



Coqui Frog Eradication Project Lawai, Kauai

1st International Conference on Coqui Frog
Hilo, Hawaii
February 8, 2008
Keren Gundersen, KISC Project Manager

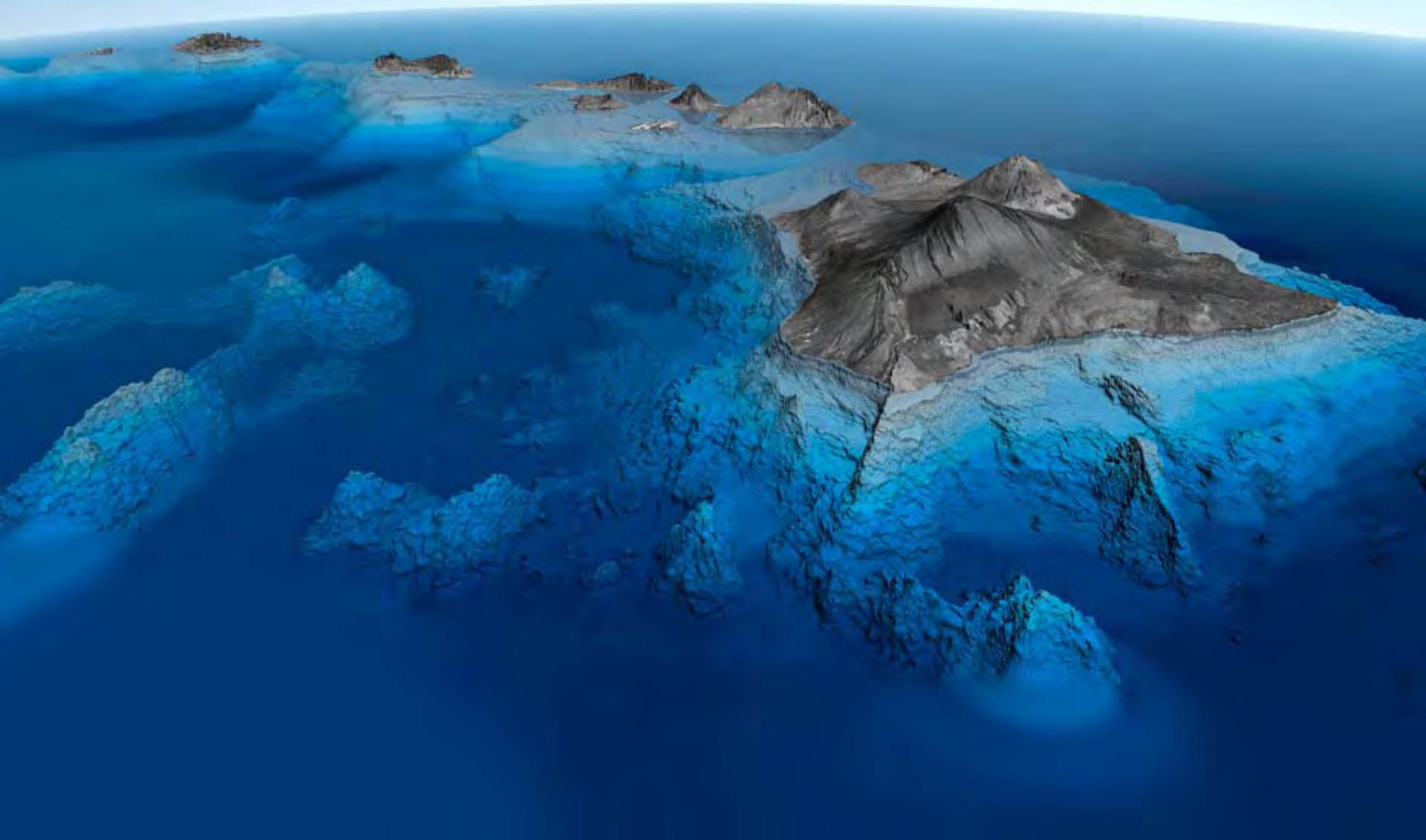
Wilfredo Falcón ©2007

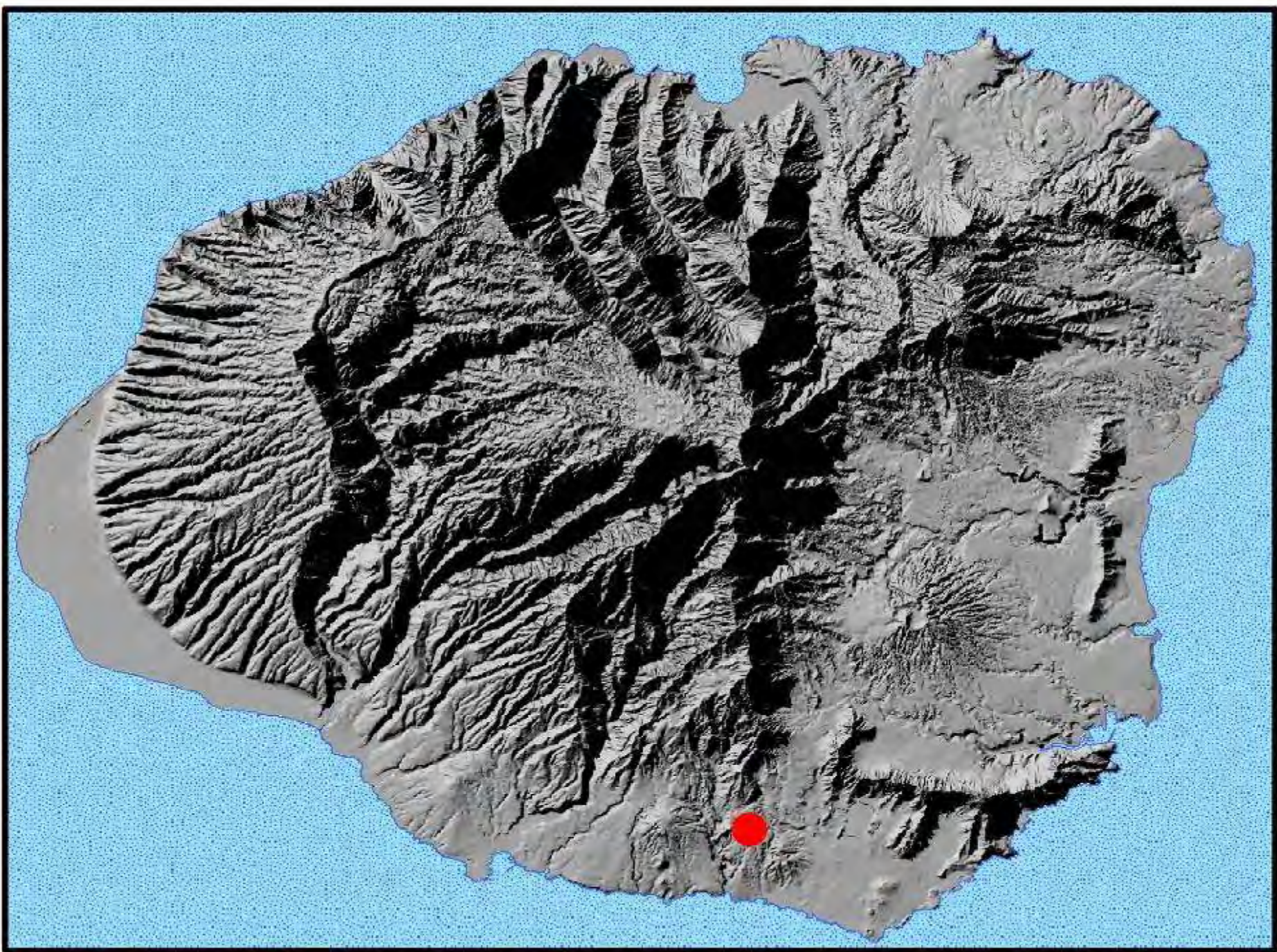
Project Overview

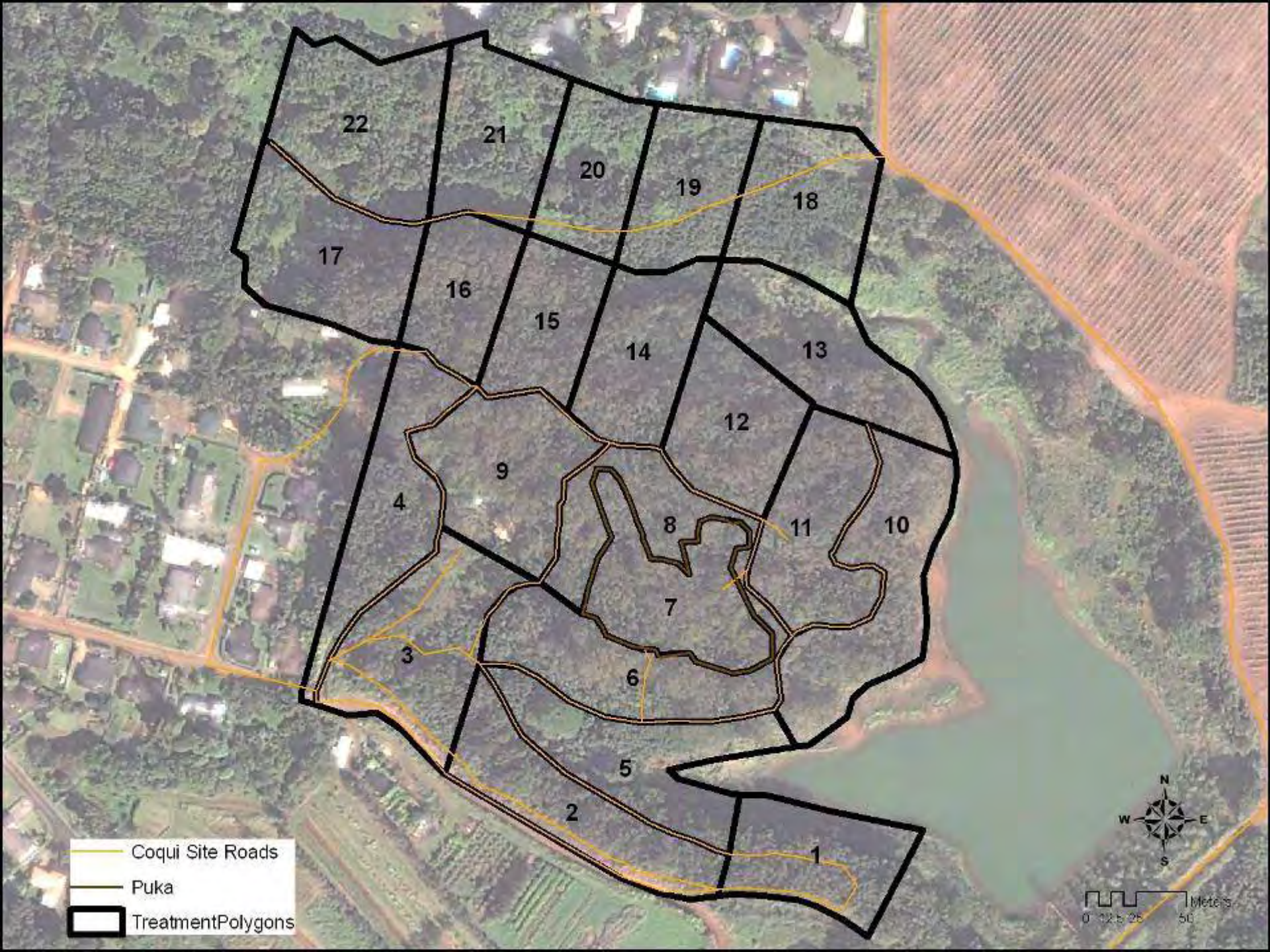
- Introduction of coqui to Kauai
- Early Efforts
- Current Efforts
- Electronic Monitoring
- Project status/projections
- Needs



👉 Kaua'i







22

21

20

19

18

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- Coqui Site Roads
- Puka
- Treatment Polygons



0 12.5 25 50 Meters

Introduction of coqui to Kauai



- Suspected introduction in 1999 to Lawai
- Coqui were likely brought in via the nursery trade
- Frogs went undetected for 2-3 years, establishing a breeding population

Early Efforts

- USDA-WS-RC – EPA approval for citric acid (2002-2003)
