

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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