ADULT MOSQUITO ECOLOGY IN SOUTHWEST GEORGIA

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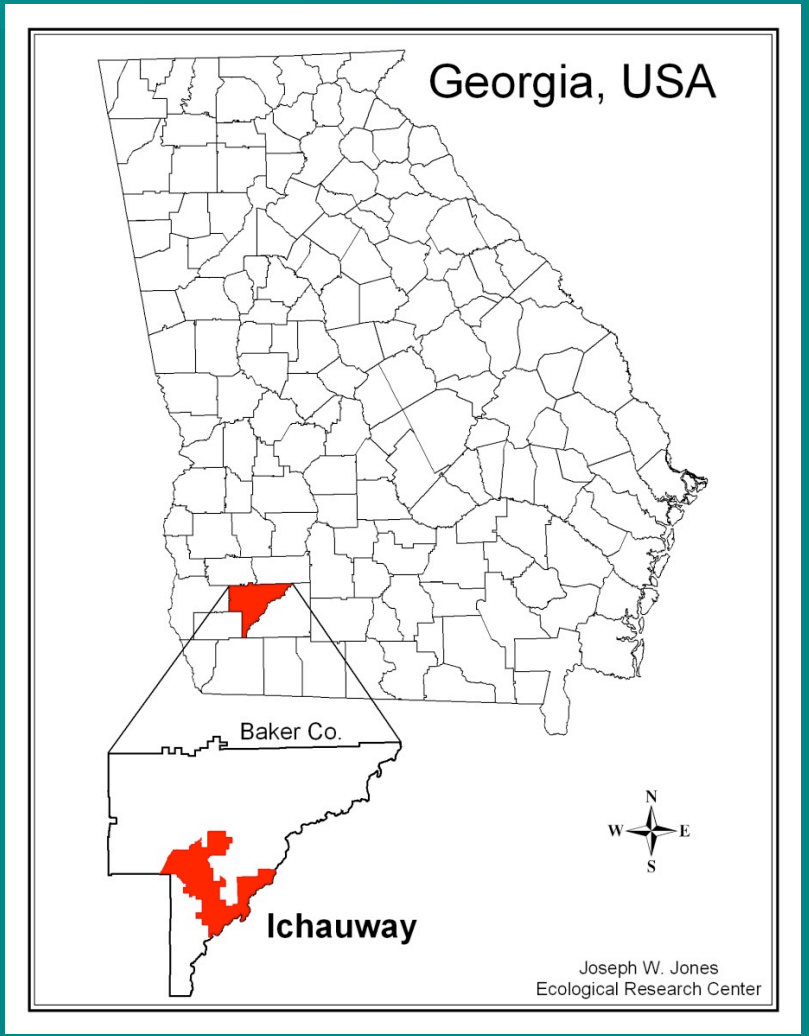
The Joseph W. Jones Ecological Research Center at Ichauway

Odum School of Ecology
The University of Georgia

What is Ichauway?

- Coca-Cola
- 29,000 acres
- Longleaf pine and wiregrass
- Maintained by fire



Project Rationale

- Return to the roots
  - Emory University Field Station at Ichauway

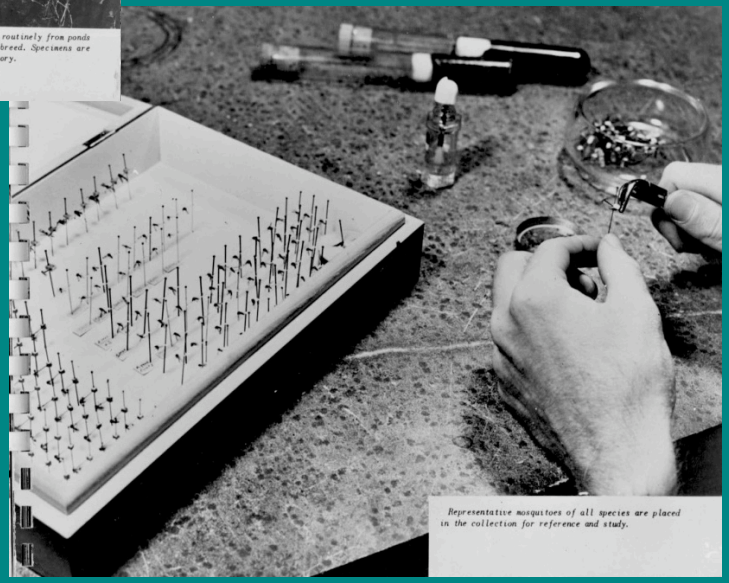
Emory University Field Station Annual Report 1946-1947