- Sporadic spraying (by various groups)
- Heavy foliage
- No plan
- By 2005 population had exploded and was starting to expand



Current Efforts

- Clearing
- Chemical control
 - Citric acid
 - Hydrated lime
 - Vegetation control w/herbicide
- Site monitoring
 - Coqui habitat
- Outreach



Extensive hydro-axe clearing
of vegetation

Clearing



Chemical Control

16% Citric Acid



3% Hydrated Lime



Selective use of
RoundUp and Garlon 4

Monitoring

Coqui habitat



- Long term commitment
- Will continue to continuously monitor up to 12 months after last calling frog is heard

PVC Refugia Traps

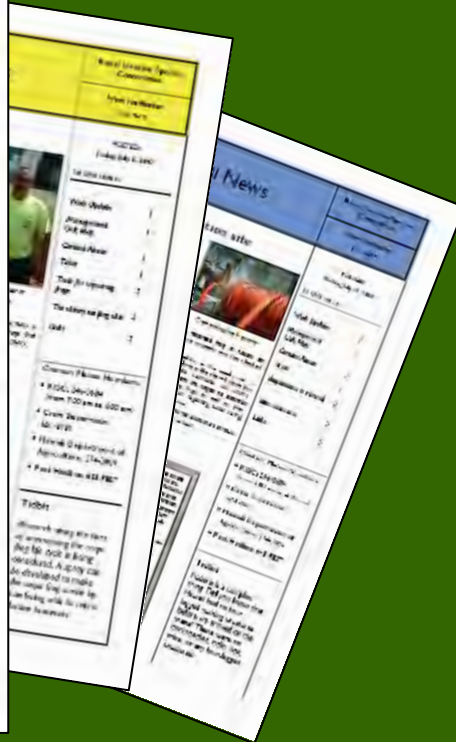


- 150 traps throughout site x 700+ days
- 1 frog captured



Weekly work notification flyers

Outreach



http://www.hear.org/kisc/coqui_news/

Worksite signage

Work Notification Policy:

