

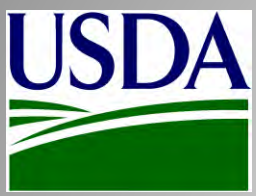
Cooperative Agricultural Pest Survey

A Program to Detect Plant Pests and Diseases of Regulatory Concern



Bradley Danner, FDACS-DPI-State Survey Coordinator



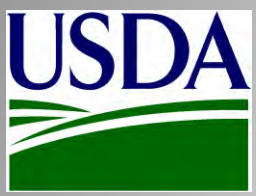


Cooperative Agricultural Pest Survey



- CAPS is a combined effort by Federal and State agricultural organizations to conduct surveillance, detection, and monitoring of agricultural and natural resource pests.
- The CAPS program serves the public and private sectors by improving the quality and availability of pest information.
- Plant diseases, insects, mites, nematodes, mollusks, & weeds.





Cooperative Agricultural Pest Survey

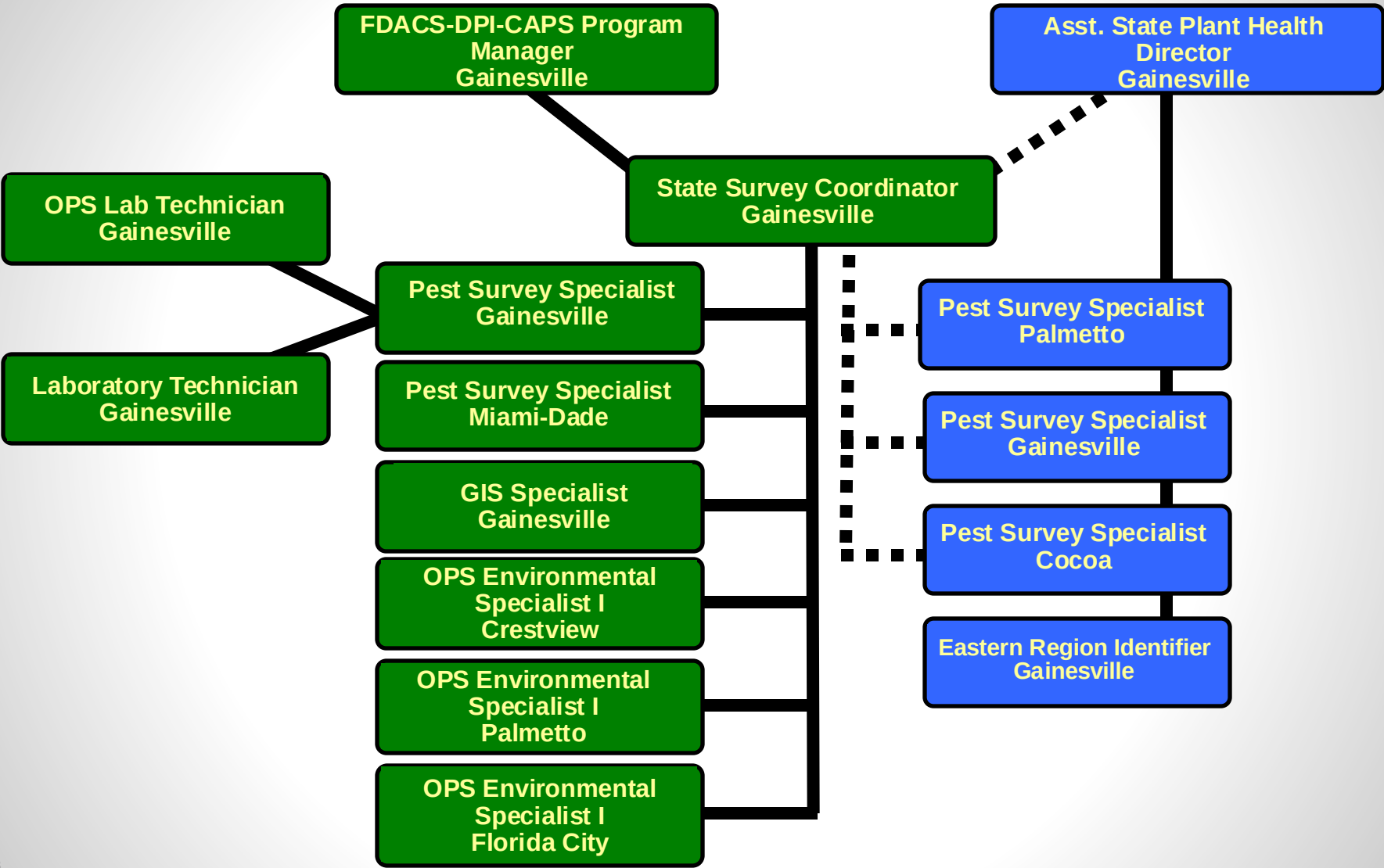


- Program was adapted by DPI in 2002
 - 2 State Positions
- Currently 10 (3 Plant Protection Act 7721, 1 Cotton Pest) State Positions and 5 USDA-PPQ positions
- FL CAPS program is the largest CAPS program nationwide





FL CAPS Organizational Chart





Florida CAPS Program (Largest in Country)



Gainesville (Headquarters):

Program Manager

DPI

State Survey Coordinator

DPI

Asst. State Plant Health Dir.

USDA

GIS Technician

DPI

Lab Technician

DPI

OPS Lab Technician

DPI

Entomological Identifier

USDA

Pest Survey Specialist

USDA

Pest Survey Specialist/Asst. State Survey Coordinator

DPI

Cocoa:

Pest Survey Specialist

USDA

Palmetto:

Pest Survey Specialist

USDA

OPS Environmental Specialist

DPI

Miami:

Pest Survey Specialist

DPI

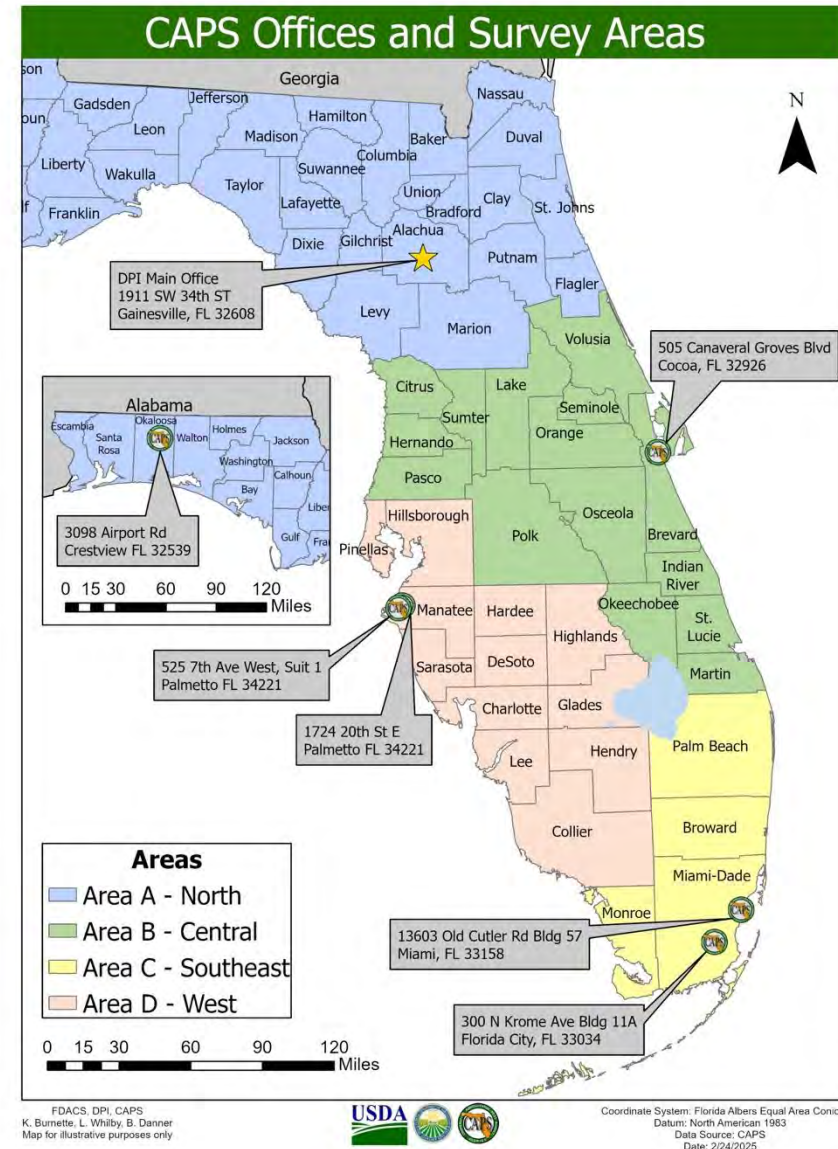
OPS Environmental Specialist

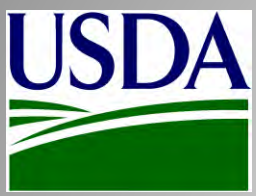
DPI

Crestview:

OPS Environmental Specialist

DPI





The Safeguarding System

- * Prevention

International Services; pre-clearance programs, etc.

- * Port of Entry Measures

CBP & PPQ

- * Pest Detection

CAPS, DPI inspectors, SPDN, SITC

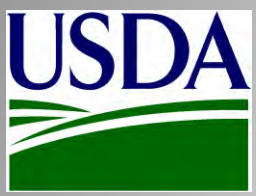
- * Eradication

Regulatory, Research & Extension

- * Mitigation

Regulatory, Research & Extension

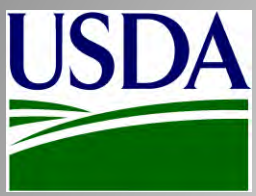




CAPS Today (rationale)

- * Survey for harmful & economically significant plant pests, diseases, and weeds that have **eluded** first-line inspections at our ports-of-entry (CBP, DHS & PPQ).
 - ☀ High Volume Ports, Int'l airports & deep-water ports
 - ☀ Mail facilities, Smuggling
 - ☀ Natural phenomena (Hurricanes)
 - ☀ Tourism
 - ☀ Diverse ethnic communities
 - ☀ Ideal environmental conditions
- * Surveys are necessary to safeguard our nation's agricultural and natural resources by detecting early pest infestations or introductions and facilitating foreign trade.

