

COMPARISON OF HATCHING SUCCESS OF LEATHERBACK SEA TURTLES (*DERMOCHELYS CORIACEA*) AT TORTUGUERO BEACH IN COSTA RICA AND SOROPTA BEACH IN PANAMA

Raúl García | Cristina Ordoñez | Jaime Restrepo | Roldán Valverde

Sea Turtle Conservancy | Sea Turtle Conservancy | Sea Turtle Conservancy | Sea Turtle Conservancy

Since 1959 the Sea Turtle Conservancy (STC) has been working for the conservation of marine turtles, monitoring nesting beaches, collecting data and collaborating with local communities and management authorities in order to minimize the effect of human activities on nesting sites and implement sustainable use of sea turtles as a natural resource. Due to their peculiar characteristics, Caribbean beaches provide essential nesting habitat for leatherback sea turtle (*Dermochelys coriacea*) populations. Analyzing the survival and productivity rates of *D. coriacea* nests for recent years (2013 – 2017) at Tortuguero Beach, Costa Rica and at Soropta, Panama; two beaches with very similar physical characteristics and prevalence of local communities, sets an important base, to better understand the conditions that favor this specie's reproduction. The objective of this study is to determine recruitment for the leatherback population from each one of these nesting beaches, and to identify the primary threats to each site in order to inform management strategies for enhanced survival rates at these sites. We analyzed the data for 744 leatherback nests (Tortuguero = 107, Soropta = 637). The hatching and emergence success were determined as 34.03% (S.E. \pm 1.35) and 30.40% (S.E. \pm 1.29) respectively for Panama, whereas Tortuguero presented lower rates: 22.35% (S.E. \pm 2.86) hatching success and 21.57% (S.E. \pm 2.95) emergence success. Poaching rates in Tortuguero are 3.03% of nests laid, not comparable with a 24.5% rate presented in Soropta in recent years. Removing poached nests from the sample resulted in higher hatching success at both beaches with 42.1% (S.E. \pm 1.45) for Soropta, and 22.9% (S.E. \pm 2.94) for Tortuguero; revealing the impact of poaching on sea turtle populations in Panama. Notably, a record 61% of the nests were poached in Soropta beach in 2013. Another factor affecting hatching production on these beaches is erosion; Tortuguero Beach has lost 32.62% of nests due to the effect of high tides on the beach; while, Soropta Beach has only had a 9.55% loss. Nevertheless, because of the shallow phreatic levels, this beach has lost 3.89% of nests to inundation and water effects. Finally, depredation of Leatherback nests by dogs and other animals occurs in Panama only, at a 2.35% rate. Although low, this rate still differs from Tortuguero where predation is negligible. In conclusion, thanks to the support and founding of the Sea Turtle Conservancy and their field staff both in Costa Rica and Panama, we were able to investigate the different variables affecting hatching and emerging success of Leatherback nests at both beaches, and suggested management strategies such as relocation of nests and an increase in monitor presence on the beach in order to address the known primary threats and improve the survival rates for *D. coriacea* at these sites.