



NAPPO

North American Plant Protection Organization
Organización Norteamericana de Protección a las Plantas
MEXICO - USA - CANADA

**3rd International Workshop on
Quarantine Pests
August 27-30, 2013
Manzanillo, Colima, Mexico**

Greg Carlton
Brandon M. Page
Dr. Michael E. Rogers
Timothy D. Riley



CITRUS HEALTH MANAGEMENT AREAS



WHAT IS A CHMA?

- Citrus Health Management Area
- Grower defined grouping of citrus acreage
- Grower participants coordinate psyllid control efforts (year-round pesticide applications)
- Manage pesticide resistance through coordinated rotation of MOAs

WHY DEVELOP A CHMA?

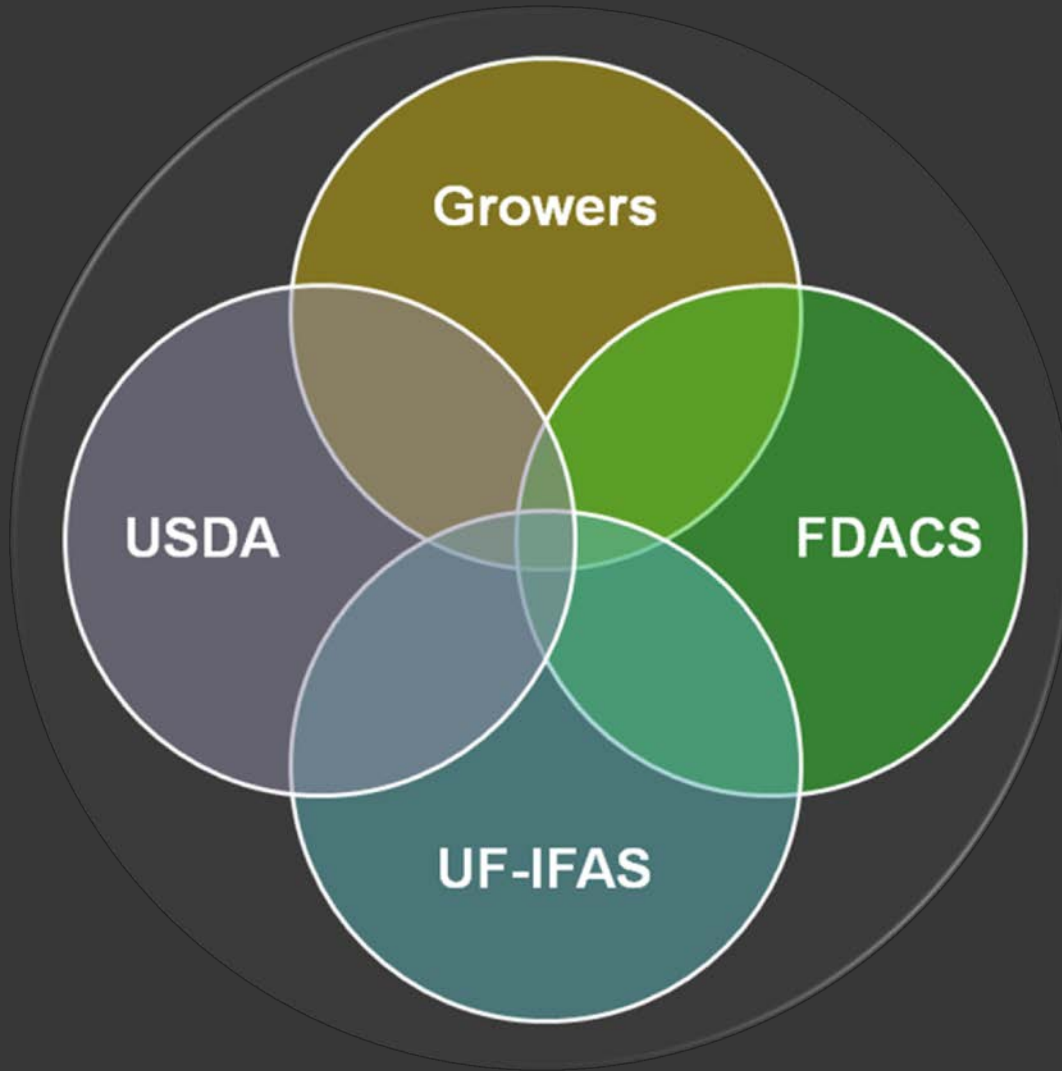
- ⦿ Slow spread of HLB through use of improved psyllid control methods
- ⦿ Prolong the usefulness of our current management tools



WHY DEVELOP A CHMA?

cont'd

- ① Sustain current citrus acreage until an HLB remedy is developed
- ① Facilitate adoption of new technology
- ① Utilize the CHMA concept for addressing production issues in the future



CHMA Participants

Collaborative efforts of growers, federal and state regulatory agencies and researchers

Citrus Health Management Areas

A map of Florida with county boundaries labeled. A large area in the central and eastern parts of the state is shaded in light blue, representing Citrus Health Management Areas. The shaded counties include Volusia, Lake, Seminole, Orange, Osceola, Polk, Brevard, Hardee, Highlands, Okeechobee, Marion, Citrus, Sumter, Hernando, Pasco, Hillsborough, Manatee, Sarasota, Desoto, Charlotte, Glades, Lee, Henry, Collier, and Monroe.

- Grower driven program to coordinate the application of materials to reduce Asian Citrus Psyllid (ACP) populations in commercial citrus
- Voluntary
- No Mandates

Citrus Health Management Areas

- USDA & DPI personnel jointly monitor ACP populations
- USDA and DPI information systems provide data to growers for coordination of applications
- IFAS maintains the CHMA Website
- IFAS provides application recommendations



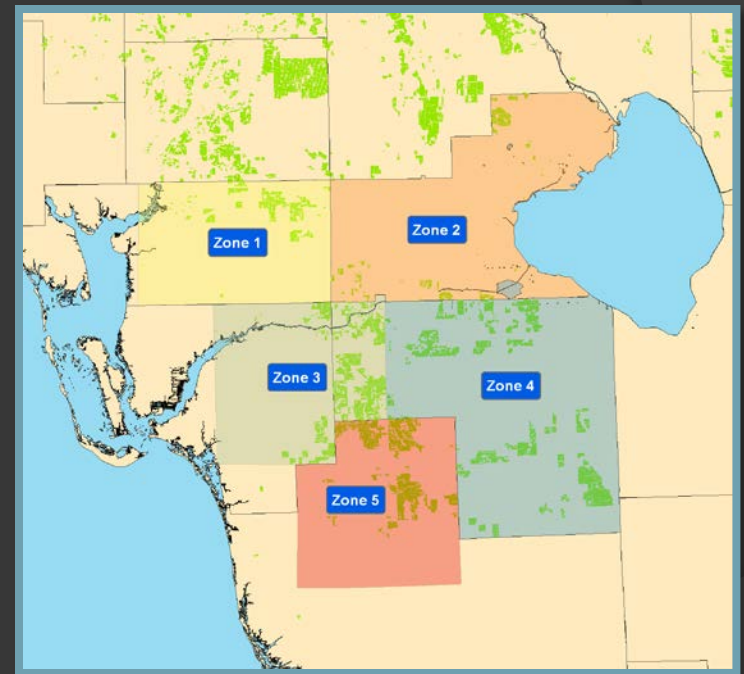
CHMA Participants

- ◎ Growers motivate neighboring growers to participate
 - Facilitated by citrus extension agents and industry leaders
- ◎ Work with other non-grower participants
 - UF/IFAS, USDA, FDACS, and industry organizations



CHMA Organization

- County Extension Agents assist growers in delineating CHMA areas
 - Based on presence and grouping of groves in region
- Establish CHMA leader



CHMA Meeting Goals

- ◎ Develop a plan of action
 - Timing and frequency of applications
- ◎ Coordinate as many sprays as possible
 - Pesticide rotation schedules
 - Application methods
 - Grower practices/limitations

