OCTOBER 2008 PROGRESS REPORT

Guam Coconut Rhinoceros Beetle
Eradication Project

Grant Program: Forest Health Management, Cooperative Lands

Project: #08-DG-11052021-126. Emergency Eradication of Coconut Rhinoceros Beetle

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This grant provides funding for sanitation of host material and mass trapping of the coconut rhinoceros beetle (CRB), *Oryctes rhinoceros*, on Guam.

Project Management and Staffing

Shortly after detection of the coconut rhinoceros beetle (CRB) on Guam in September, 2007, an Incident Command System (ICS) was set up to manage the Guam CRB Eradication Project. This ICS is under the leadership of the Guam USDA-APHIS port director and the director of the Guam Department of Agriculture. The ICS produces detailed reports of operations, has a weekly planning meeting and its members participate in biweekly telephone conference calls with stakeholders, including the US Forest Service officials. The project coordinator maintains a project web page at http://www.guaminsects.net/uogces/kbwiki/index.php?title=Oryctes_rhinoceros.

In addition to this Forest Service grant, the project is funded by USDA-APHIS and the Government of Guam. Funds from this grant have been used to hire an operations manager, a sanitation crew supervisor, and a sanitation crew with 6 members.

Sanitation

Immature CRB feed on decaying coconut material. The objective of sanitation is to eliminate breeding sites by removing this material. Material infested with CRB must be treated to kill all CRB before transportation and disposal. The sanitation crew locates potential breeding sites within the CRB infestation area. These sites contain standing dead coconuts, fallen logs, rotting coconut stumps, and piles of coconut trimmings and nuts. We had originally planned to run this material through a chipper for subsequent composting in windrows. Unfortunately, initial attempts with a chipper failed because the wet, fibrous material clogged the output chute of the machine.

We currently handle the material by bucking it into manageable pieces with chain saws. These pieces are loaded into role-off bins for transport to a centralized fumigation site within the infestation area. Piles of material are sealed in tarps and fumigated with methyl bromide. After fumigation, the material is trucked to a land fill and buried. Green waste from hotels within the quarantine area is trucked to the fumigation site and merged with the material collected by the sanitation crew. Hotels pay for trucking and fumigation.

Recently, while sanitizing a new infestation on private land at Urunao at the northern tip of Guam, we have had success in burning infested material on site. We have been unable to dispose of CRB breeding material collected at Faifai Beach. This beach has no road access, making it impossible to haul material to the fumigation site. CRB breeding material collected at Faifai was placed in piles on the beach. These were sealed under tarps and fumigated using ?? tablets. We will attempt to burn the piles during the coming dry season.

Trapping Network

An extensive network of CRB pheromone traps has been established on Guam. These traps were constructed by the Guam Department of Agriculture Agricultural Development Service and they are baited with Oryctalure®, a commercially available aggregation pheromone which attracted both male and female adult beetle. The traps have two purposes. Mass trapping within the known infestation area at a density of one trap per acre is intended to kill adults before they damage trees. More widely dispersed traps throughout the island are intended to detect spread of the infestation. XXXX traps are currently deployed. Two trap inspectors are employed by the project, under APHIS-CAPS funding to visit each trap biweekly. In addition, traps on US military land and at one hotel are checked by collaborators. Trap data is immediately entered into a database maintained on the project web site. This database facilitates analysis and mapping. An animated Google Earth display of the trap data is available at http://guaminsects.net/oryctes/gev.php. (Note: The free Google Earth client software must be installed on your computer to view this display.)

