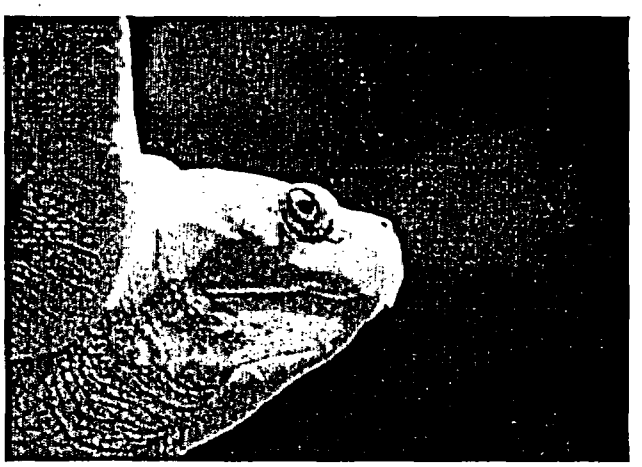
Kemp's Ridley Turtle (Lepidochelys kempii)

Endangered Species

The Kemp's ridley was listed as endangered throughout its range on December 2, 1970, and its status has remained unchanged. The Kemp's ridley population has declined since 1947 when an estimated 42,000 females nested in one day to a nesting population of approximately 1000 in the mid 1980's. The decline of this species was primarily due to human activities including collection of eggs, fishing for juveniles and adults, killing adults for meat and other products, and direct take for indigenous use. In addition to these sources of mortality, Kemp's ridleys have been subject to high levels of incidental take by shrimp trawlers. Today, under strict protection, the population appears to be in the earliest stages of recovery. The increase can be attributed to two primary factors: full protection of nesting females and their nests in Mexico, and the requirement to use turtle excluder devices (TEDs) in shrimp trawls both in the United States and Mexico.



Biology

The Kemp's ridley and olive ridley sea turtles are the smallest of all extant sea turtles, with the weight of an adult generally being less than 45 kg and the straight carapace length around 65 cm. Adult Kemp's ridleys' shells are almost as wide as long. Coloration changes significantly during development from the grey-black carapace and plastron of hatchlings to the lighter grey-olive carapace and cream-white or yellowish plastron of adults. There are two pairs of prefrontal scales on the head, five vertebral scutes, five pairs of coastal scutes and generally twelve pairs of marginals on the carapace. In each bridge adjoining the plastron to the carapace, there are four scutes, each of which is perforated by a pore. This is the external opening of Rathke's gland which secretes a substance of unknown (possibly a pheromone) function. Males resemble the females in size and coloration. Secondary sexual characteristics of male sea turtles include a longer tail, more distal vent, recurved claws and, during breeding, a softened mid-plastron. Eggs are 34-45 mm in diameter and 24-40 g in weight. Hatchlings range from 42-48 mm in straight line carapace length, 32-44 mm in width and 15-20 g in weight.

Neonatal Kemp's ridleys feed on the available sargassum and associated infauna or other epipelagic species found in the Gulf of Mexico. In post-pelagic stages, the ridley is largely a crab-eater, with a preference for portunid crabs. Age at sexual maturity is not known, but is believed to be approximately 7-15 years, although other estimates of age at maturity range as high as 35 years.

Distribution

The major nesting beach for Kemp's ridleys is on the northeastern coast of Mexico. This location is near Rancho Nuevo in southern Tamaulipas. The species occurs mainly in coastal areas of the Gulf of Mexico and the northwestern Atlantic Ocean.

Human Impacts on Kemp's Ridley Sea Turtles

I) Impacts in the nesting environment

Threats to the nesting beach in Mexico are presently few, but potentially serious. Human population growth and increasing developmental pressure will result in increased threats to the nesting beach. Only the central part of the prime nesting area is protected by Mexican presidential decree. A primary concern is human encroachment and access along the entire nesting area. However, the wording of the Mexican decree is vague and construction of commercial fishing facilities proceeded in 1987 immediately adjacent to the main turtle camp at Rancho Nuevo. Occasionally plans for massive expansion of La Pesca (just to the north of the nesting area) as a fishing center or dredging of the Gulf Intercoastal Waterway from Brownsville, Texas to Barra del Tordo (in the south part of the nesting beach) are reported. These plans are alarming because of the assuredly detrimental and possibly disastrous effects that they could have on the nesting population if they were to be completed.

A threat resulting from management practices at Ranch Nuevo is relocating all of the nests in one corral to prevent poaching and predation. This concentration makes the eggs more susceptible to reduced viablility from the manipulation, disease vectors and inundation.

II)Impacts in the marine environment

1. It is estimated that before the implementation of TEDs, the commercial shrimp fleet killed 500-5000 Kemp's ridleys each year. Besides shrimp trawls, Kemp's ridleys have been taken in pound nets, trawls, gill nets, hook and line, crab traps, and longlines. Beginning in 1976, the U.S. and Mexican governments agreed to phase out U.S. shrimping in Mexican waters by 1979. U.S. shrimp vessels continued to illegally operate off Mexico through the mid 1980s. The Mexican shrimp fleet has declined and consists of only approximately 600 vessels, many of which do not operate. Also since 1978, Mexico has closed the nearshore waters off Rancho Nuevo to fishing during the nesting season. However, this closure has not been strictly enforced.
2. The Gulf of Mexico is an area of high density offshore oil extraction with chronic low-level spills and occasional massive spills. The two primary feeding grounds for adult Kemp's ridley turtles in the northern and southern Gulf of Mexico are both near major areas of near shore and offshore oil exploration and production. The nesting beach at Rancho Nuevo is also vulnerable and has been affected by oil spills.
3. The vast amount of floating debris in the Gulf of Mexico constitutes an increasingly serious threat to Kemp's ridley turtles of all ages. Plastics, monofilament, discarded netting and many other waste items are either eaten by Kemp's ridleys or become death traps when the turtles become entangled. Injestion of plastic, rubber, fishing line and hooks, tar, cellophane, rope amd string, wax, styrofoam, charcoal, aluminum cans and cigarette filters has occurred in sea turtles. NMFS is currently analyzing stranding data and available necropsy information to determine the magnitude of debris ingestion and entanglement.
4. Dredging operations affect Kemp's ridley turtles through incidental take and by degrading the habitat. Incidental take of ridleys has been documented with hopper dredges. In addition to direct take, channelization of the inshore and nearshore areas can degrade foraging and migratory habitat through spoil dumping, degraded water quality/clarity and altered current flow.