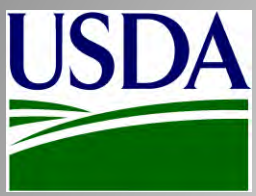




FL CAPS Current Surveys

- Exotic Wood Boring Beetle (EWBB/SWPM)
- Corn Commodity
- Nursery Survey
- Cotton Commodity Survey
- Tomato Commodity
- Cotton Seed Bug Multi-State Survey Program
- ❖ High Risk
- ❖ Interdiction Stations
- Outreach & Training Programs
- Early Detection Rapid Response (EDRR)





FL CAPS Current Surveys



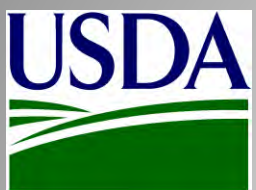
- Exotic Wood Boring Beetle (EWBB/SWPM)
- Corn Commodity
- Nursery Survey
- Cotton Commodity Survey
- **Tomato Commodity**
- **Cotton Seed Bug Multi-State Survey Program**



FL CAPS Current Surveys

- Exotic Wood Boring Beetle (EWBB/SWPM)
 - Traps: 169
 - *Platypus quercivorous*: 22
 - *Ips* spp.: 49
 - *Hylobius abietis* & *Tomicus destruens*: 37
 - General Ethanol: 37
 - General Cerambycid: 27
 - Visuals: 69
 - ALB/CLB/YLH Blitz: 100
 - Samples: 1,186
 - Specimens: 42,266



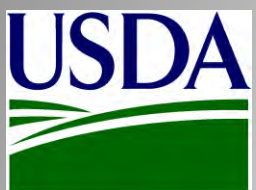


FL CAPS Current Surveys



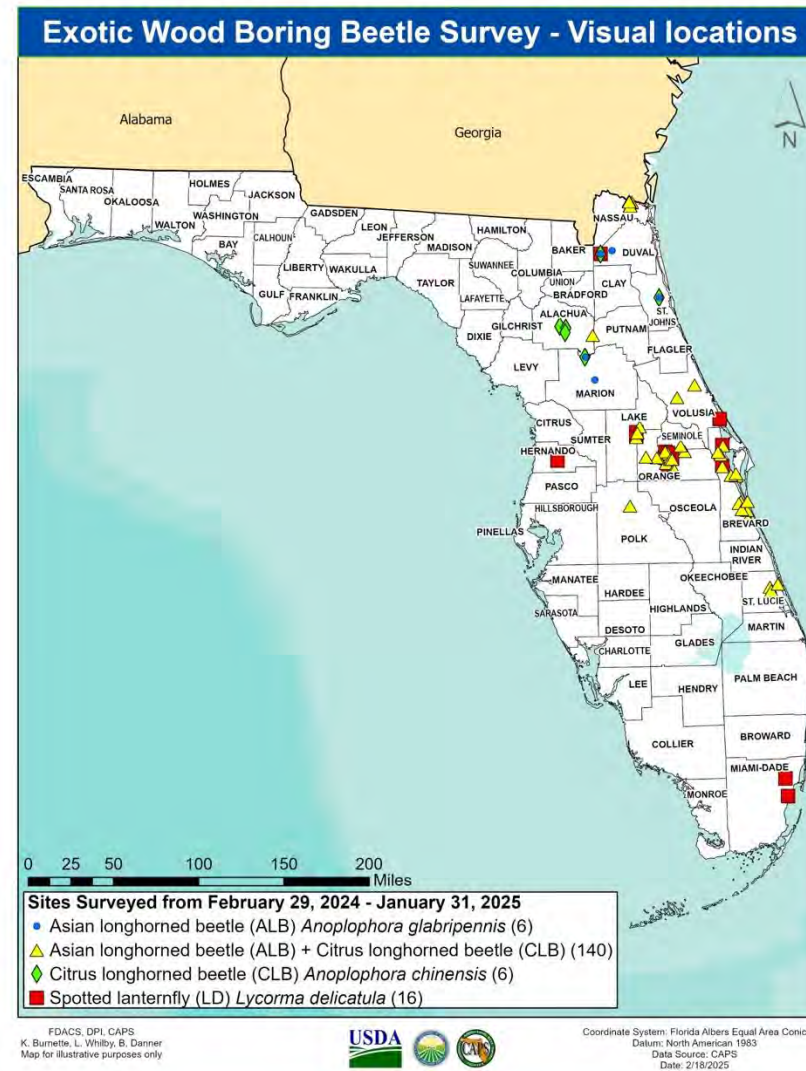
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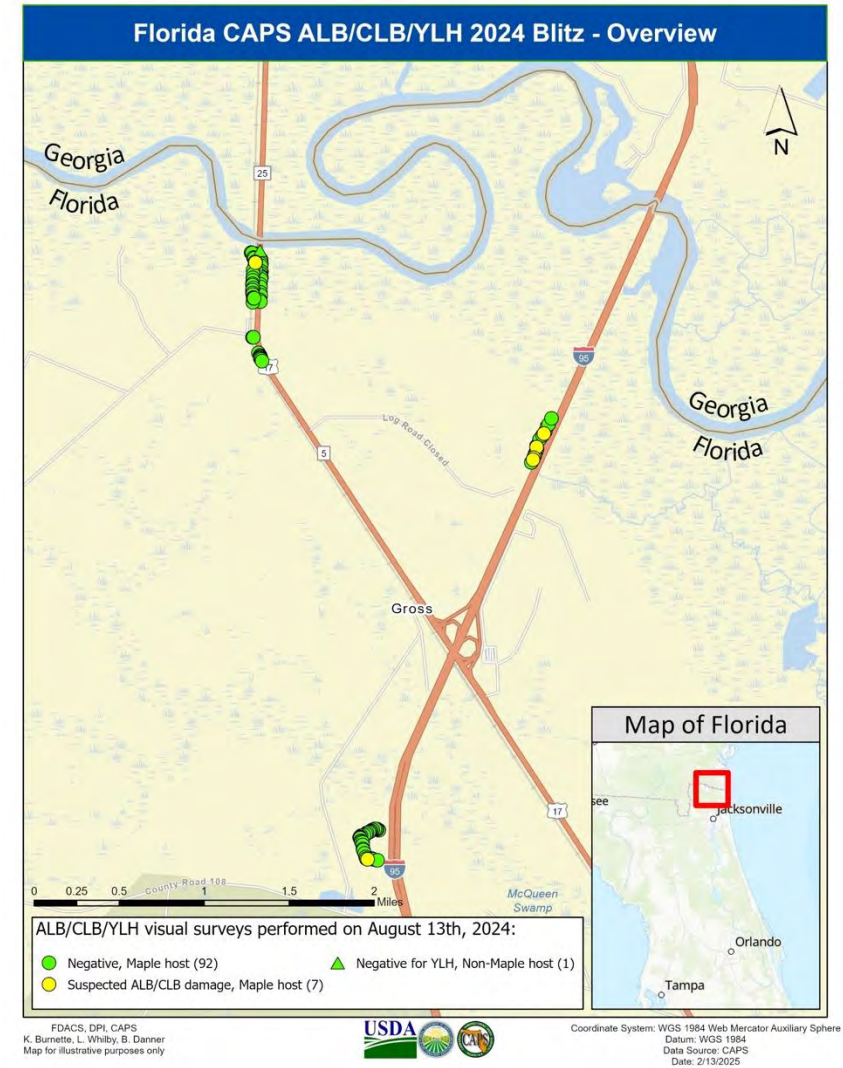
FL CAPS Current Surveys

- Exotic Wood Boring Beetle (EWBB/SWPM)
 - Traps: 169
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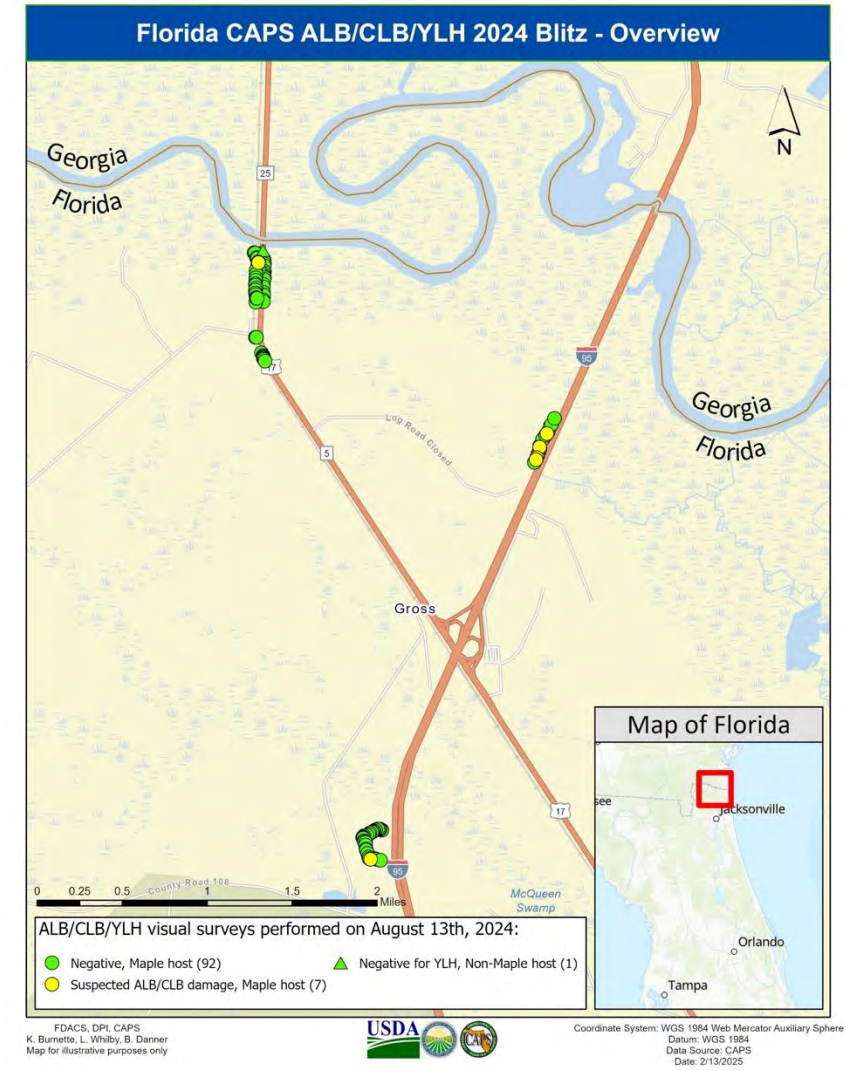
FL CAPS Current Surveys

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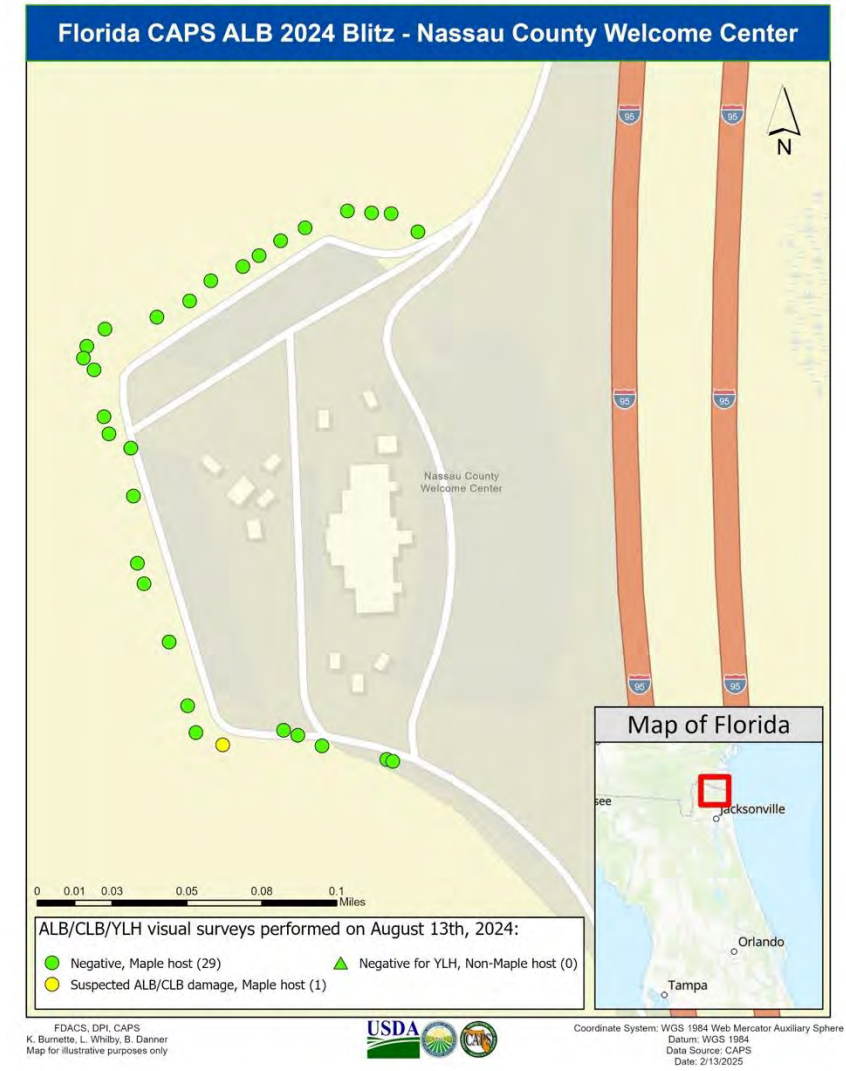
FL CAPS ALB/CLB/YLH Blitz

