Juvenile Green Sea Turtle (*Chelonia mydas*) Diving Behavior in Relation to Habitat Heterogeneity and Water Temperature in Kawainui, Oʻahu, HI

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Few studies have focused on the diving behaviour of juvenile green sea turtles (*Chelonia mydas*) within their foraging habitats because their movements and residency patterns can be unpredictable. The Kawainui Marsh Estuary (KME) on Oʻahu, HI, supports a large number (seasonal estimates: 40 – 100 turtles) of juvenile green turtles during spring – summer. Sea turtles at this site overlap with recreational activities and are susceptible to incidental hooking and entanglement in discarded debris. We quantified the diving behaviour of six resident green sea turtles (11 total tracking periods) in relation to habitat and environmental variability on diel, tidal, and seasonal (spring – summer) time scales. We used four complementary methods to achieve this goal: deploying time-depth-temperature recorders on turtles; monitoring water temperature using loggers placed throughout KME; measuring algal biomass and percent cover in areas of high algae concentration; and conducting behavioural visual surveys of turtle behaviour. We integrated these disparate datasets using multivariate analyses and related turtle diving behaviour to environmental variables. These results highlighted two distinct behavioural patterns: turtles spent considerable time foraging during the day in the shallows with high algal abundance, particularly at higher tides, and spent more time resting in the deeper channel and canal, particularly at night. This information will help managers to both interpret turtle activity patterns at this high-use site and to assess locations and times when juvenile turtles are most at risk from human activity. These results may be applicable to other shallow foraging locations.