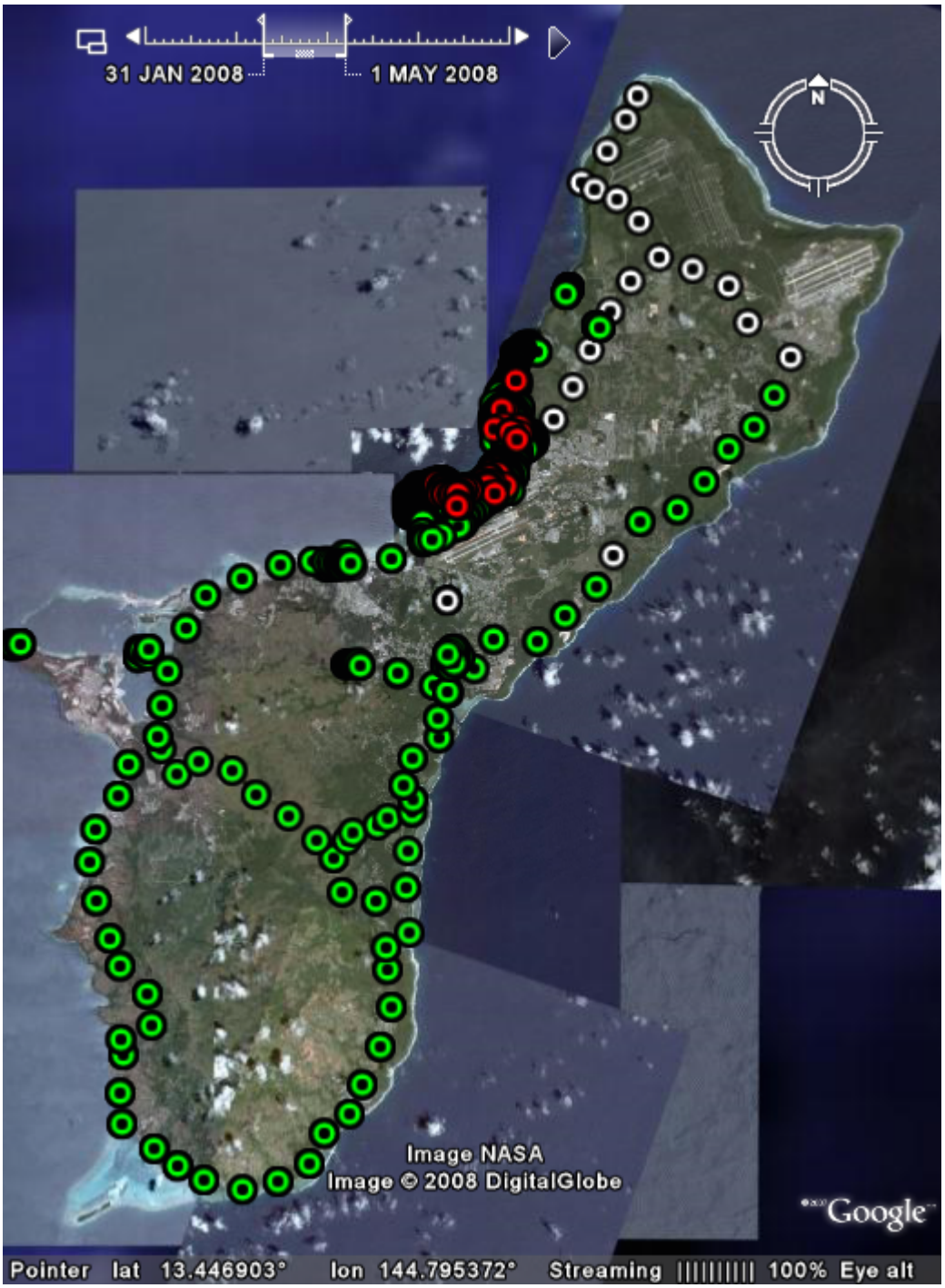
Mass trapping. Mass trapping does not appear to be very effective as a tactic for killing adult beetles before they damage trees. In July, 10 moths after the initial detection of CRB on Guam, we surveyed the Pacific Islands Club Resort property and found that 73 out of 581 coconut palms growing there had been damaged by CRB, despite the fact that the hotel had maintained 28 pheromone traps on the 8.5 ha property since October 19, 2007. Pheromone traps baited with Oryctalure® do not appear to be very attractive to CRB flying in the Guam hotel property landscape. On XXXXX I released six marked, male beetles at the Guam Visitor Bureau (lat/lon). All of these readily took flight, but none were recovered in nearby pheromone traps. It has been suggested that trap catch can be improved by using rotting coconut material as a synergistic co-attractant in addition to the Orytalure®. To test this, we have added rotting coconut material to our regular vaned bucket traps and deployed a new trap design which is a five foot PVC tube half filled with rotting coconut. To date, we have no evidence to suggest that addition of rotting coconut enhances trap catch.

