

{rokbox title=|Image in dorsal view of *C. testudinaria* on the carapace of a green turtle indicating how size was measured, “R” refers to the rostral plate, “C” to the carinal plate and “L” to the lateral plate :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-growth-rates-epibiotic-bibi-2025-thumb-et-al.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-growth-rates-epibiotic-bibi-2025-et-al.jpg{/rokbox}

Sergio Poyatos, **Pilar Santidrián Tomillo**, Lara Fazzari, Trevor L. Proctor, Carolina M. Santoro Pérez, Veronica Valverde-Cantillo and Nathan J. Robinson, 2025.

Growth rates of the epibiotic barnacle *Chelonibia testudinaria* reveal habitat use of pre-nesting green turtles in Costa Rica

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Abstract: The barnacle *Chelonibia testudinaria* is arguably the most common and conspicuous epibiont on sea turtles. As evidence suggests that

C. testudinaria

settles on turtles in coastal areas, this barnacle could serve as an indicator of habitat use. The utility of

C. testudinaria

for this purpose is, however, limited by a lack of information on its growth rate. Here, we estimated growth curves for

C. testudinaria

on green turtles (

Chelonia mydas

) nesting on Cabuyal (10° 40 N, 85° 39 W) and Playa Grande/Ventanas (10° 20 N, 85° 51 W) in northwest Costa Rica. Growth rates of 106 barnacles from 38 green turtles were measured during the 2023/24 turtle nesting season and then incorporated into a von Bertalanffy growth model. The mean intrinsic growth rate (rostrum-carinal length) was 0.0091 d⁻¹ and the asymptotic length was 59.5 mm. We detected a statistically significant effect of beach and turtle identity on growth rates, and growth rates were almost double those reported from

C. testudinaria

on loggerhead turtles in Australia. Our results indicate that barnacle larvae settled a mean of 76 d before turtles begin nesting, and thus pre-nesting turtles likely also inhabit coastal habitats. In addition, we provide the first measurements of barnacle detachment rates in wild sea turtles with 24.1% of barnacles detaching after a single internesting period (9–21 d). Our study reinforces the utility of

C. testudinaria

as indicators of coastal habitat use in sea turtles, although further studies into the variables

driving barnacle growth are still required.

Keywords: *Chelonia mydas*, Epibiosis, Growth curve, Migration, Von Bertalanffy.