

REPRODUCTIVE BIOLOGY AND CONSERVATION OF THE LOGGERHEAD SEA TURTLE *Caretta caretta* IN THE NORTHERN STATE OF RIO DE JANEIRO, BRAZIL

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Projeto TAMAR-ICMBio began its activities in northern Rio de Janeiro in 1992, when the Bacia de Campos station was first established. The early fieldwork included mostly nesting surveys as well as beach monitoring and nest protection along 8 kilometers of the northern coast of Rio de Janeiro. Gradually, the size of the monitored area has increased, and since 2004–2005 about 100 km of nesting beaches have been monitored in each season. Currently, the Bacia de Campos station is responsible for the protection of approximately 1000 loggerhead nests per season (approximate average number of nests between 2007–2008 and 2009–2010 nesting seasons).



Figure 1. Adult female loggerhead (*Caretta caretta*).

On the northern Rio de Janeiro coast, the large majority of sea turtle nests are of loggerheads. From 2002/2003 to 2010/2011 nesting seasons, among 7187 nests with known species, 7176 (99.8%) belonged to loggerheads. However, leatherbacks, hawksbills, green turtles and olive ridleys have also been observed nesting occasionally.

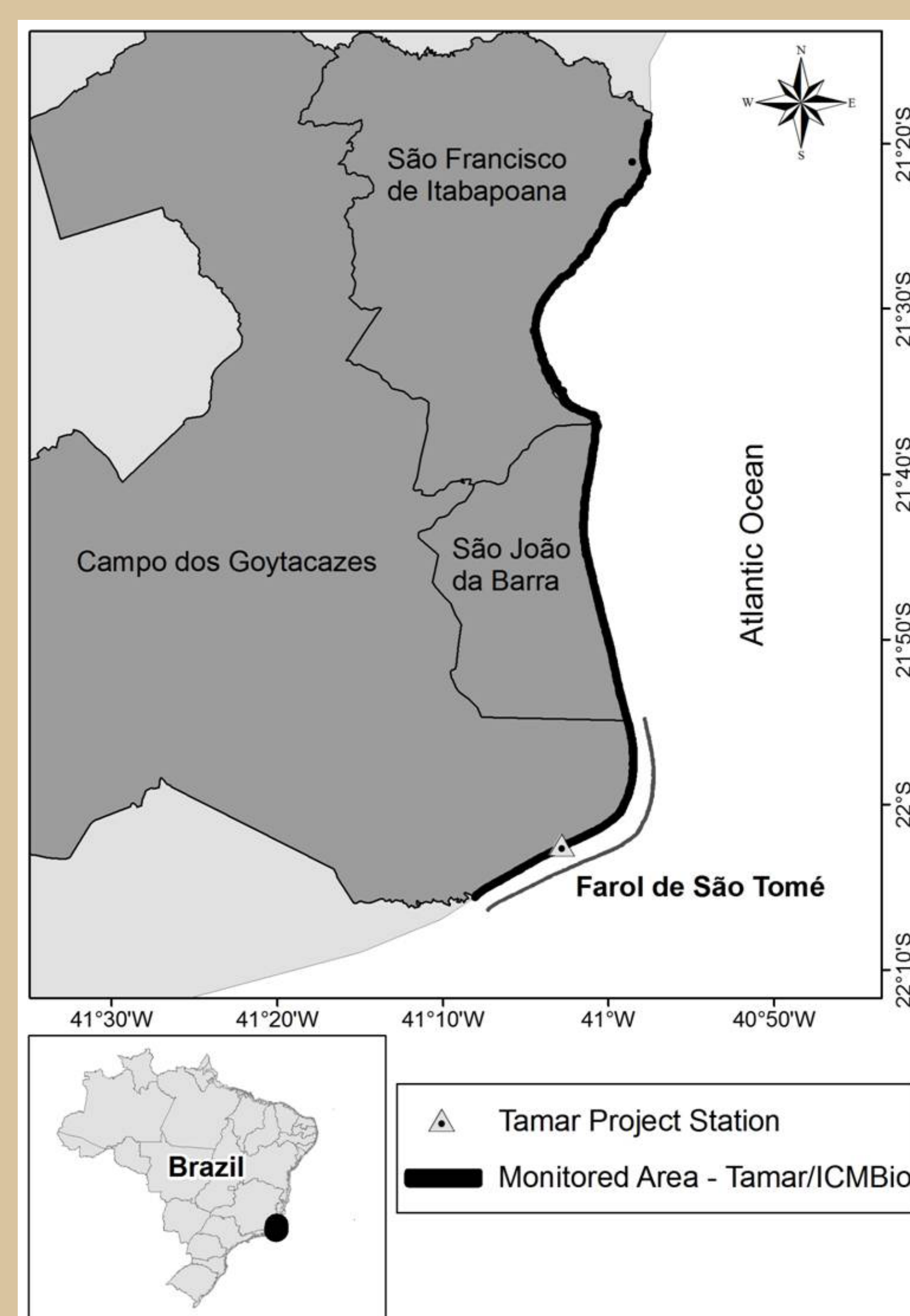


Figure 3. Tamar technicians measuring the curved carapace width of a loggerhead during nesting process.

Figure 2. Map of the study area on the northern coast of Rio de Janeiro State. The thick black line shows the monitored area and the thin grey line indicates the Intensive Study Area (ISA) along the Farol de São Tomé beach.

While nesting regions in northeastern Brazil are largely female-producing, Rio de Janeiro is supposedly an area of production of a large proportion of male hatchlings, due to its lower average temperatures, as has been observed for the state of Espírito Santo, just north of the state of Rio de Janeiro. The production of significant proportions of males would place Rio de Janeiro in a relevant position with regard to loggerhead's population biology and conservation in Brazil. This paper presents data on nesting loggerheads on the northern state of Rio de Janeiro. We evaluated data from the last seven nesting seasons, which followed similar spatial and temporal patterns.