- 100 Visual Points Survey at 3 Locations
 - I-95 Welcome Center
 - I-95 Interdiction Station
 - Hwy 17 Interdiction Station



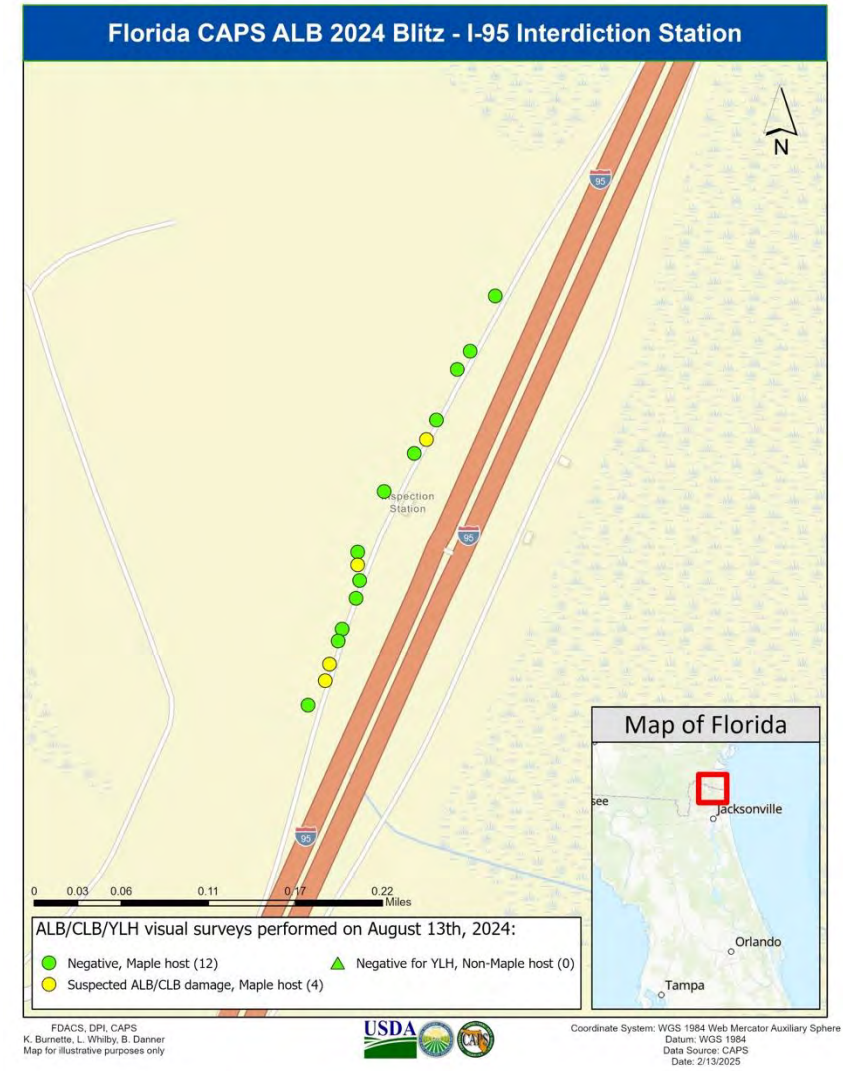
FL CAPS ALB/CLB/YLH Blitz

- 100 Visual Points Survey at 3 Locations
 - I-95 Welcome Center
 - 30 host trees
 - I-95 Interdiction Station
 - Hwy 17 Interdiction Station



FL CAPS ALB/CLB/YLH Blitz

- 100 Visual Points Survey at 3 Locations
 - I-95 Welcome Center
 - **I-95 Interdiction Station**
 - 16 host trees
 - Hwy 17 Interdiction Station



FL CAPS ALB/CLB/YLH Blitz

- 100 Visual Points Survey at 3 Locations
 - I-95 Welcome Center
 - I-95 Interdiction Station
 - **Hwy 17 Interdiction Station**
 - 53 host trees
 - 1 YLH specific site (under bridge)



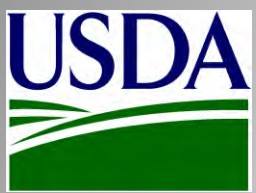
FL CAPS Current Surveys

- Corn Commodity
 - Traps: 135
 - *Laodelphax striatellus*: 41
 - *Autographa gamma*: 29
 - *Thaumatotibia leucotreta*: 33
 - *Helicoverpa armigera*: 32
 - Visuals: 35
 - Samples: 357
 - Specimens: 7,043



Photo by Melissa Franklin, 2013

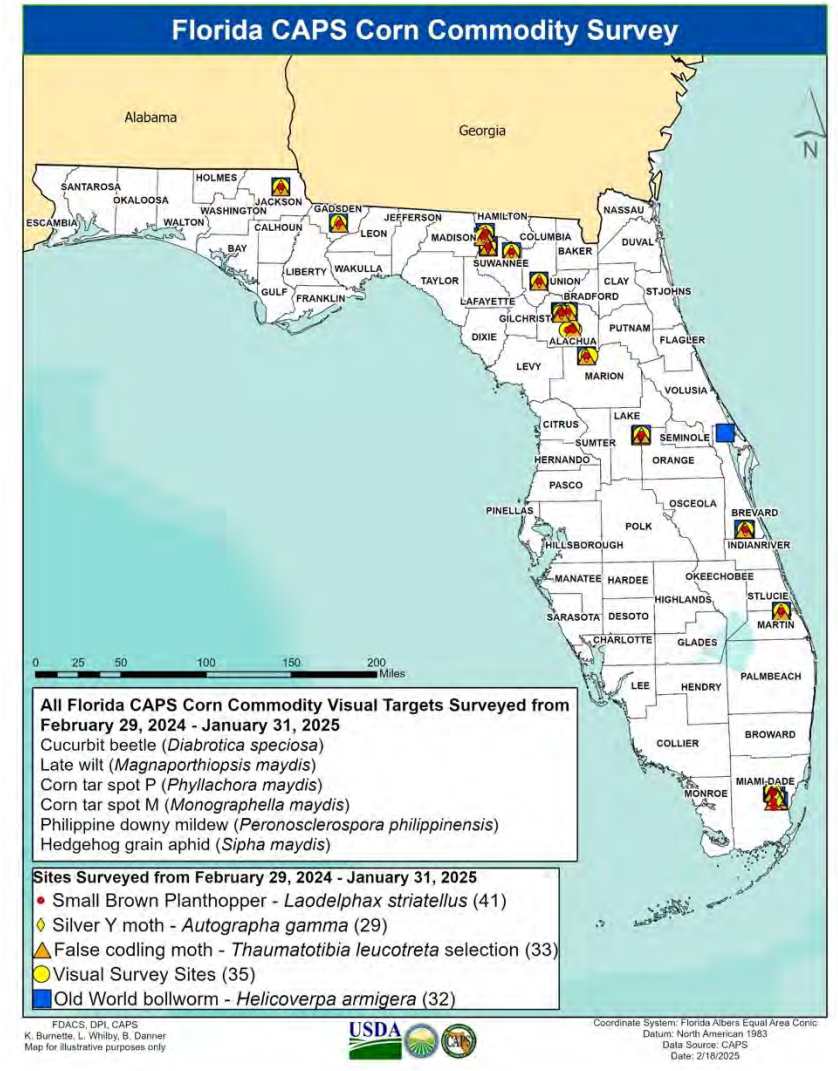




FL CAPS Current Surveys

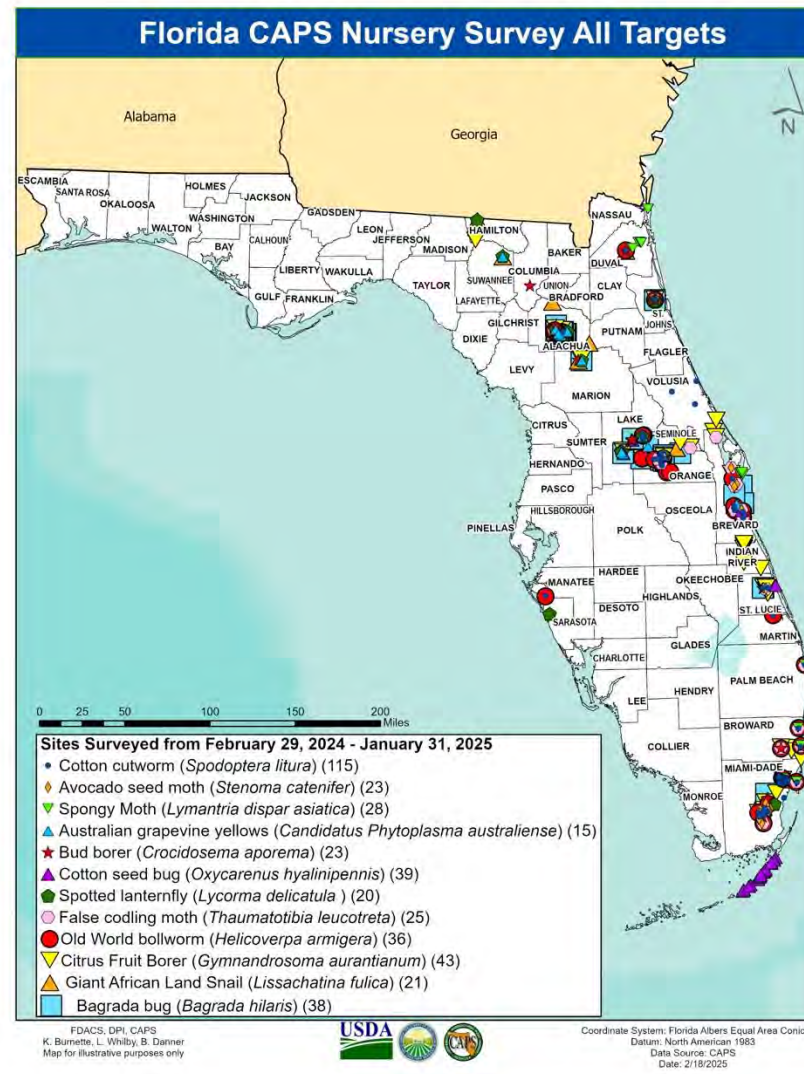
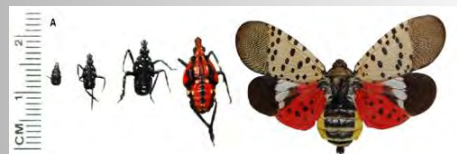
- Corn Commodity
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 - Visuals: 35
 - Samples: 357
 - Specimens: 7,043

Targets Not Found!



