{rokbox title=| The effects of main factors included in the top-ranked model for false crawl outcomes :: Image: Authors|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-drivers-unsuccessful-nesting-santidrian-2026-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-drivers-unsuccessful-nesting-santidrian-2026-et-al.jpg{/rokbox}

Holly L. White, Verónica Valverde and **Pilar Santidrián Tomillo**,2026. **Drivers of unsuccessful nesting activities in East Pacific green turtles (Chelonia mydas).** Marine Biology.May 2026.Volume 100.Article number 108. https://doi.org/10.1007/s00227-026-04877-8

Abstract:Reproduction in sea turtles is characterized by large maternal investment with females nesting multiple times in a season and laying large clutches of eggs. Thus, the energetic cost of reproduction is likely high. Despite increasing reproductive cost, unsuccessful nesting activities – including false crawls (emergence without attempting to nest) and abandoned nests (the turtle makes a body pit but does not lay) – are common. This study investigated the drivers of unsuccessful nesting activities in green turtles (*Chelonia mydas*) at Cabuyal, Costa Rica, between 2011/12 and 2023/24. Eight environmental drivers (month, sector (alongshore position), zone (cross-shore position), time, time to/from high tide, tide height, weather and lunar illumination) and four drivers based on previous experience (previous nesting outcome, time since first seen, number of false crawls before current attempt and number of nest abandonments before current attempt) were evaluated. Using binomial generalised linear mixed-effects models, the effects of the above variables were tested on nesting outcomes (yes = 1/no = 0) for either false crawls or nest abandonments. For false crawls, the best model included month, sector, time to/from high tide, zone and number of abandoned nests before current attempt, with only the last two being statistically significant. The frequency of false crawls increased in lower beach zones, indicating early decision-making, and decreased as number of nests abandoned increased. For abandoned nests, the best model included zone and previous attempt outcome, with previous failures reducing chances of nest abandonment. Extended egg retention may increase energetic costs and reduce reproductive success, increasing urgency to nest following unsuccessful attempts.

Keywords:Sea turtle,Nesting success,Green turtle,False crawl,Nest abandonment.