Strategies

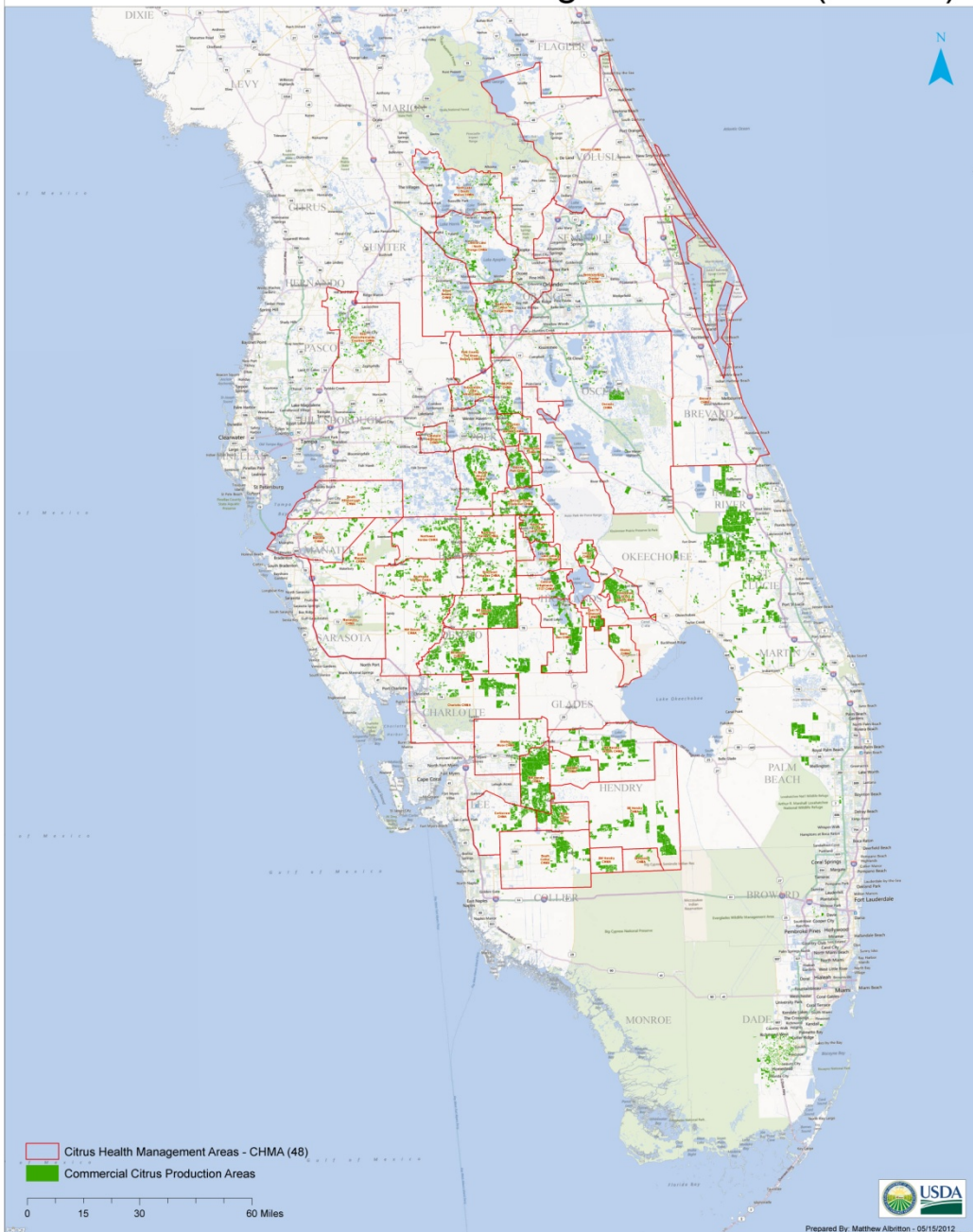
Individual Control

- Single grove
- Grove hopping
- ACP exposed to multiple MOA
- Quick re-infestation
- Frequent applications

Coordinated Control

- Large amount of acreage
- Quick application
- Single MOA
- More ACP killed = Extended period of control
- Possible reduced number of sprays
- Plan of attack

Statewide Citrus Health Management Areas (CHMA)



48 CHMAs

Represents 486,000 acres

93% of Florida Citrus Industry



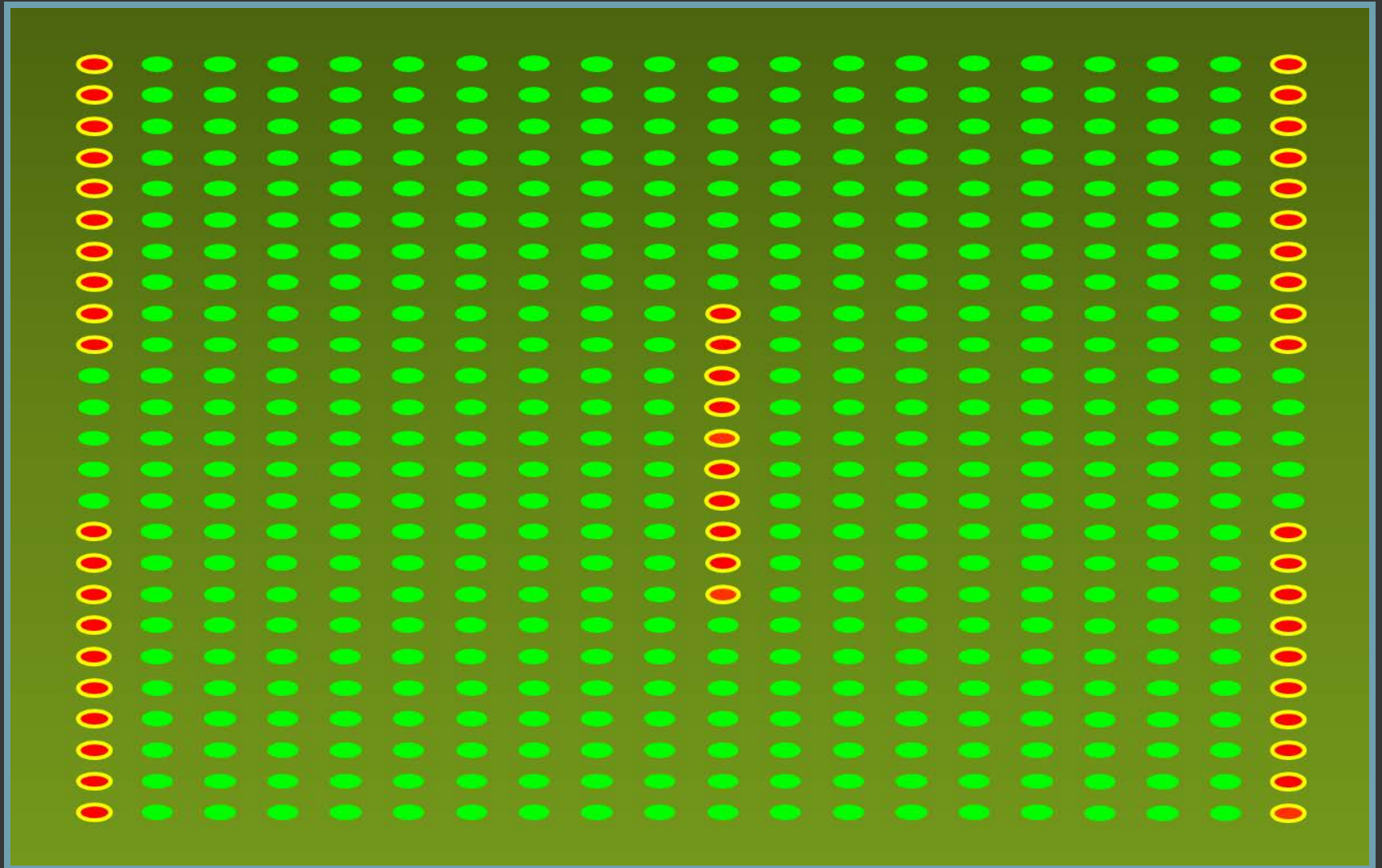
Area-Wide Surveillance of Asian Citrus Psyllid

○ Survey

- **6,000 blocks statewide**
- **3-week monitoring cycle**
- **50 trees / grove block**
- **1 tap sample per tree**
- **Data input into IPHIS**
- **FDACS and USDA formats data and places on UF/IFAS website for grower access**



Monitoring **Site Locations** within Block



IFAS CHMA Website

UF UNIVERSITY OF FLORIDA

UF | UF/IFAS Extension
University of Florida

Search This Site 

[Home](#) | [Pest Management](#) | [Horticulture](#) | [Economics](#) | [Food Sciences](#) | [CHMA](#) | [Citrus](#) | [Agents](#)

[CREC Home](#)

[Extension Home](#)

[CHMA Overview](#)

[CHMA Toolkit](#)

[Contact Information](#)

[Active CHMA Websites](#)

▶ [Related Sites](#)

▶ [Resources](#)

Citrus Health Management Areas (CHMAs)



Creation of Citrus Health Management Areas (CHMAs) has been identified as a high priority for Florida citrus growers to slow the spread of citrus greening disease and preserve the current Florida commercial citrus acreage. The purpose of CHMAs is to encourage neighboring citrus growers to work together to combat citrus greening, particularly through the coordination of psyllid control efforts. The information found in the links below is provided to aid Florida citrus growers in establishing CHMAs in their areas.

[CHMA Sectional Mapping Program](#)

[Click Here to join the CHMA Program](#)

[CHMA Overview](#) | [Active CHMA Website](#) | [CHMA Toolkit](#) | [CHMA Ranking by Cycle](#)

[Contact Information](#)