<http://www.hear.org/kisc/pdfs/200704coquiworknotificationpolicy.pdf>



Coqui PSA's

Outreach

Bumper stickers



"Nuf Already!"
Pest Hotline Frog Swatter



Fairs and Events

Electronic Monitoring

Monitoring Goal:

To show a measurable decline in the coqui population (other than human observation)

- Small size (10x4 inches)
- Time activated recording
- Low cost (\$40).



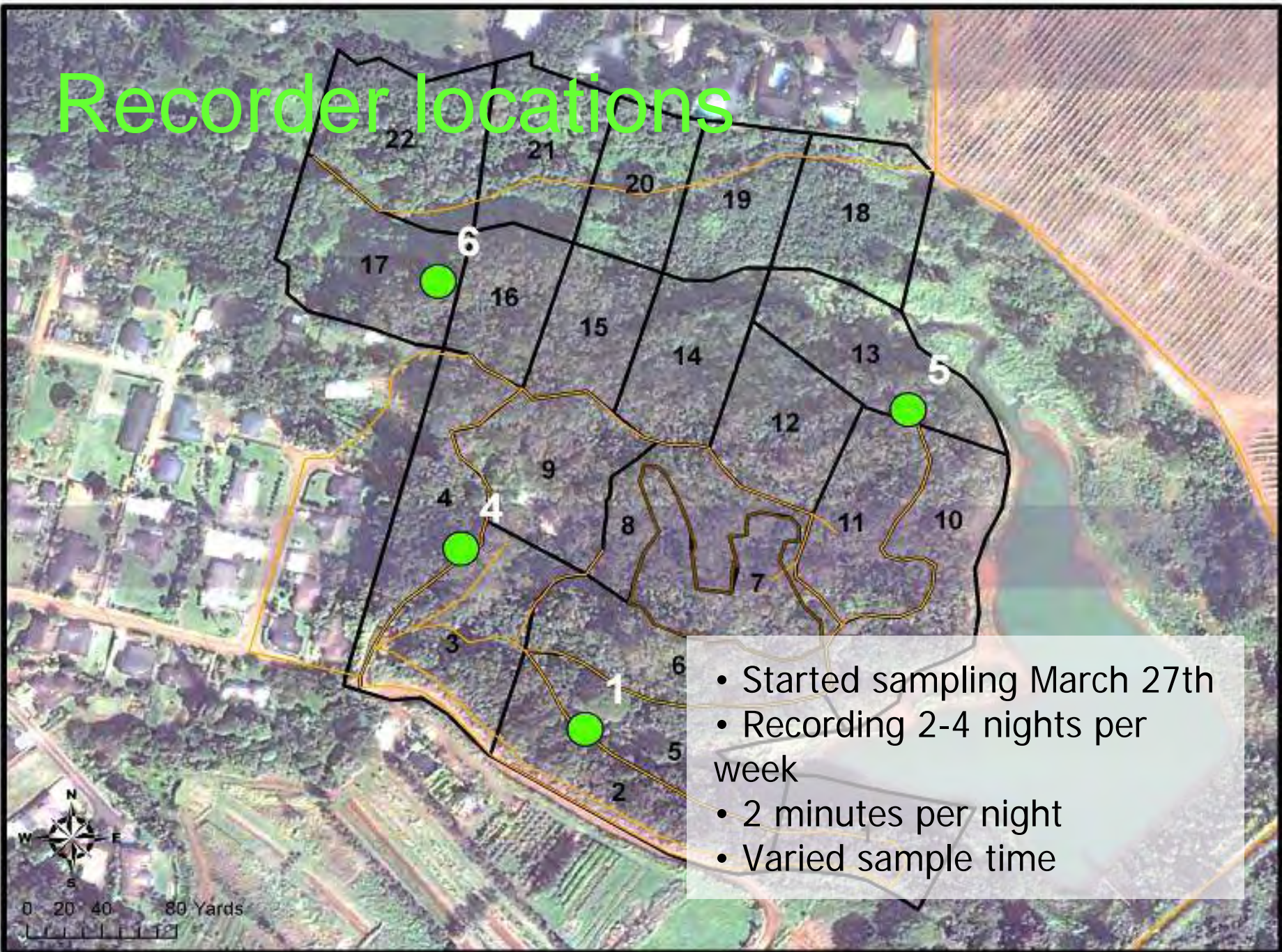
Olympus VN2100 model digital voice recorders