FL CAPS Current Surveys

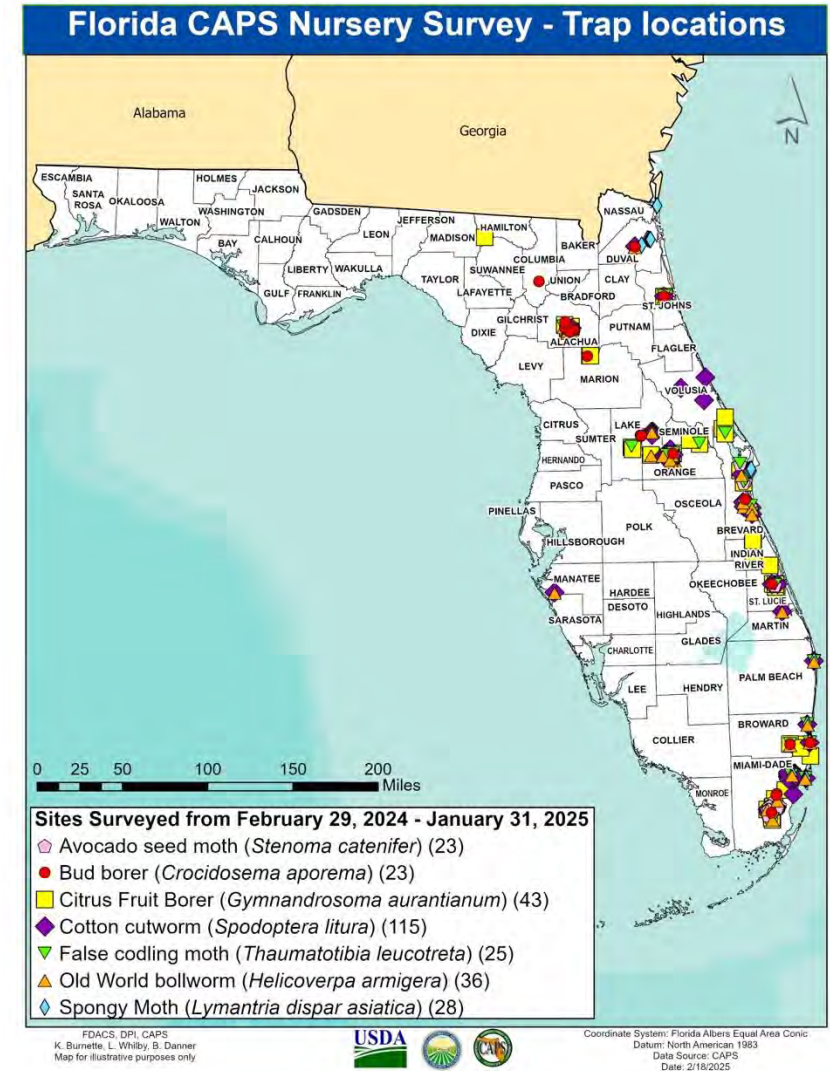
- Nursery Survey
 - Traps: 318
 - Visuals: 133
 - Samples: 642
 - Specimens: 5,711



FL CAPS Current Surveys

- Nursery Survey
 - Traps: 318
 - *Stenoma catenifer*: 23
 - *Crocidocema aporema*: 23
 - *Gymnandrosoma aurantianum*: 43
 - *Spodoptera litura*: 115
 - *Thaumatotibia leucotreta*: 25
 - *Helicoverpa armigera*: 36
 - *Lymatria dispar asiatica*: 28
 - Visuals: 133
 - Samples: 642
 - Specimens: 5,711

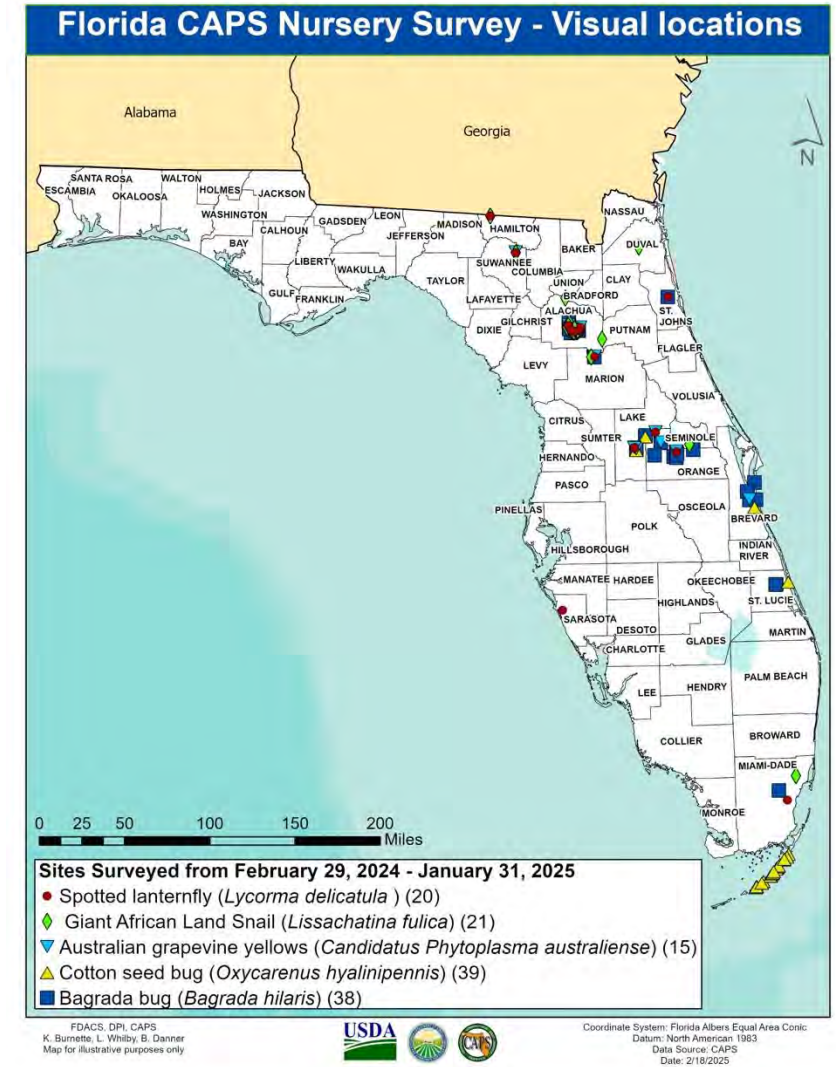
Spodoptera litura Found!



FL CAPS Current Surveys

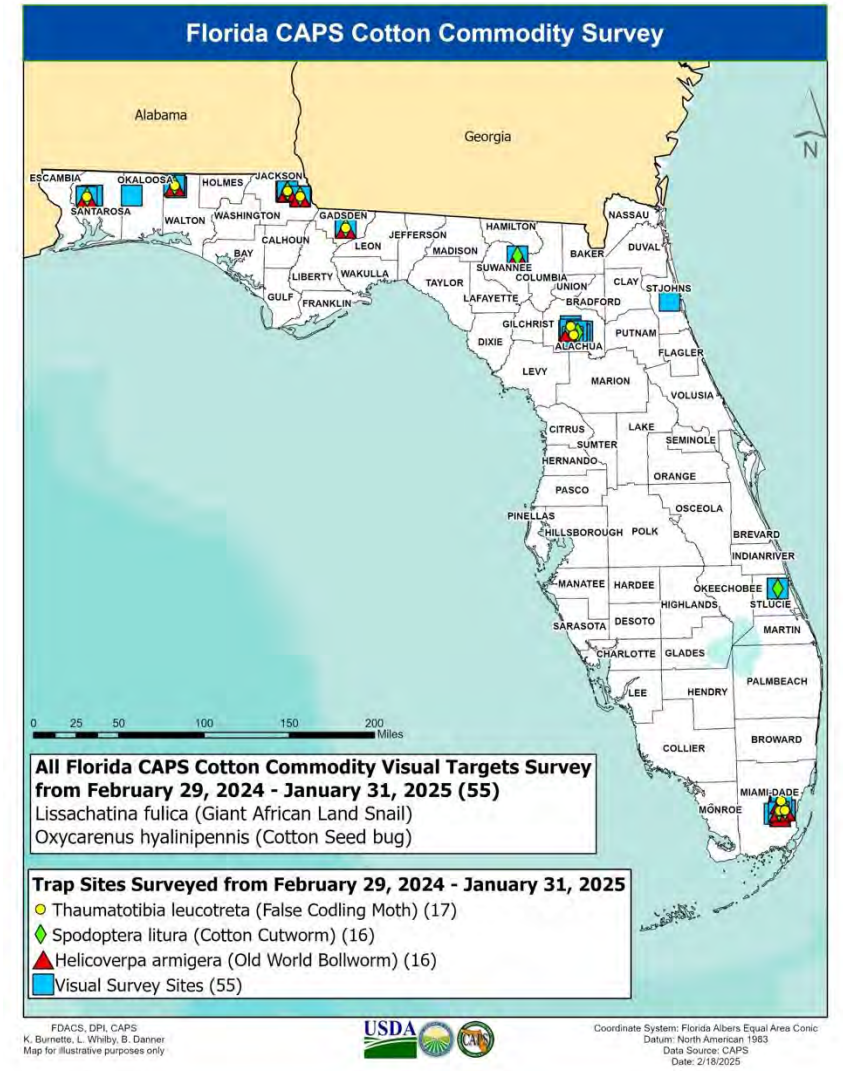
- Nursery Survey
 - Traps: 318
 - Visuals: 133
 - *Lycorma delicatula*: 20
 - *Lissachatina fulica*: 21
 - *Candidatus Phytoplasma australiense*: 15
 - *Oxycarenus hyalinipennis*: 39
 - *Bagrada hilaris*: 38
 - Samples: 642
 - Specimens: 5,711

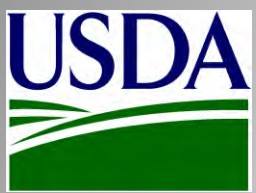
Targets Not Found!



FL CAPS Current Surveys

- Cotton Commodity & Cotton Seed Bug
 - Traps: 49
 - *Thaumatotibia leucotreta*: 17
 - *Spodoptera litura*: 16
 - *Helicoverpa armigera*: 16
 - Visuals: 55
 - Samples: 67
 - Specimens: 2,720

