

## Short Communication

# Marine Turtles Surveys in Nosy Iranja Kely, North-Western Madagascar

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**Key words:** *Chelonia mydas*, *eretmochelys imbricata*, nesting activity, ecotourism, Iranja island, Madagascar

**Abstract**—This report gives an update on a population of nesting females of green (*Chelonia mydas*) and hawksbill (*Eretmochelys imbricata*) turtles from August 2000 to December 2004 at Nosy Iranja Kely (North West Madagascar), one of the two islands of the Iranja Archipelago. Monitoring of marine turtles on this island was possible because of cooperation between a private hotel and researchers.

As in the majority of turtle nesting sites in the South West Indian Ocean, the green turtle is the most abundant marine turtle species nesting in Nosy Iranja Kely. From August 2000 to December 2004, 345 green turtle nests were recorded, while only 76, hawksbill turtle nests were found. The nesting period for both species is seasonal: green turtle nesting peaking during the winter months (May to August) and hawksbill during the summer months (December to March). This monitoring also emphasizes the importance of the island for hawksbill nesting as this species nest is rare in the Comoros Basin.

While tourist activities may have had a negative impact on marine turtles on the east of the island, these activities also have a positive impact on the south, helping to reduce threats such as poaching and allow an effective monitoring of nesting marine turtles on the island.

## INTRODUCTION

Five species of marine turtle are reported to occur in the coastal waters of Madagascar: green (*Chelonia mydas* L.), hawksbill (*Eretmochelys imbricata* L.), olive ridley (*Lepidochelys olivacea* Eschscholtz), loggerhead (*Caretta caretta* L.) and leatherback (*Dermochelys coriacea* Vandelli) (Marquez, 1990; Ratsimbazafy, 2003; Seminoff, 2004). Only the first four species are known to nest along the coast of Madagascar and the distribution of the nesting sites differs according to each species (Ratsimbazafy, 2003). While marine turtles are commonly exploited by the local population little scientific data is available (Rakotonirina, 2001) and

they may be by a variety of human activities including poaching, fishing and habitat disturbance (Rakotonirina and Cook, 1994, Ciccione *et al.*, 2002).

Several eco-tourism ventures have been established focusing primarily on marine turtles, in areas where nesting occurs, such as in Mayotte Island (Robin *et al.*, 2006) and in Nosy Iranja Kely, in the north-western of Madagascar. Nosy Iranja Archipelago (13°35'S; 47°49'E), located 40 km south of Nosy Be island, is comprised of two islands, Nosy Iranja Be and Nosy Iranja Kely, linked together by a sand bank exposed at high tide (Figure 1). Nosy Iranja Be is the biggest island with an area of approximately 30 Ha. The unique

human activity in this island is generated by a village settlement. The other island, Nosy Iranja Kely, is approximately 17 Ha. and is characterised by beach rock on the west coast and a large area of white sand in the south and the east coast (Figure 1).

In early 2000, a 4 star hotel was built in Nosy Iranja Kely, with 24 lodges spread over the small

island (Figure 1). The hotel has initiated ecotourism activities through the observation of nesting marine turtles, mainly in the south and along the east coast of the island. The human activities related to the presence of the hotel brought disturbance to the marine turtles activities in the east side of the island because nighttimes lights reduced the nesting marine turtles. However, in the south of the island,

