hypothesis,' which suggests that sea turtles opportunistically exploit anomalously warm conditions to reach foraging habitats along the North American coast. They also emphasize the role of additional environmental drivers, such as advective current systems, in these movements. Under accelerated climate change, such transient pathways may become increasingly prevalent, with significant implications for conservation planning and fisheries management.

DIET COMPOSITION OF GREEN (*CHELONIA MYDAS*) AND HAWKSBILL (*ERETMOCHELYS IMBRICATA*) TURTLES AT KEY FORAGING LOCATIONS IN HAWAI'I*

Shandell M. Brunson[1], Alison J. Meeth[1], Trevor L. Proctor[1], Jan Vicente[2], Ku'ulei Rodgers[2], Donna Brown[3], Celia Smith[1], T. Todd Jones[4], Summer Martin[4], Camryn Allen[4], Alexander Gaos[4], Shaya Honarvar[1,5], Cynthia L. Hunter[1]

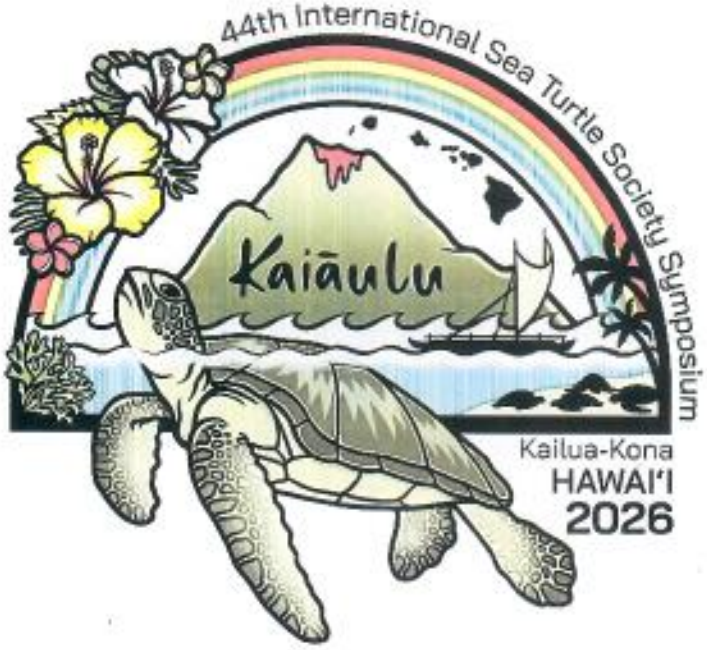
[1]University of Hawai'i at Mānoa, School of Life Sciences, Honolulu, HI, USA
[2]University of Hawai'i at Mānoa, Hawai'i Institute of Marine Biology, Honolulu, HI, USA
[3]University of Hawai'i, Maui College, Kahului, HI, USA
[4]Pacific Islands Fisheries Science Center, National Marine Fisheries Service, NOAA, Honolulu, HI, USA
[5]Pacific Cooperative Studies Unit, University of Hawai'i at Mānoa, 3190 Maile Way, Honolulu, Hawai'i 96822, USA

Sea turtles demonstrate trophic plasticity, with interspecific and population-level variation in diet observed even across small geographic scales. Additionally, differences in the nutritional composition and digestibility of algae and seagrasses are expected to influence turtles' life history characteristics and physiological processes. Consequently, characterizing site-specific dietary patterns provides valuable insight into sea turtle ecology and supports effective conservation and management efforts. Previous research demonstrated that green turtles (*Chelonia mydas*) in Kāne'ohe Bay, a key foraging site for Hawaiian green turtles, exhibited a progressive dietary shift toward non-native algal species. However, this population's diet has not been reassessed in nearly a decade. To address this, we analyzed the forestomach contents of 42 green turtles collected in Kāne'ohe Bay in 2018–2019 and compared our results to earlier findings. We identified all food items to the lowest possible taxonomic level, measured wet mass, and calculated the frequency of occurrence among turtles (F), average percent contribution by mass (W), and Index of Relative Importance (IRI). We also provide preliminary comparisons with stomach content analyses from Hawaiian hawksbill turtles (*Eretmochelys imbricata*), a uniquely isolated population. Our results indicate that the non-native red alga *Gracilaria salicornia* is now the most frequently consumed dietary item by green turtles in Kāne'ohe Bay (F = 88.1%, W = 63.2 ± 40.8%, IRI = 88.4%), followed by *Acanthophora spicifera* (F = 35.7%, W = 16.6 ± 32.7%, IRI = 8.3%). By contrast, in 2009, *Acanthophora spicifera* was reported as the dominant dietary item (F = 64%) by Russell and Balazs. Preliminary hawksbill data similarly indicate heavy reliance on algae, with an overall diet composed of approximately 81% algae by wet weight. Analysis of trace amounts of (<1%) food items included sponges that were successfully identified as Suberites sp., a potentially native sponge, through both DNA barcoding and morphological assessments. These results show that food items from gut contents yield high-quality DNA for sequencing. Ongoing analyses will identify hawksbill prey items to finer taxonomic levels while incorporating an additional 20–30 samples. These updated findings highlight the dynamic foraging behavior of sea turtles and their potential responses to changes in prey availability. The increased dominance of G. salicornia in green turtle diets may reflect shifts in algal abundance, differential nutritional value, or selective preference for this non-native species. By providing current, quantitative data on the feeding ecology of both Hawaiian turtles, our work enhances understanding of trophic interactions in local ecosystems and informs future conservation and management strategies for these species.

ISTS Technical Memorandum

ISSN 3106-1397

PROCEEDINGS OF THE FORTY-FOURTH SYMPOSIUM ON SEA TURTLE BIOLOGY AND CONSERVATION



February 28 – March 6, 2026
Kailua-Kona, Hawai'i, USA

Compiled by:
Paul A. Whittock, Lisa C. Belskis, & Joseph B. Pfaller

June 2026