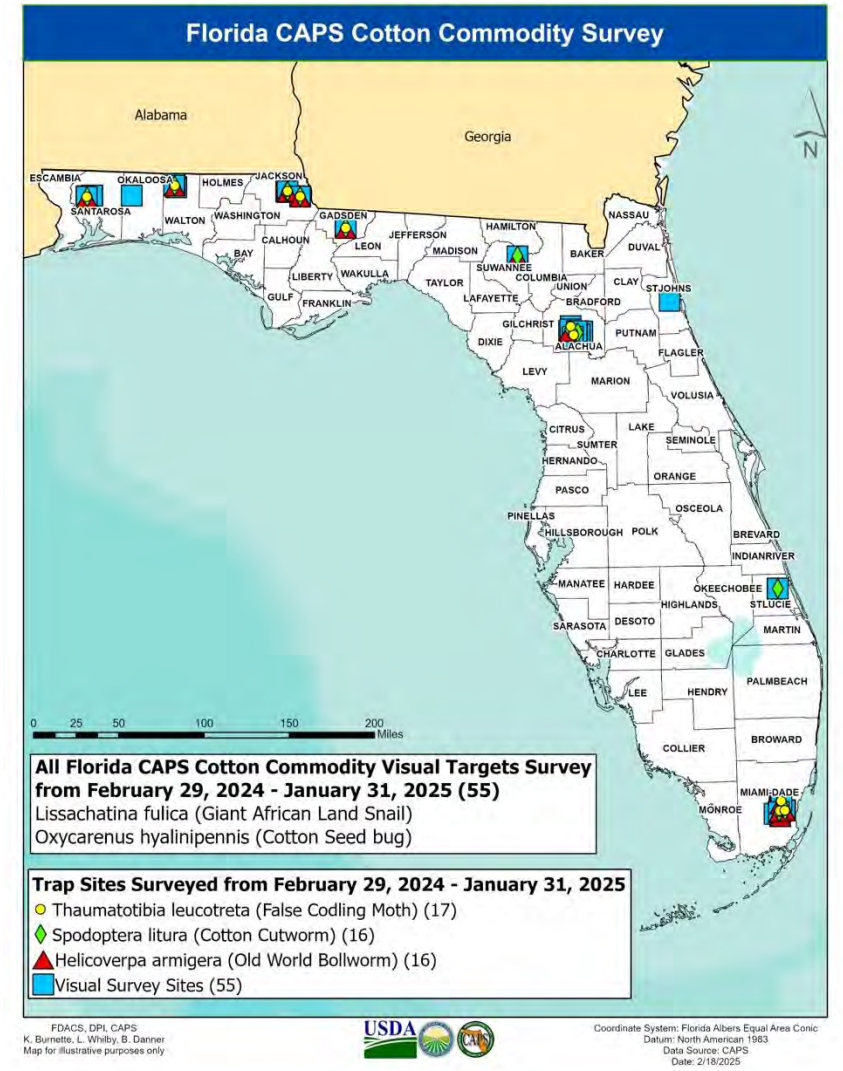




FL CAPS Current Surveys

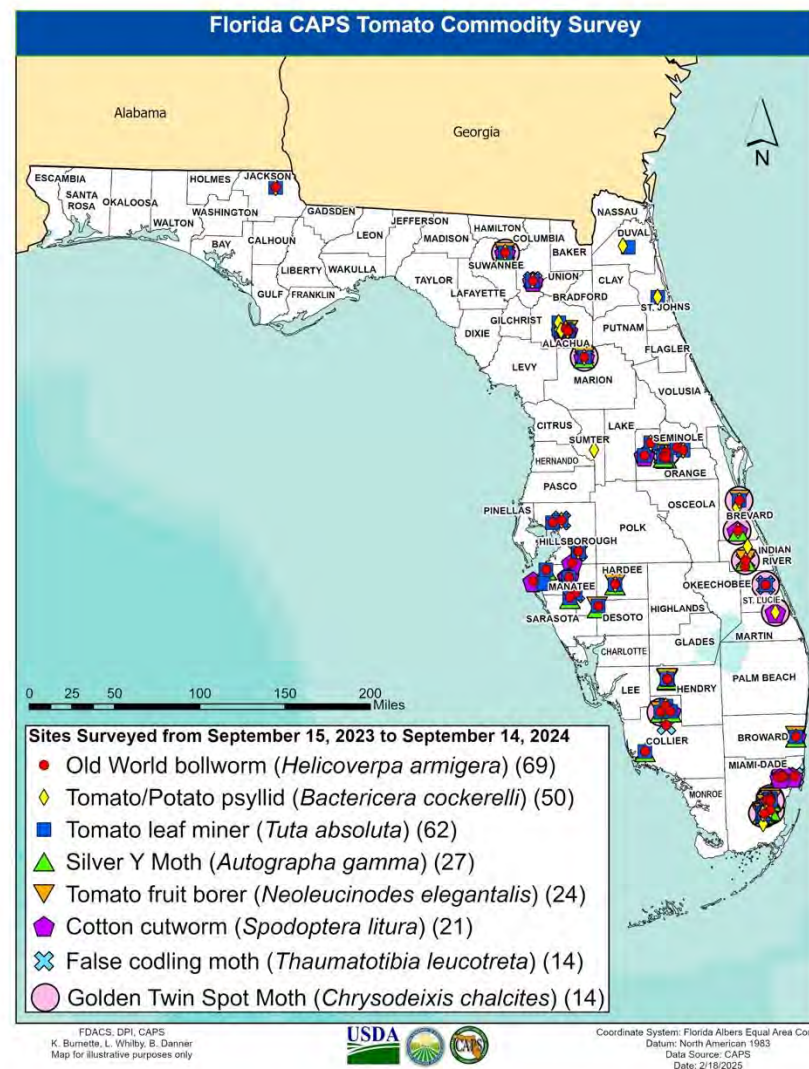
- Cotton Commodity & Cotton Seed Bug
 - Traps: 49
 - *Thaumatotibia leucotreta*: 17
 - *Spodoptera litura*: 16
 - *Helicoverpa armigera*: 16
 - Visuals: 55
 - Samples: 67
 - Specimens: 2,720

Targets Not Found!



FL CAPS Current Surveys

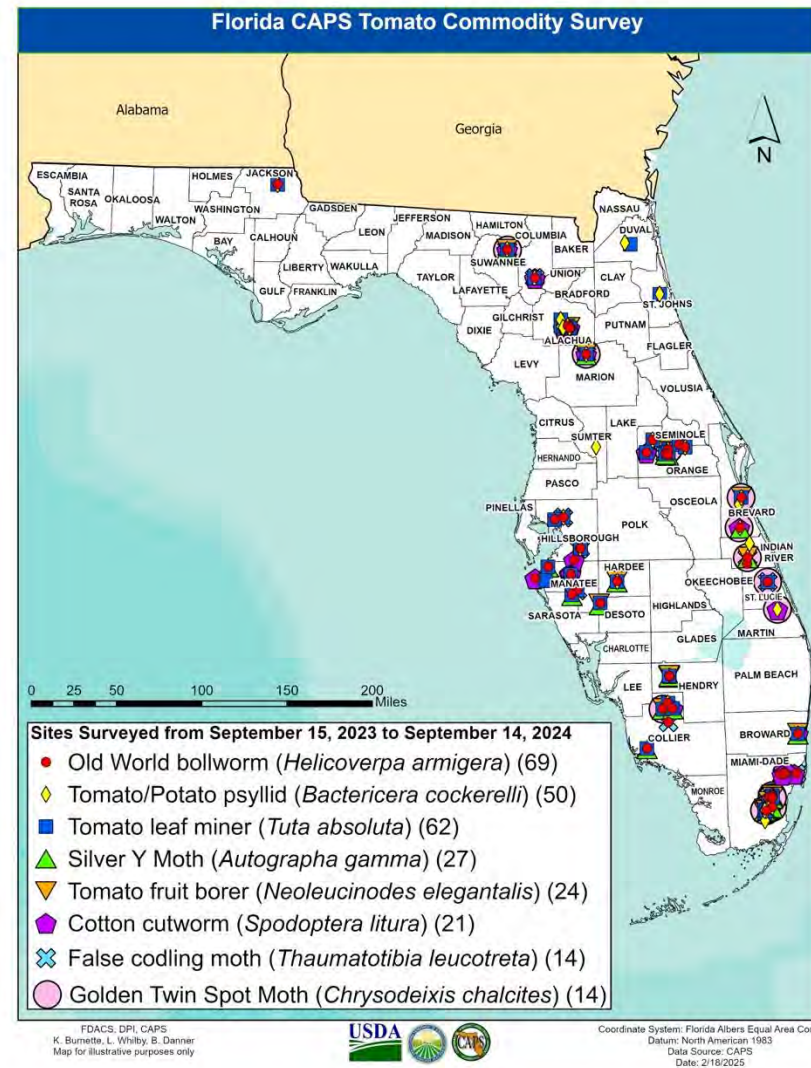
- Tomato Commodity
 - Traps: 281
 - *Helicoverpa armigera*: 69
 - *Bactericera cockerelli*: 50
 - *Phthorimea absoluta*: 62
 - *Autographa gamma*: 27
 - *Neolucinoides elegantalis*: 24
 - *Spodoptera litura*: 21
 - *Thaumatotibia leucotreta*: 14
 - *Chrysodeixis chalcites*: 14
 - Samples: 381
 - Specimens: 2,445

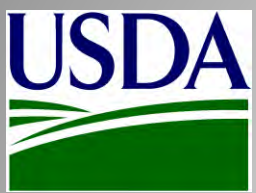


FL CAPS Current Surveys

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 - Traps: 281
 - *Helicoverpa armigera*: 69
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 - Samples: 381
 - Specimens: 2,445

Targets Not Found!



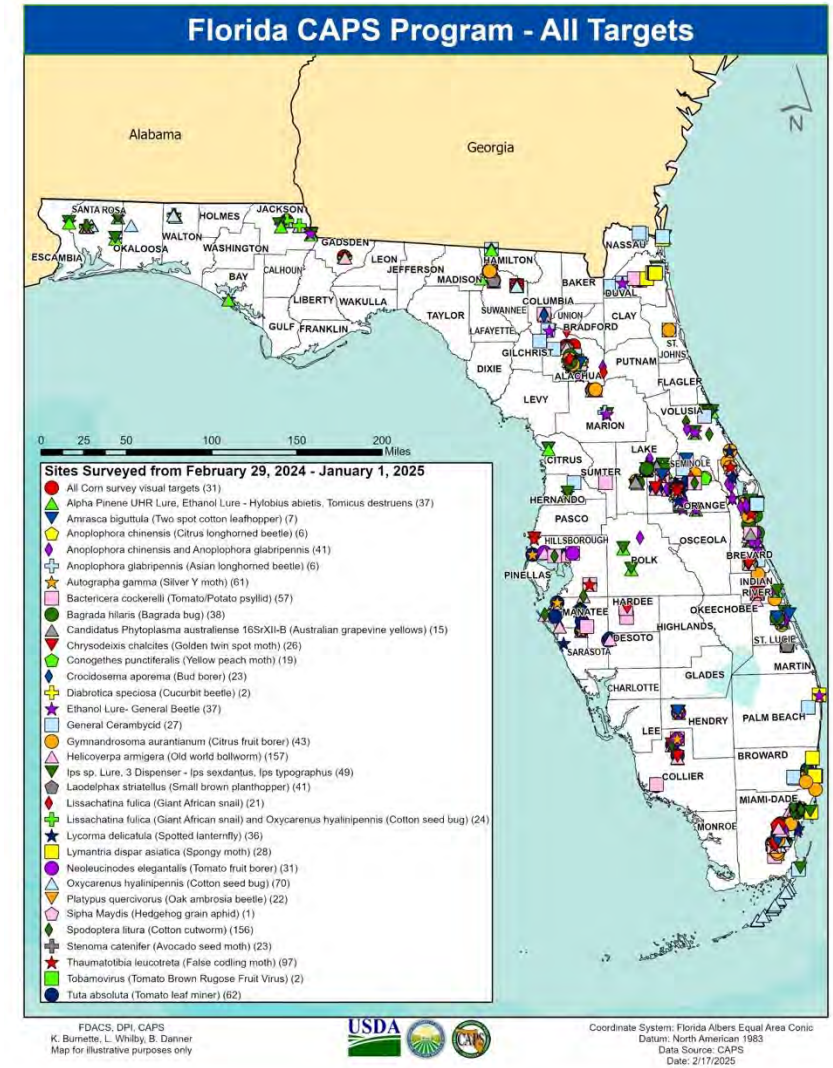


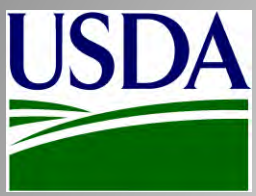
FL CAPS Current Surveys

Survey	# of Samples	# of Specimens
Corn	357	7,043
Cotton	67	2,720
EWBB	1,186	42,266
Nursery	642	5,711
Tomato	381	2,445
Total	2,633	60,185

New Records: 43

- (1) US Continental Record - *Dendropsyche venezuelae* –Psychidae – Lepidoptera
- (42) First in County Records
 - (14) *Amrasca biguttula* – Cicadellidae - Hemiptera





Thank You!

FDACS-DPI Cooperators

- Justin Anto
- Abby Bartlett
- Victoria Benjamin
- Sarah Bachar
- Bill Churchill
- Jakira Davis
- Sam Hart
- Angi Hutcherson
- Ray Jarrett
- Diane McColl
- Twylah Morelli
- Juan Ochoa
- Caroline Pride
- Ayiana Rivera Robles
- Sam Smith
- Alec Tasi
- Lisa Tyler
- Mark Zenoble

USDA-APHIS-PPQ Cooperators

- Ana Arechabaleta
- Amanda Ascrivani
- Arabia Barroso
- Camila Caceres Castano
- Hanoy Carmente German
- Raisha Cornier
- Derrick Cotton
- Jian Zayas Declet
- Pedro De La Concepcion
- Jake Farnum
- Alesha Fuller
- Nora Garcia
- Gloria Gonzalez
- Liliana Jerez
- John Leavengood
- Jay Martin
- Sean McCarthy
- Brian Michalak

- James Pernsteiner
- Matthew Quenaudon
- Jason Rivera
- Tanya Sierra Rivera
- Anthony Tullock
- Leicet Diaz Varona
- Junior Williams

CBP Cooperators

- Michael Gilson
- David Miller
- Jennifer Flores Torres

FDACS-FFS Cooperators

- Bobby Cahal

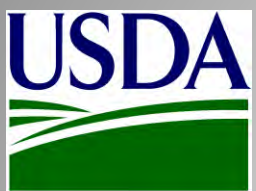
Traps: 952

Visits: 8,342

Visuals: 392

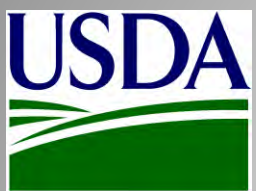
Visits: 1,440





Questions?