The mean annual number of nests laid in the last seven seasons was 1021 (SD = 288; range = 756–1625; N = 7 seasons). During this period, the average hatching success for relocated clutches was 65.6% (SD = 7.6; range = 57.7–81.3) for beach nests (B) and 64.9% (SD = 4.3; range = 61.2–73.8) for hatchery nests (H). Among the seasons, hatching success for I, B and H nests varied between 57.7% and 81.3%. Mean incubation period was 60.4 days (SD = 4.1; range = 54.7–66.7; N = 933 nests) for nests left in situ (I), 57.4 days (SD = 3.7; range = 51.9–61.3; N = 3527 nests) for H nests and 61.05 days (SD = 4.3; range = 56.1–67.3; N = 614 nests) for B nests. According to literature, emergence periods for loggerheads range from 42 to 58 days. Here we found lower incubation periods for H nests. This data is probably related to the exposure of the hatcheries nests to higher temperatures which had increased metabolic rates of the embryos.

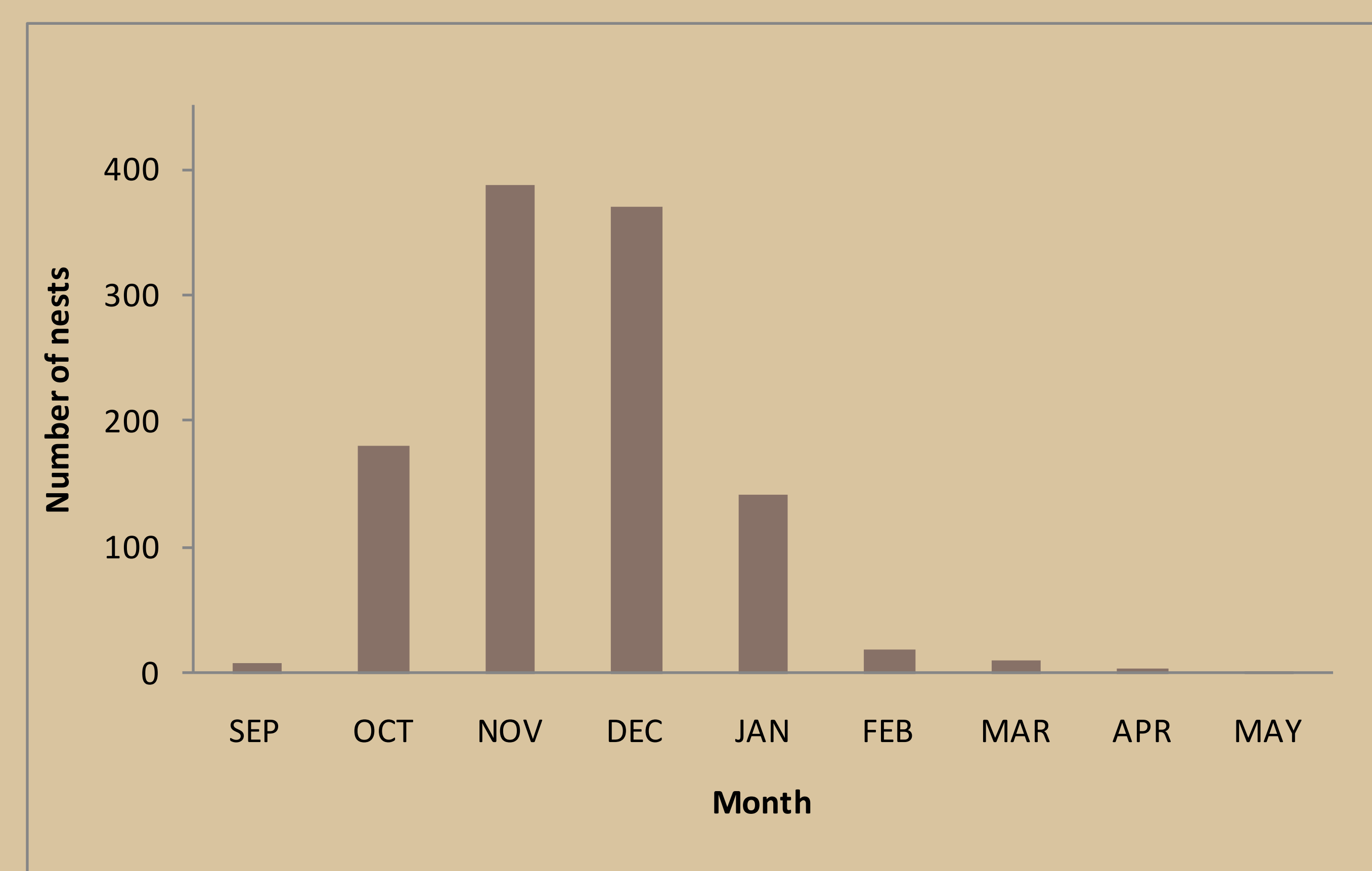


Figure 4. Number of observed loggerhead nests (N=7151) in the northern state of Rio de Janeiro by month, from 2004–2005 to 2010–2011.

This study has aimed to characterize, for the first time, the loggerhead nesting population from the northern part of Rio de Janeiro. TAMAR's conservation activities in Rio de Janeiro are based on limiting human-caused damage to sea turtle populations and their habitats. Besides the environmental protection activities, TAMAR has aimed to incorporate human and social issues into all its initiatives, involving local communities in its conservation efforts.



Figure 5. Loggerhead hatchlings being released into the sea, northern coast of Rio de Janeiro.

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