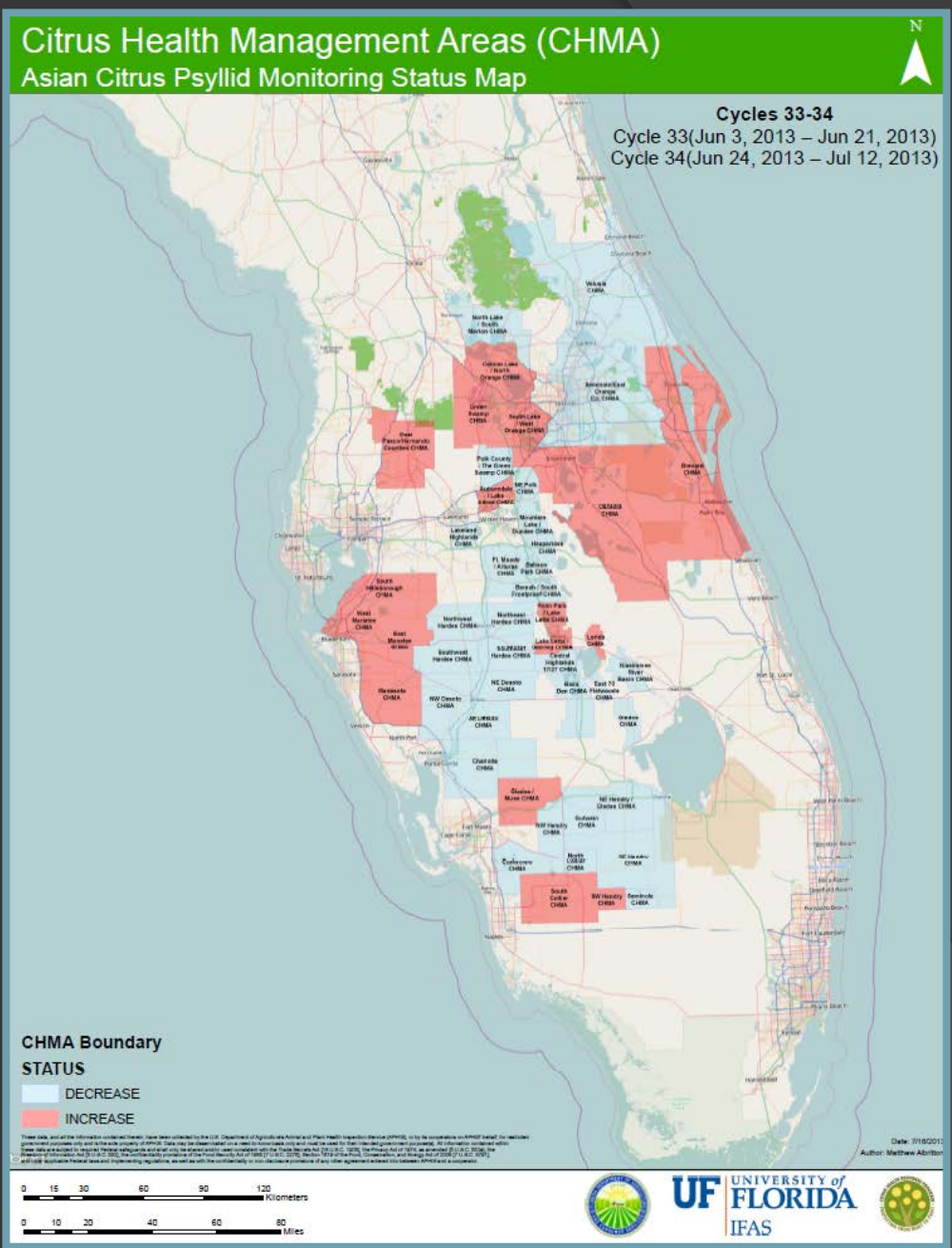


[myUF](#) | [Site Map](#) | [Directory](#) | [Web Site Listing](#) | [Privacy Policy](#) | [Regulations](#) | [Contact Webmaster](#)

©2013 Last modified: Thursday, July 25 2013

UF UNIVERSITY OF FLORIDA
IFAS Extension

ACP Statewide Status Map



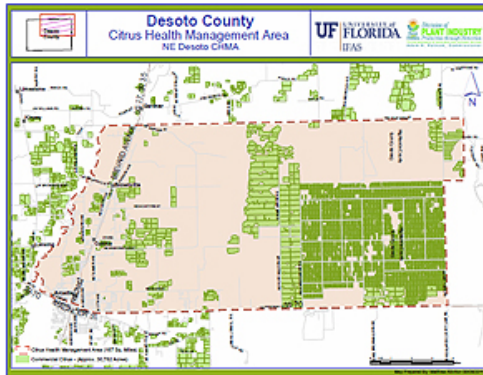
Active CHMA Websites

- CREC Home
- Extension Home
- CHMA Overview
- CHMA Toolkit
- Contact Information
- Active CHMA Websites**
- ▶ Related Sites
- ▶ Resources

Citrus Health Management Areas (CHMAs)



NE Desoto CHMA



(click to enlarge map)

- ▶ Current planned pesticide applications
- ▶ Past pesticide applications
- ▶ Psyllid scouting reports
- ▶ CHMA wide ACP trend graph
- ▶ Join this CHMA – (Receive automatic email updates regarding the latest news and proposed coordinated spray schedules for this CHMA)

NE Desoto CHMA Contacts

Jerry Newlin – OCLP
(863) 494-4939 ext. 201
JNewlin@orangecofla.com

Buddy Strickland – OCLP
(863) 381-2676
bstrickland@orangecofla.com

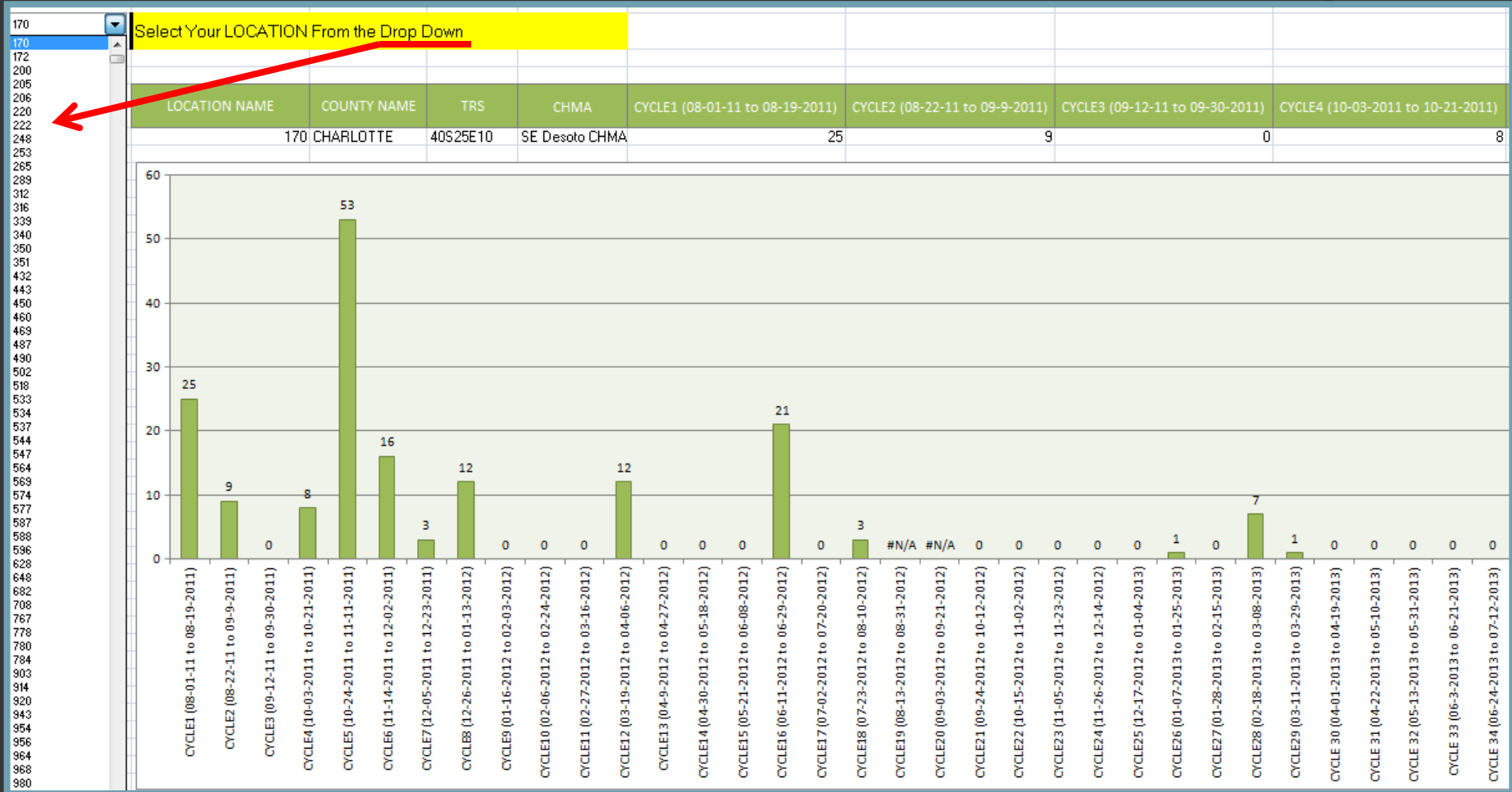
Steve H. Futch – UF-IFAS
Citrus Ext. Agent
(863) 956-8644 ext. 18644
shf@ufl.edu

