Surveillance Programme for the American Palm Weevil *Rhynchophorus palmarum* in Grenada

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R. palmarum adult

Introduction / Background

- *R. palmarum* is most important pest of Coconuts and ornamental palms in Grenada
- The pest vectors the plant parasitic nematode *Bursaphelenchus cocophilus,* the cause of Red Ring Disease
- After hurricane Ivan plant death more from infestation by life stages of *R. palmarum* than from Red Ring disease.
- Impact of *R. palmarum* felt more significanty after the passage of hurricane Ivan (September 2004) which destroyed 70% of mature plants (beetle/tree ratio up).
- 2004 – 2012 significant imports from SVG (500 bags (100 mature nuts) / week)

Tunnels of pupa in trunk

Pupal case of R. palmarum

R. palmarum vs Red Ring Disease

Chronology of Events : leading up to the survey

- 1999 – Rhyncolure from ChemTica International in Costa Rica
- 2011 – RPW Surveillance (Miami)
- 2012 – Coconut Identified as ‘Focus Crop’ by MOALFFE
- 2012 – joint training with Agronomy and Extension Divisions (Brazilian trap designs)
- 2012 – Involvement of Agricultural shops in retailing Rhyncolure
  TAMCC Student – Water Bottle traps
- 2012 – Widespread Use of bottle traps
- 2014 - Survey (use of bucket traps)

