

{rokbox title=|(A) Post-nesting migration tracks of nine green turtles (*Chelonia mydas*) tagged at Playa Cabuyal, Costa Rica (indicated by orange arrow) :: Image: Authors|thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-habitat-use-foraging-bibi-2025-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-habitat-use-foraging-bibi-2025-et-al.jpg{/rokbox}

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Habitat Use and Foraging Ecology of Three Sea Turtle Species Nesting in Northwest Costa Rica

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Abstract: Sea turtle species, even when sharing nesting beaches, exhibit distinct at-sea movements and foraging behavior. At Playa Cabuyal, a sea turtle nesting beach in northwest Costa Rica, we utilized satellite telemetry to reveal the post-nesting movement of green turtles (*Chelonia mydas*, $n = 9$) alongside carbon and nitrogen stable isotope analysis of skin samples of green ($n = 28$), olive ridley (*Lepidochelys olivacea*, $n = 20$), and leatherback (*Dermochelys coriacea*, $n = 4$) turtles. Green turtles (2012–2015) undertook three migratory strategies: moving northward to Nicaragua and the Gulf of Fonseca ($n = 6$), remaining resident near Cabuyal in the Gulf of Papagayo ($n = 2$), or migrating south to the Gulf of Guayaquil in Ecuador ($n = 1$). There was no significant difference in the $\delta^{13}\text{C}$ values of green turtles (mean: -14.7‰ , range: -16.8‰ to -12.8‰) and olive ridley turtles (mean: -15.1‰ , $\delta^{13}\text{C}$: -16.6‰ to -14.2‰) suggesting that both species forage across a range of coastal and offshore habitats, while $\delta^{13}\text{C}$ values for leatherback turtles (mean: -15.5‰ , range: -15.9‰ to -15.0‰) suggest exclusively offshore habitat use. In contrast, $\delta^{15}\text{N}$ values of green turtles (mean: 16.0‰ , range: 13.7 to 17.4‰) were significantly higher than those for olive ridley turtles (mean: 14.2‰ , range: 12.3‰ to 15.7‰) suggesting that green turtles may be predominately carnivorous. The notably wide range of $\delta^{15}\text{N}$ values in leatherback turtles (mean: 14.9‰ , range: 12.2‰ to 16.8‰) also suggests that this species feeds across many different trophic levels of gelatinous prey. Evidence that the sea turtles nesting on Playa Cabuyal utilize a broad range of foraging areas in the East Tropical Pacific underscores the need for coordinated, multinational conservation efforts for these species.

Keywords: *Chelonia mydas*, *Lepidochelys olivacea*, *Dermochelys coriacea*