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PRESS RELEASE

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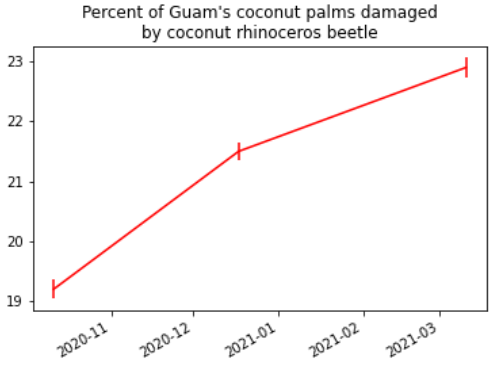
UOG survey: 23% of coconut palms show rhino beetle damage

Bimonthly island-wide roadside image surveys indicate that 23% of Guam's coconut palms, or one in five, show signs of attack by coconut rhinoceros beetles.

The CRB damage surveys use an innovative method developed by University of Guam Professor Aubrey Moore, who holds a doctorate in entomology. High-definition digital images are recorded along roadsides of all major routes at a rate of one per second by a smart phone attached to a vehicle. In the lab, a computer program developed using an artificial intelligence technique called deep learning examines every image to identify all the coconut palms, measure the CRB damage to each, and generate an interactive map. The map is published online at https://url.uog.edu/crbdamage.

Moore said the survey method is a big improvement over the standard CRB damage monitoring method, which requires visual inspection and assessment of individual palms.

"We can now quickly measure damage to tens of thousands of palms instead of a few hundred. This means that our damage estimates are much more precise," Moore said.



The data will be used to measure changes in damage in response to CRB pest control activities. Since the surveys began in October, the proportion of coconut palms with visible damage from CRB has ranged between 19% and 23%.

The Guam surveys will be conducted bimonthly. An island-wide roadside video survey is also being done on Rota for early detection of CRB damage, and there is interest in use of roadside video surveys for CRB damage elsewhere in the Pacific. For islands without extensive roads, Moore plans to evaluate drone imagery.

Moore's work on monitoring CRB damage in Guam is supported by grants from the U.S. Department of the Interior – Office of Insular Affairs and the U.S. Forest Service.

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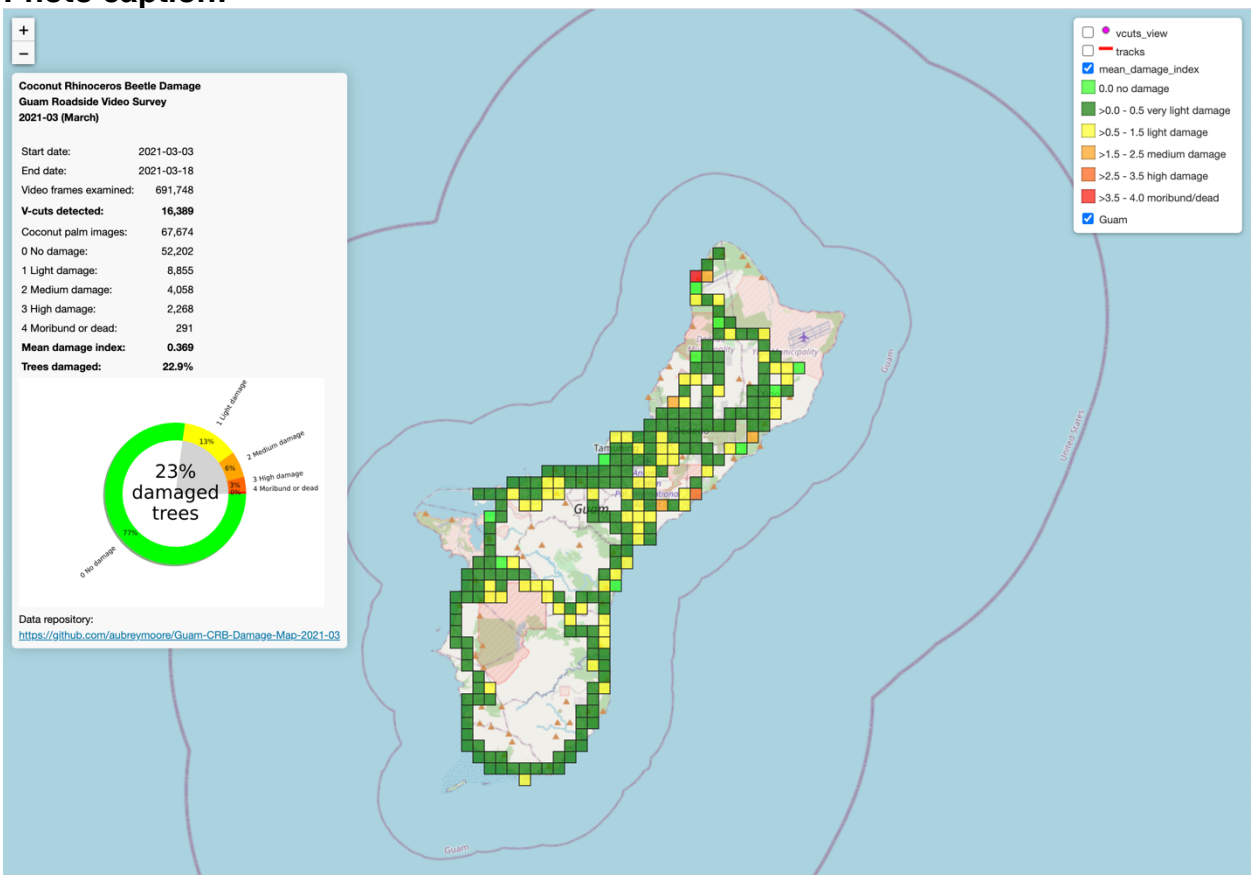
Photo caption:



2021-crb-damage-map
An interactive online map shows the level of coconut rhinoceros beetle damage to coconuts palms as assessed from major roadways throughout Guam. The map may be viewed at https://url.uog.edu/crbdamage.

Image courtesy of University of Guam