

Peer Review

Review of: "Feeding Ecology and Activity Rhythms of the Critically Endangered Hawksbill Turtle"

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The article presents a valuable and well-executed study that significantly advances knowledge of hawksbill turtle ecology in Martinique. The use of animal-borne video combined with habitat sampling provides robust and novel data on diet composition, including previously unreported sponge families, which adds important detail to existing literature. The methodology is sound, and the integration of machine learning for behavioural classification enhances the rigor of data analysis. The discussion effectively situates findings within broader ecological and conservation contexts. However, some areas could benefit from clarification—such as a more detailed explanation of sample size limitations and potential biases related to tag effects on behaviour. Additionally, expanding on how these findings might inform specific management actions would strengthen the applied relevance. Overall, this manuscript offers a meaningful contribution to marine turtle ecology and conservation science.

Introduction:

The introduction is scientifically sound and sets up the study well, but would benefit from editing for clarity, conciseness, flow, and consistency in reference use.

E.g. *"...due to numerous threats such as residential and commercial development, overexploitation, pollution, energy production and mining, human intrusions and disturbance, bycatch, illegal trade, and habitat destruction, and climate change"*

- This list is excessive and hard to digest. Consider summarising more concisely.
- Suggestion: *"...due to a range of anthropogenic threats, including habitat loss, illegal trade, bycatch, pollution, and climate change [5]."*

The second paragraph effectively establishes geographic relevance, but:

The sentence “*One of a large population of hawksbills...*” is awkwardly worded.

The role of national action plans could be better contextualised.

Consider a hypothesis or guiding question to close the introduction, if applicable.

Methods:

This Methods section is comprehensive, clearly structured, and provides sufficient detail to allow replication. It demonstrates high scientific rigour, especially through the integration of innovative bio-logging techniques and complementary field validation. Ethical considerations are properly addressed, and the methodology is well-aligned with the study’s aims.

However, several clarity, conciseness, and technical detail issues need attention. Some terminology could be clarified, and replication logic in behavioural analysis and prey identification should be tightened. Inline citations are appropriate, but reliance on prior local studies could be supplemented with a brief rationale for method choices.

Results:

This section presents a rich and multifaceted dataset, covering morphometrics, behaviour, dive profiles, bite analysis, and prey selection. The authors have combined video, sensor data, and field sampling in a rigorous and innovative way. The structure is generally clear, and results are presented logically. That said, several aspects require clarification or better framing—especially regarding sample size limitations, proportions, and the interpretation of behavioural and dietary data.

E.g.

Statistical clarity: “ $p < 0.001$, Kruskal-Wallis, $n = 222$ ” lacks explanation. What is n here—dives or individuals? What were the test conditions?

Suggestion: Add a sentence specifying the null hypothesis and the variable distribution.

Discussion:

This is a well-written and insightful Discussion that presents important behavioural and ecological data from an understudied group (male hawksbills). With improvements in structure, clearer discussion of limitations, and stronger conservation framing, it will significantly strengthen the manuscript’s impact.

The section could benefit from clearer sub-structuring. Right now, findings, comparisons, and interpretations blend without transitions. Consider explicitly dividing into:

- Diet composition and selectivity

- Behavioural time budgets and ecological implications
- Prey availability vs. preference
- Methodological limitations and biases
- Implications for conservation

While camera placement and low prey visibility are acknowledged earlier, they should be briefly restated here. This helps situate interpretations in light of methodological constraints.

- Suggested sentence:
- “It is important to note that dorsal camera placement may have limited our ability to detect some feeding events or accurately identify cryptic prey, potentially skewing bite data toward more exposed or identifiable species.”

Sex bias: The dataset is overwhelmingly male (5M:1F). Discuss how this may limit the generalisability of behavioural findings to females, especially regarding feeding time and habitat use.

Implications for conservation/ future recommendations

This section would benefit from a forward-looking paragraph at the end. Consider suggesting:

- Comparative studies across sexes, life stages, or seasons
- Using dual camera placement (ventral + dorsal)
- Expanding the taxonomic resolution of prey (e.g., via eDNA from feeding grounds)
- Longitudinal tracking of individual foraging site fidelity

Congratulations on a well-structured and thoughtful study. This contribution to sea turtle ecology is certainly novel, timely, and important!

Best wishes and kind regards,

Amy Jones

Declarations

Potential competing interests: No potential competing interests to declare.