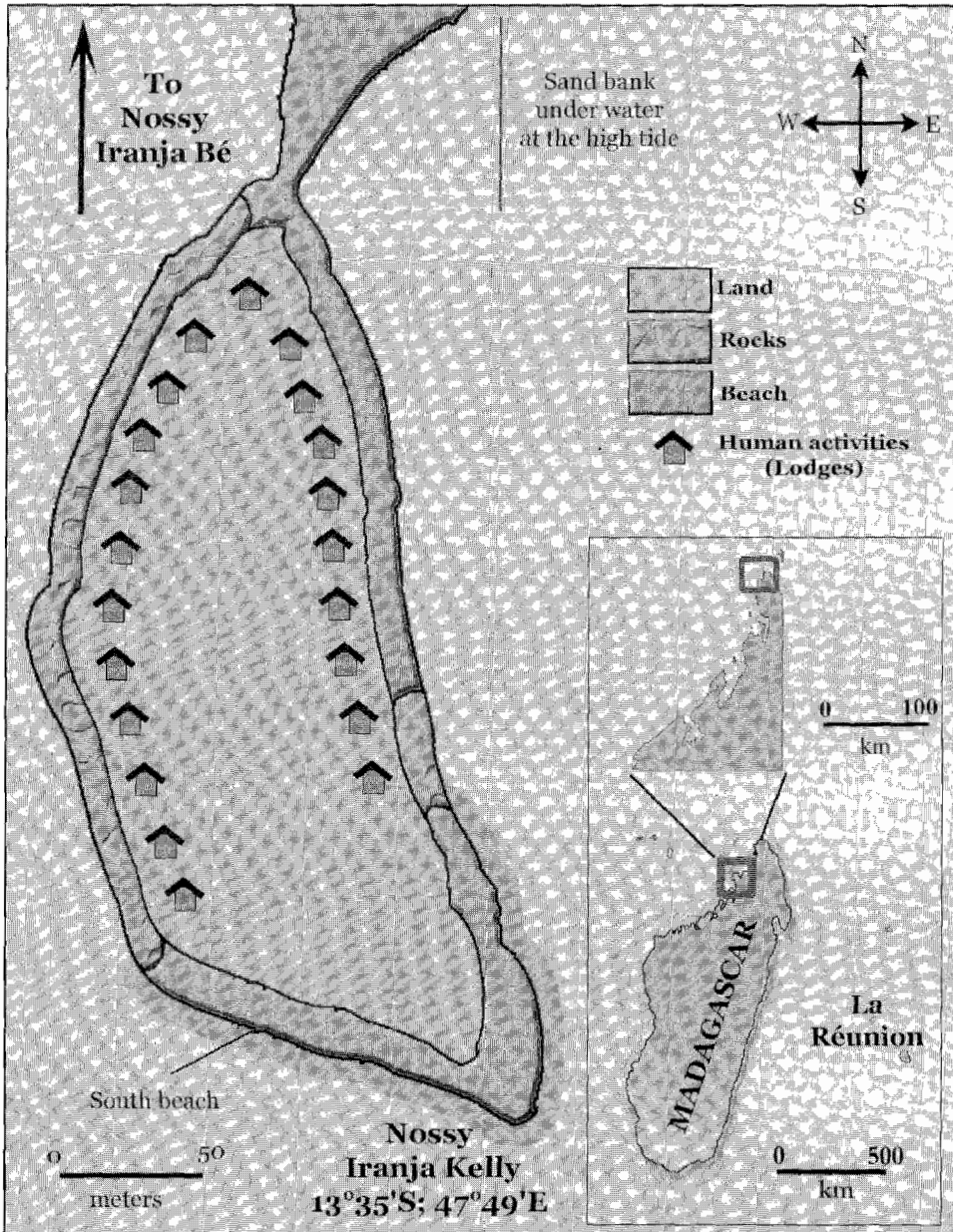


Fig. 1. The island of Nosy Iranja Kely, northern of Madagascar

activities are carried out to preserve the integrity of the site and protect it against poachers.

During the establishment phase of the hotel (2000), WWF Madagascar and West Indian Ocean Programme Office (WWF MWIO PO) initiated baseline research studies of marine turtles through its marine turtle conservation programme. Since 2004, Kelonia and Ifremer conducted scientific projects in collaboration with the hotel. A Malagasy from the continent has been hired by the hotel and preliminary trained by WWF, then by Kelonia and Ifremer, to monitor marine turtle nesting activities in order to ensure that nests are protected and to develop turtle watching activities. He surveys the beach alone every night through the year. Nesting marine turtles are tagged (monel tag) and reported per species and date. No monitoring was conducted from February to November 2002 as the hotel was closed during this period because of political crisis in Madagascar.