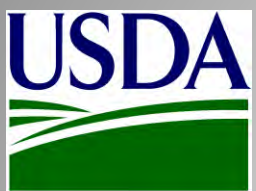


Spodoptera litura Survey



Photo taken by: Natasha Wright, Braman Termite & Pest Elimination, Bugwood.org

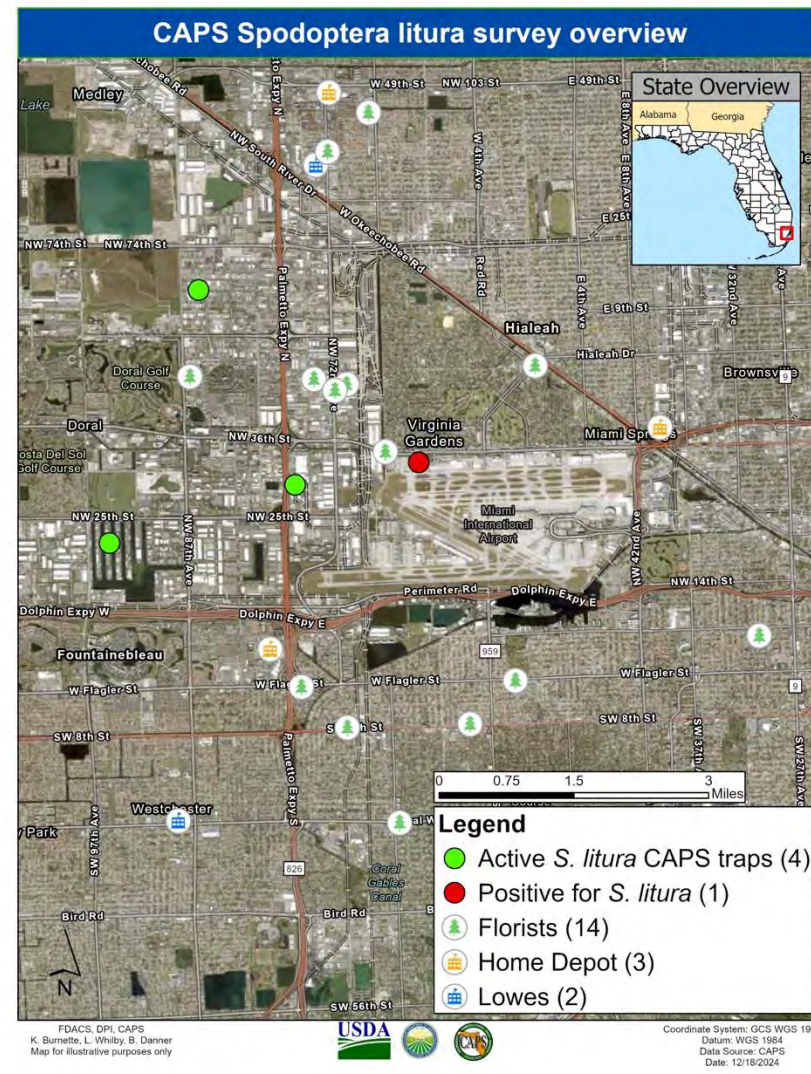


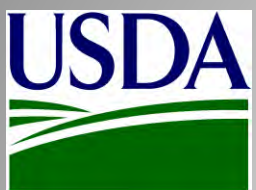


FL CAPS Current Surveys



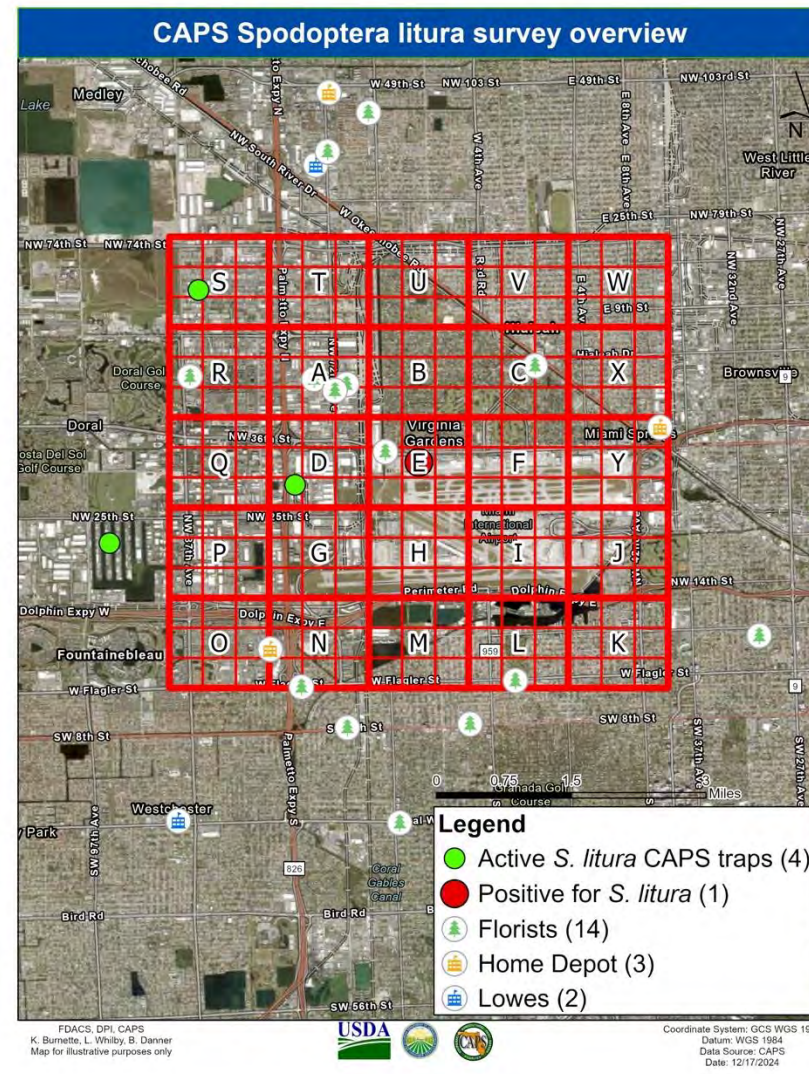
- *Spodoptera litura* Delimitation Survey
 - Collected: 11/27/2024
 - Received: 12/12/2024
 - Identified: 12/13/2024





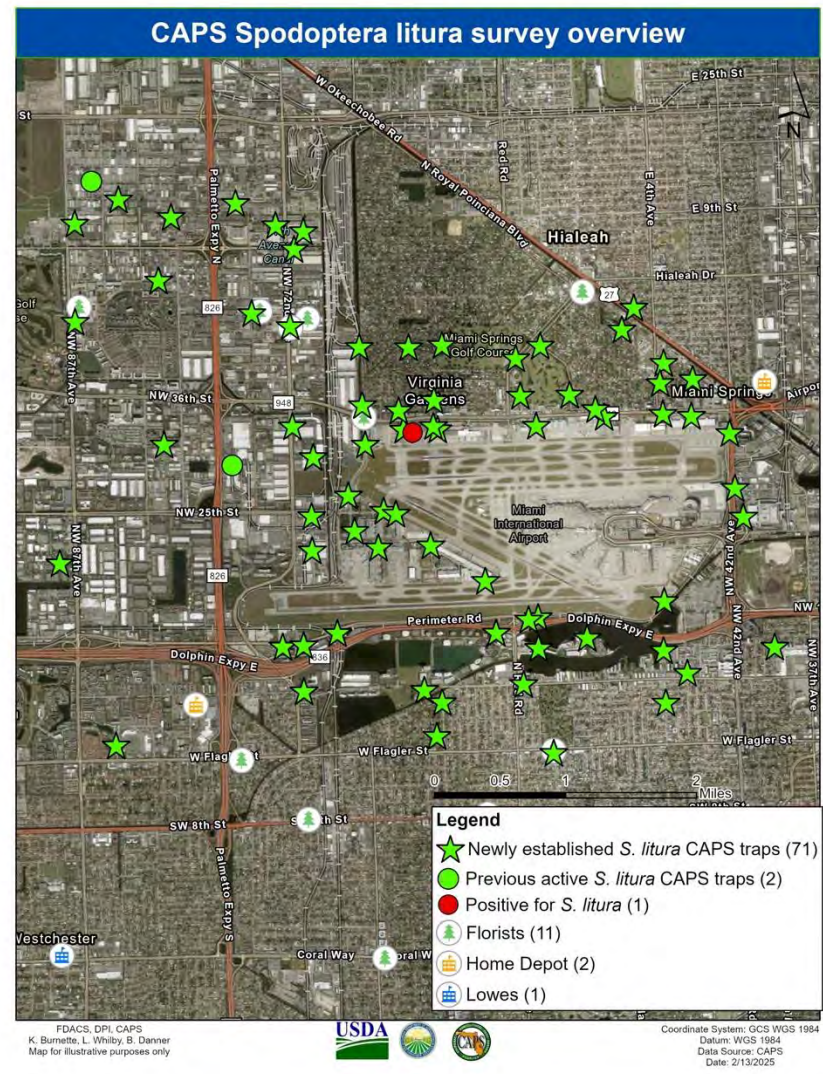
FL CAPS Current Surveys

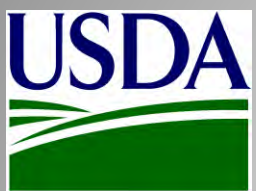
- *Spodoptera litura* Delimitation Survey
 - Collected: 11/27/2024
 - Received: 12/12/2024
 - Identified: 12/13/2024
 - Deploy Traps: 12/16/2024



FL CAPS Current Surveys

- *Spodoptera litura* Delimitation Survey
 - Traps: 74
 - CAPS Traps: 3
 - Delimitation Traps: 71
 - Positive Traps: 1
 - Samples: 18
 - Specimens: 27





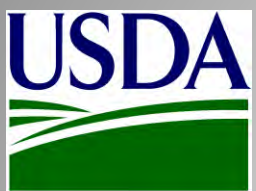
Thank You!



FDACS-DPI Cooperators

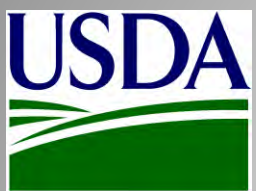
- Carly Dodgen
- Julia Laur
- Phellicia Perez
- Mileydis Vargas





Questions?





