

**RISK ASSESSMENT FOR LEATHERBACK NESTS (*DERMOCHELYS CORIACEA*)  
IN SOROPTA BEACH, BOCAS DEL TORO PROVINCE (PANAMA)**

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The Sea Turtle Conservancy was established in 2003 in the “Comarca Ngäbe bugle” and Bocas del Toro province at the Caribbean coast of Panama. This is a really important worldwide known nesting area for two sea turtle species: leatherback (*Dermochelys coriácea*) and hawksbill (*Eretmochelys imbricata*), (Carr 1956, Ordoñez 2007). Soropta beach (9.477°N 82.453°W) is one of the most important beaches in the area with an average of 500 leatherback nests per season. During 2009 there was a 1,9km reduction in the beach length due to the Changuinola river rise. An alteration of the beach width during the nesting seasons from 2013 to 2017 has also been observed. This study wants to create a standardized and reliable method to understand which nests need to be relocated depending on their distance to the tide line and the beach zone where they are found; also define in which zone they should be moved to. The study area comprises 4,5km of the beach, divided into 100m long zones that are delimited with markers from 20 to 75. During the nesting season (April-July 2017), we measured the variations of the beach width every 50m to determine what zones are more likely to have eroded or flooded nests during the season. To analyze the collected data, we assigned a risk value to each zone: high, medium, or low; that being based on the difference between the beach width during the low and high tides for each zone. In addition, the % of nests hatching success related with the zone where they were found has been analyzed. Knowing that the average % of leatherback nests hatching success in Soropta beach has been maintained at around 30% for the last years, we took that number as a reference to consider the nests high success (>30%) from a total of 86 nests. The results show the beach width varies from 106m to 0m; the presence of the three risk categories, being 3 low, 81 medium and 26 high risk zones of the total analyzed has also been recognized. From the total of high successfully nests, we only found 4% in a high risk zone. On the other hand, from the nests with 0% hatching success, 42% have been found in high risk zones, 58% in medium risk zones and 0% in low risk zones. With beach width measurements, we could determine that the high risk zones are between zone 56 and 75, so all the nests found between these areas should be relocated into a safer zone. The study safest zones are located between 20 and 34, where most of the hatching success % in the area is over 30%. Due to these results, we can consider that these zones are the most adequate to be relocated at. All the nests found in a higher distance from the minimum beach width in each zone should be relocated, given that during the high tides these nests would be under the tide line, and the probability of erosion or flooding rises. With this study, we could establish criteria to determine which nests should be relocated depending on each zone’s risk. However, the risk to have eroded or flooded nests mainly depends on their distance to the tide line. With this information, and studying the modifications of the beach during the nesting seasons, a more adequate relocate protocol could be established so the nest hatching success % would be probably risen for future seasons.