

# Free Cell Phone Apps for Pest Surveys

Aubrey Moore

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We will have a look at 2 free smart phone apps for collecting field data associated with pest surveys: **iNaturalist** and **EpiCollect5**.

- Both apps have the following features:
- Free apps, data uploaded to free online databases
- Run on **Android** (download from **Google Play**) and **iPhone** (download from **App Store**)
- Uses the phone's GPS chip to record latitude and longitude
- Uses the phone's camera to record images (optional)
- Does not require a cellular connection for collecting field data
- Data, including images, are uploaded to online databases using a cellular or WiFi connection

# 1 iNaturalist

iNaturalist web site: <https://www.inaturalist.org>

## 1.1 Example iNaturalist Project: Insects of Micronesia

Project URL: <https://www.inaturalist.org/projects/insects-of-micronesia>

This site is intended to facilitate identification of insects from digital photographs taken within Micronesia. To print insect pin labels for specimens with associated observations in this project, go to <http://guaminsects.net/iNatLabels/index.php>.

## 1.2 Example iNaturalist Project: Guam *Vespa tropica* Survey

Project URL: <https://www.inaturalist.org/projects/vespa-tropica-on-guam>

This project was set up to facilitate collecting observations of *Vespa tropica*, the greater banded hornet, a newly arrived invasive species on Guam. The latest version of a University of Guam fact sheet on *V. tropica* is available from: [https://github.com/aubreymoore/Vespa-tropica/raw/master/vespa\\_tropica.pdf](https://github.com/aubreymoore/Vespa-tropica/raw/master/vespa_tropica.pdf) All iNat observations of *V. tropica* on Guam are automatically aggregated by this project.

## 1.3 Create an iNaturalist Project Database

## 1.4 Download Project Data

## 2 EpiCollect5

EpiCollect5 web site: <https://five.epicollect.net/>

### 2.1 Example EpiCollect+ Project: CRB Damage Survey

Go here: [3](#).

### 2.2 Create an EpiCollect5 Project Database

### 2.3 Download Project Data

### **3 Appendix: EpiCollect+ Project Example: CRB Damage Survey**


Please see next page.

# Notes on Data from Coconut Rhinoceros Beetle Tree Damage Surveys

Aubrey Moore

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- Data were collected using Android cell phones and the EpiCollect Plus app (<http://www.epicollect.net/>).
  - A custom EpiCollect Plus project data form was used (Fig. 1).
  - Observations were uploaded into an online database at the end of each day (Fig. 2).
  - At the end of the project, all observations were downloaded in comma separated values (CSV) format (**crb\_tree\_inspection.csv**).
- QGIS (<http://www.qgis.org/en/site/>) was used visualize survey results (Figs. 4 and 5).
  - All GIS data used in generating maps are available in the folder **aafb-gis3**.


[Create Project](#)
[Instructions](#)
[Privacy Policy](#)

Logged in as Aubrey Moore (aubrey.moore2013@gmail.com)
 [Sign out](#)

[Home](#) >
 [Project : crb\\_tree\\_inspection](#) >
 Form Builder

Save Project

crb\_tree\_inspection

Add a form

Text fields

Text

Numeric

Date

Time

Drop-down list

Radio Buttons

☐ Option One
 ☐ Option Two

Check boxes

☒ Option One
 ☒ Option Two

Multi-line Text

Media fields

Links with other forms

Form : Drag fields from the column on the left into this column

crb\_tree\_inspection

ID: crb\_tree\_inspection\_key

date (MM/dd/yyyy)

ID: ecplus\_crb\_tree\_inspection\_ctr13

time (HH:mm:ss - 24 hours)

ID: ecplus\_crb\_tree\_inspection\_ctr12

location

ID: ecplus\_crb\_tree\_inspection\_ctr14

photo

ID: ecplus\_crb\_tree\_inspection\_ctr15

type of palm

☐ coconut
 ☐ other palm

ID: ecplus\_crb\_tree\_inspection\_ctr16

single tree or group of trees

☐ single
 ☐ group

ID: ecplus\_crb\_tree\_inspection\_ctr19

CRB damage

☒ one or more of youngest 4 fronds damaged
 ☒ 1 or more older fronds damaged
 ☒ bore hole(s) visible
 ☒ no CRB damage
 ☒ standing dead palm (snag)

ID: ecplus\_crb\_tree\_inspection\_ctr17

notes

ID: ecplus\_crb\_tree\_inspection\_ctr18

Project Validation


Project Valid

This project has no errors.

0 of 0

[previous](#)
[next](#)

Figure 1: EpiCollect Plus custom data form.


