

CAUSES OF EXTREME VARIABILITY OF NEST DENSITY AMONG CLOSE AND SIMILAR BEACHES OF BOAVISTA (CAPE VERDE): FROM 1 TO 2000 ANNUAL NESTS PER KM

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Abstract

The 70 km of white sandy beaches of Boa Vista island in Cape Verde harbours one of the largest rookeries of the endangered loggerhead sea turtle, *Caretta caretta*. From middle June to early October, approximately 2000 to 4000 females lay up to 20000 nests annually. However, female beach selection, nesting success and nest density strongly varies among beaches and spatial patterns of nest abundance and distribution are relatively constant among seasons. The numbers of nesting activities and nests have been recorded along all beaches of the island during four nesting seasons (2007-2010). To understand the reasons that cause such nesting spatial variability many natural and human related features have been considered. In the south-eastern part of the island (Reserva Natural das Tartarugas), the beaches have the highest nest density that usually exceeds 500 nests per km and hosts around 75 % of total nests of the island. Some beaches during some seasons can even exceed 2000 nests per km. However, on many of these high-density beaches the number of false crawls usually triplicates the number of nests. Furthermore, despite the low percentage of nesting activities that end on effective nesting, hatching success is very low and rarely exceeds mean values of 35 %. The low quality of beaches for incubation does not explain their high nest density. These beaches are very isolated and have the longest distances and worst communication to villages in the island. Towards the west and very close to these high density beaches, there are very similar pristine beaches with very few nesting activities and nest density that in the extreme cases have less than 3 nests per Km. There are no natural factors associated with the beaches that can explain this dramatic shift in nesting density. Factors associated with the marine environment such as dominant local currents or the migration routes from the internesting feeding areas of adults closed to the African continent may be responsible of the sudden decrease of the number of nests. The low nest density beaches are intercalated small beaches that host a relevant number of nests. Populated coastal areas of the northwest area of the island with suitable beaches have also sporadic nesting activity. Northern and eastern beaches have medium variable levels of nesting activity (10-1000 nests per km) and host around 20-24 % of nests of the island. Beaches with high density of nesting and nests are very attractive for eco-touristic activities with sea turtles. Tour operators can guarantee turtle watching on these beaches during most of the nesting season and tourists spend little effort and a short time for watching turtle nesting. The quality of these touristic visits and satisfaction of clients are common. At these areas, ecotourism with turtles can be a powerful tool in sustainable development programs. Local population can get a much better income from alive turtles than from dead ones. And at the same time this environmental service of a wild endangered species can benefit its conservation in the Atlantic.