

NOTES AND FIELD REPORTS

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Status of Marine Turtles in the Gulf of Mannar, India

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ABSTRACT. — *Lepidochelys olivacea* was the most frequent sea turtle documented in the Gulf of Mannar during 2000–2001, whereas during the 1970s it was *Chelonia mydas*. Reduction in overall proportions of *C. mydas* and its size classes is attributed to exploitation of eggs, turtles, and incidental catch in fishing gear.

Five species of sea turtles occur in the Gulf of Mannar off the southeast tip of India, including the olive ridley (*Lepidochelys olivacea*), the green turtle (*Chelonia mydas*), the loggerhead (*Caretta caretta*), the hawksbill (*Eretmochelys imbricata*), and the leatherback (*Dermochelys coriacea*). Our study focuses on the status of marine turtles in Gulf of Mannar with particular emphasis on the changes in the population of green turtles, which occur there in considerable numbers but whose actual status is poorly documented. The Gulf of Mannar extends from Cape Comorin (lat 8°4'40"N, long 77°33'4"E) to Dhanushkodi (lat 9°9'9"N, long 79°26'46"E), and has about 250 km of coastline (Fig. 1). Extensive coral and

seagrass beds on the northern side and deep sea on the southern side make this area suitable for all 5 species of sea turtles found in this region. Over 20 islands are found in the Gulf of Mannar, including Krusadai and Rameswaram. Turtle fishing was practiced in this area for ages, and turtles were exported to Sri Lanka and other countries until 2 decades ago (Agastheesapillai and Thiagarajan 1979). Although the export of sea turtles was banned during the early 1980s by the Indian Wildlife Protection Act of 1972 (Anonymous 1991), the subsistence exploitation of turtles continues there even today.

Methods. — We surveyed the beaches south of Tuticorin (70 km) and Rameswaram Island (15 km) bimonthly, from November 2000 to April 2001. At least 10 km was covered during a day's survey, and the sampling was restricted to 0500–0800 hours. The number of tracks and shells of dead turtles found were recorded. We also monitored the fish market of Rameswaram Island and 6 others along the Tuticorin coast. On locating a turtle, we recorded the species and its curved carapace length (CCL). The shells of dead turtles were marked with paint to avoid repeat count.

Results and Discussion. — In this area, fishermen collect turtles using multifilament gill nets. These nets measured over 50 m in length and 6 m in width, and had mesh size from 15 to 22 cm. Entangled live turtles were taken for consumption, and the dead ones discarded in the sea. Considerable trawler fishing is also practiced throughout this range. Altogether, we observed 178 specimens, including 122 along the Tuticorin coast and 56 in Rameswaram Island (Table 1). In addition, 15 nests (14 on the Tuticorin beach and 1 on Rameswaram Island) were observed. Overall proportion of species showed that

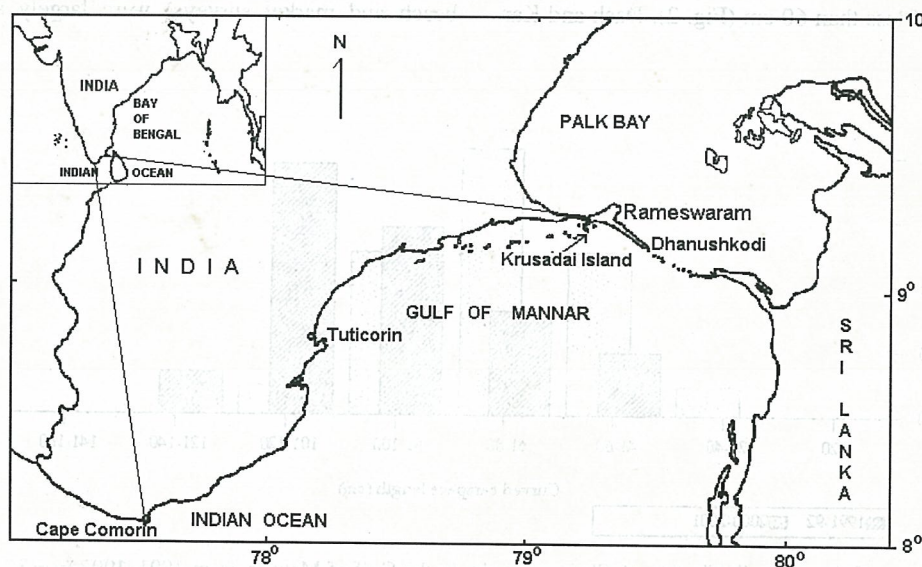


Figure 1. Map of southeast India showing the Gulf of Mannar.

present study. Of the 31 specimens observed from November 1991 to April 1992, only 25.8% had a CCL of less than 80 cm (Fig. 3). The size class distribution of turtles in both studies was significantly different ($\chi^2 = 186.99$, $p < 0.001$, $df = 4$). Reduction in the proportion of adult turtles could be due to exploitation over several decades, especially the take of nesting females.

Because both the overall proportions of *C. mydas* and the proportions of mature turtles have decreased, we conclude that, as elsewhere (Limpus 1995), the population of this species is declining in the Gulf of Mannar, India. All of the major detrimental factors, such as exploitation of eggs and turtles irrespective of size (Frazier 1980) and incidental death due to the careless operation of fishing gear, exist in this region.

The length frequencies of both *L. olivacea* and *C. mydas* (Fig. 3), show that the Gulf of Mannar is an important development and foraging habitat for turtles in the Bay of Bengal. However, no population estimates for these species are available for this region. Unless serious conservation measures such as exploitation control are undertaken, long-term survival for sea turtles in the Gulf of Mannar is bleak. An ecological study and sea turtle population monitoring program would provide the required data to propose conservation measures for sea turtles in this region.

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Diet of the Green Turtle (*Chelonia mydas*) at Ra's Al Hadd, Sultanate of Oman

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ABSTRACT. — Digestive tract contents of stranded green turtles (*Chelonia mydas*) from Ra's Al Hadd area, Oman, were examined. In decreasing order of importance, the food items (dry weight) comprised 19 taxa of algae (49%), 22 taxa of animal matter (26%), 2 seagrasses (15%), litter (7%), and substrate (3%).

The nesting and feeding grounds of the green turtle, *Chelonia mydas*, in Oman are of regional importance (Baldwin and Al-Kiyumi 1999). The present study focuses on the diet composition of stranded green turtles in the area of Ra's Al Hadd, a Nature Reserve internationally important as feeding and nesting grounds for this species.

The green turtle is the most commonly encountered marine reptile in Oman (Ross and Barwani 1982). Over 275 beaches along the 1700-km stretch of coastline are used for nesting, including those on offshore islands from the northern region of Musandam to the Oman-Yemen border in the south (Salm 1991). There are large concentrations of turtle nesting at Ra's Al Hadd (ca. 6000 females per year; Ross and Barwani 1982). Ra's Al Hadd is a protected area for nesting sea turtles, covering a stretch of coast of approximately 70 km from Khawr Al