Amrasca biguttula Survey

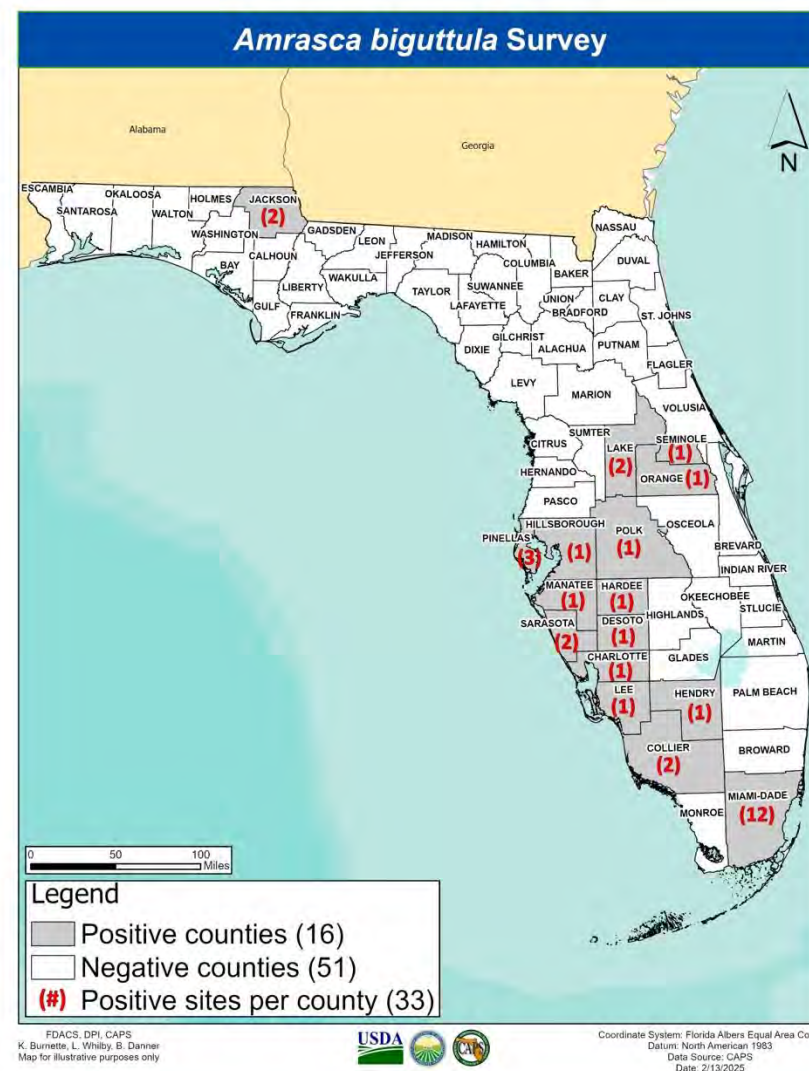


Photo taken by: Daphne Zapsas, USDA-APHIS



FL CAPS Current Surveys

- *Amrasca biguttula* Survey
 - Positive Counties: 16
 - Positive Sites: 33

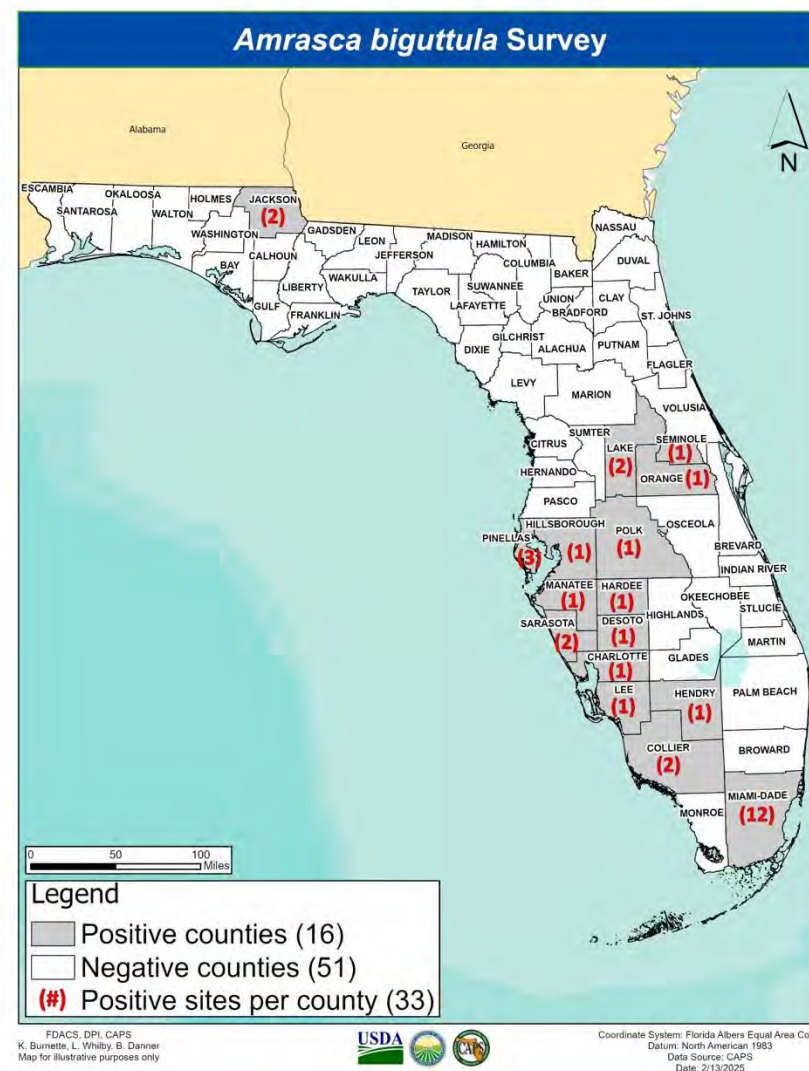


FL CAPS Current Surveys

- *Amrasca biguttula* Survey

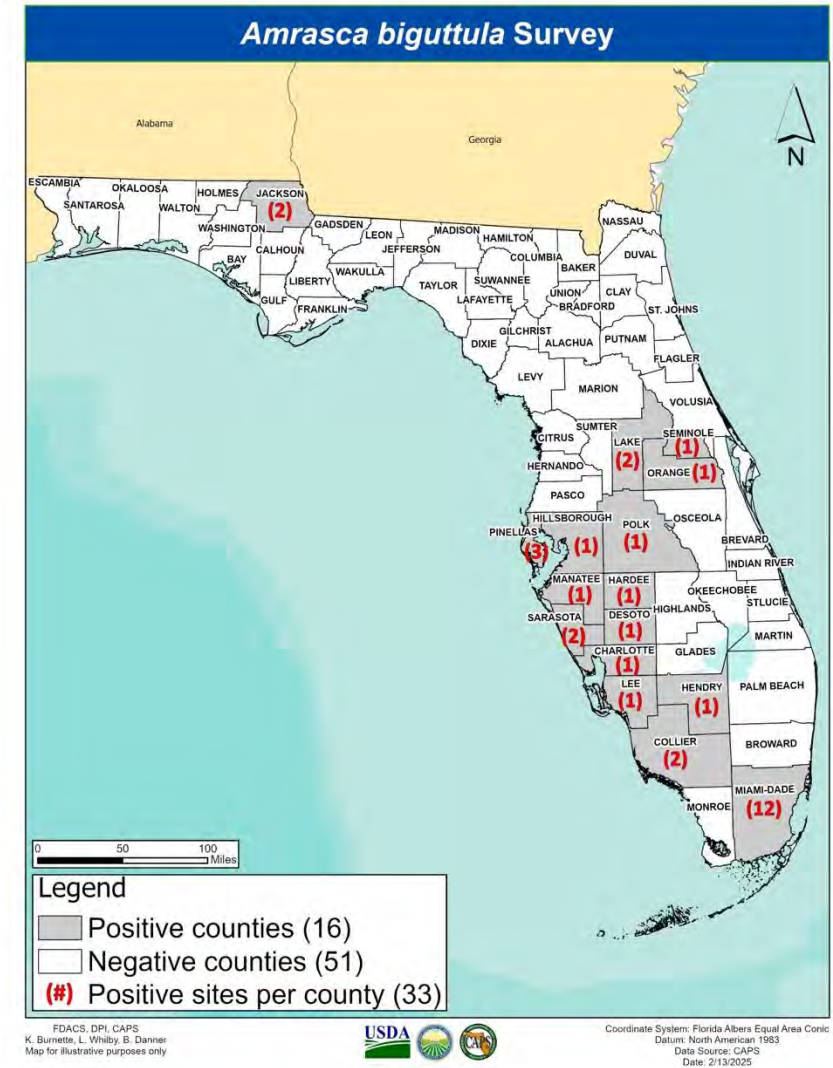
- County List

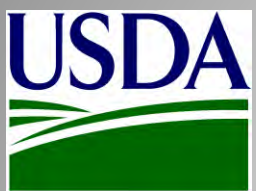
- Charlotte
- Collier
- Desoto
- Hardee
- Hendry
- Hillsborough
- Jackson
- Lake
- Lee
- Manatee
- Miami-Dade – US Continental Record (Amy Roda, USDA)
- Orange
- Pinellas
- Polk
- Sarasota
- Seminole



FL CAPS Current Surveys

- *Amrasca biguttula* Survey
 - Florida Host Records
 - *Abelmoschus esculentus* (Okra)
 - *Alcea rosea* (Hollyhock)
 - *Gossypium sp.* (Cotton)
 - *Hibiscus rosa-sinensis* (Hibiscus)
 - *Sida ulmifolia* (Common Wireweed)
 - *Solanum chenopodioides* (Black Nightshade)
 - *Solanum melongena* (Eggplant)



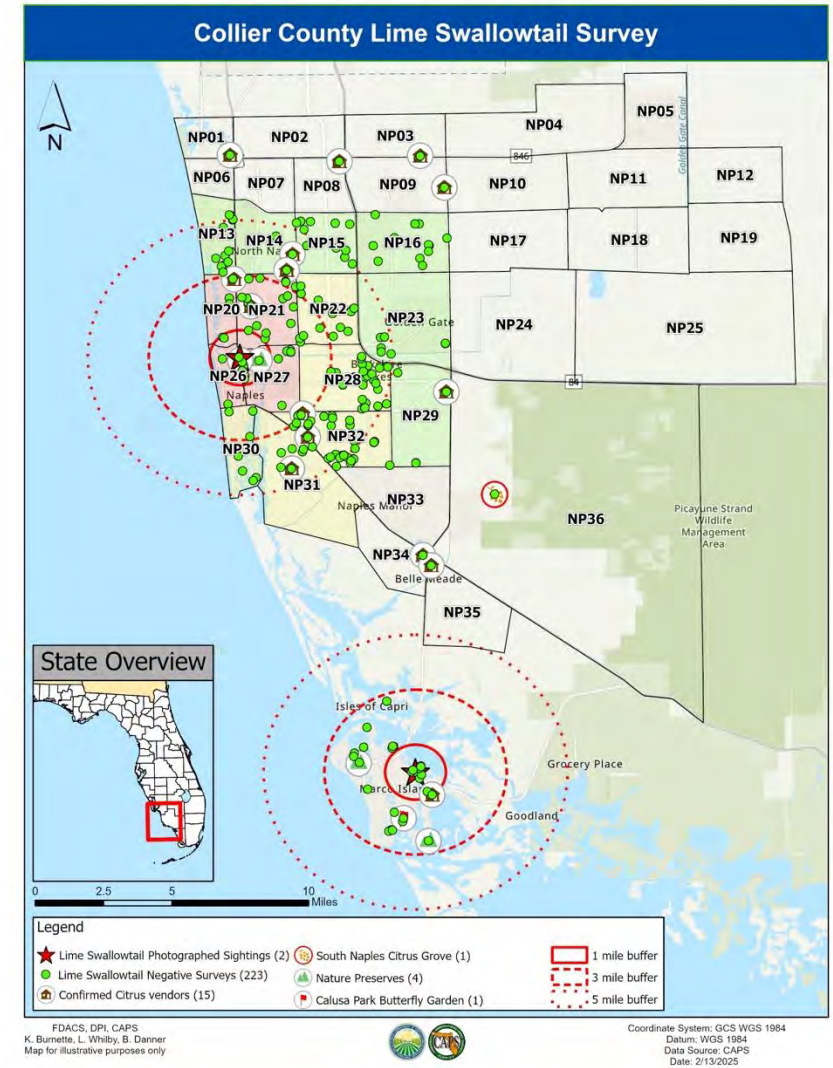


Questions?