Latest News

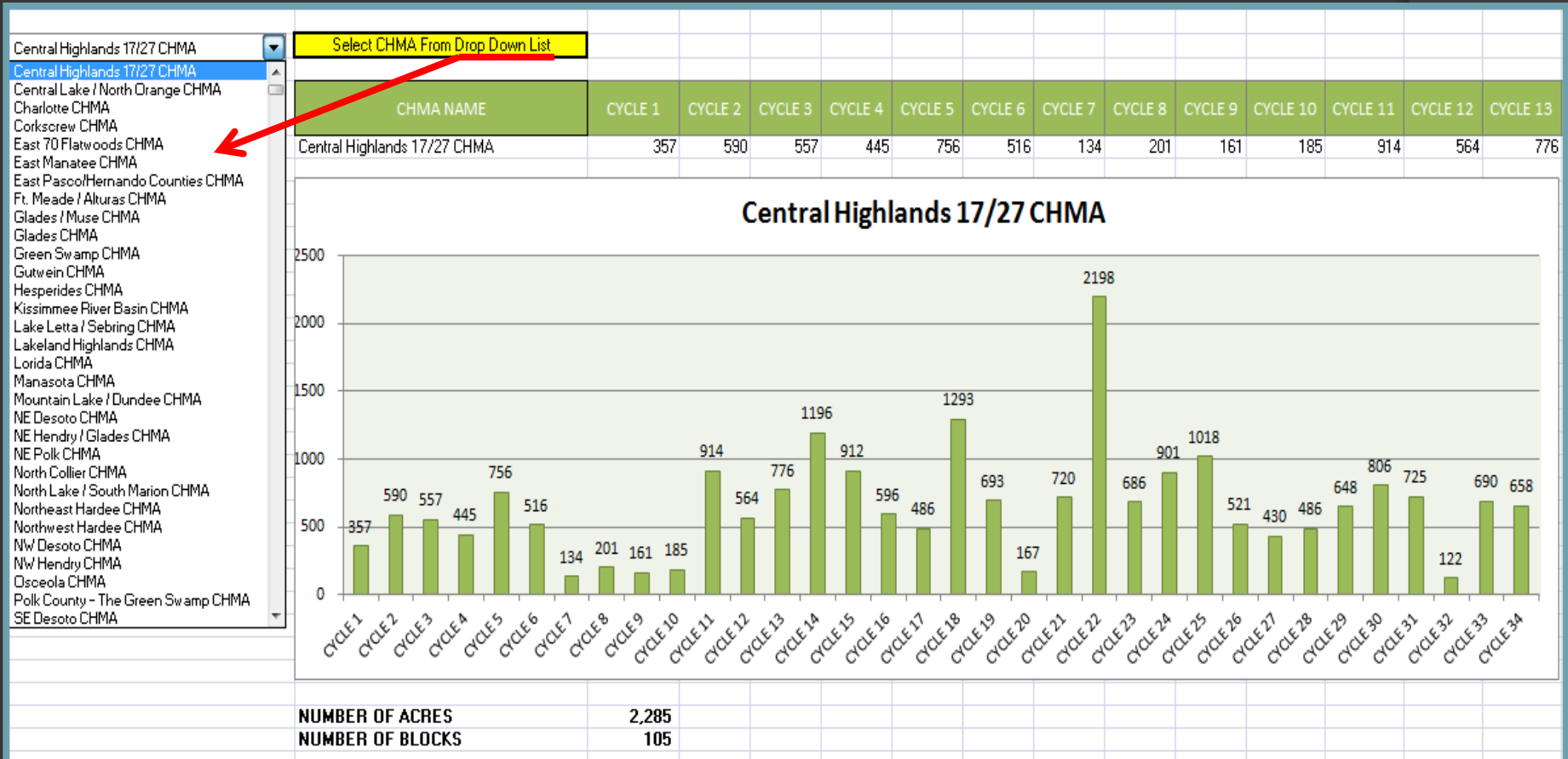
NE Desoto report 7/31/13

News Archive

Block Specific Data



CHMA Data Graph



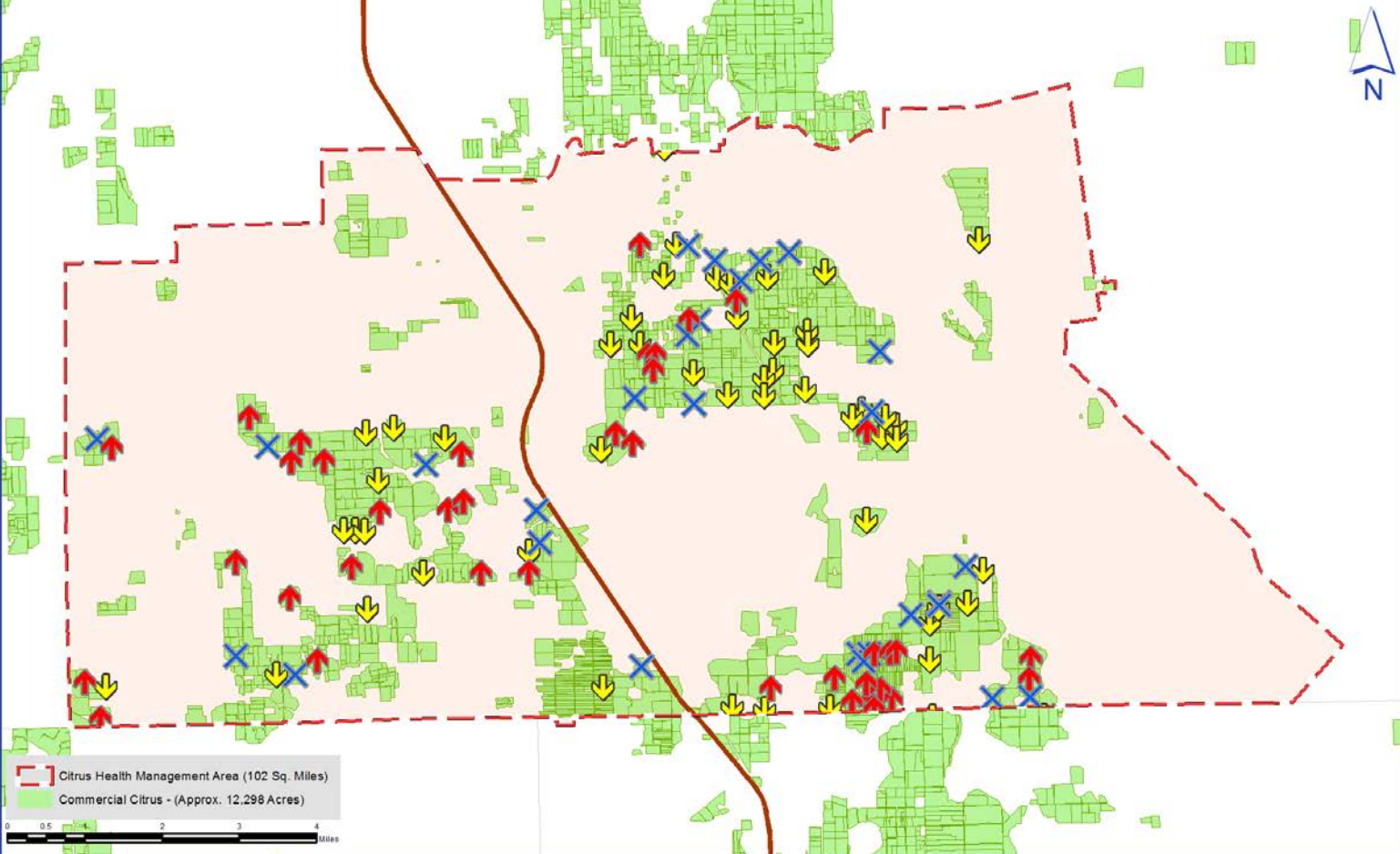
ACP CHMA Change Map



Polk County
Citrus Health Management Area
Bereah / South Frostproof CHMA



↑ Blocks Where ACP Counts Have Increased ↓ Blocks Where ACP Counts Have Decreased X Blocks Where ACP Counts Have Remained the Same



Map Prepared By: Matthew Albritton - 08/15/2011

Sectional Mapping Program

The screenshot shows the UF/IFAS Extension website. At the top left is the UF University of Florida logo. To its right is the text "UF/IFAS Extension University of Florida". A search bar is located to the right of the logo. Below the search bar are social media icons for Facebook, Twitter, and YouTube. A navigation menu is positioned below the search bar, containing links for Home, Pest Management, Horticulture, Economics, Food Sciences, CHMA, and Citrus. A secondary navigation bar below the menu lists "Agents".

On the left side of the page is a sidebar menu with the following items: CREC Home, Extension Home, CHMA Overview, CHMA Toolkit, Contact Information, Active CHMA Websites, Related Sites, and Resources. The "Related Sites" and "Resources" items have right-pointing arrows.

The main content area features a section titled "Citrus Health Management Areas (CHMAs)". Below the title is a row of four images: a yellow airplane, a white van with a spray nozzle, a CHMA logo featuring a map of Florida with a tree, a tractor, and a helicopter. Below the images is a paragraph of text explaining the purpose of CHMAs. Below the text are two buttons: "CHMA Sectional Mapping Program" (circled in red) and "Click Here to join the CHMA Program". Below these buttons is a row of links: "CHMA Overview", "Active CHMA Website", "CHMA Toolkit", and "CHMA Ranking by Cycle". Below that is a "Contact Information" link.

At the bottom of the page is a footer with a horizontal line and a small orange circle icon. Below the line are links for "myUF", "Site Map", "Directory", "Web Site Listing", "Privacy Policy", "Regulations", and "Contact Webmaster". Below these links is the copyright notice "©2013 Last modified: Thursday, July 25 2013". On the right side of the footer is the UF University of Florida IFAS Extension logo.

CHMA Sectional Mapping Program

- Utilizing the FDACS and USDA scouting data
- TRS (Township, Range, Section) / square mile
- Grouping scouted blocks by TRS
- Plotting data and TRS locations onto interactive map

CHMA Selection

- Auburndale / Lake Alfred CHMA
- Avon Park / Lake Letta CHMA
- Babson Park CHMA
- Bairs Den CHMA
- Bereah / South Frostproof CHMA
- Brevard CHMA
- Central Highlands 17/27 CHMA
- Central Lake / North Orange CHMA
- Charlotte CHMA
- East 70 Flatwoods CHMA
- East Manatee CHMA
- East Pasco/Hernando Counties CHMA
- Ft. Meade / Alturas CHMA
- Glades CHMA
- Green Swamp CHMA
- Gulf CHMA
- Hesperides CHMA
- Indian River CHMA
- Kissimmee River Basin CHMA
- Lake Letta / Sebring CHMA
- Lakeland Highlands CHMA
- Lorida CHMA
- Manasota CHMA

Presentations

Cycle Name:

Date Range: From: 4/22/2013 To: 5/10/2013

Cycle 31

4/22/2013-5/10/2013

Map | Satellite

Google

Imagery ©2013 TerraMetrics - Terms of Use

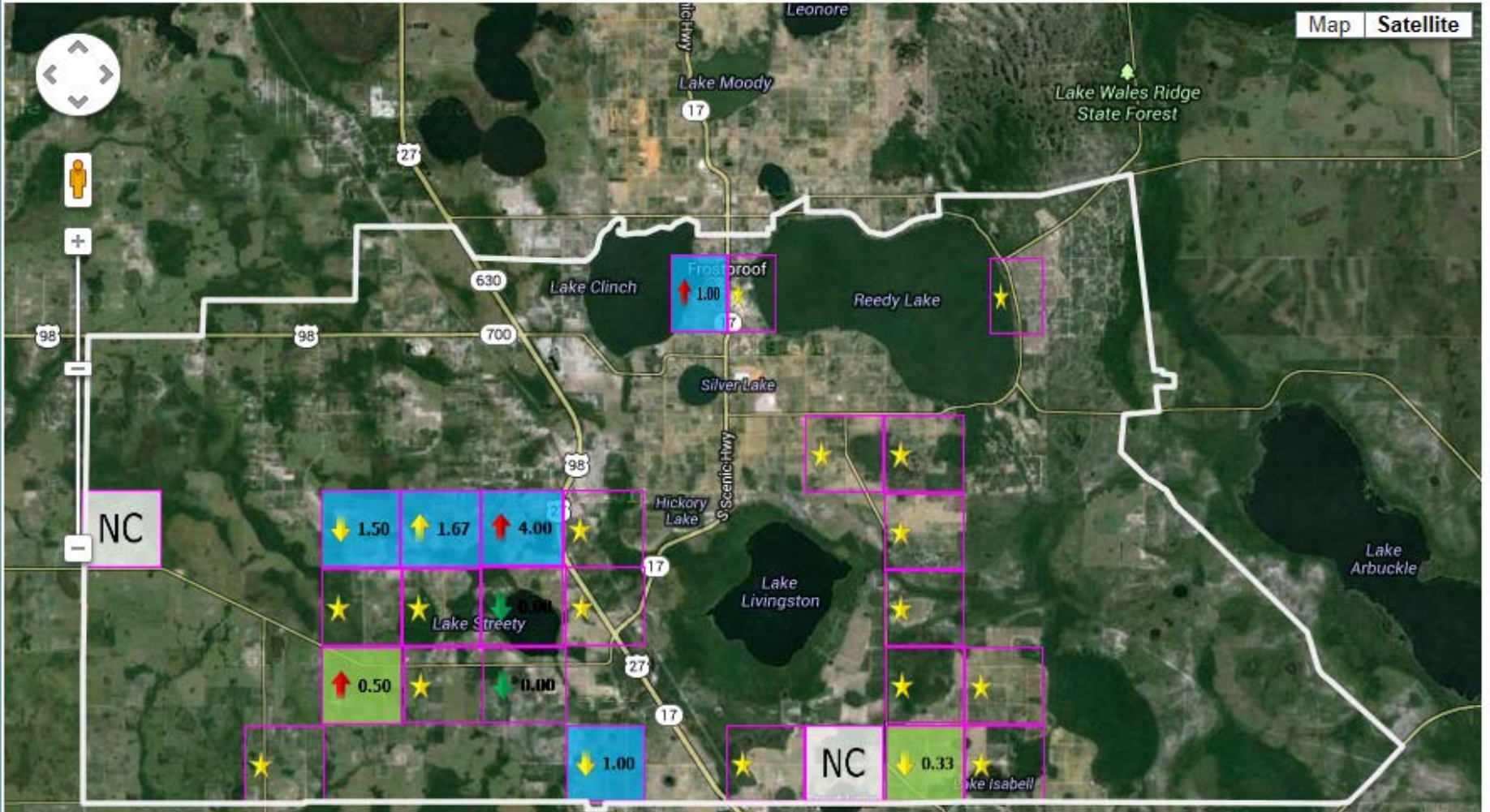


Cycle 33

6/3/2013-6/21/2013











Bereah/South Frostproof CHMA

Average Psyllids = 0.42



Map | Satellite

Legend

-  0 Psyllids
 -  <1 Psyllids
 -  1-5 Psyllids
 -  6-10 Psyllids
 -  >10 Psyllids
-
-  0 psyllids for two consecutive cycles
 -  Psyllids decreased to a lower category
 -  Psyllids decreased but remained in same category
 -  Psyllids increased but remained in same category
 -  Psyllids increased to a higher category

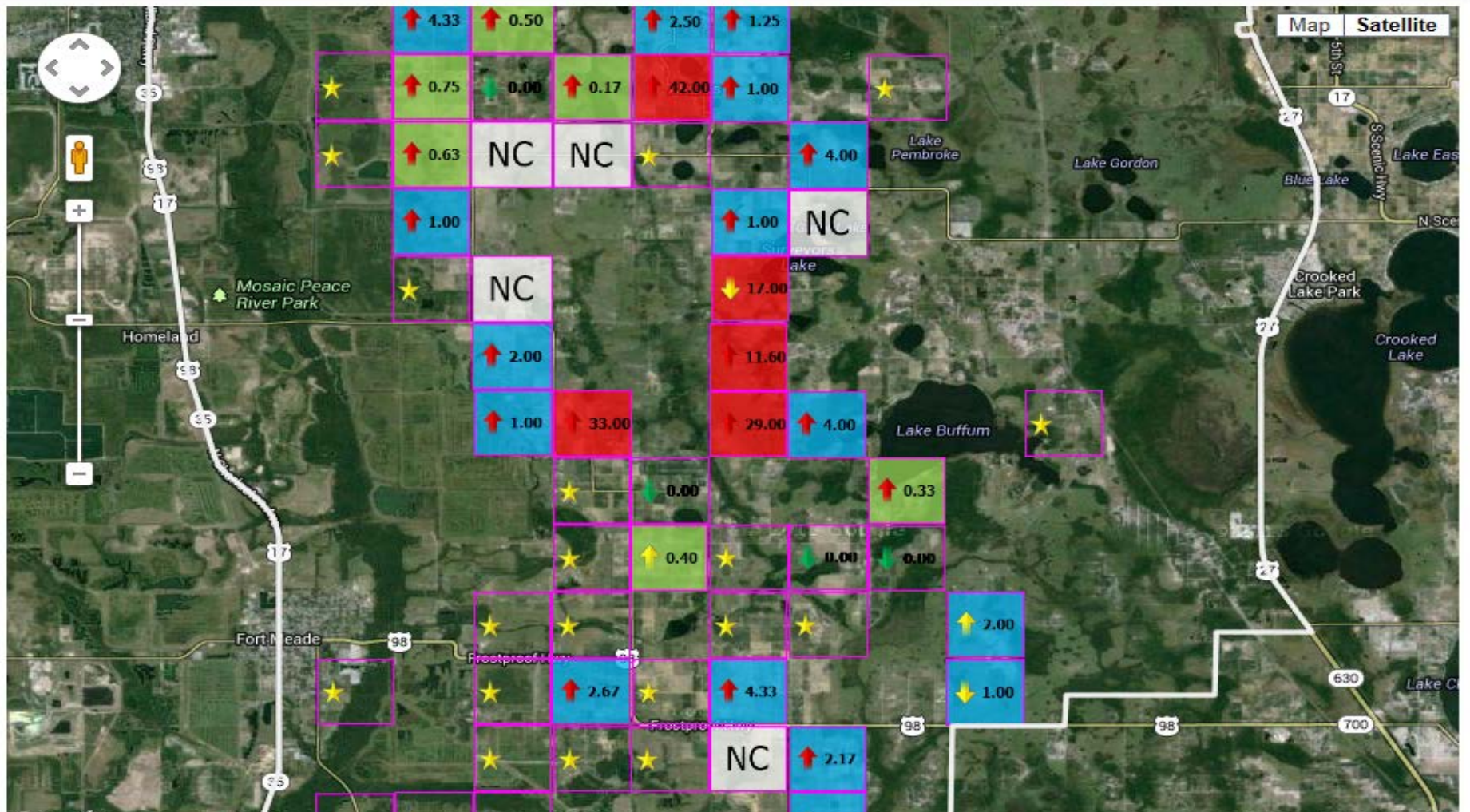


Cycle 33

6/3/2013-6/21/2013

Fort Meade/Alturas CHMA

Average Psyllids = 3.11



Legend

- 0 Psyllids
- <1 Psyllids
- 1-5 Psyllids
- 6-10 Psyllids
- >10 Psyllids
- 0 psyllids for two consecutive cycles
- Psyllids decreased to a lower category
- Psyllids decreased but remained in same category
- Psyllids increased but remained in same category
- Psyllids increased to a higher category

