

World's Largest Population of Nesting Turtles Threatened

During a single week in 1991, 610,000 olive ridley sea turtles (*Lepidochelys olivacea*) nested on a short stretch of the beach known as Gahirmatha, located on the east coast of India. In terms of numbers, this nesting represents an extraordinary spectacle, turning a beach which normally is deserted into one that supports the world's largest sea turtle nesting. Gahirmatha forms the eastern boundary of the 672 sq. km Bhitarkanika Wildlife Sanctuary, which was established in 1975, in the State of Orissa, bordering the Bay of Bengal, at the recommendation of an FAO consultancy project. While the beach is 35 km in extent, the mass nesting takes place only along the 10 km between Habalikhathi and Ekakulanasi. Long-term studies on the nesting ecology of the species were begun here by the Orissa Forest Department, Utkal University, and the Central Marine Fisheries Research Institute.

Annual nesting between 1976 and 1985 was approximately 130,000 to 500,000 turtles. The nesting of the olive ridley, along with that of the critically endangered Kemp's ridley (*Lepidochelys kempi*) of central America, is en masse, usually involving many hundreds to many thousands of turtles, which are referred to as arribadas (from "arrival" in Spanish). At Gahirmatha, two such nesting peaks take place in a usual year, the first in January/February is generally larger (although in 1987, the second was larger (386,036) than the first (245,157)). The second mass nesting takes place 45-70 days subsequent to the first, or some time in March or April. This coincides with or is just before the peak hatching period of eggs laid during the first arribada. Mass nesting takes place at night, although during the big arribadas, nesting may spill over into the morning. Assuming a male:female ratio of 1:1, and that males accompany females, the adult olive ridley population here is thought to comprise a million animals, with up to an additional six million hatchlings being produced annually!

Now threatening this remarkable nesting population is a new fishing project. The 8.5

million rupee (=ca. U.S. \$280,000) project at Talchua, just 10 km from Gahirmatha, has commenced, which when completed, will establish a jetty, designed to dock 500 motor boats, and a fisheries complex, including a processing plant and prawn culture facilities. This operation will land an estimated 50 tons of fish every day, and considering that the current relatively low intensity fishing operations entrap sea turtles, it will severely endanger the ridley turtle. Turtles caught in trawler nets die by drowning, which represents a significant cause of mortality. The drowned turtles are removed from the nets and thrown into the sea, to wash up on the coast. In March 1983, between 55 and 150 dead turtles were found per 100 m of beach. Comparable to the potential for increased mortality from incidental capture will also be the increased mortality from disturbance by the commotion of the operations and the resulting environmental degradation of the area.

The plea for a letter writing campaign initiated recently has resulted in a large number of letters from all over the world being sent to the Prime Minister of India (Shri P. V. Narasimha Rao, Rashtrapati Bhavan, New Delhi 110 011, India), the Chief Minister of the State of Orissa (Shri Biju Patnaik, Government of Orissa, Bhubaneswar, Orissa, India) and the Central Minister of Environment and Forest (Shri Kamal Nath, Paryavaran Bhavan, C. G. O. Complex, Lodhi Road, New Delhi 110 003, India). However, to keep up the pressure, this activity has to be sustained and even accelerated. Strong but respectfully worded letters urging the government to relocate the fisheries complex, perhaps at the nearby Paradeep and/or Dhamara areas, would spare this important ridley population.

Although the government has assured a ban on fishing within 20 km of Gahirmatha and Talchua, it will not prevent turtle mortality for one simple reason: this ban cannot be implemented effectively. The unacceptably large numbers of turtles drowned in nets (despite a ban on fishing within 5 km of the coast) indicates ineffective enforcement of such bans. Another example is the declining Kemp's ridley turtle populations, where incidental capture in fishing gear has been found to be a

major factor for the population remaining at a decreased level. Nesting populations of the Kemp's ridley are now only found on one beach near Ranch Nuevo in Mexico and a few spots on the Atlantic coast of the southern United States, and these populations are down from approximately 40,000 females during a single night to 500-700 during the entire season.

The olive ridley is technically protected, along with India's most threatened wild plant and animal species, in Schedule I of the Indian Wildlife (Protection) Act of 1972, which implies that any form of capture or exploitation is punishable by a mandatory prison sentence as well as a heavy fine. In the past, collaborative operations to curb poaching and trawling were conducted by the Indian Coast Guards and the Navy, using patrol boats, planes and helicopters, but these efforts have been discontinued.

More than just the fate of the world's largest nesting population of marine turtles is at stake in Orissa. The future of the Bhitarkanika Sanctuary, India's second largest mangrove forest, is also threatened. Bhitarkanika Wildlife sanctuary harbors mainland India's largest population of the saltwater crocodile (*Crocodylus porosus*), as well as significant populations of water monitor lizards (*Varanus salvator*), the Asian giant softshell turtle (*Pelochelys bibroni*), open-billed stork (*Anastomus oscitans*), and several other species of protected reptile, bird, and mammal species, as well as the large patch of mangroves with 62 out of 67 species of mangrove trees known from the country.

(Contributed by Indraneil Das)



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