Other mosquitoes are collected from speci
constructed resting, places near breeding areas

Adult mosquitoes are collected from houses, barns, and outbuildings.

Mosquito larvae are collected routinely from ponds and other places in which they breed. Specimens are later identified in the laboratory.

Mosquitoes used in transmission studies are reared and stored under carefully controlled conditions in the insectary.



Representative mosquitoes of all species are placed in the collection for reference and study.

Project Rationale

- Originally comparison of urban vs. rural
- Focus on adults
- 'Dilution effect' theory

www.albanytomorrow.com

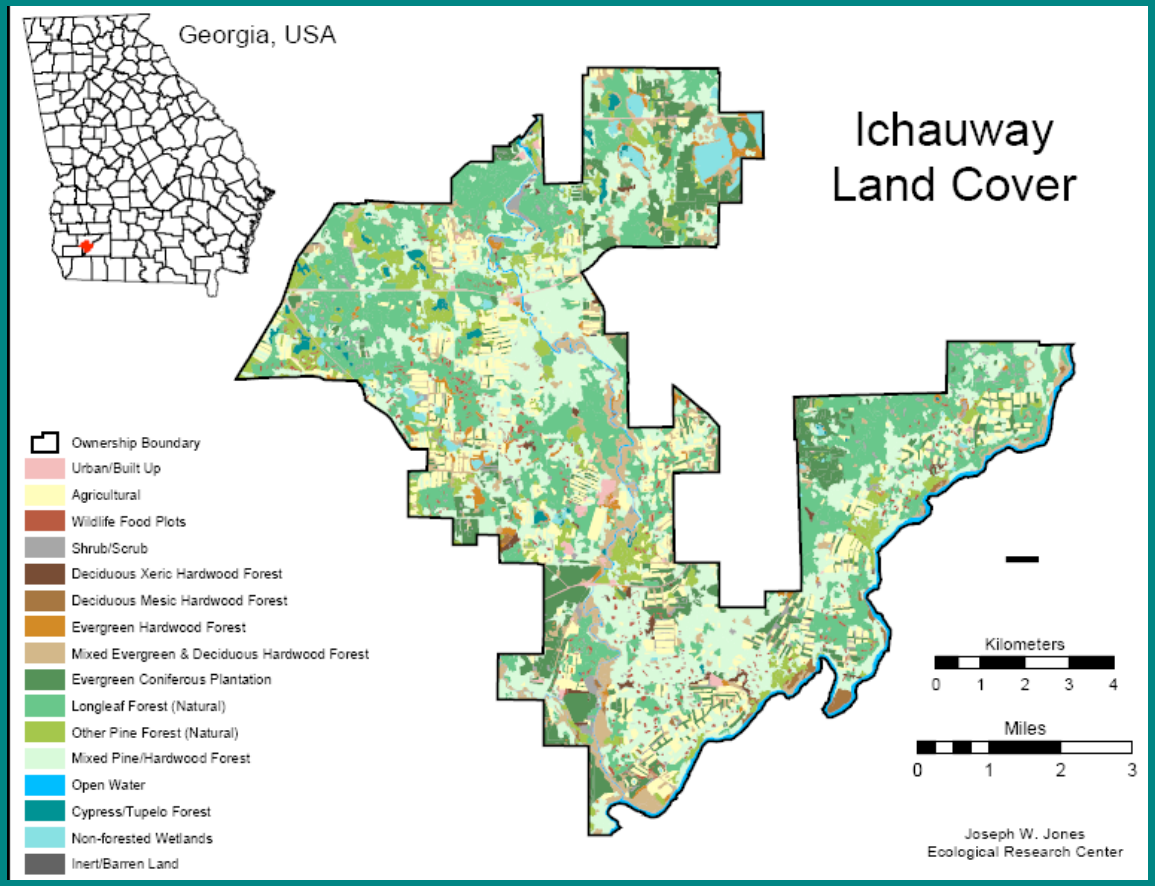
www.jonesctr.org

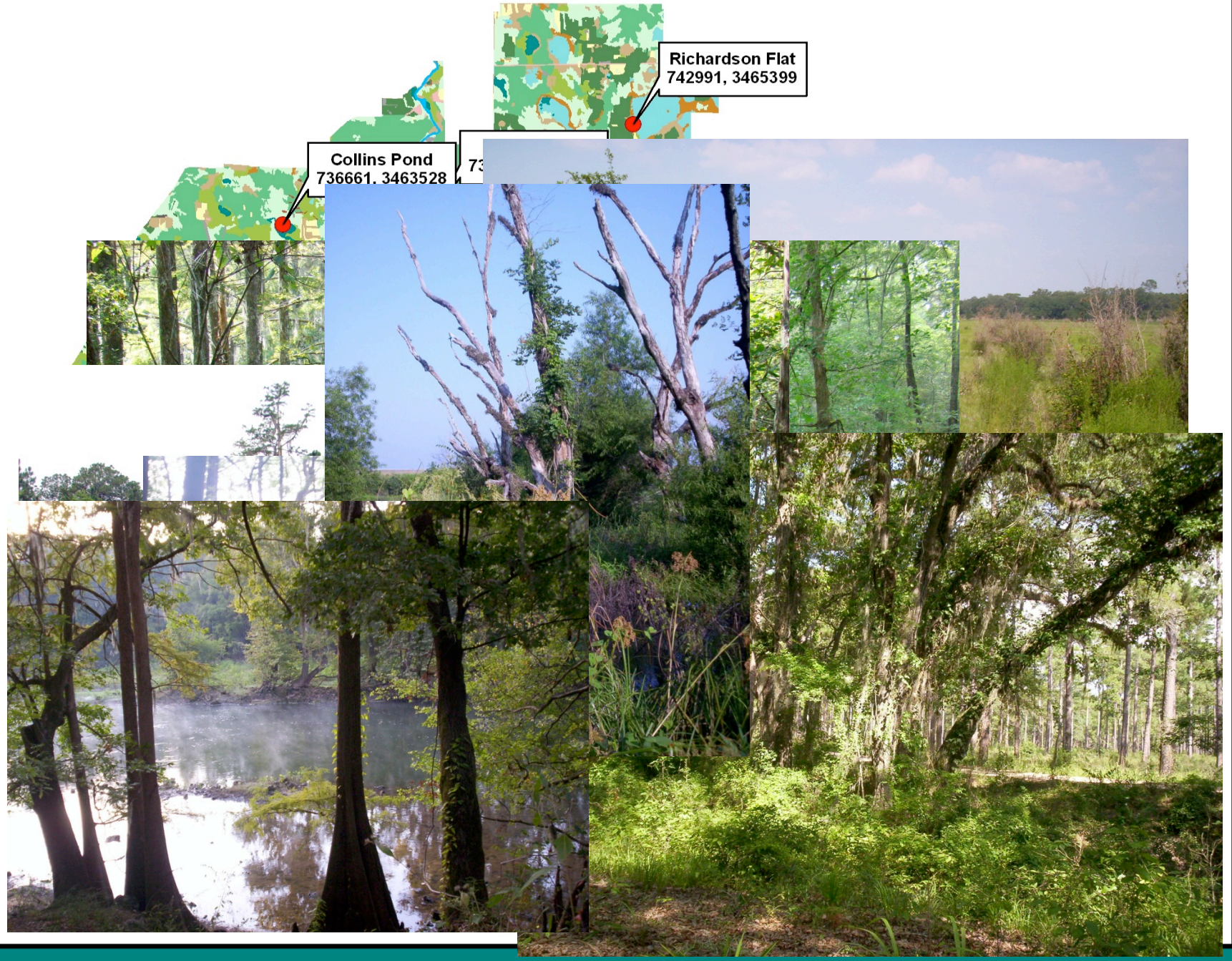
Project Objectives

- Gain data on:
  - Mosquito community composition
  - Prevalence of arboviruses
  - Host-feeding patterns of mosquitoes

Methods

- Study sites
  - 8 sites selected from Ichauway




Richardson Flat
742991, 3465399
Collins Pond
736661, 3463528

Field Methods

- Environmental factors measured:
  - Temperature
