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)

Introduction

Coming soon!

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.

Digital Image Analysis: Detecting CRB Damage in Video Frames

Visualization: Creating a CRB Damage Map

Results

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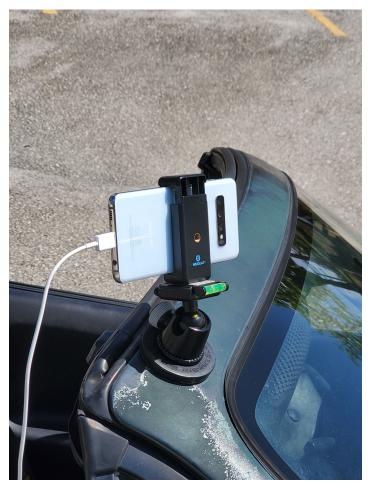


Fig 1. Smart phone attached to a vehicle with a magnetic mount.

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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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Supporting information

S1 Fig. Bold the title sentence. Add descriptive text after the title of the item (optional).

S2 Fig. Lorem ipsum. Maecenas convallis mauris sit amet sem ultrices gravida. Etiam eget sapien nibh. Sed ac ipsum eget enim egestas ullamcorper nec euismod ligula. Curabitur fringilla pulvinar lectus consectetur pellentesque.

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Acknowledgments

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References

- 1. Conant GC, Wolfe KH. Turning a hobby into a job: how duplicated genes find new functions. Nat Rev Genet. 2008 Dec;9(12):938–950.
- 2. Ohno S. Evolution by gene duplication. London: George Alien & Unwin Ltd. Berlin, Heidelberg and New York: Springer-Verlag.; 1970.
- 3. Magwire MM, Bayer F, Webster CL, Cao C, Jiggins FM. Successive increases in the resistance of Drosophila to viral infection through a transposon insertion followed by a Duplication. PLoS Genet. 2011 Oct;7(10):e1002337.

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