Custom housing



- Rainproof
- Shields recorder's microphone from wind

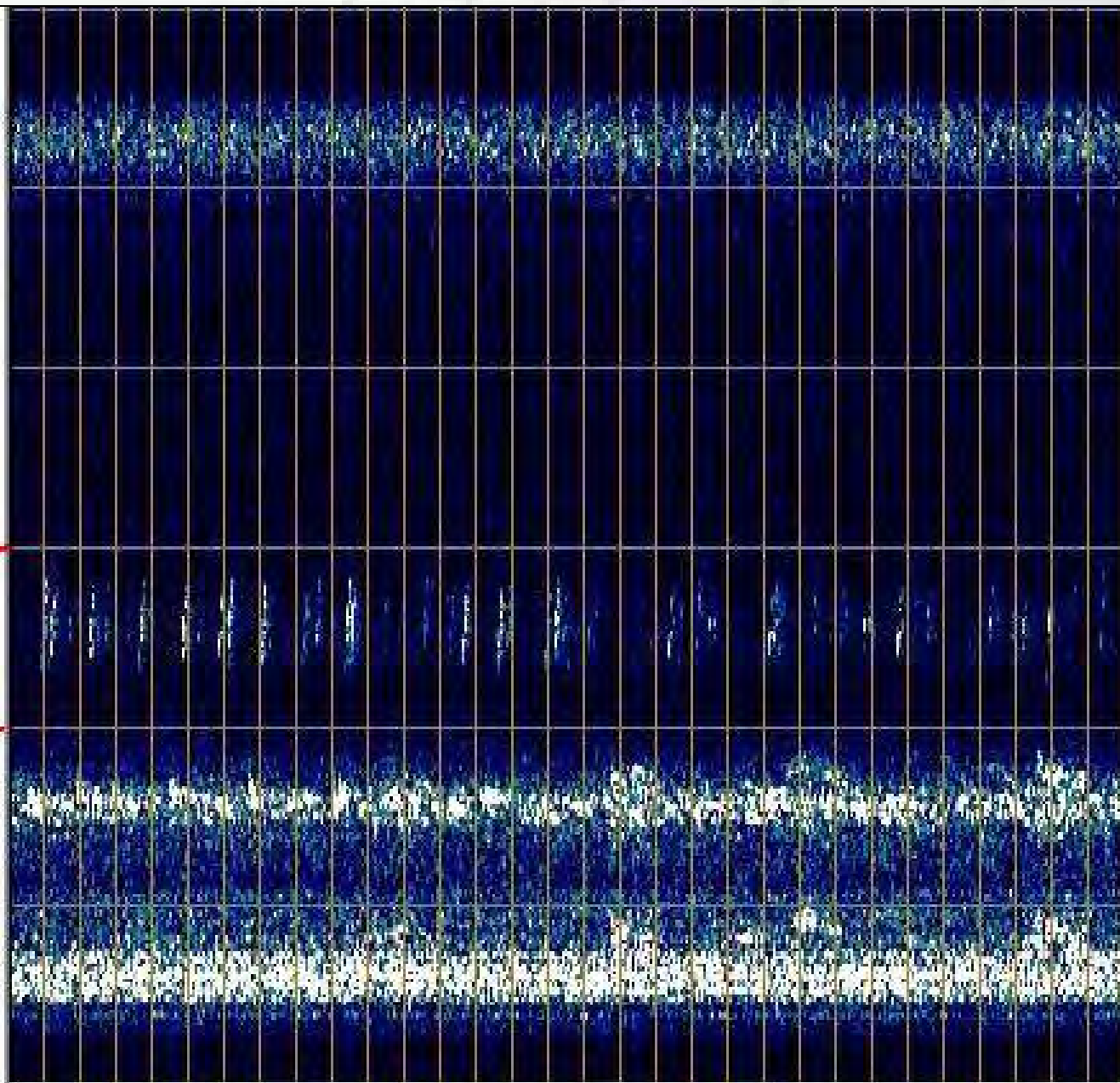
Recorder locations



- Started sampling March 27th
- Recording 2-4 nights per week
- 2 minutes per night
- Varied sample time