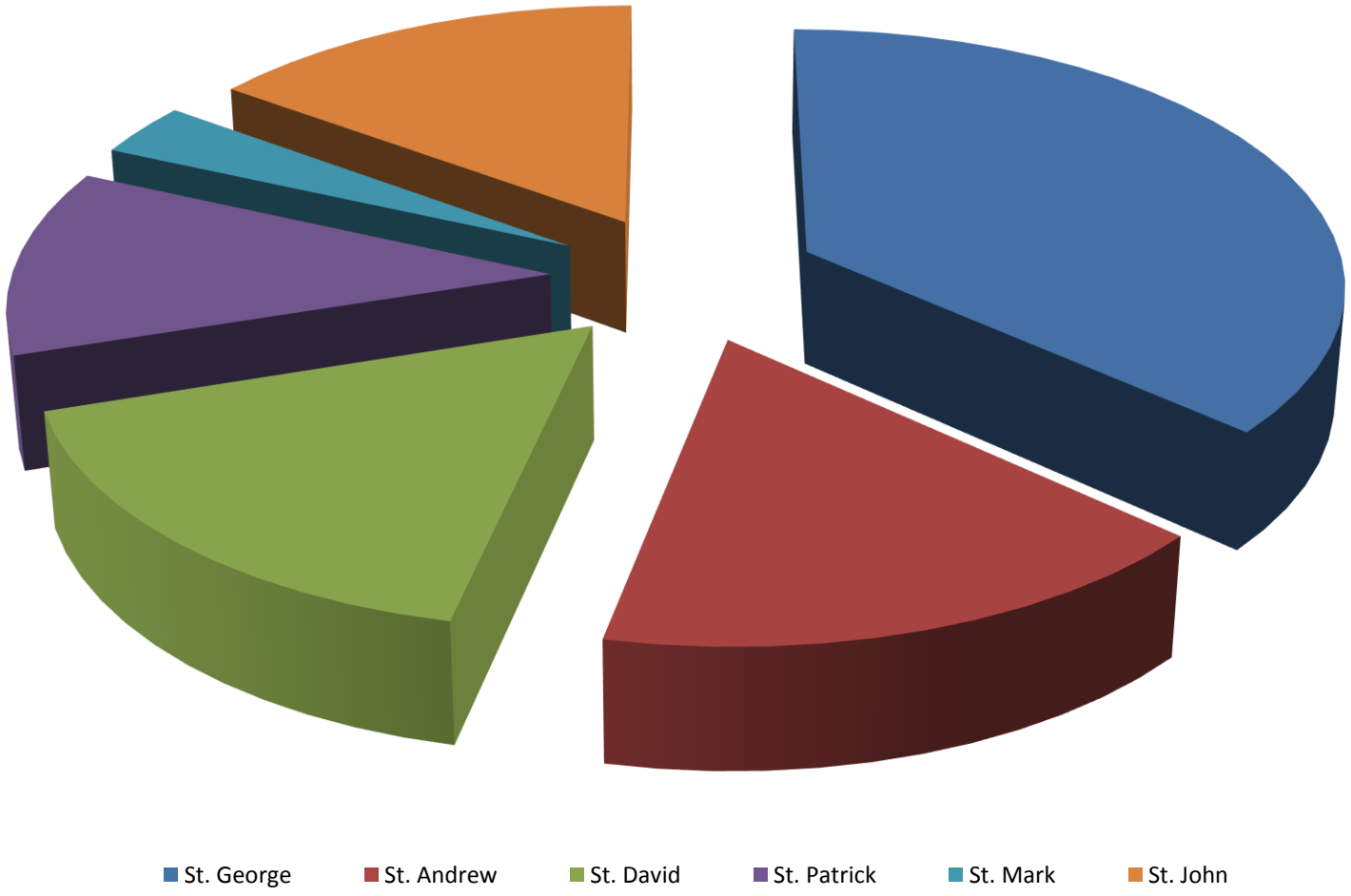
Objectives of Survey

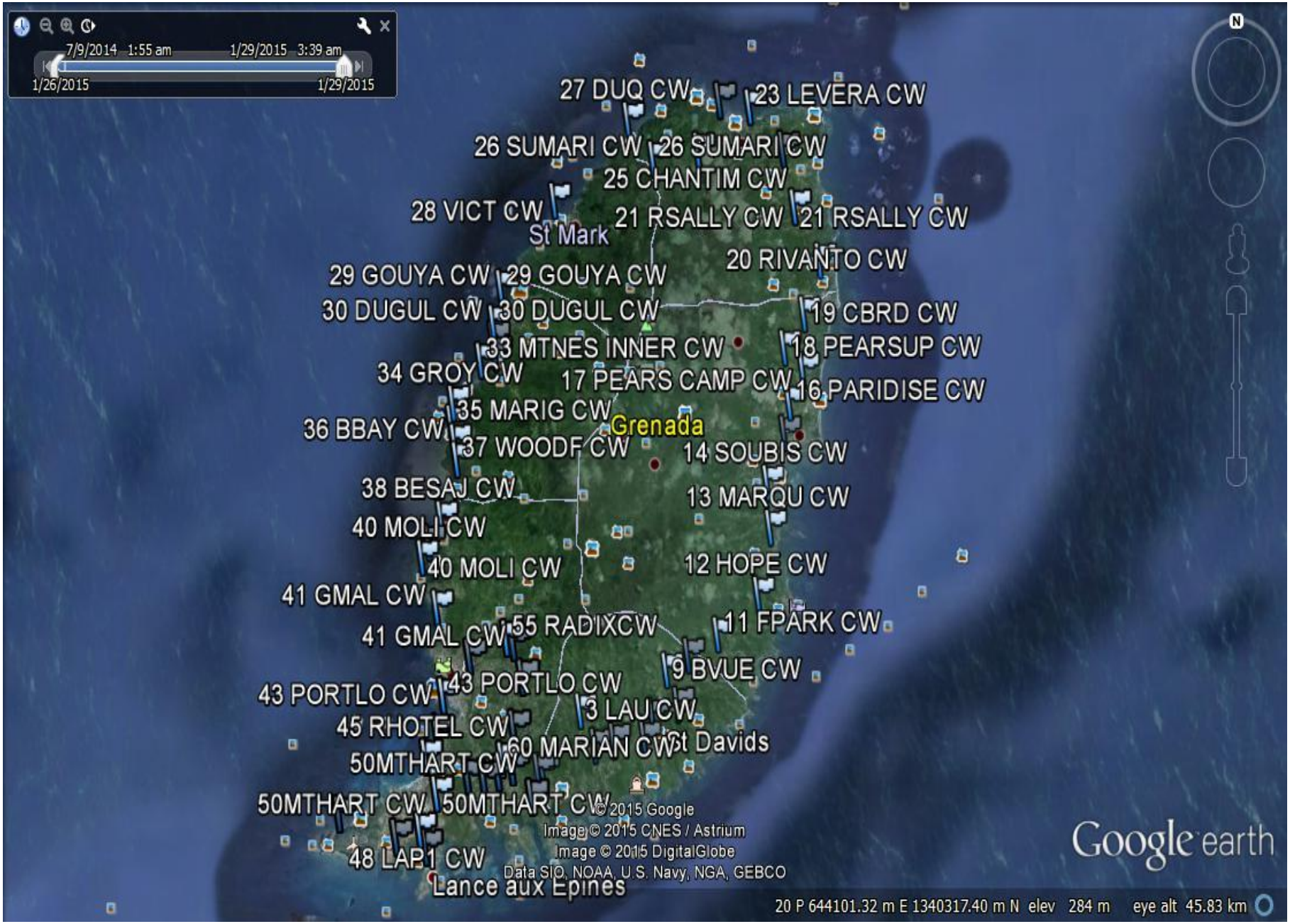
- To determine infestation levels (index)
- To determine distribution of R. palmarum
- To identify hotspots
- To act as a precursor to Mass Trapping Programme and RPW Survey
- To act as a platform for data collection and training of MOALFFE technical staff.