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 [Sign out](#)

[Home](#) >
 [Project : crb\\_tree\\_inspection](#) >
 Form : crb\_tree\_inspection

### crb\_tree\_inspection - crb\_tree\_inspection

Table View
Map

Filter List By
crb\_tree\_inspection

Clear Filter
Show/Hide Fields
Download
Share




Time Created	crb_tree_inspection	date	time	location	photo	type of palm	single tree or group of trees	CRB damage	notes
19 Feb 2015 00:18:57	67cb4f01-848a-42e0-95e9-eaf33277fe70	02/19/2015	10:15:58	13.4306003, 144.8009441 <a href="#">Show Details</a>		coconut	single	one or more of youngest 4 fronds damaged, 1 or more older fronds damaged, bore hole(s) visible	Tree damage at uog/pesticide being applied
19 Feb 2015 00:21:05	941a088a-cde7-4b5f-a49f-77134f6b424f	02/19/2015	10:19:20	13.4305506, 144.8009299 <a href="#">Show Details</a>		coconut	single	one or more of youngest 4 fronds damaged, 1 or more older fronds damaged, bore hole(s) visible	Tree damage at uog/pesticide being applied
19 Feb 2015 03:40:11	4ebd0699-2e55-47c-aedd-7165089f7922	02/19/2015	13:35:18	13.5693031, 144.9184816 <a href="#">Show Details</a>		coconut	group	one or more of youngest 4 fronds damaged	One tree has four months old damage.....
								one or more of youngest	

Figure 2: View of online EpiCollect database.

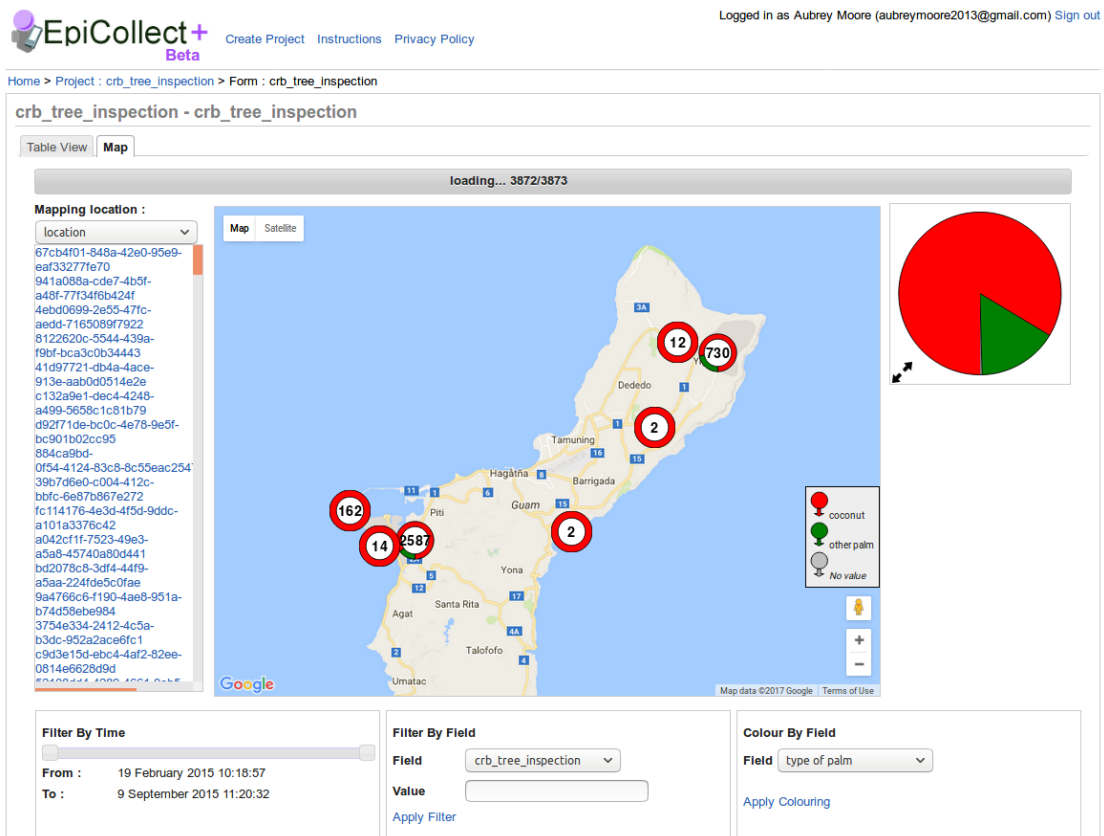


Figure 3: Graphical summary of data.