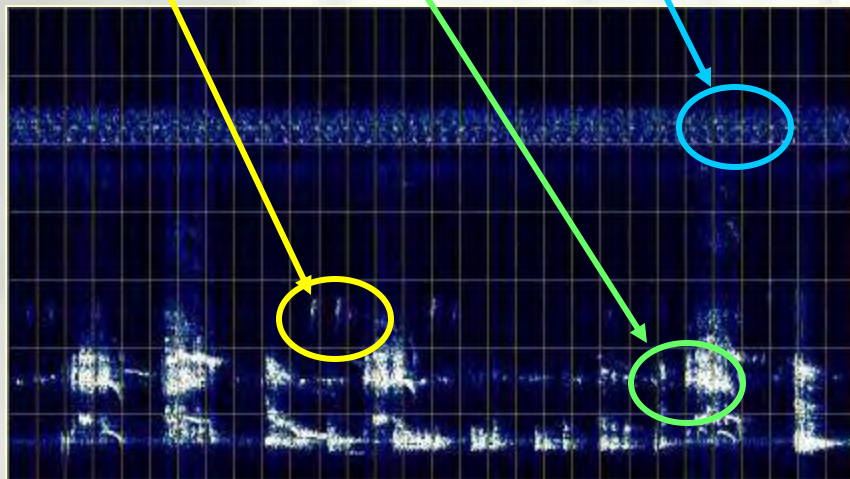
Temporal Frequency Analysis

2000-3000 Hz

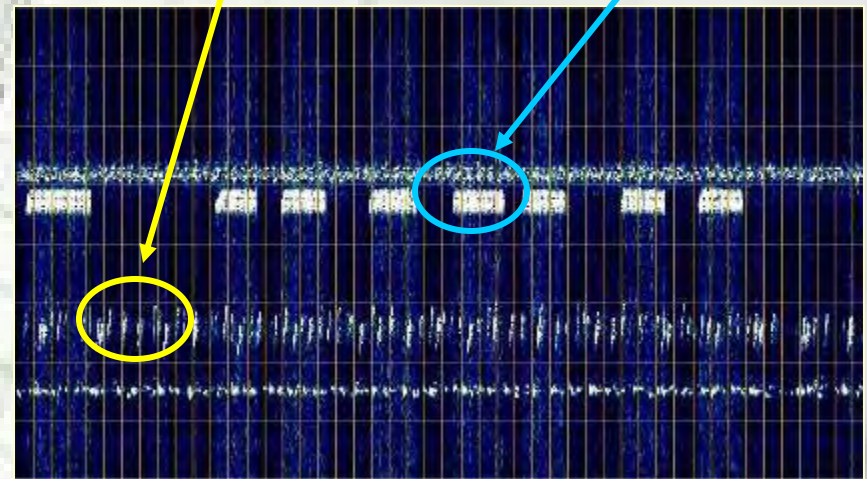


Comparison of frequencies

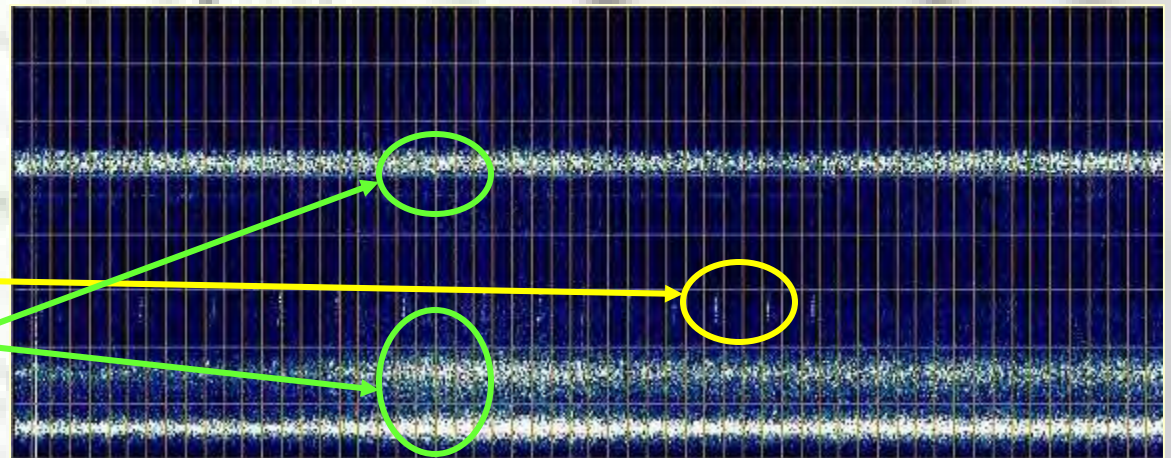
Coqui with dogs and roosters



Coqui with buzzing bug



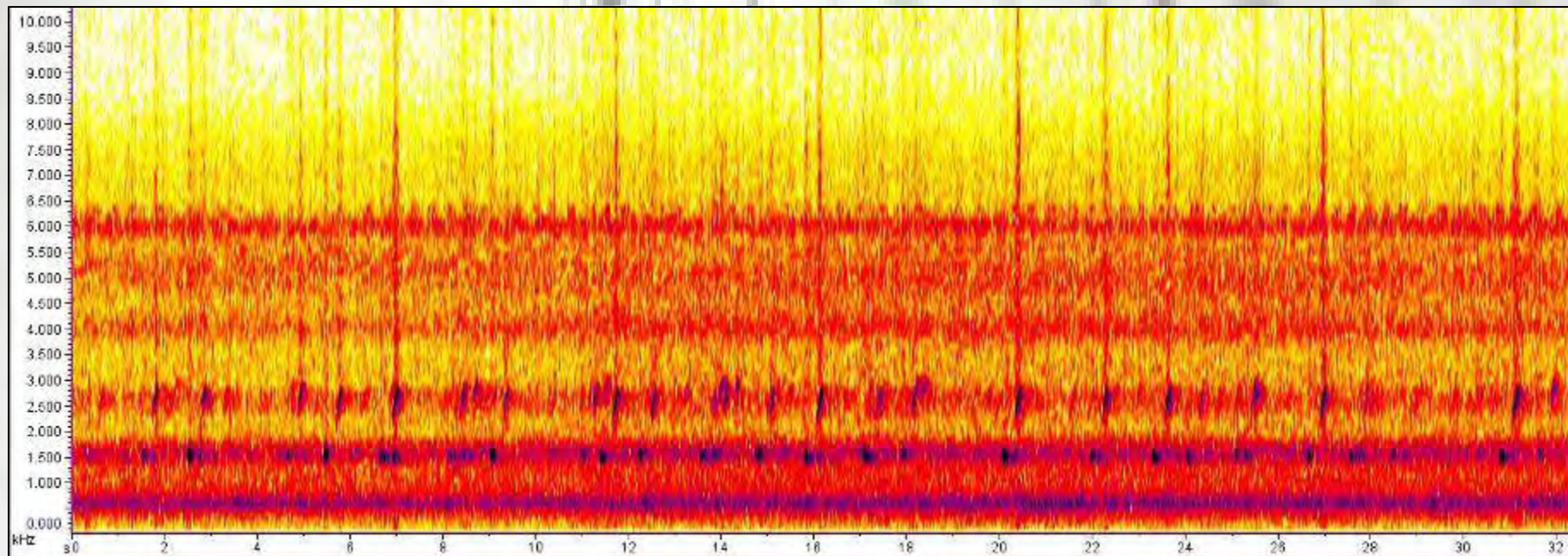
Coqui with
