

Automated roadside video surveys for detection and monitoring of damage to coconut palms by coconut rhinoceros beetle, *Oryctes rhinoceros*

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Abstract

Coming soon!

Author summary

Coming soon (if necessary)

Construction Notes

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Example PLOS Computational Biology article

<https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1007823>

Introduction

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Materials and methods

Data acquisition: recording roadside videos using a smart phone

Roadside videos were recorded using a smart phone (Samsung Galaxy S10) attached the exterior of a vehicle using a magnetic mount (Fig 1). Videos were recorded using the free OpenCamera app (url) and location was recorded using the free GPSlogger app (url). Details for mounting the smart phone and setting app parameters are available in S1.



Fig 1. Smart phone attached to a vehicle with a magnetic mount.

Digital image analysis: detecting CRB damage in video frames

Object detector development

Data analysis workflow

Visualization: mapping CRB damage

An interactive web map for each survey is generated using QGIS version 3.14 using the **qgis2web** plugin. QGIS reads survey data directly from a Spatialite database. The database and a Python script for generating maps are available in a public repository, <https://github.com/aubreymoore/Guam-CRB-damage-map>. The most current web map is publicly available on an HTML page stored in this repository, <https://aubreymoore.github.io/Guam-CRB-damage-map/>.

Results

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- 1. react
- 2. diffuse free particles
- 3. increment time by dt and go to 1

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Discussion

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Conclusion

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information, see S1 Appendix.

Supporting information

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Acknowledgments

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