

MIGRATION & NAVIGATION

HIGH PLASTICITY OF LOGGERHEADS ON NESTING SITE FIDELITY: FROM USING REPEATEDLY THE SAME SMALL BEACH DURING DIFFERENT SEASONS TO DEPOSITING CONSECUTIVE NESTS IN DIFFERENT ISLANDS DISTANT MORE THAN 100 KM

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Sea turtles exhibit a strong natal homing associated with a high nesting site philopatry. Mark-recapture and genetic studies confirm these patterns suggesting differences among and within species. In the present study, we have analysed the degree of nest site fidelity of a loggerhead population nesting on the islands of Cape Verde and have evaluated the existence of intrapopulation variability in this trait. The loggerhead is the only sea turtle species that nests in Cape Verde, and 15,000–25,000 nests per season have been estimated for the whole archipelago. Around 90% of nests are deposited in the island of Boavista, and 9% of nests are equally distributed among the islands of Sal, Maio and San Nicolau. During the past 12 years more than 10,000 loggerhead adult females have been tagged and recaptured on different islands but the future of the rookery is considered uncertain, especially because of the consumption of turtle meat. We have found gravid females moving among islands. For example, in 2009 a female nested in July in Santiago and in August in Boavista. Both islands are separated by at least 130 km. A similar behaviour was found by several females between Boavista and Sal, two islands separated by at least 50 km. The distances among islands were not very large but females had to leave the platform shelf, crossing very deep waters (>1,000 m) with strong currents. Within Boavista, we have also found that the 30% of females have nested in beaches separated by more than 20 km from the beach where they were marked. But at the same time, many females have repeatedly nested in the same small beach (shorter than 2 km) even in different nesting seasons. For example, a female called Hortensia buried 5 nests within 400 m during 2004 and returned to nest to the same beach stretch during 2006. This high plasticity in nesting site fidelity has important implications for the design of conservation strategies. Protecting selected high density beaches is not enough to save all individuals that nest on those beaches. Nesting dispersal has occurred among islands that are up to 130 km away. Consequently, we believe that in Cape Verde, all islands could be connected for loggerhead nesting. The lack of genetic structure among islands confirms this pattern. The rate at which this long distance dispersal happens should be studied in order to evaluate whether natural nesting dispersal is enough to facilitate recolonisation of islands where loggerhead nesting has been extirpated in the past decades. However, whether the Cape Verdean loggerhead rookery can contribute to the recolonisation of the African continent, more than 500 km away from the archipelago, remains unknown. Highly populated islands with a severe reduction of nesting activity and a strong harvesting pressure on loggerheads could be sinks for the whole population. Increased understanding of the degree of nest site fidelity and connectivity among islands is very important to design and establish the priorities for loggerhead conservation in Cape Verde.