



RECORD OF A HAWKSBILL SEA TURTLE AT CAR NICOBAR ISLAND, ANDAMAN AND NICOBAR ARCHIPELAGO

RAJENDRAN KIRUBA-SANKAR^{1#}, JESSICA BARMAN¹, KANDASAMY SARAVANAN¹, JAYASIMHAN PRAVEENRAJ¹, YUVARAJ ESWARAN², SIRISHA ADAMALA¹ & LUCINDA MESHACK¹

¹ICAR- Central Island Agricultural Research Institute, Port Blair, Andaman and Nicobar Islands

²Department of Coastal Disaster Management, Pondicherry University, Port Blair, Andaman and Nicobar Islands

#rkirubasankar@gmail.com

The Andaman and Nicobar Islands (ANI) are home to four species of sea turtles, the green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), leatherback (*Dermochelys coriacea*), and olive ridley (*Lepidochelys olivacea*) turtles (Bhaskar, 1979; Bhaskar, 1993; Andrews, 2000; Namboothri *et al.* 2012; Shanker & Namboothri, 2012). Among these, leatherback turtles are predominantly known for nesting at Great Nicobar Island whereas olive ridley turtles can be found nesting across the Andaman and Nicobar archipelago (Andrews, 2000; Swaminathan *et al.*, 2017). Hawksbill turtles feed throughout the ANI and there are a few records of them nesting in the archipelago, too (Bhaskar, 1979; Andrews, 2000; Swaminathan *et al.*, 2017).

We hereby report a live hawksbill turtle at Car Nicobar Island (Figure 1). The turtle was caught by traditional Nicobarese fishers while skin diving on the shallow reef areas of Malacca village on 28th March 2023. The turtle was observed by the authors on the same day as its capture, after we received information through the local Nicobarese people. It was identified as a hawksbill turtle by the presence of a narrow-pointed hawk-like beak, overlapping scutes on the carapace and a serrated carapace edge, four costal scutes on each side of the carapace, five central carapacial scutes, four prefrontal scales on the head, and three postorbital scales on each side of the head (Figure 2; Pritchard *et al.*, 1999).

The turtle was killed for local consumption. We collected the carapace for measurements (Table 1) several days later and then returned it to the tribal fishers. The turtle was smaller (curved carapace length; Mean $\pm$ StDev, Range) than nesting hawksbill turtles in the region (86.4 $\pm$ 3.6cm, 67.0-96.0cm at Cousine Island, Seychelles, Gane *et al.*, 2020; 81.4 $\pm$ 3.4cm, 75.0-89.5cm in Oman, Pilcher *et al.*, 2014) and did

not have a tail extending beyond the carapace so it was categorised as an immature turtle of undetermined sex.

There are few records of turtles from the beaches and waters of Car Nicobar (Bhaskar, 1979; Murugan, 2004; Kannan & Rajagopalan, 2005; Swaminathan *et al.*, 2017). Our interactions with the local Nicobarese around the time of this observation made us aware of encounters with the species at no less than 10 out of 15 villages in Car Nicobar. They easily identified the hawksbill turtle from its beak-like mouth. Local people prefer to eat

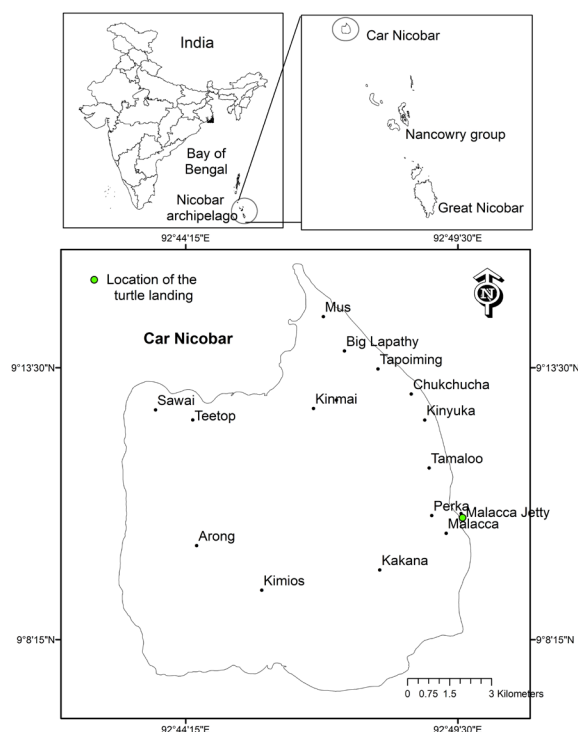


Figure 1. Location of Car Nicobar Island and site of hawksbill turtle capture.

