico. In the U.S., 574 Kemp's ridley nests have been documented on the Texas coast from 2002 through 2008, as compared to the 81 nests recorded over the previous 54 years (although monitoring was less rigorous in earlier years, so some nests may have gone unreported). The number of nests detected in recent years indicates that at least 6,000 females (female turtles nest about 2.5 times on average during a season) are nesting each season in the western Gulf. We believe the Kemp's ridley is on its way to recovery as a result of protection on nesting beaches and in the marine environment.

Conservation on the Nesting Beaches

In the mid-1960s, Mexico sent a team of biologists to Rancho Nuevo to survey the Kemp's ridley sea turtle nesting population and to establish a conservation program to protect the remaining females, their eggs, and hatchlings from human and animal predators. By 1977, the U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), National Marine Fisheries Service (NMFS), and Texas Parks and Wildlife Department joined Mexico's Instituto Nacional de Pesca (INP) in the conservation effort, eventually establishing conservation camps south and north of Rancho Nuevo. In the 1990s, the INP, Tamaulipas state

After depositing her eggs in a hole dug in the beach sand, a Kemp's ridley covers the nest.



Wendy Teas/NOAA

¹For list of members, see www.fws.gov/kempstridley



Wendy Teas/NOAA

While a Kemp's ridley lays her eggs, researchers have a chance to gather data.

government, Administracion Portuaria Integral de Altamira, Universidad del Noreste, and Gladys Porter Zoo of Brownsville, Texas, expanded the project to include other beaches in the Mexican states of Tamaulipas and Veracruz. Since then, some eggs have been relocated to protected corrals and their hatchlings monitored as they crawled toward the sea. The hatching success of these eggs and emerging success of hatchlings from nests has been estimated at 62 to 79 percent, a rate that is believed to be greater than if the nests were left unprotected.

Since 1986, NPS staff and volunteers have patrolled North Padre Island (part of the Padre Island National Seashore)

in southern Texas to protect nesting Kemp's ridley turtles and their eggs, and to gather biological data. The frequency and range of patrols has expanded over the years. Today, all Texas beaches are patrolled, to some extent, by the NPS and volunteers from the Sea Turtle Restoration Project, Texas A&M University at Galveston, and other organizations. Biologists and volunteers have also conducted extensive public education about sea turtles, which is vital since beach users report up to half the Kemp's ridley nests documented on the Texas coast each year. Eggs from the nests found along the Texas coast are transported to an incubation facility or

relocated into a protected corral for their safety until threats in the wild can be addressed adequately.

In the late 1970s, Mexico and the U.S. also undertook a "headstart" program in which Kemp's ridleys hatchlings were maintained for a time in captivity to circumvent the normally high mortality of hatchlings. The turtles were released when they outgrew the threats posed by many of their predators. More than 10,000 turtles were obtained from Rancho Nuevo as hatchlings and released at various locations throughout the Gulf of Mexico after months of headstarting. From 1978 to 1988, more than 22,000 eggs from Rancho Nuevo were also sent to



Burying relocated eggs in a protected beach corral.

North Padre Island in an attempt to reestablish a nesting colony in Texas. Over the 11 years, approximately 17,000 of these eggs hatched. The hatchlings were allowed to crawl down the beach at North Padre Island and swim up to 10 meters (33 feet) offshore, where most were recaptured; this was done in an attempt to imprint them on local beaches before taking them to the NMFS laboratory in Galveston for one year of headstarting. However, except on the upper Texas coast, most Kemp's ridleys found nesting on Texas beaches are from the wild stock and were not headstarted. It has been difficult to statistically demonstrate the success of experimental imprinting and headstarting, and additional headstart experiments have been discouraged.

Conservation in the Marine Environment

Mexico declared Rancho Nuevo a Reservation Area in 1986, which prohibited sailing and fishing within 6.44 kilometers (about 4 miles) of the beach. In 1990, commercial harvest of all species of sea turtles was banned in all waters of Mexico. Beginning in 2000, Mexico closed the nearshore waters off Tamaulipas and Veracruz to shrimp fishing during

the Kemp's ridley nesting season. Since 2007, Mexico also has prohibited longline shark fishing in a 5-km (3.1-mile) buffer off Tamaulipas and Veracruz to protect Kemp's ridleys. Mexico also mandated the removal of fishhooks from turtles captured incidentally and prohibited longlines within the nearshore areas.

The development of turtle excluder devices (TEDs) to reduce sea turtle capture in the U.S. shrimp fishery began in the late 1970s. Used in conjunction with shrimping nets, TEDs have greatly reduced Kemp's ridley mortality due to shrimp fishing. Since 1987, U.S. law has required the use of TEDs by large shrimp vessels operating along the east coast of Florida. Because of delays in enacting the federal regulations, the state of Florida enacted regulations for its waters. In 1991, TEDs were required in all U.S. waters south of the North Carolina/Virginia border through Texas and in the summer flounder fishery operating in waters off North Carolina through southern Virginia. In addition, a U.S. law requires that nations exporting shrimp to the U.S. also conserve turtles. Consequently, TEDs have been used by the Mexican fleet since 1993.

In 1978, Texas established the "Texas closure," which generally occurs May through July, to enhance shrimp catch. Because the timing of the closure coincides with the peak Kemp's ridley nesting period, the turtle receives increased protection. In 2000, Texas also established a seasonal shrimp fishery closure from Corpus Christi Fish Pass to the Texas-Mexico border. It is in effect from December 1 to July 15 each year, and the zone extends 9.26 kilometers (about 5.8 miles) out from the beach. Historically, this area accounts for 68 percent of turtle strandings and less than 3 percent of the total Texas shrimp landings within this timeframe. These rules will give additional protection to adult Kemp's ridleys off Padre Island and could lead to the establishment of a secondary nesting beach.

Conclusion

The Kemp's ridley nesting population is increasing, and we are cautiously optimistic that the species is on its way to recovery. For the foreseeable future, however, continued protection for nesting beaches and turtles in their aquatic habitat is necessary. In 2002, the FWS, NMFS, and Mexico's Secretariat of Environment and Natural Resources convened a bi-national Kemp's Ridley Recovery Team to revise the Kemp's Ridley Recovery Plan of 1992. We expect that a draft revised plan will be available for public review in late 2009. This project demonstrates what collaborative conservation efforts can do for even critically endangered species, but it also underscores that such programs require a long-term commitment.

Sources

Kemp's Ridley Recovery Plan:
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Padre Island National Seashore:
<http://www.nps.gov/pais/>
Gladys Porter Zoo:
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