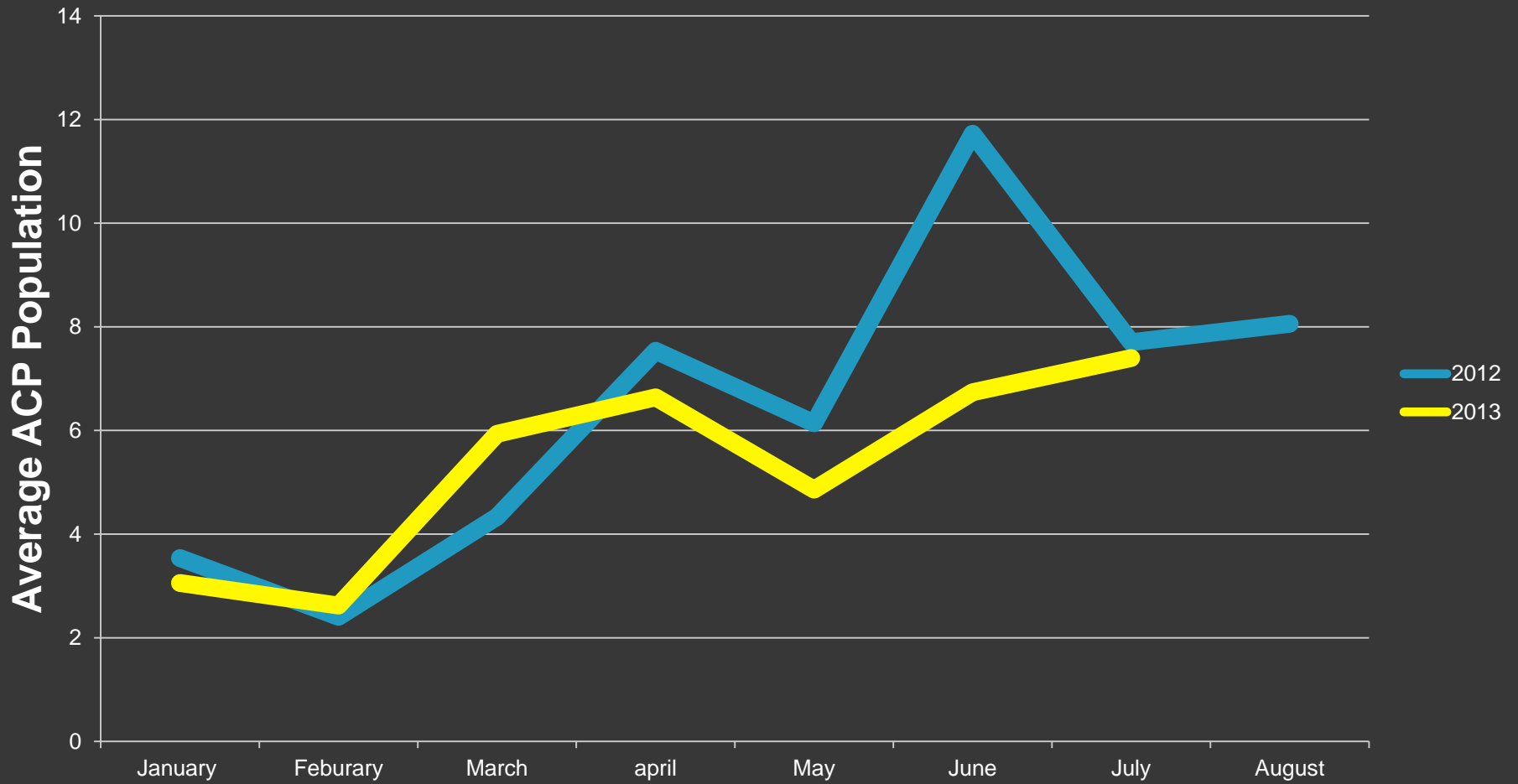
Results and Observations

- ◎ **Grower participation is increasing as they see the data and results**
- ◎ **Psyllid populations are decreasing where coordinated applications have been implemented**

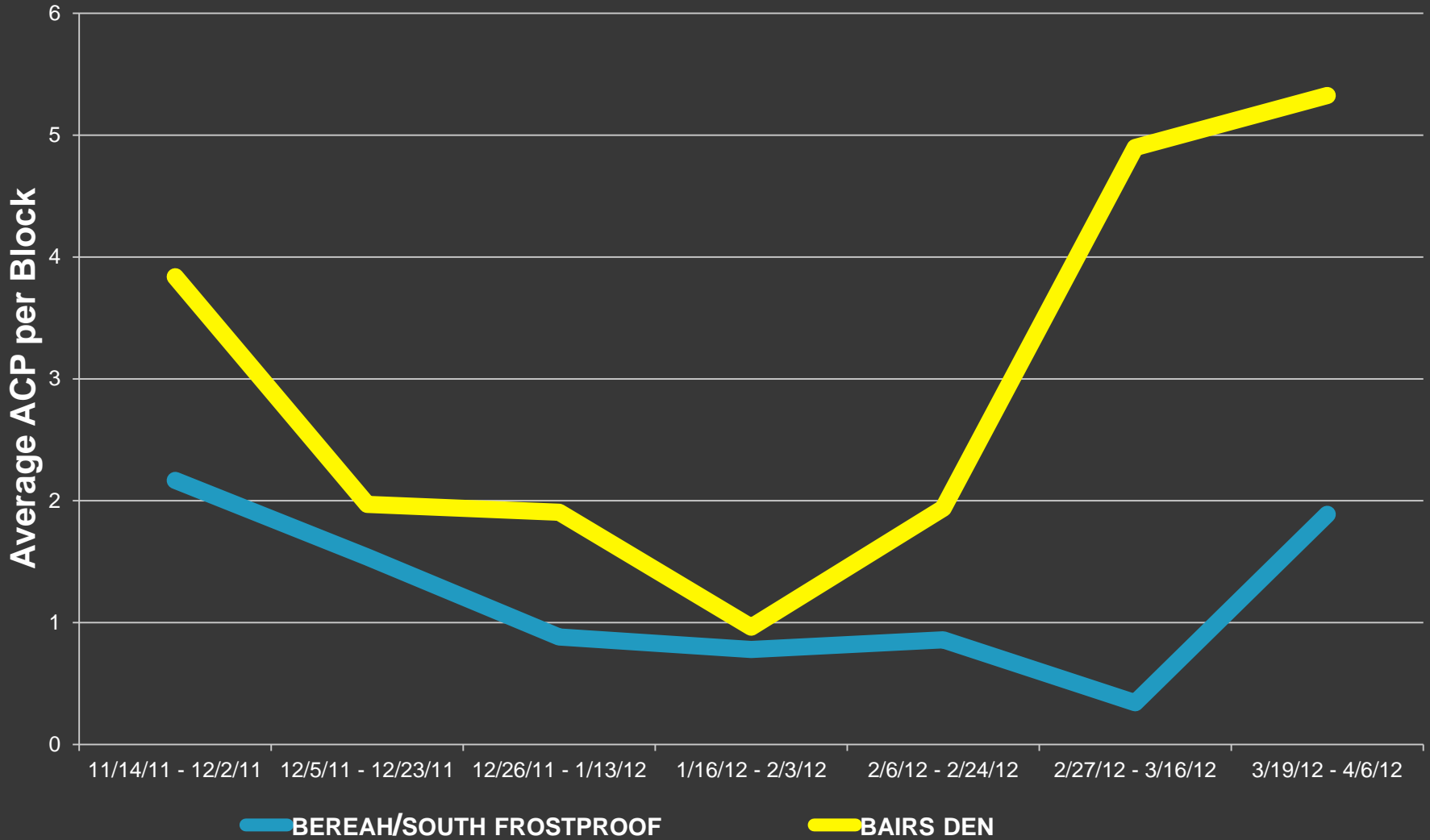
Results and Observations

- ⦿ **Applications are being postponed several weeks due to the effectiveness of the coordinated treatments**
- ⦿ **Grower interaction is enhanced**
- ⦿ **The CHMA concept is a venue for managing other pests and diseases**