Table 1. Carapace and plastron measurements (cm) of the hawksbill turtle at Car Nicobar Island. CCL_{MAX} – Maximum curved carapace length; CCL_{N-T} – Curved carapace length notch to tip; CCL_{MIN} – Minimum curved carapace length; SCL_{MAX} – Maximum straight carapace length; SCL_{N-T} – Straight carapace length notch to tip; SCL_{MIN} – Minimum straight carapace length; SCW – Straight carapace width; CCW – Curved carapace width; PL – Plastron length; PW – Plastron width as per Bolten (1999).

CCL_{MAX}	CCL_{N-T}	CCL_{MIN}	SCL_{MAX}	SCL_{N-T}	SCL_{MIN}	SCW	CCW	PL	PW
41.4	38.9	37.3	39.9	38.4	37.3	33.0	36.6	29.0	27.9

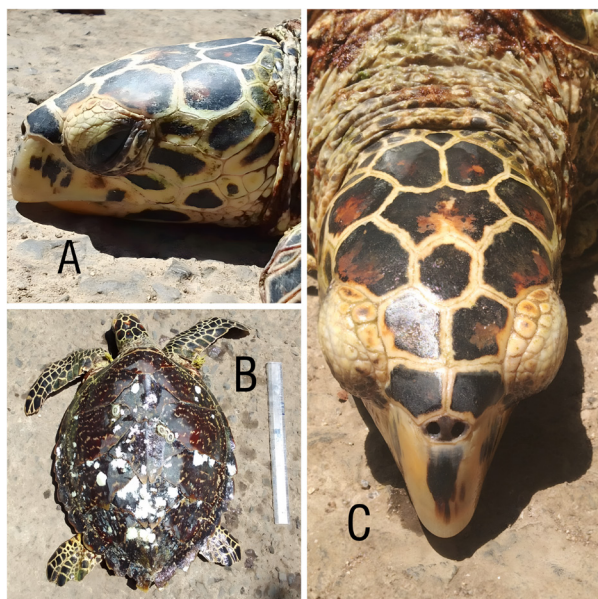


Figure 2. Images of the hawksbill turtle spotted by Nicobarese fishers on the reef areas of Malacca village, Car Nicobar Island. A) Lateral view of the head with its distinctive beak-like mouth and three postorbital scales; B) Four overlapping costal scutes and serrated marginal scutes on the carapace; C) Dorsal view of the head showing two pairs of prefrontal scales. (Photo by Lucinda Meshack)

turtle eggs, although turtle meat is also a common delicacy, and carapaces are used for ornamental purposes (Tiwari, 2012). During our time at Car Nicobar, we also found finger rings that were made from tortoiseshell.

The hawksbill turtle is a critically endangered species at the global level (Arantes *et al.*, 2020). All sea turtles in India are protected under the Wildlife Protection Act of 1972. However, traditional Nicobarese peoples are permitted to legally take sea turtles and their eggs, and the hawksbill turtle has been commonly hunted in the Nicobar Islands (Murugan, 2004). We recommend systematic studies combining traditional ecological knowledge of local communities and scientific research methods to a) quantify the current take of sea turtles and their eggs in the ANI and understand consumption patterns over time; b) establish the

dependency of local tribes on turtle eggs and meat; c) determine trends of nesting and foraging population; and, d) document other traditional uses of sea turtles at locations such as Car Nicobar to gain a better understanding of the cultural significance of sea turtles in the islands. Such studies would provide valuable information for the conservation and management of sea turtles in the ANI, including Car Nicobar.

ETHICAL STANDARDS

The author Lucinda Meshack, is a member of the native Nicobarese community at Car Nicobar and handled and photographed the turtle. The authors R. Kiruba Sankar and Jessica Barman visited Car Nicobar for interactions with the local traditional people and fulfilled the necessary requirements to visit Car Nicobar Island as entry is restricted under the Andaman and Nicobar Islands (Protection of Aboriginal Tribes) Regulation, 1956. We also obtained the consent of the Chief Captain, Office of the Tribal Council, Car Nicobar to report the sea turtle capture.