Detection Traps. Detection traps show that the main CRB infestation is still localized in the Tumon Bay hotel area of Guam. However, there have been trap catches not associated with the known infestation:

- Two traps in central Guam (in Chalan Pago Village and Mangilao Village) caught beetles, but surveys found no nearby CRB damage or immatures.
- Two beetles have been caught on land occupied by the US military: one on Navy land at NCTMS, and one on Andersen Air Force Base. These findings complicate eradication efforts because it is difficult to obtain security passes for entry onto military land.
- A single beetle was caught in a trap at the hard fill site in Yigo Village which is being used as a dump for green waste. It is probable that this beetle was accidentally transport to this site as a hitch-hiker.
- Beetles caught in traps at Urunao, just south of the northern tip of Guam lead to the discovery of a breeding site on private land. Breeding material is being removed and destroyed with the cooperation of the land owners.

Figure 1. Vaned bucket trap.


Figure 2: Tube trap.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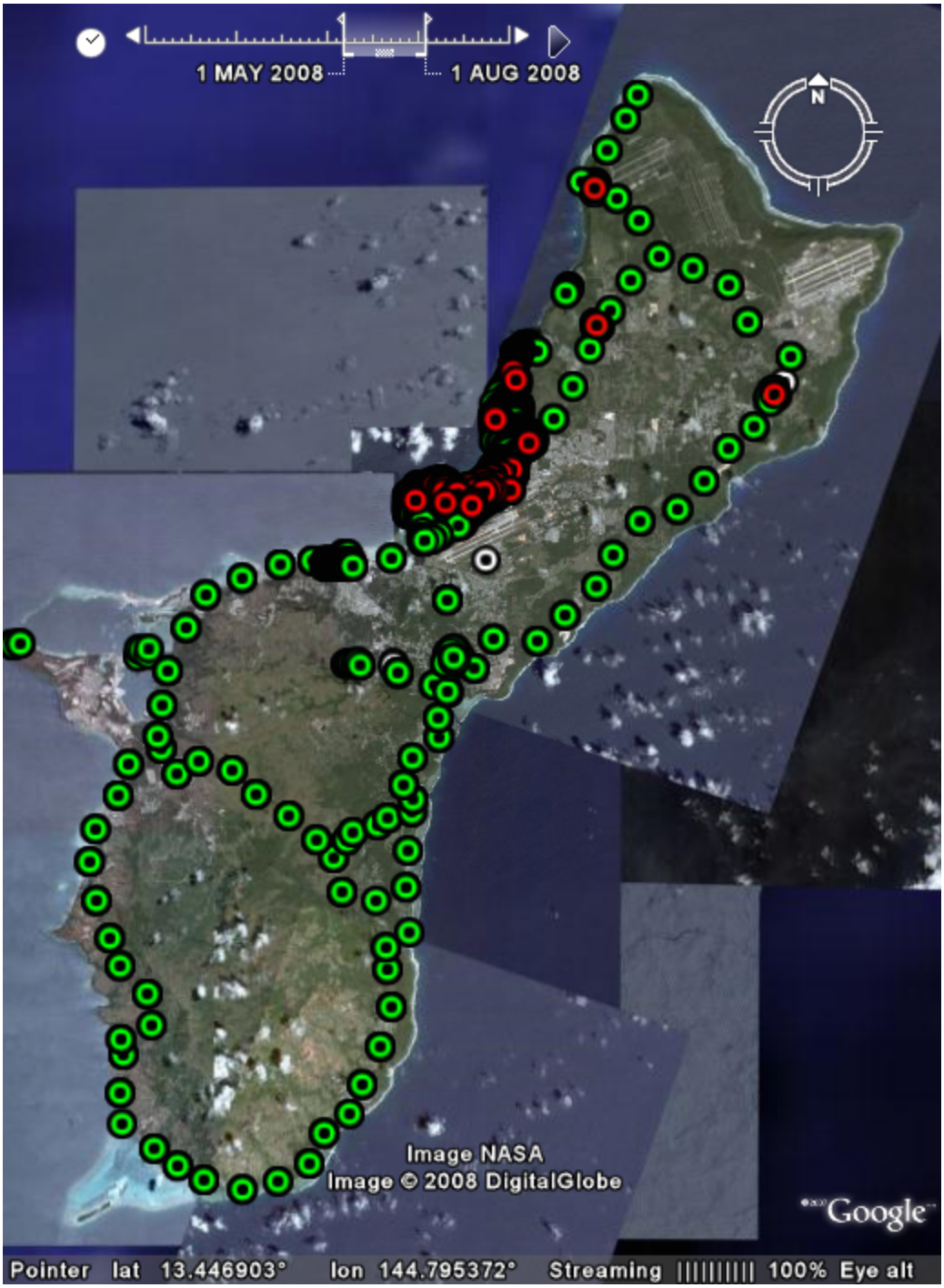
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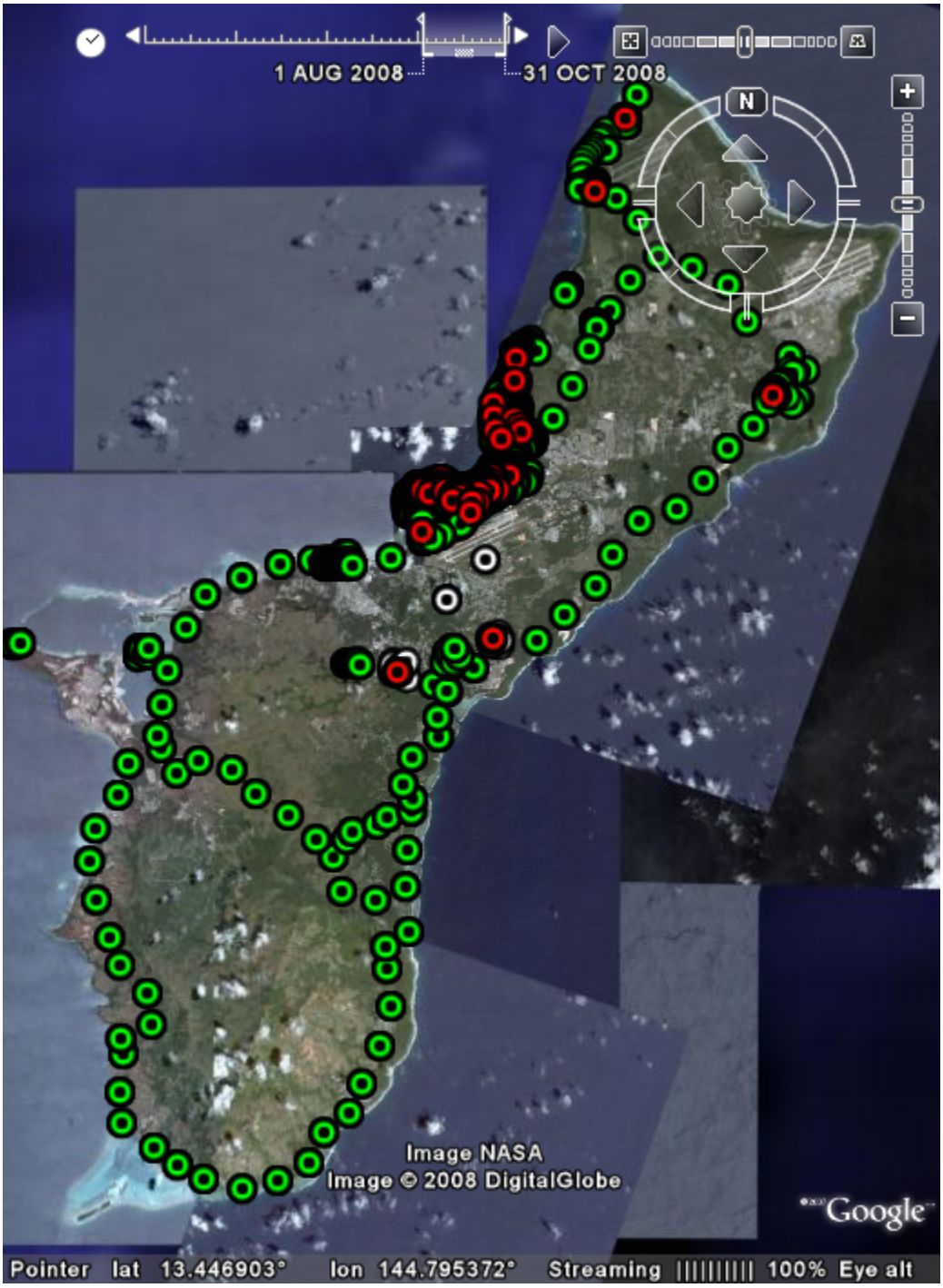
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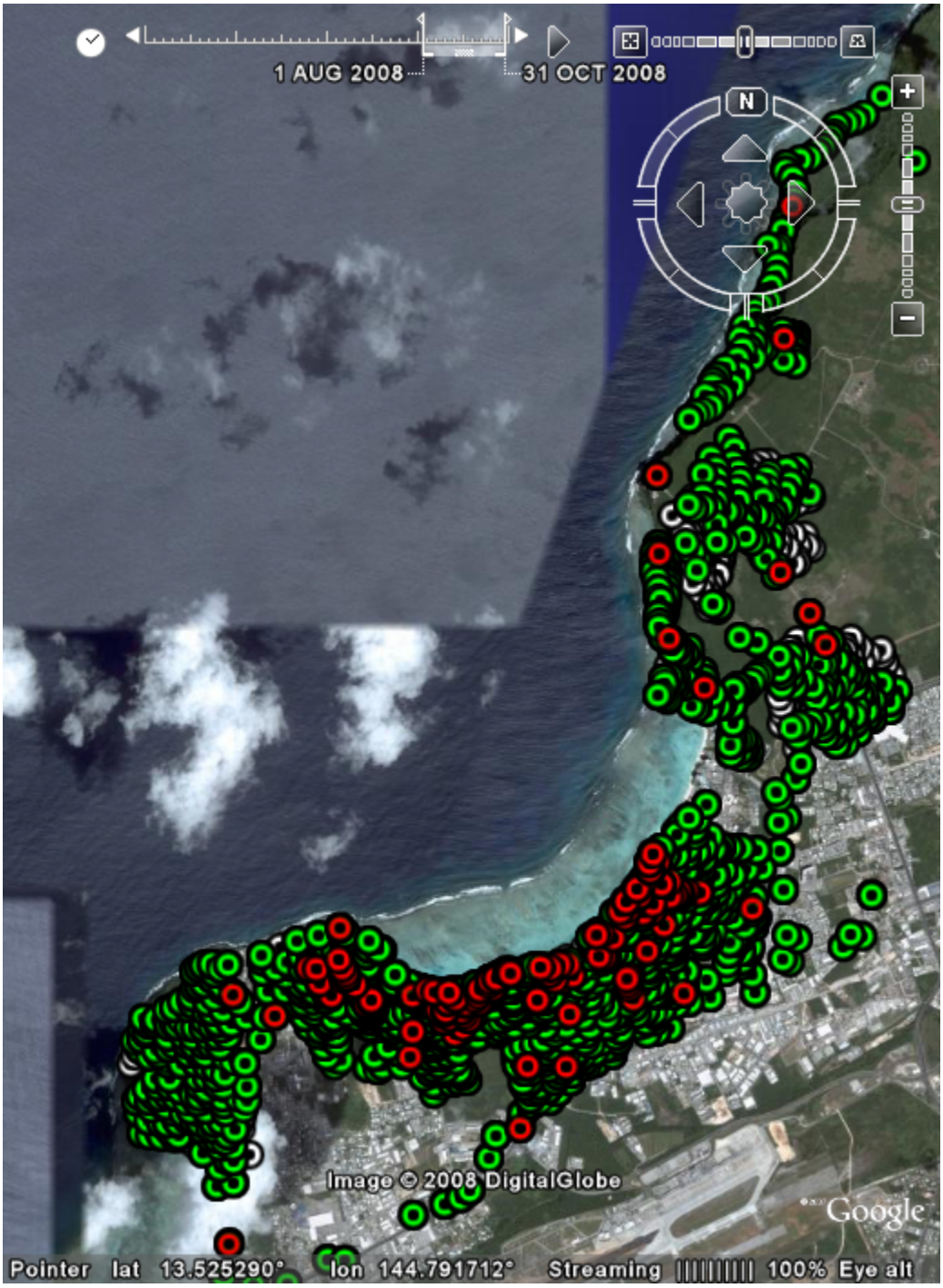
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Additional Activities

Survey of CRB Damage to Coconut Palms in a Hotel Landscape

Pesticide Application

Development of Acoustic Detection Technology