  - Relative Humidity
  - Rainfall
  - Canopy Cover

www.rickly.com

www.onsetcomp.com

Field Methods continued

- Mosquito collection:
  - Once a week
  - CO_2-baited CDC miniature light trap
  - CDC gravid trap

Obtaining blooded females

Laboratory Methods

- Mosquitoes separated and ID'd to species
- Species, sex and number of mosquitoes
- Mosquitoes in pools stored at -80°C

Laboratory Methods continued

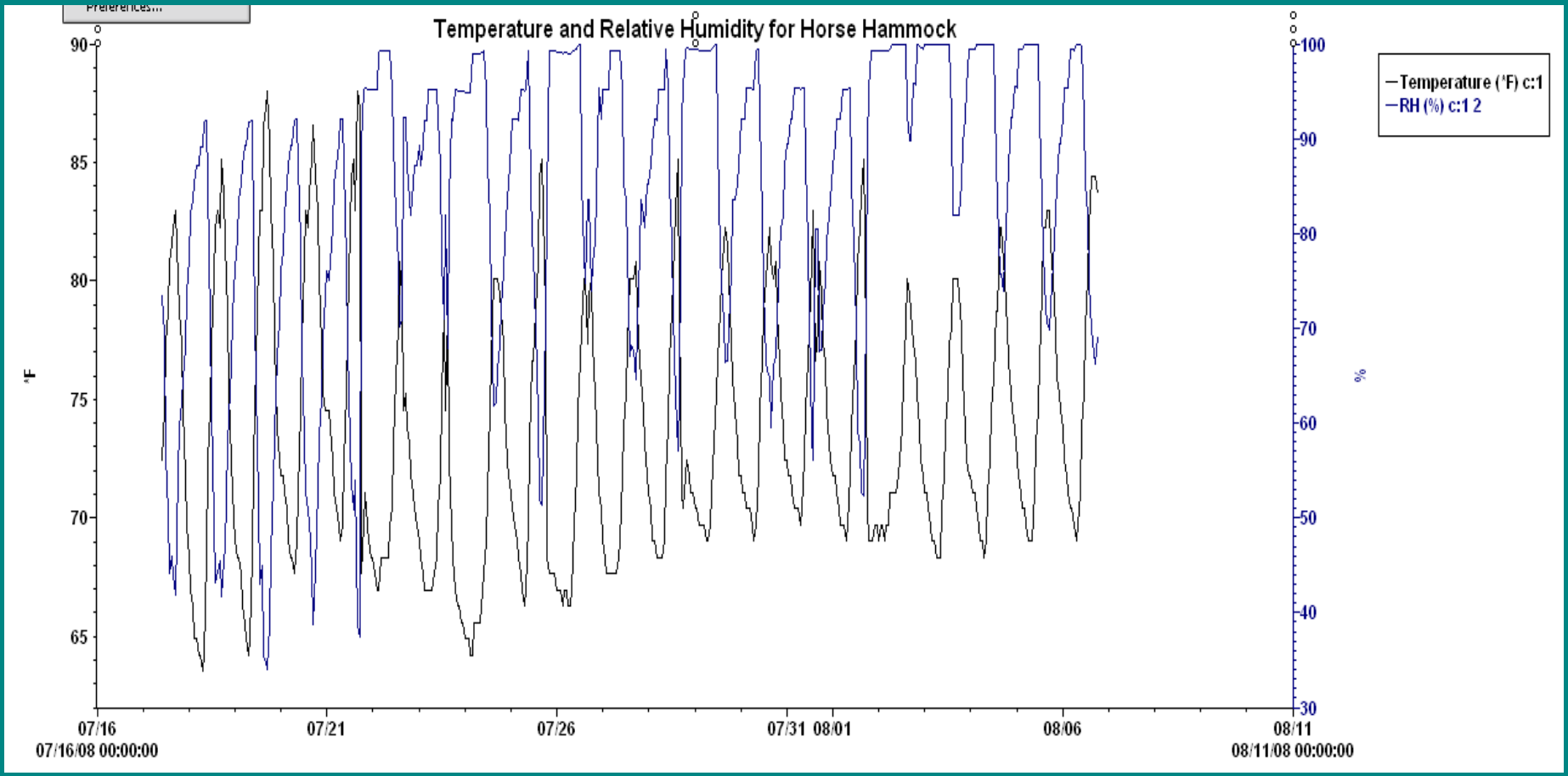
- Mosquito pools will be tested for arboviruses
- Source of blood meal will be identified