The preliminary results of this monitoring show that population of nesting green and hawksbill turtles are small but significant in Nosy Iranja Kely. The nesting period for both species is seasonal, with green nesting peaking during the winter months (May to August, Figure 2) and hawksbill peaking during the summer months (December to March, Figure 2 respectively). From August 2000 to December 2004, 345 green turtles nests were recorded (excluding the month of 2002 non-monitored; Figure 2). The greatest number of nests recorded in a single month was 22 in June 2004

for this species (Figure 2). Hawksbill turtle nests were less often recorded with only 76 (excluding the month of 2002 non-monitored; Figure 2), and the greatest number of nests recorded in a single month was 10 in February 2004. In spite of the total number of hawksbill nests being small, this number remains significant for the Mozambique Channel where these nests are rare.

Before the construction of the hotel, nesting areas were threatened, by poachers and by disturbance from fishermen on the islands. Although the hotel represents a resort for tourists, the hotel owner pledges to conserve the nesting beach areas for marine turtle conservation. Despite disturbance because of light in the east coast, the survey in the south shows that the nesting frequency for the two species is significant and has remained similar since 2000, suggesting that human activities related to the hotel do not significantly affect marine turtles nesting in the south of the island. Unfortunately, the real impact of the hotel on marine turtles cannot be assessed because there is no available data on nesting marine turtles for this island prior to 2000, for both the beach of the south and the east. However, an informal investigation in nearby local communities shows evidence of ongoing turtles hunting for meat. In August 2005, recent carapaces of green turtles were found in Nosy Iranja Be (Ciccione, pers. comm.), evidence that poaching is going on in Iranja Archipelago, but that nesting turtles are protected by the hotel in Nosy Iranja Kely.

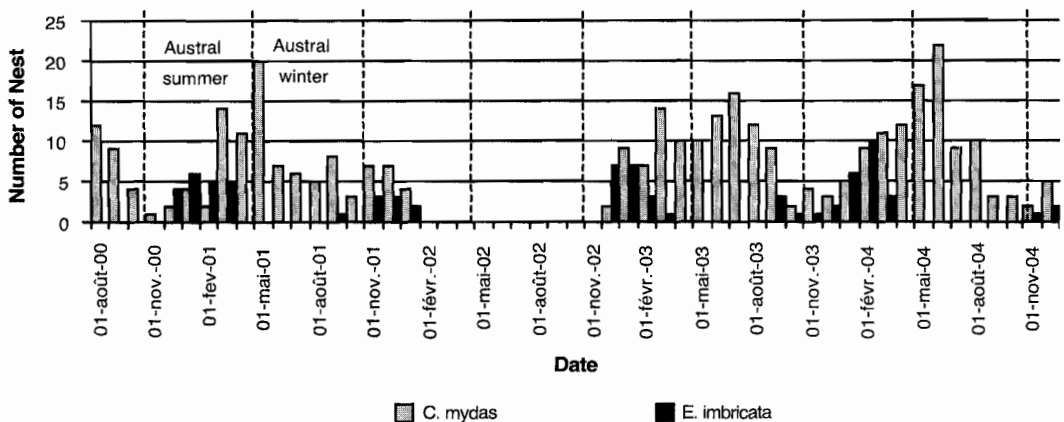


Fig. 2. Green (*Chelonia mydas*) and hawksbill (*Eretmochelys imbricata*) turtles nesting records in Nosy Iranja Kely Island (Madagascar) from 2000 to 2004

Nosy Iranja Kely is a great example of successful cooperation between tourist operator and scientists developing a “not-extractive value-adding to marine turtles” associated with a scientific monitoring program. Such a partnership could also be developed between the hotel, researchers and the local community that spend time on the adjacent island, Nosy Iranja Be. It would be valuable to carry out an assessment of marine turtle nesting in this island prior to any initiative in order to collect baseline data for later evaluation. Such a programme would extend the protection of marine turtles to the entire Iranja Archipelago, creating a safe marine turtle nesting zone in the north west of Madagascar.

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