hard rain



New Software

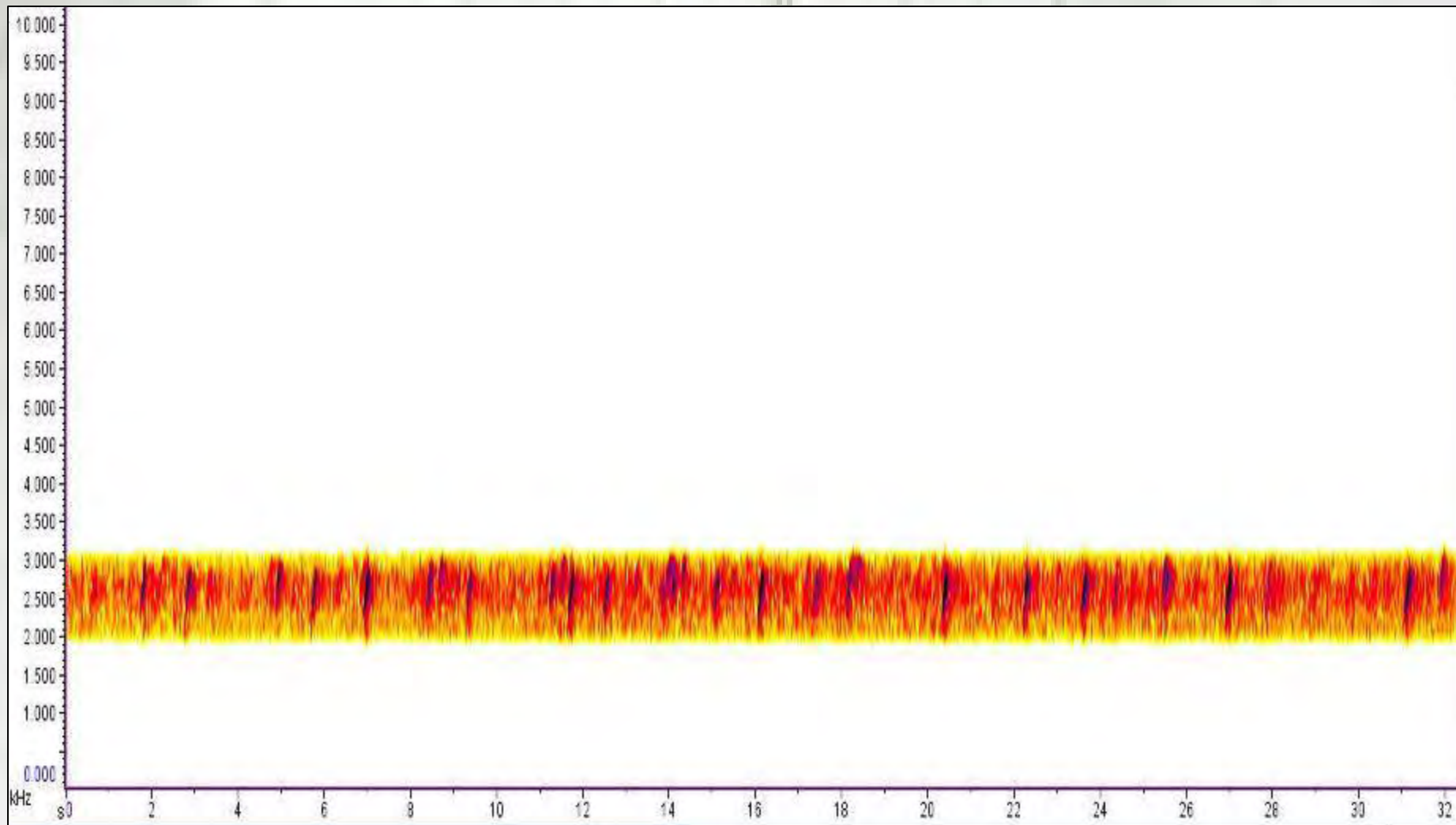


- Quantitative analysis
- Automated call detection tools



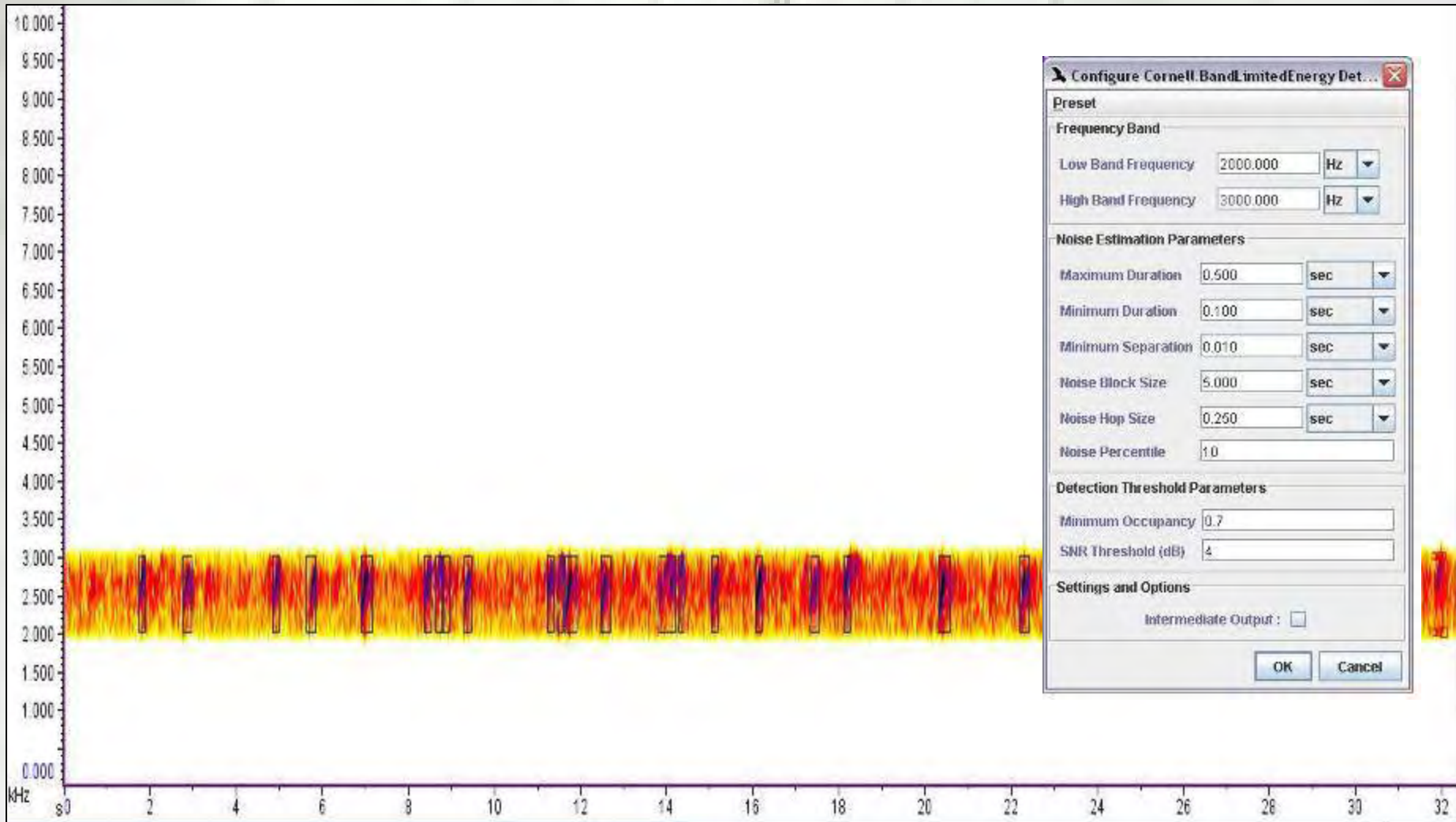
Automated Detection

Apply frequency filter:



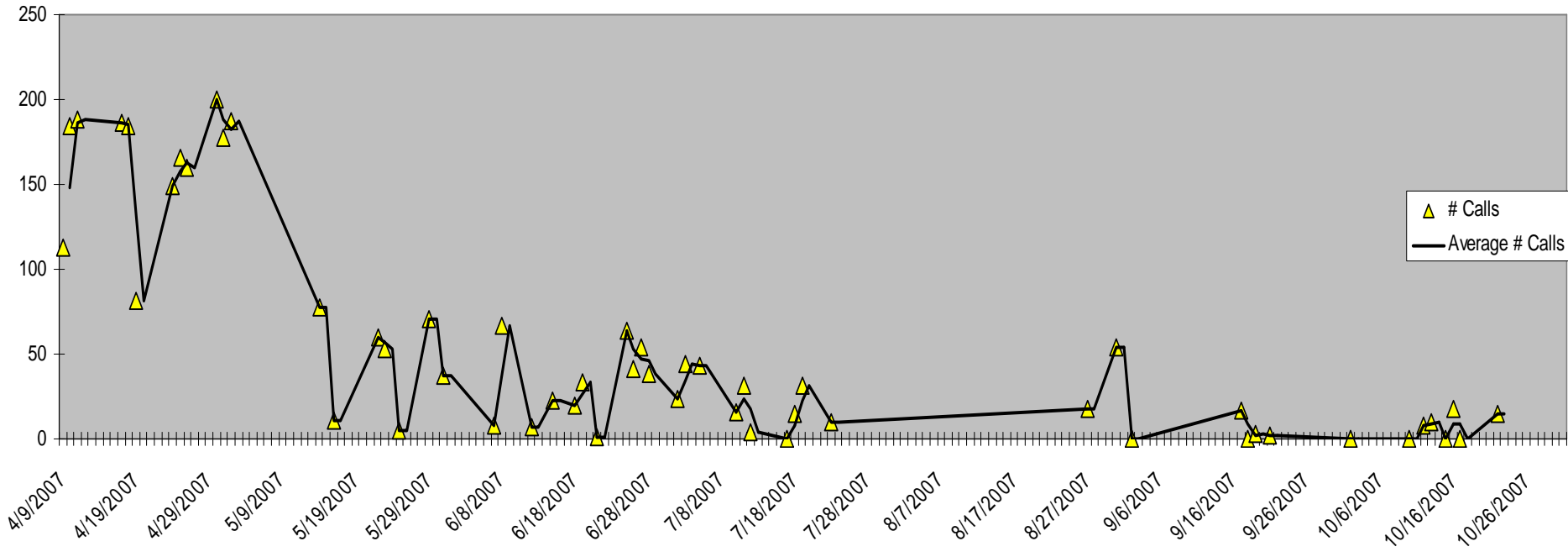
Automated Detection

Run detection tool:



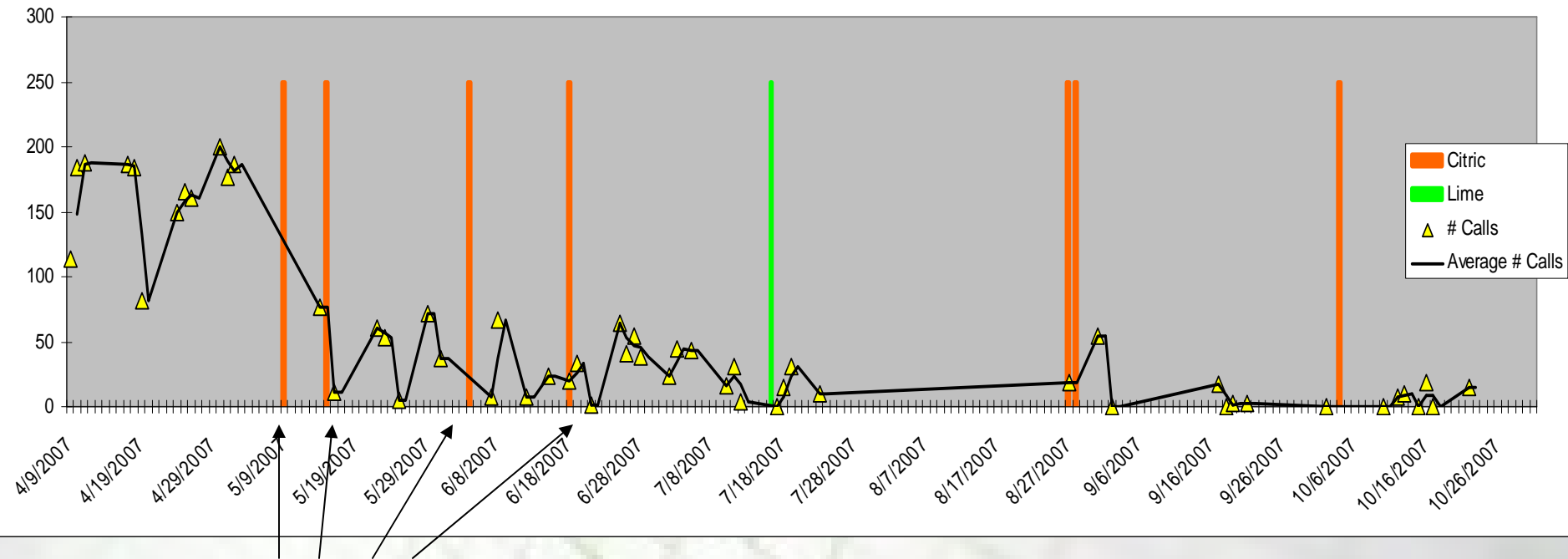
Graph Results

Location 4



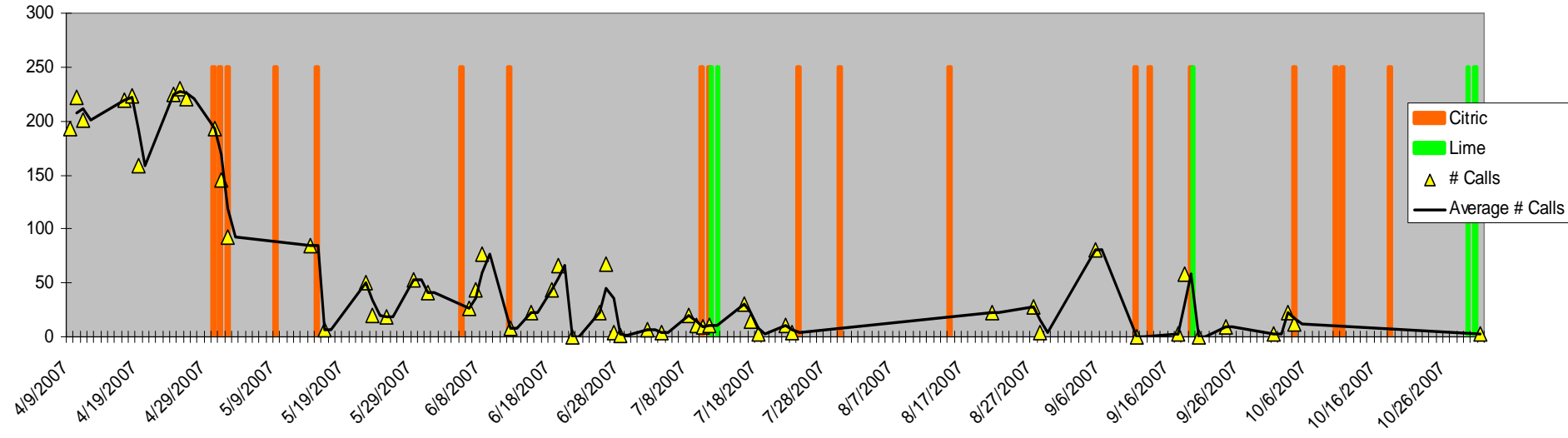
Compare Results to Treatments

Location 4

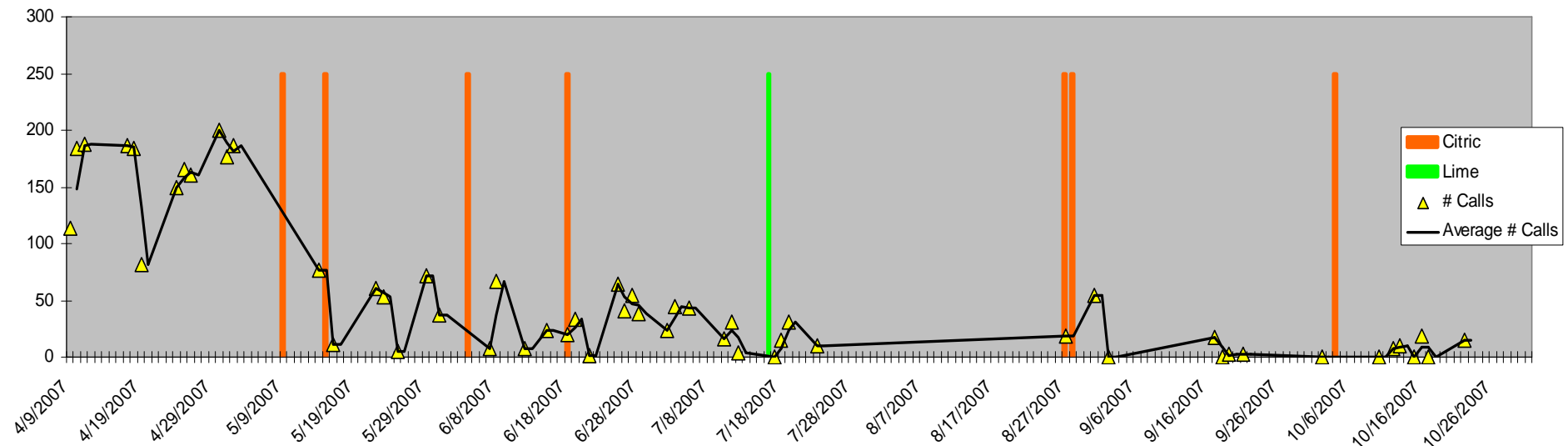


Showing all chemical treatments within 10 meters of the recorder

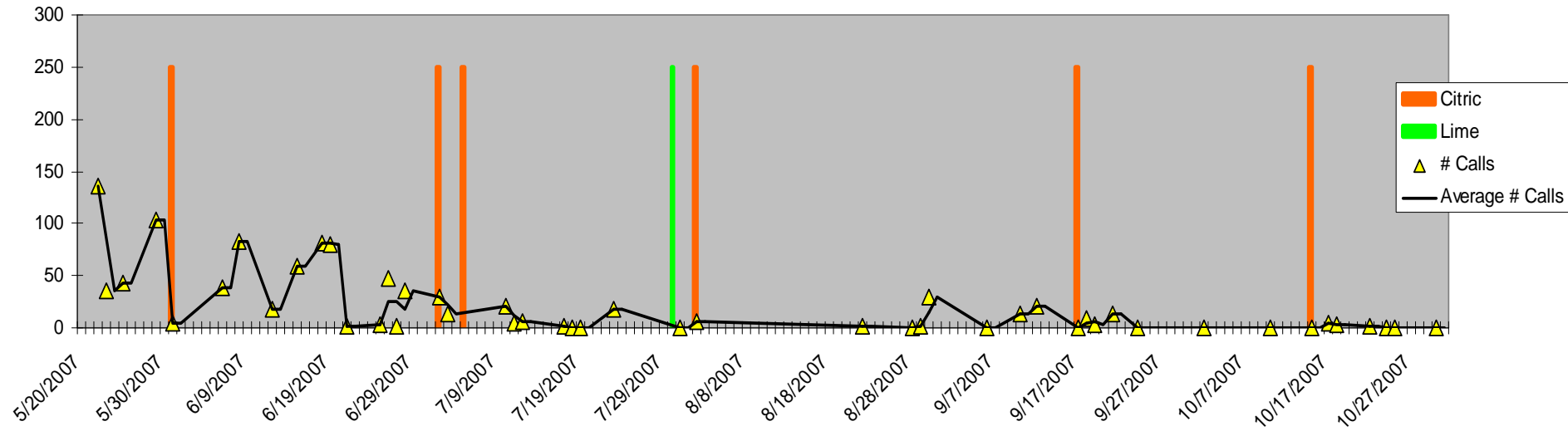
Location 1



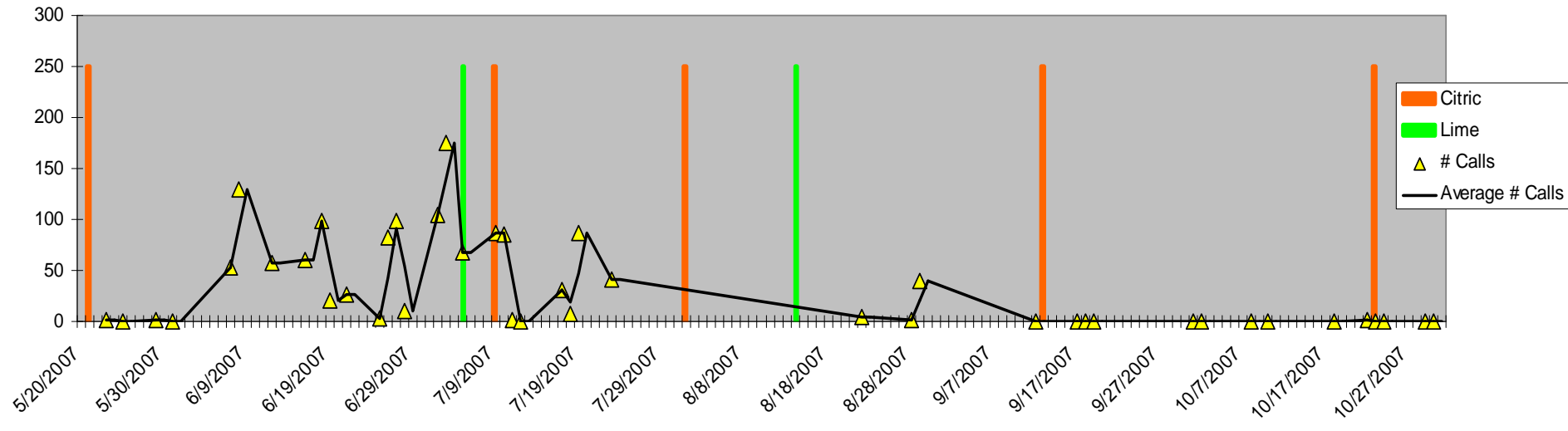
Location 4



Location 5



Location 6



Electronic Recording Limitations & Variability

- This method counts calls, not frogs
- The range at which a call can be detected varies, depending on call density
- The detection process tends to underestimate call density on loud nights, and overestimate on nights with few or no calls
- Our methods can change as our monitoring goals change

Project status/projections



- 2007
 - 49,623 gallons of citric acid
 - 32,812 gallons of hydrated lime
 - 4,702 person hours
- 2008
 - Continue weekly treatments 2x weekly
 - Continue to monitor site and nurseries
 - Respond to new island reports

Needs

- Continued funding
- Increased inter-island quarantine
- On-island hot water treatment facility (mobile?)
