{rokbox title=|Map showing the two bounding boxes containing theorized inter-nesting habitats for olive ridley turtles at Parque Nacional Marino Las Baulas (PNMB) and Cabuyal :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-higher-temperatures-shorten-bibi-2025-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-higher-temperatures-shorten-bibi-2025-et-al.jpg{/rokbox}

Laura Fuentes-Tejada, **Pilar Santidrián Tomillo**, Chelsea E. Durr, Daniel Oliveira Cutrim, Verónica Valverde-Cantillo, Frank V. Paladino, Nathan J. Robinson, 2025.
Higher temperatures shorten inter-nesting periods in olive ridley turtles
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Abstract: Climate change is impacting sea turtles worldwide with the effects varying between species and populations. For example, rising temperatures have variable effects on the duration of the inter-nesting period (IP)—the time between two consecutive nests during a single nesting season. Specifically, a negative correlation between water temperature and IP has been reported in green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), and loggerhead (*Caretta caretta*) turtles. In contrast, previous studies have shown no correlation for olive ridley turtles (*Lepidochelys olivacea*). Here, we assessed whether this lack of a correlation in olive ridley turtles was a product of the small sample size used in previous studies (nmax = 11). We used capture-mark-recapture data over 14 years to calculate the IP of olive ridley turtles (n = 96) nesting on two different beaches in Costa Rica. Next, we calculated mean sea surface temperature (SST) during each IP within estimated inter-nesting areas (225 km2), as inferred from previous olive ridley telemetry studies, and using data from NASA's multi-scale ultra-high-resolution sensor. Mean (±SD) IP was 22.5 ± 6.0 d (range: 13–41 d) and mean SST was 28.0 ± 0.6 °C (range: 26.1–29.5 °C). We observed a statistically significant negative relationship between SST and IP suggesting that elevated temperatures at inter-nesting habitats influence the phenology of olive ridley turtles as previously observed in other hard-shelled sea turtle species. Thus, we postulate that elevated temperatures due to climate change may influence the timing of nesting seasons for solitary nesting olive ridley turtles and may even alter timing of the olive ridley mass nesting aggregations known as arribadas.

Keywords: *Arribada*, Climate change,Internesting period, Olive ridley, Phenology, Sea surface temperature