SPATIOTEMPORAL ANALYSIS OF HAWAIIAN GREEN SEA TURTLE (*CHELONIA MYDAS*) STRANDINGS ON MAUI, HAWAII (2017-2024)

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Geographic Information Systems (GIS) enable visualization and analysis of datasets to reveal spatial and temporal patterns that inform conservation strategies, identify emerging threats, and improve our understanding of ecosystem dynamics. This study explores spatiotemporal patterns in the Hawaiian green sea turtle (*Chelonia mydas*) strandings and entanglements along the Maui coastline from 2017 to 2024, using data that was collected by the Marine Institute of the Maui Ocean Center (MOCMI) and made available through the National Oceanic and Atmospheric Administration (NOAA) Fisheries. Using this data, 1,297 strandings of Hawaiian green sea turtle were analyzed. Esri ArcGIS Pro was used to conduct Hot Spot analysis using the Getis-Ord Gi* statistic to determine spatial clustering of turtle strandings along the Maui coastline. Counts and percentages by age classes, region, and stranding causes were also calculated using summary statistics tools available in ArcGIS Pro. These results were visualized to create cartographic products that revealed spatial patterns along the Maui coastline. The majority of strandings involved sub-adults (36.1%) and juveniles (36.8%), followed by adults (23.1%). Hot Spot Analysis revealed spatial clustering of strandings with two hotspots along the central Maui coastline, four hotspots along the western coastline, and four hotspots along the southern coastline. Hot Spot Analysis also revealed the age distribution along Maui's coastline, showing a significant cluster of adults, sub-adults, and juveniles in different regions. The central coastline region shows the highest concentration of adult sea turtle hotspots (six locations); the western coastline had the highest hotspot for juveniles (eight locations), while the southern coastline has a mixture of all three age-groups (seven juvenile clusters and six adult/sub-adult clusters). The south region of the Maui coastline exhibited the highest stranding counts across all age classes, especially sub-adult (316) and juvenile (304) turtles. The western region was dominated by juveniles (120), followed by sub-adult turtles (99). The central region showed moderate strandings, especially among adults (75). Only two strandings were recorded along the eastern coastline of Maui. Fishing line entanglement was the leading cause of strandings (48.5%), followed by foul-hooked (22.2%). Overall, GIS tools effectively revealed spatial and demographic patterns in sea turtle strandings, providing actionable insights for conservation planning. These findings can inform targeted conservation actions, habitat protection, public awareness campaigns, and resource allocation. Future work should address data gaps in underreported regions, evaluate long-term injury outcomes, particularly in juvenile and sub-adult populations, and assess the impacts of human activities on turtle health and distribution.

LONG-TERM IMPACTS OF INTRODUCED PREDATORS ON GREEN SEA TURTLE NESTING BEACHES ON ULITHI AND SOROL ATOLLS IN YAP STATE, FEDERATED STATES OF MICRONESIA*

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Green Sea Turtle (*Chelonia mydas*) populations nesting on Ulithi and Sorol Atolls, Federated States of Micronesia, face significant recruitment challenges due to nest predation from introduced species, primarily monitor lizards, feral pigs, and rats. Historical nest predation rates on impacted islands have

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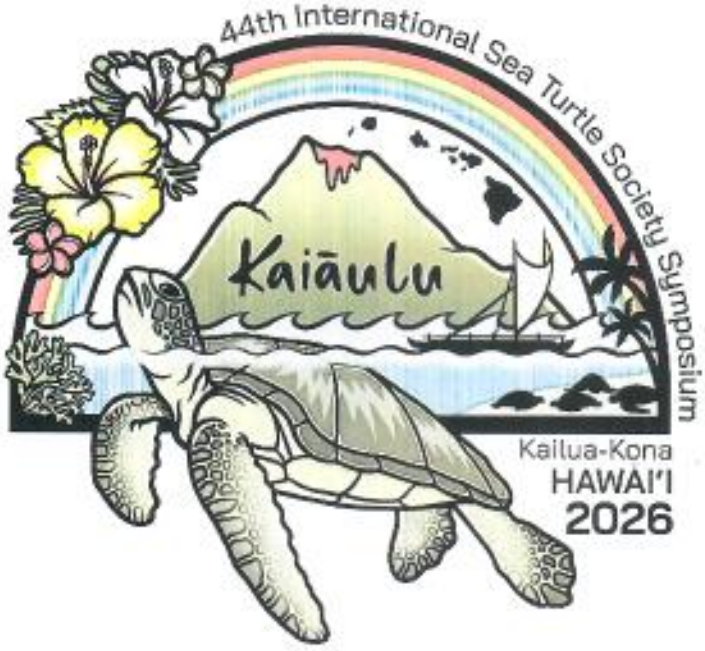

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