- Increased public education and outreach



Coqui Field Crew



Duane Patricio, Joseph Aguon-Kona (Supervisor), Cherylann Lemalu,
Kevin Sasaki, Robert Diaz
(not pictured: Cyrus Correia, Lisa St. Amant, Bradley Morita)

Partners & Kauai Coqui Working Group



HDOA



CTAHR



KISC

KAUAI INVASIVE SPECIES COMMITTEE



**LAWAI NEIGHBORING
RESIDENTS**



DOFAW



**County
of Kauai**



**USDA-
Wildlife
Services**

COQUIT

IF YOU ARE SQUEAMISH STAY HOME !!!

COLD GREEN SKIN

against

SOFT, WARM FLESH!

...a CROAK

...a SCREAM!

FROGS

It's the day
that Nature
strikes
back!



WALTER Z. ANDERSON and JAMES H. NICHOLS, JR. present
"FROGS" starring **RAYMILLAND · SAM ELLIOTT · JOAN VAN ARK · ADAM ROARKE**
with **JUDY PACE · LYNN BORDEN · MAE MERCER · DAVID GILLIAM · NICHOLAS CORTLAND**

Screenplay by ROBERT MUIR-CROSON and ROBERT BLES · Story by ROBERT MUIR-CROSON · Directed by GEORGE MUIR-CROSON
Executive Producer ROSEMARY E. HERMAN · Produced by GEORGE EDWARDS and PETER THORAS · Edited by MARY-ANNE
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