ACKNOWLEDGMENTS

The field observation was carried out under the project 'Augmenting Livelihood, Resilience, and Knowledge Generation through Coastal Fisheries Information Hub for Nicobar Tribes of Car Nicobar Island' funded by the Science for Equity Empowerment and Development (SEED) Division, Department of Science and Technology (DST), New Delhi.

Literature cited:

- Arantes, L.S., S.M Vargas & F.R. Santos. 2020. Global phylogeography of the critically endangered hawksbill turtle (*Eretmochelys imbricata*). *Genetics and Molecular Biology* 43: e20190264. DOI: 10.1590/1678-4685-GMB-2019-0264.
- Andrews, H.V. 2000. Current marine turtle situation in the Andaman and Nicobar Islands – An urgent need for conservation action. *Kachhapa* 3: 19-23.
- Bhaskar, S. 1979. Sea turtle survey in the Andaman and Nicobars. *Hamadryad* 4: 1-26.

- Bhaskar, S. 1993. The status and ecology of sea turtles in the Andaman and Nicobar Islands. *Centre for Herpetology Publication* No ST 1/93: 1-37.
- Bolten, A.B. 1999. Techniques for measuring sea turtles. In: *Research and Management Techniques for the Conservation of Sea Turtles* (eds. Eckert, K.L., K.A. Bjorndal, F.A. Abreu-Grobois & M. Donnelly). IUCN/SSC Marine Turtle Specialist Group Publication No. 4. Pp. 110-114.
- Gane, J, C.T. Downs, I. Oliver & M. Brown. 2020. Nesting ecology and hatching success of the hawksbill turtle (2004-2014) on Cousine Island, Seychelles, *African Journal of Marine Science* 42: 53-65.
- Kannan, P. & M. Rajagopalan. 2005. Sighting of sea turtles in the Andaman Sea and Bay of Bengal. *Indian Ocean Turtle Newsletter* 2: 7-9.
- Murugan, A. 2004. Sea turtles and their conservation in Andaman and Nicobar Islands. In: *Proceedings of the International Symposium on SEASTAR2000 and Bio-logging Science (The 5th SEASTAR2000 Workshop)*. Pp. 6-10. <https://repository.kulib.kyoto-u.ac.jp/dspace/handle/2433/44095>. Accessed on September 22, 2023.
- Namboothri, N., A. Swaminathan & K. Shanker. 2012. A compilation of data from Satish Bhaskar's sea turtle surveys of the Andaman and Nicobar Islands. *Indian Ocean Turtle Newsletter* 16: 4-13.
- Pilcher, N.J., M. Antonopoulou, L. Perry, M.A. Abdel-Moati, T.Z Al Abdessalaam, M. Albeldawi, M. Al Ansi, *et al.* 2014. Identification of important sea turtle areas (ITAs) for hawksbill turtles in the Arabian region. *Journal of Experimental Marine Biology and Ecology* 460: 89-99.
- Pritchard, P.C.H. & J.A. Mortimer. 1999. Taxonomy, external morphology, and species identification. In: *Research and Management Techniques for the Conservation of Sea Turtles* (eds. Eckert, K.L., K.A. Bjorndal, F.A. Abreu-Grobois & M. Donnelly). IUCN/SSC Marine Turtle Specialist Group Publication No. 4. Pp. 21-38.
- Shanker, K. & N. Namboothri. 2012. Sea turtle surveys and research in the Andaman and Nicobar Islands. *Indian Ocean Turtle Newsletter* 16: 1-3.
- Swaminathan A., S. Thesorow, S. Watha, M. Manoharakrishnan, N. Namboothri & M. Chandi. 2017. Current status and distribution of threatened leatherback turtles and their nesting beaches in the Nicobar group of Islands. *Indian Ocean Turtle Newsletter* 25: 12-18.
- Tiwari, M. 2012. Sea turtles in the southern Nicobar Islands: Results of surveys from February-May 1991. *Indian Ocean Turtle Newsletter* 16: 14-18.