Statewide Average ACP Population

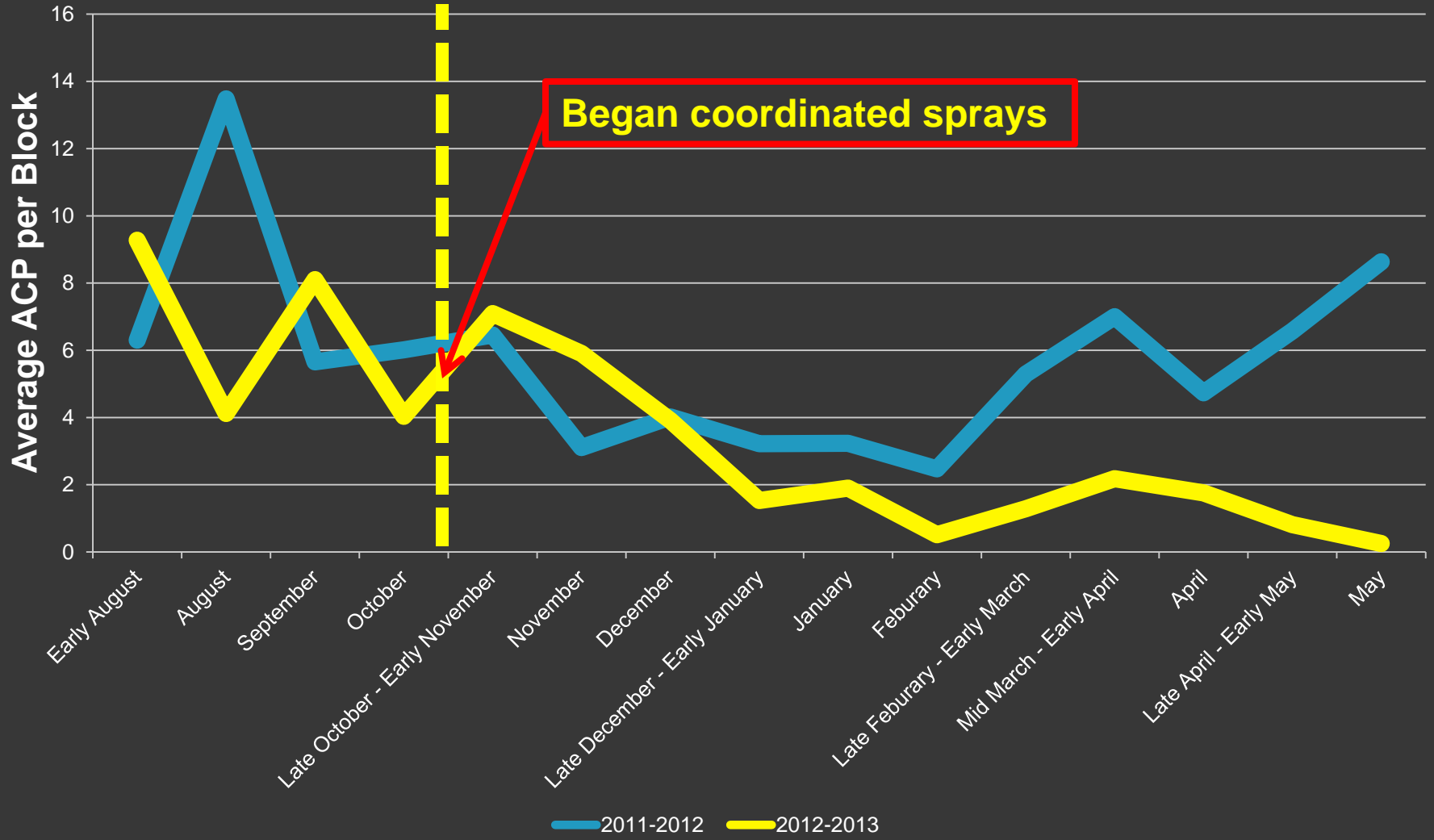


Dormant Peroid 2011 - 2012

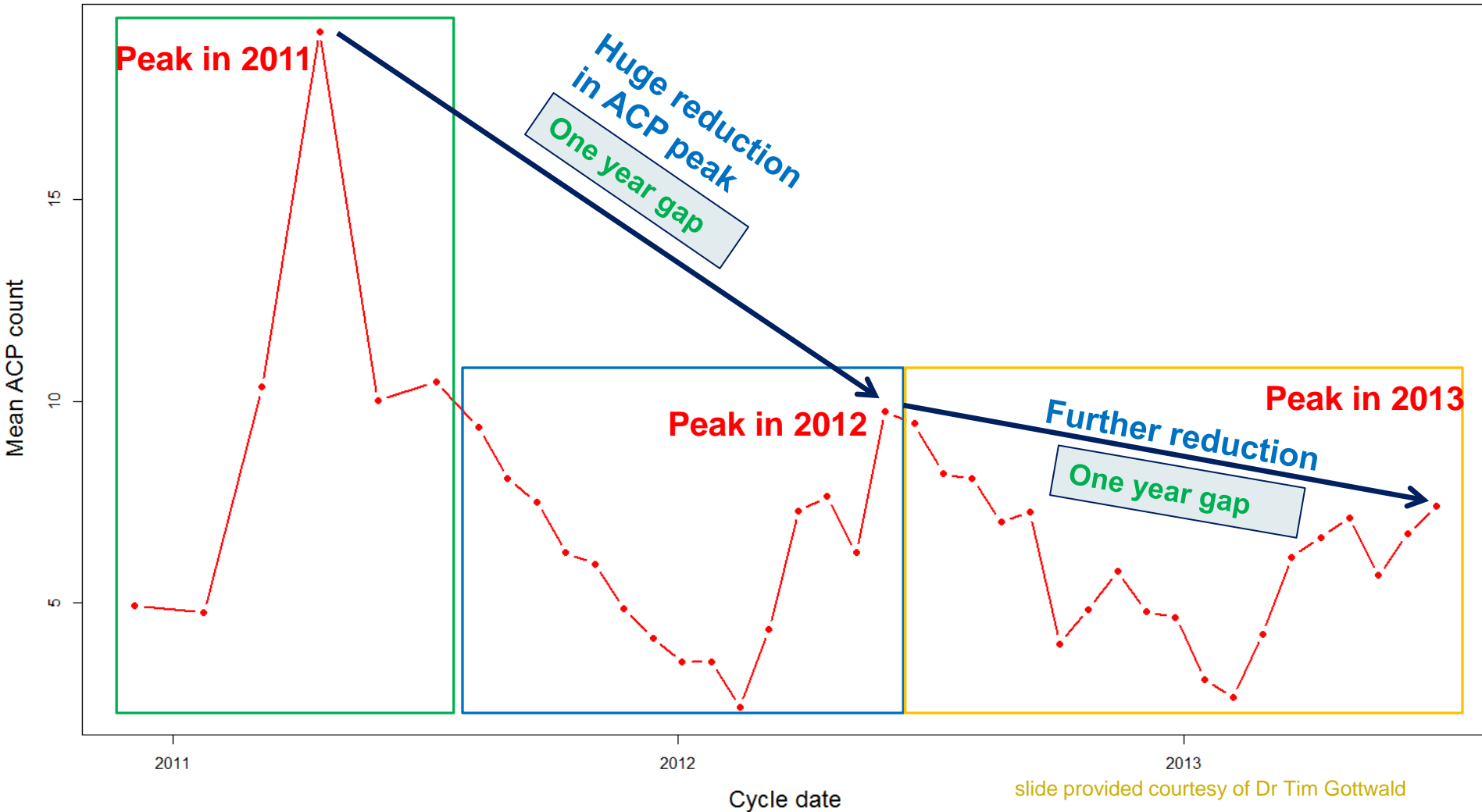


Low Participation vs High Participation

Fort Meade/Alturas CHMA

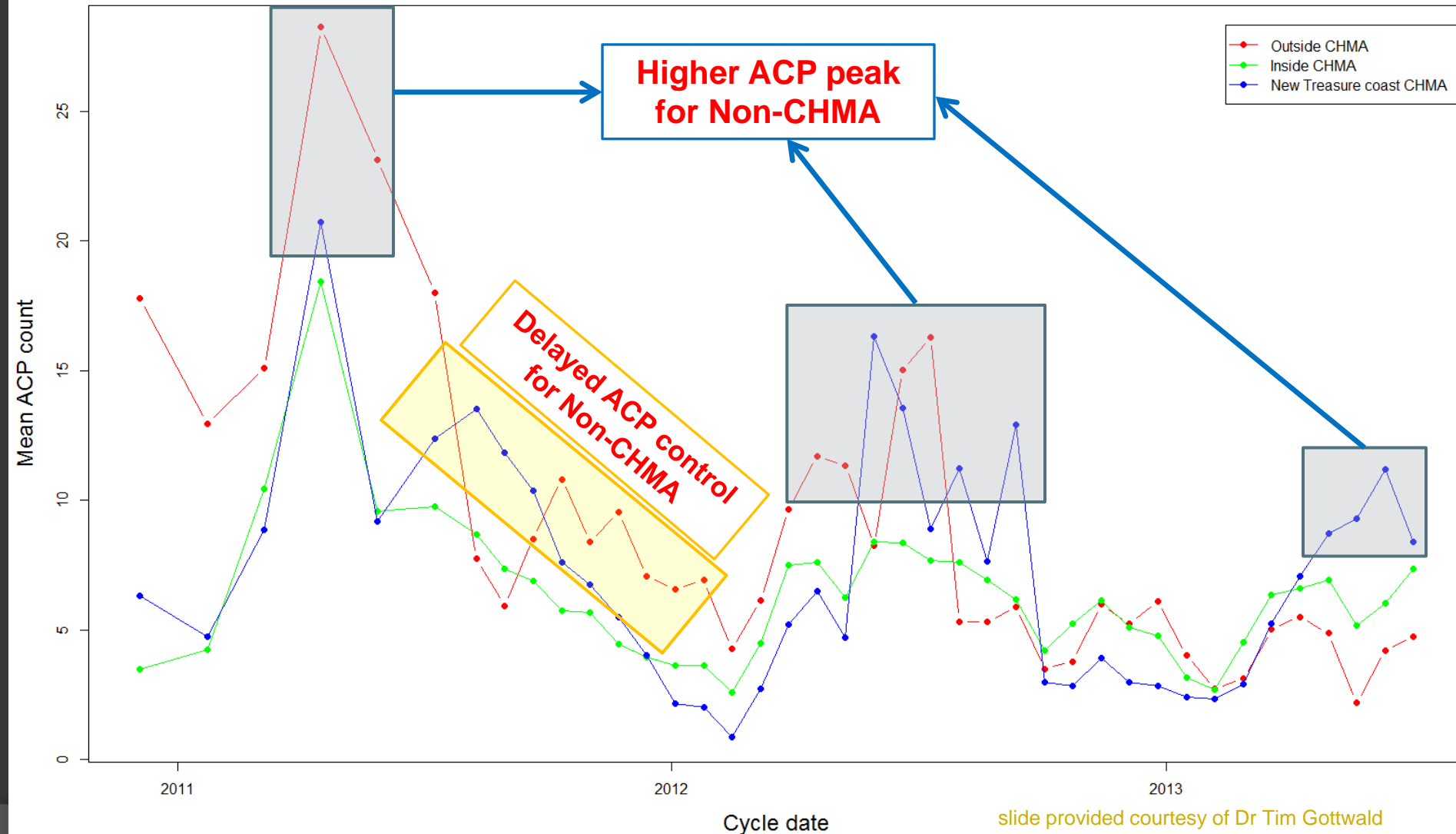


ACP controls



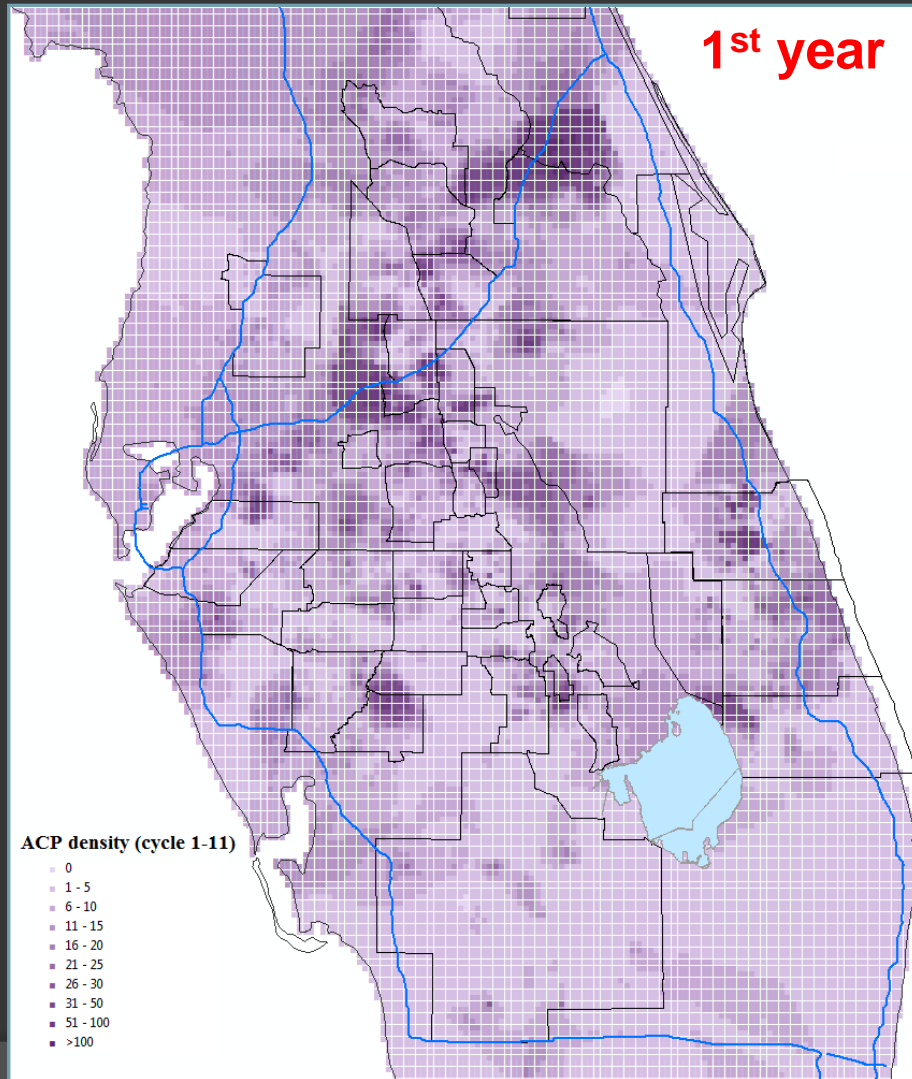
ACP controls for CHMA

- Paired t test was used to test the significant difference between ACP controls.
- ACP pressure is significantly lower inside CHMA, compared with outside CHMA ($p=0.001$) or New Treasure coast CHMA ($p=0.04$)