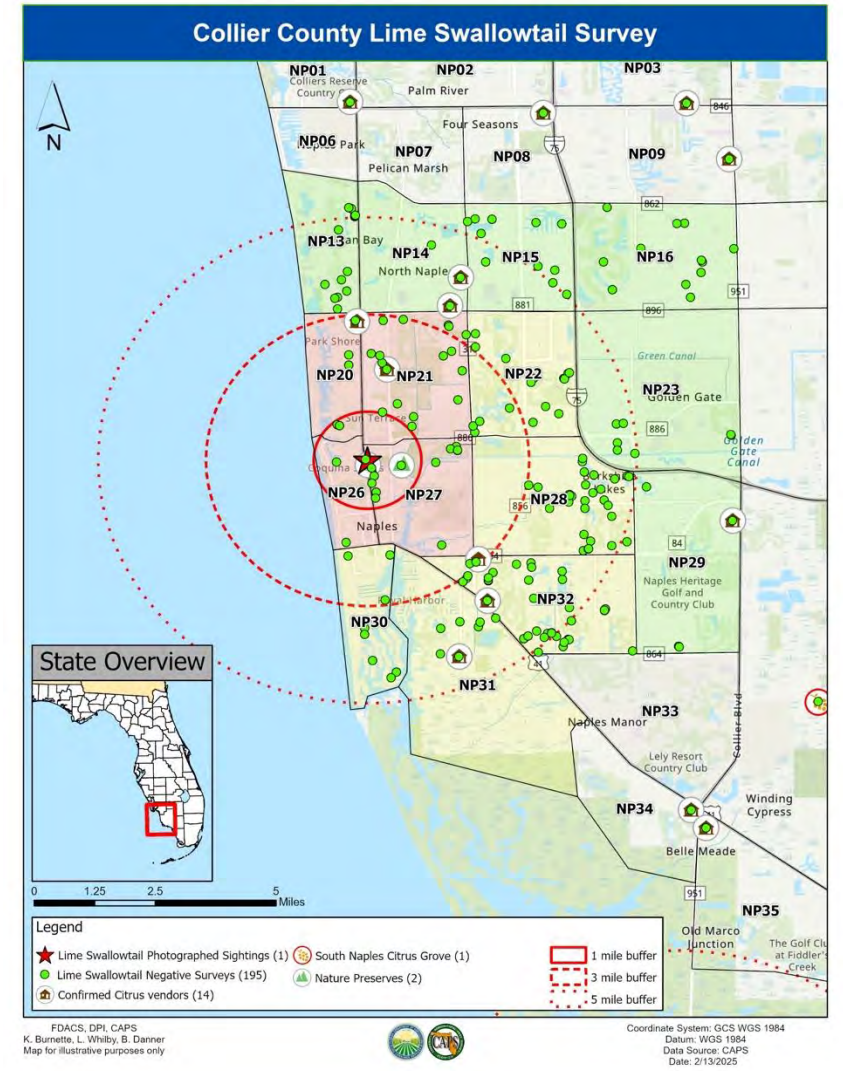
FL CAPS Current Surveys

- Lime Swallowtail Survey
 - 09/09/2024 – Naples Preserve
 - 09/10/2024 – Leigh Plummer Park
 - Survey Points: 223
 - Naples
 - Marco Island
 - Samples: 25
 - Specimens: 25



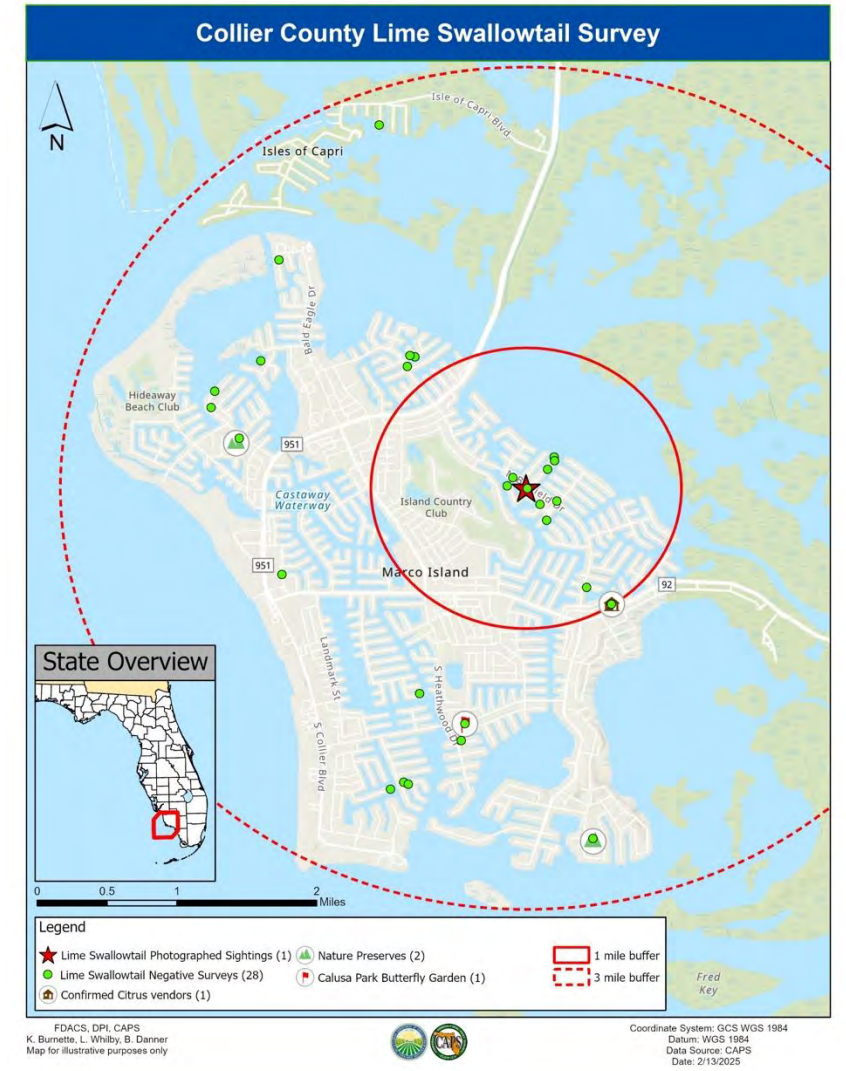
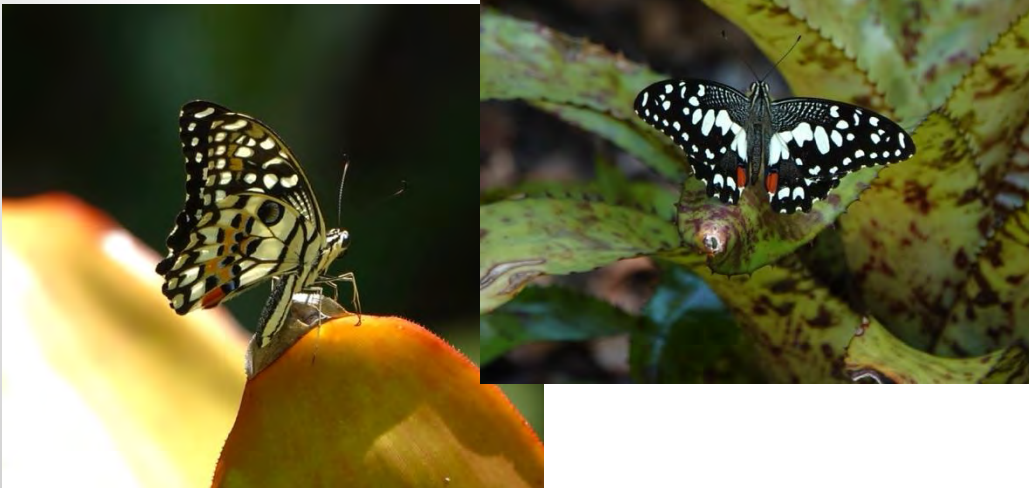
FL CAPS Current Surveys

- Lime Swallowtail Survey
 - Survey Points: 223
 - Naples
 - Survey Points: 195
 - Marco Island
 - Samples: 24
 - Specimens: 24



FL CAPS Current Surveys

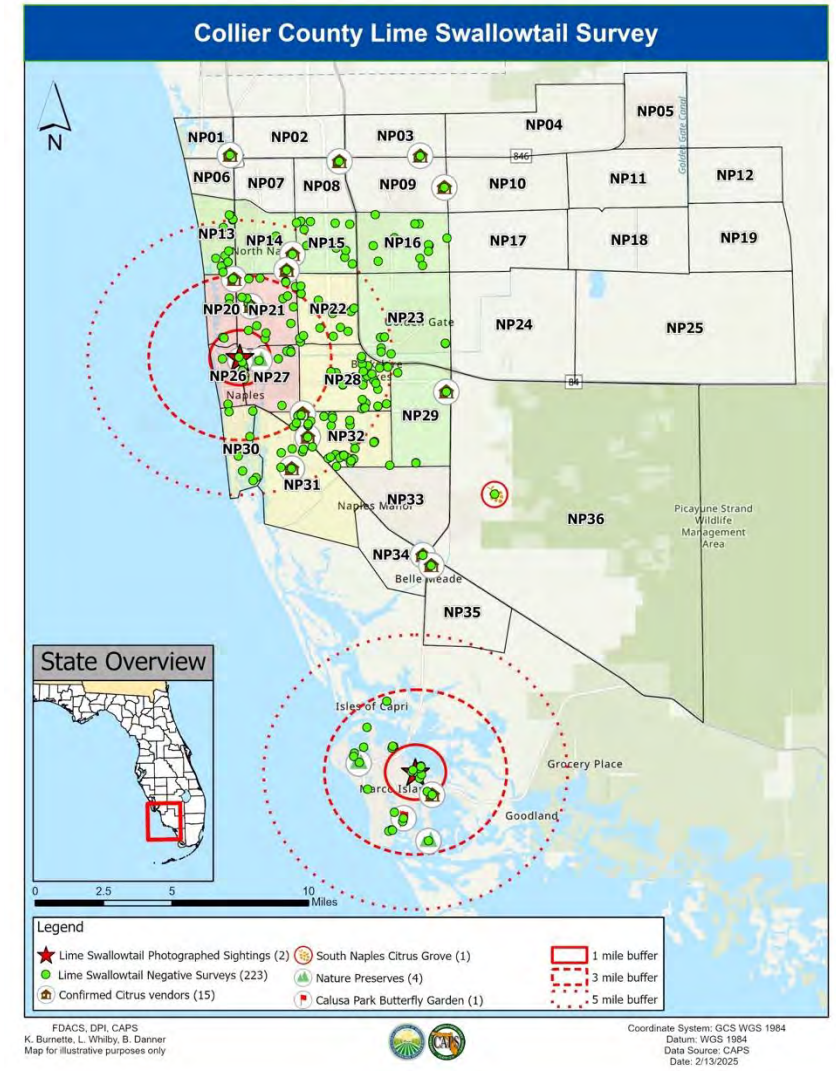
- Lime Swallowtail Survey
 - Survey Points: 223
 - Naples
 - **Marco Island**
 - Survey Points: 28
 - Samples: 1
 - Specimens: 1 (snail)



FL CAPS Current Surveys

- Lime Swallowtail Survey
 - Survey Points: 223
 - Naples
 - Marco Island
 - Samples: 25
 - Specimens: 25
 - *Papilio cresphontes* (24)
 - *Drymaeus multilineatus* (1)

Target Not Found!



FL CAPS Current Surveys

- Lime Swallowtail Survey Outreach



DIVISION OF PLANT INDUSTRY

Lime Swallowtail Butterfly (*Papilio demoleus*)

Pest Risk:

- Larvae feed on young citrus foliage
- Adults are strong fliers, allowing them to disperse quickly
- Females lay up to 100 eggs in a year
- Exotic invasive species that competes for resources and displaces native species

MAJOR PEST OF CITRUS

Learn more about Lime Swallowtail

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EGGS
 .05 in.
 white to yellow

EARLY STAGE CATERPILLAR
 .07 - 1.1 in.

LATE STAGE CATERPILLAR
 1 - 1.5 in.

PUPA
 1.2 in. long,
 .5 in. wide

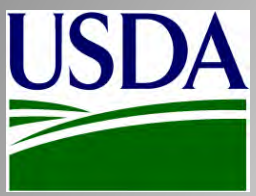
ADULT BUTTERFLY
 3 - 4 in. wingspan
 Adult butterflies have a black and white pattern with red hindwing spots.

Thank You!

FDACS-DPI Cooperators

- Isabelle Atchia
- Matt Brodie
- Rick Blaney
- Stefan Hartz
- Mary Graham
- Scott Krueger
- Emily Safran
- Mileydis Vargas





Thank You!