SOUTHEASTERN COOPERATIVE WILDLIFE DISEASE STUDY

Preliminary Results

Preliminary results

- Environmental data recorded:



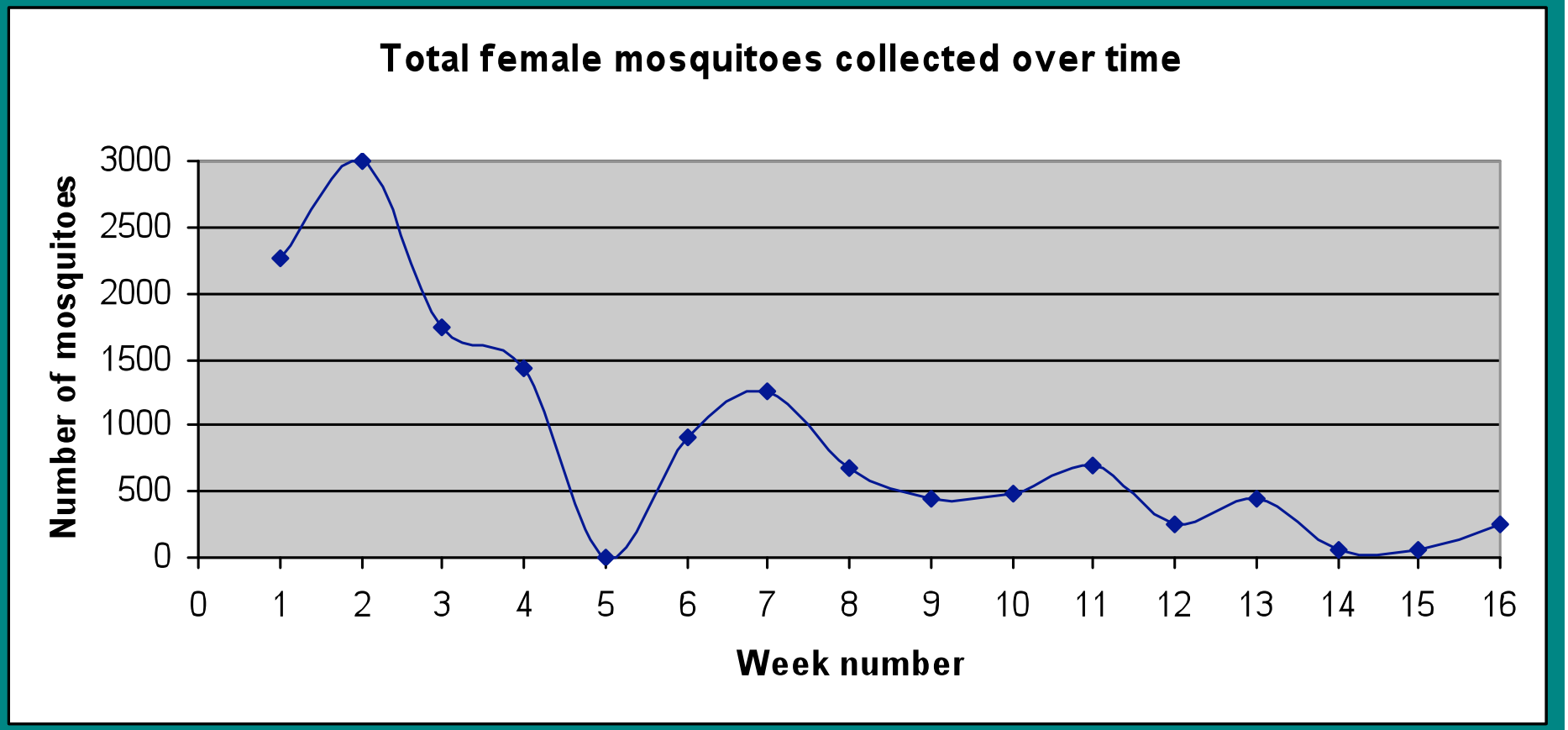
Preliminary Results

- 30 Mosquito Species Collected:

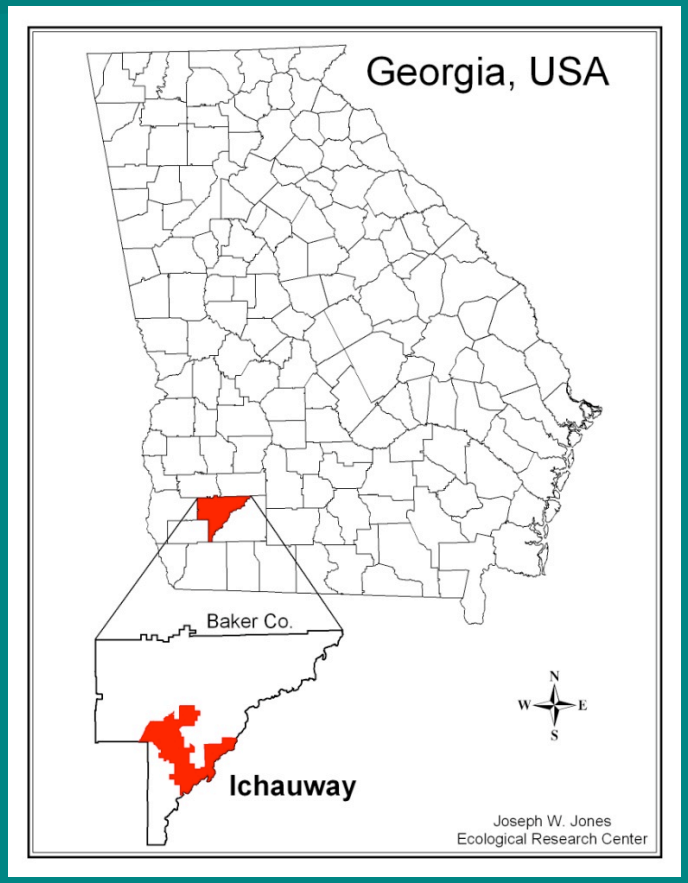
Ae. albopictus
Ae. vexans
An. crucians
An. punctipennis
An. quadrimaculatus
Cq. perturbans
Cs. melanura
Cx. coronator
Cx. erraticus
Cx. nigripalpus
Cx. quinquefasciatus
Cx. restuans
Cx. salinarius
Cx. territans
Oc. atlanticus
Oc. canadensis
Oc. fulvus pallens
Oc. infirmatus
Oc. mitchellae
Oc. sticticus
Oc. thibaulti
Oc. triseriatus
Or. signifera
Ps. ciliata
Ps. columbiae
Ps. cyanescens
Ps. ferox
Ps. howardii
Ps. mathesoni
Ur. sapphirina