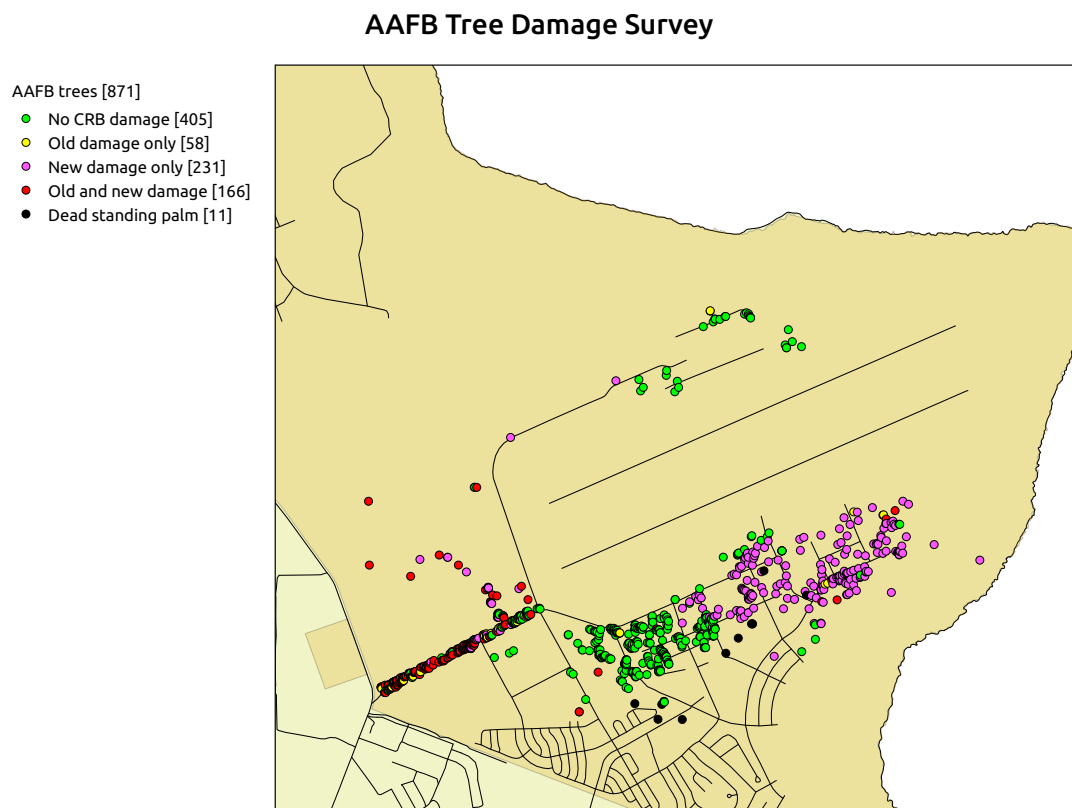


Figure 4: Visualization of surveys results from Andersen Air Force Base.

## Navy Coconut Rhinoceros Beetle damage Survey July 2015

### Legend

Navy-trees [2747]

- No CRB damage [1814]
- Old damage only [126]
- New damage only [329]
- Old and new damage [475]
- Dead standing palm [3]

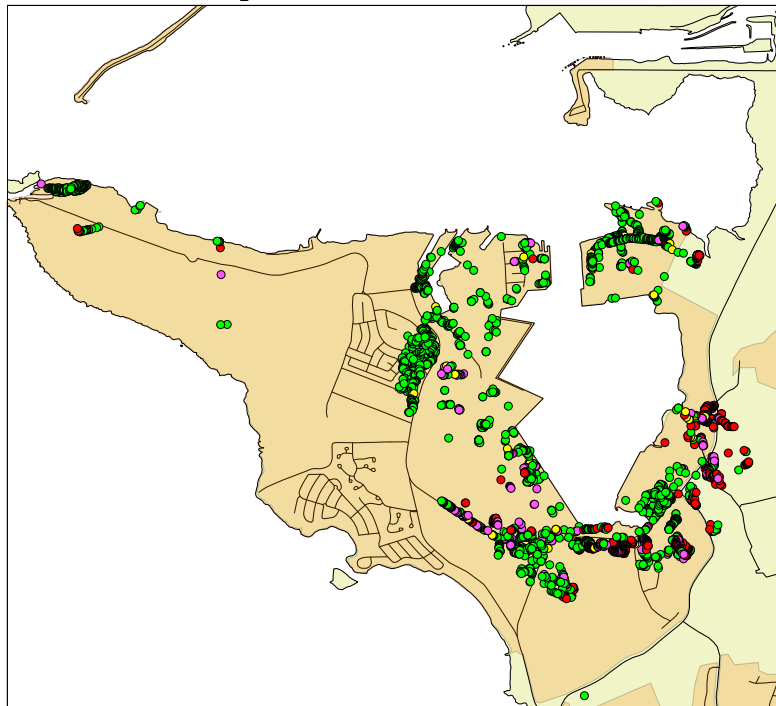


Figure 5: Visualization of survey results from Big Navy.