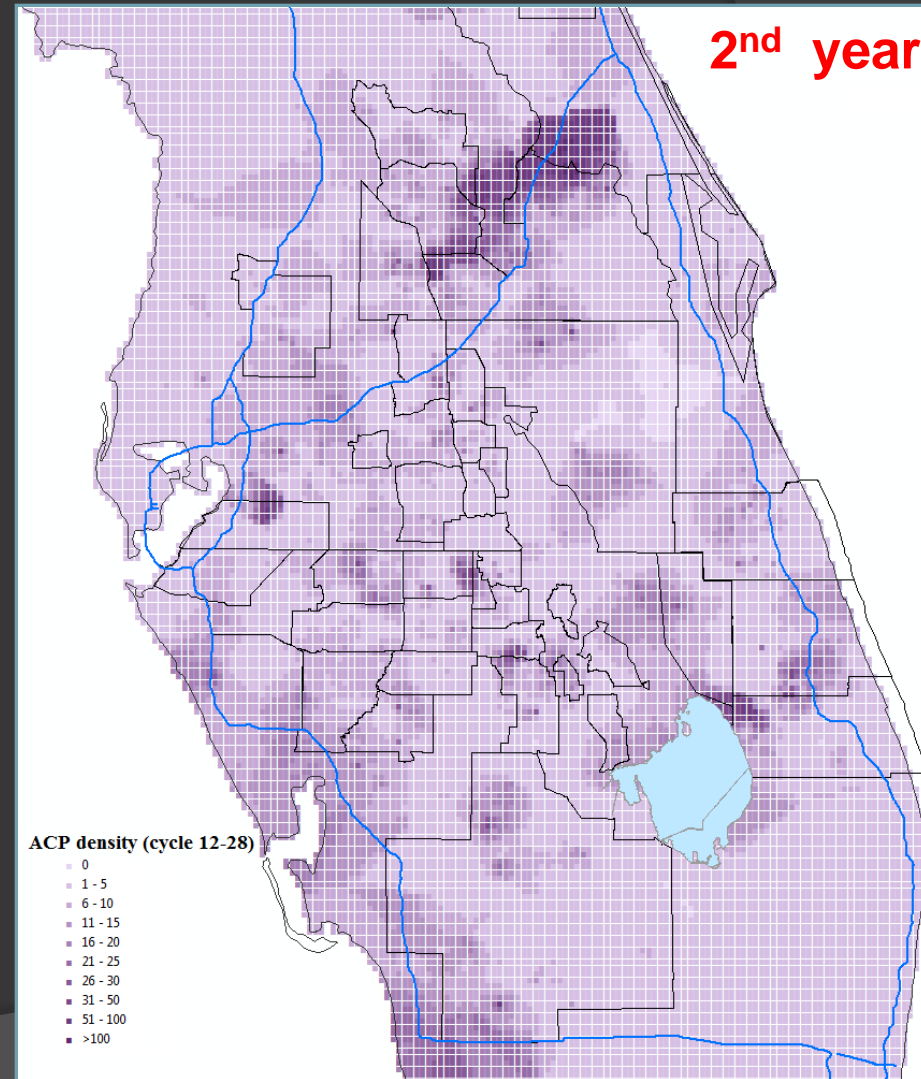


ACP controls for CHMA

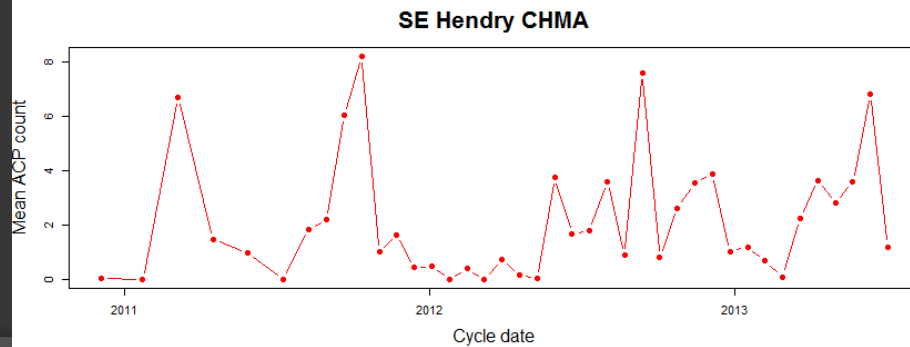
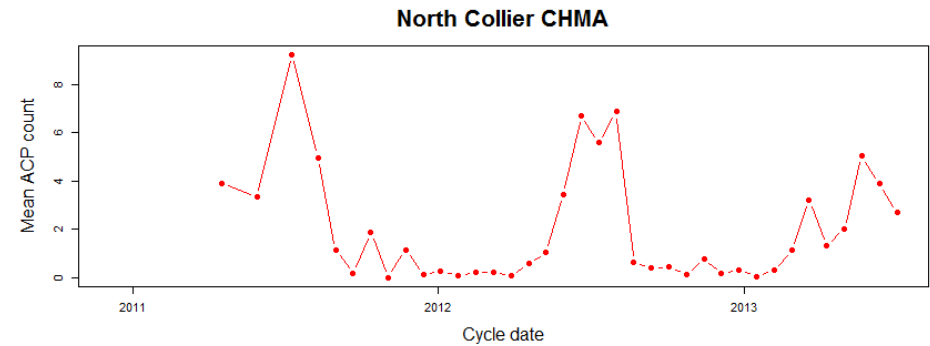
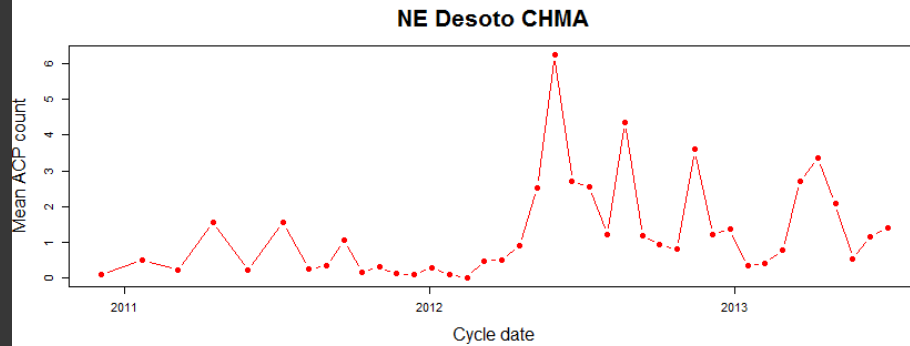
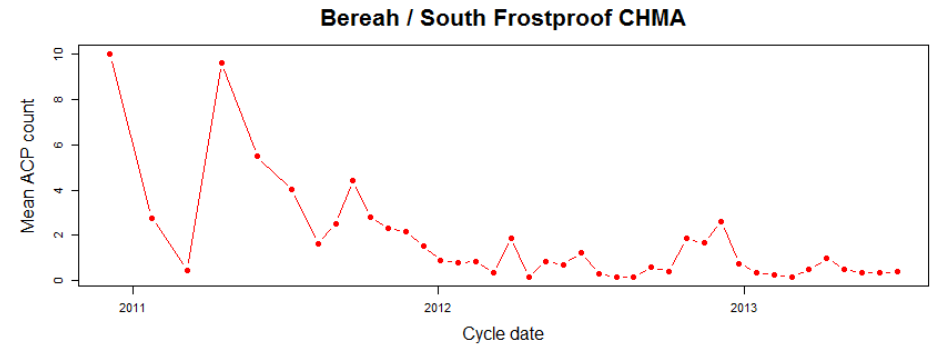
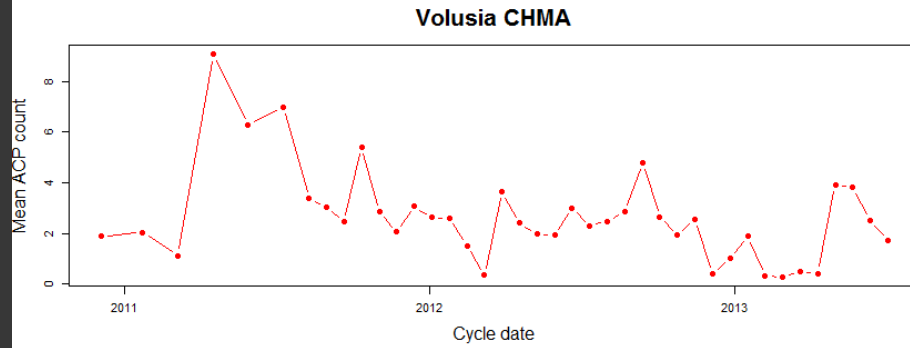
11/08/2010 to 11/11/2011



11/14/2011 to 11/02/2012



ACP controls for CHMA comparisons



Acknowledgements

● Brandon Page, IFAS

● Dr., Michael Rogers, IFAS

● Tim Riley, USDA

● CRDF

● FDACS

● USDA



For more information:

Visit the Florida CHMA Website:

www.flchma.org

Thank you