Survey details

- Aim to have one trap per square kilometre
- Pheromone changed after three (3) months
- 4 trap routes ; two trappers
- 60 traps distributed islandwide
- Weekly servicing
- Use of USDA 5 gallon buckets baited with Rhyncolure (10% Molasses solution placed one inch high into bucket)

R. palmarum trap distribution by Parish




7/9/2014 1:55 am
1/29/2015 3:39 am
1/26/2015
1/29/2015
27 DUQ CW
23 LEVERA CW
26 SUMARI CW
26 SUMARI CW
25 CHANTIM CW
28 VICT CW
21 RSALLY CW
21 RSALLY CW
St Mark
20 RIVANTO CW
29 GOUYA CW
29 GOUYA CW
30 DUGUL CW
30 DUGUL CW
19 CBRD CW
33 MTNES INNER CW
18 PEARSUP CW
34 GROY CW
17 PEARS CAMP CW
16 PARIDISE CW
35 MARIG CW
36 BBAY CW
Grenada
37 WOODF CW
14 SOUBIS CW
38 BESAJ CW
13 MARQU CW
40 MOLI CW
40 MOLI CW
12 HOPE CW
41 GMAL CW
41 GMAL CW
55 RADIXCW
11 FPARK CW
9 BVUE CW
43 PORTLO CW
43 PORTLO CW
3 LAU CW
45 RHOTEL CW
60 MARIAN CW
St Davids
50MTHART CW
50MTHART CW
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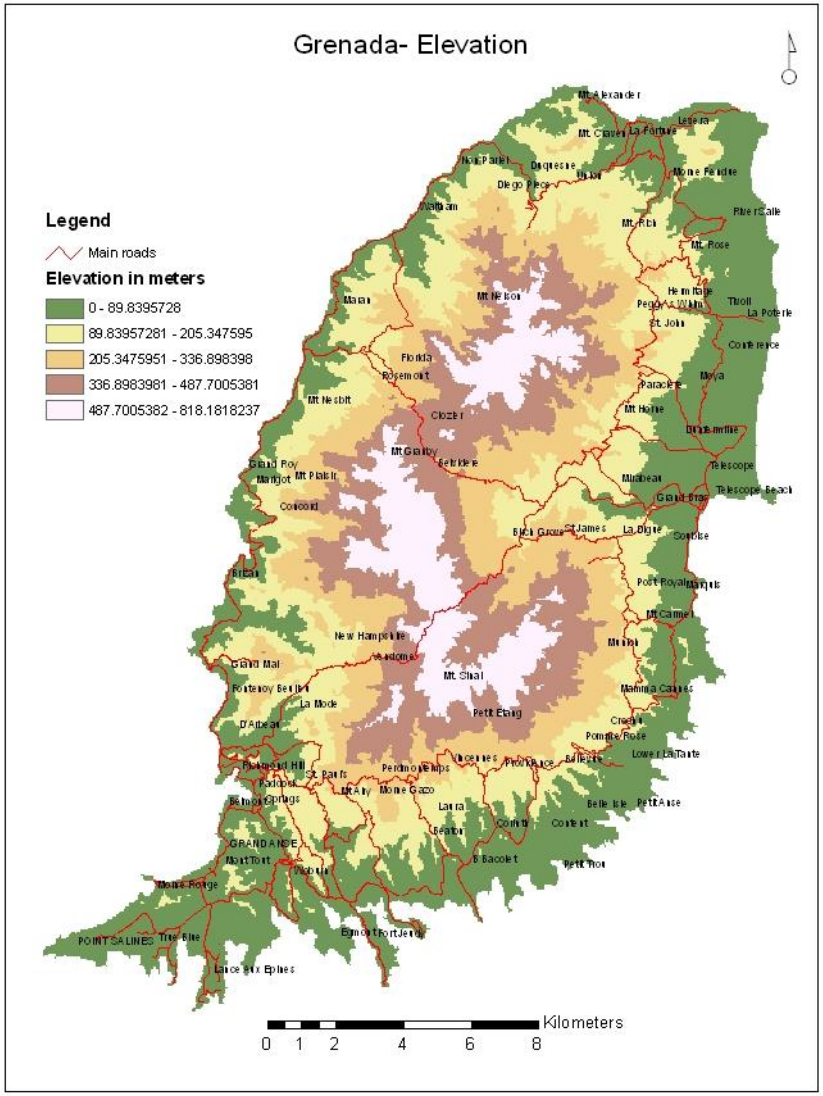
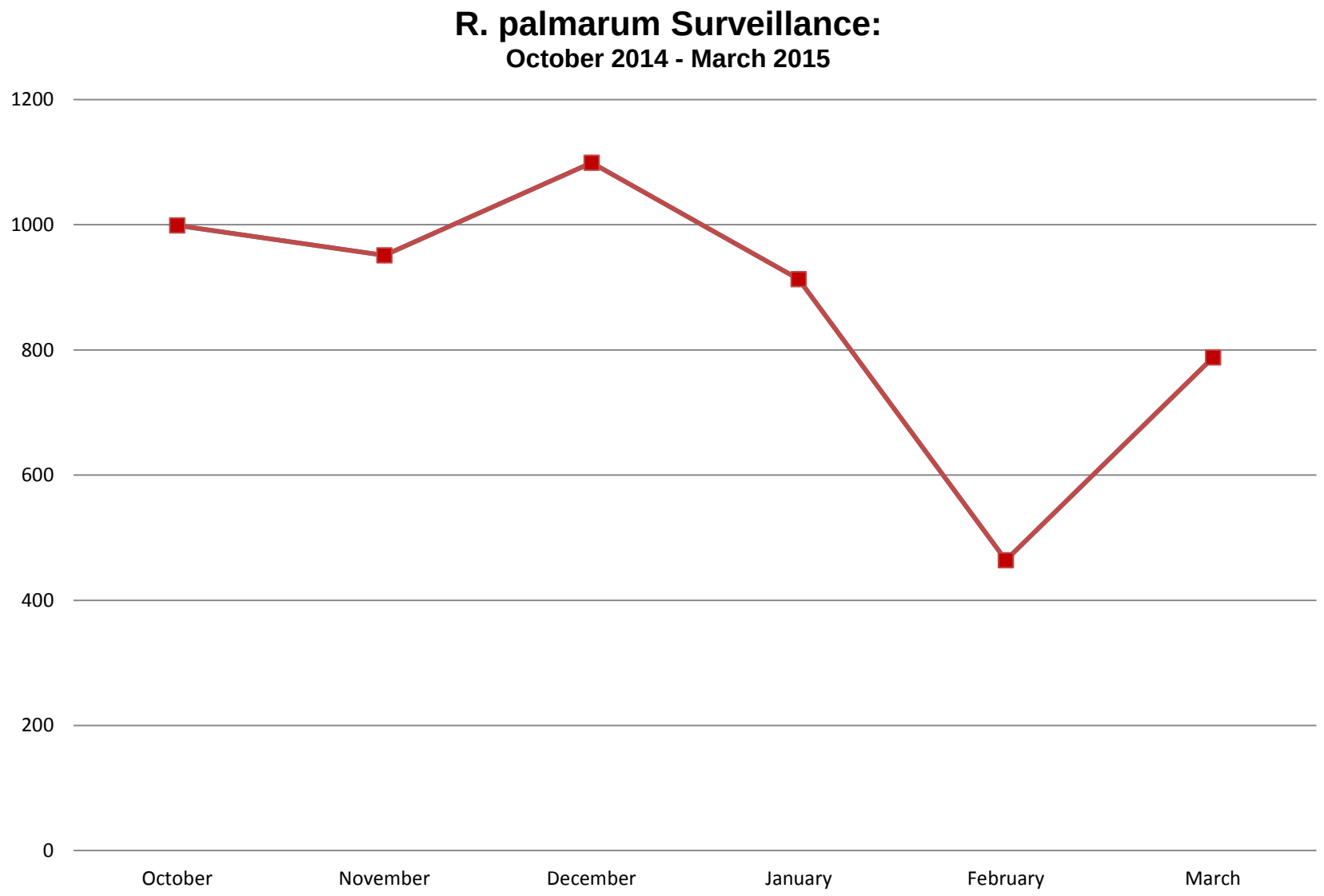
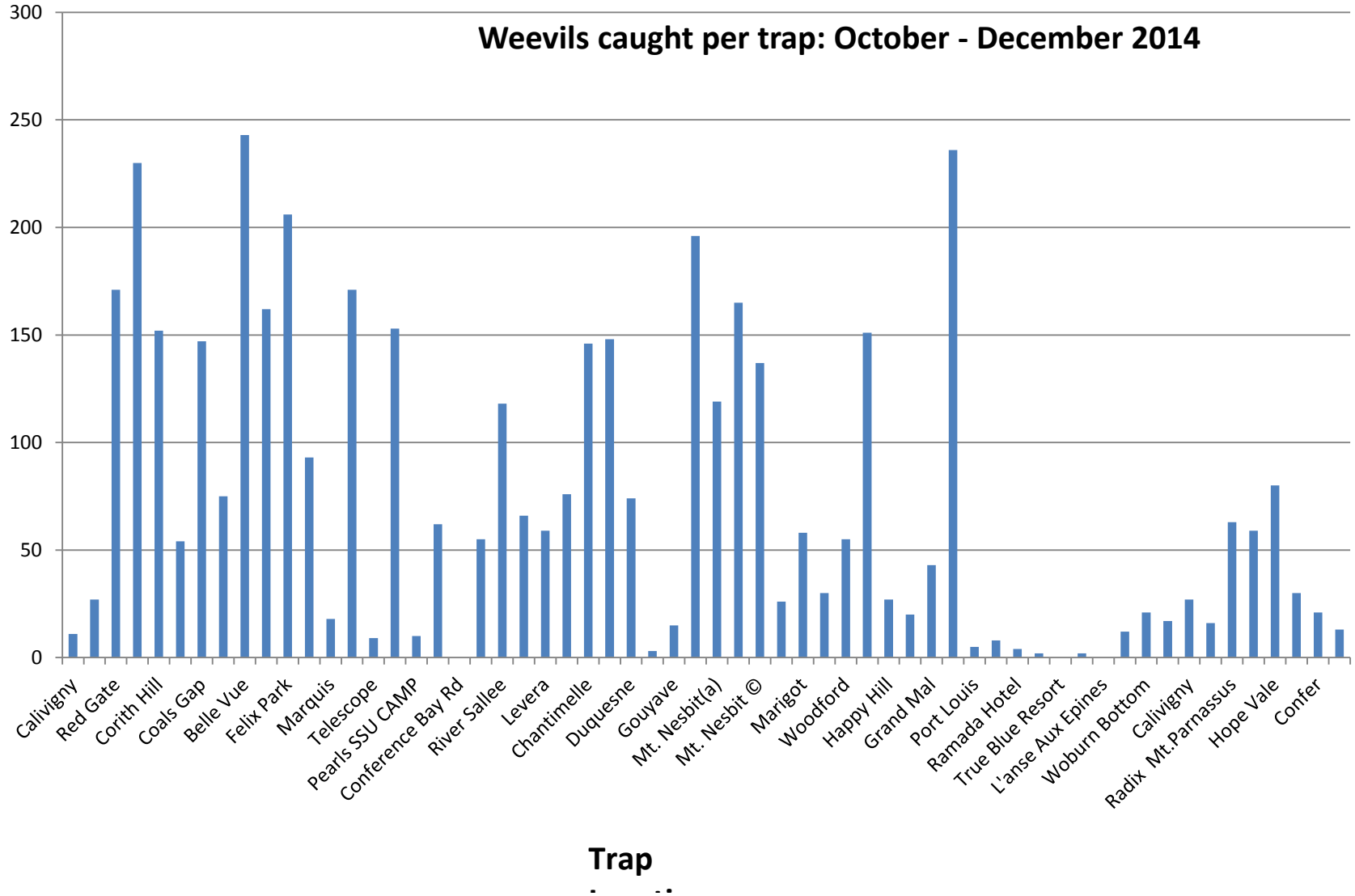
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
48 LAP1 CW
Lance aux Epines
Google earth
20 P 644101.32 m E 1340317.40 m N elev 284 m eye alt 45.83 km



Grenada - topography


R. palmarum Surveillance:
October 2014 - March 2015
1200
1000
800
600
400
200
0
October
November
December
January
February
March


Weevils caught per trap: October - December 2014
300
250
200
150
100
50
0
Calivigny
Red Gate
Corith Hill
Coals Gap
Belle Vue
Felix Park
Marquis
Telescope
Pearls SSU CAMP
Conference Bay Rd
River Sallee
Levera
Chantimelle
Duquesne
Gouyave
Mt. Nesbit(a)
Mt. Nesbit ©
Marigot
Woodford
Happy Hill
Grand Mal
Port Louis
Ramada Hotel
True Blue Resort
L'anse Aux Epines
Woburn Bottom
Calivigny
Radix Mt.Parnassus
Hope Vale
Confer
Trap

Follow Up

pupaspin.MOV

Conclusions:

- R. palmarum widespread in Grenada
- 6% of areas surveyed considered to have very high infestation levels
- 16% of areas surveyed have high infestation
- Focus of Extension work and mass trapping must begin in areas where 22% of traps located to give strong support to MOALFFE focus crop programme.


Thank YOU!