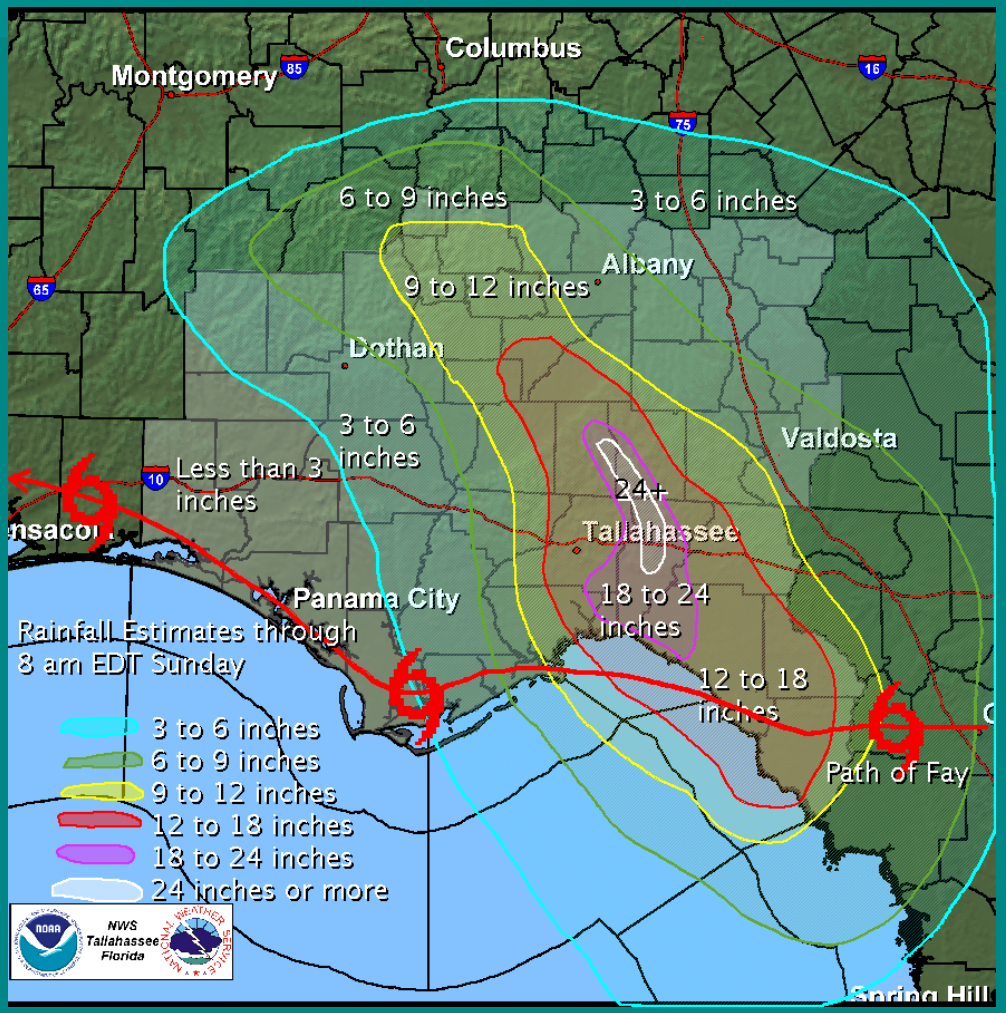
Abundance of mosquitoes over time

May 13- August 29, 2008



Then there was Fay

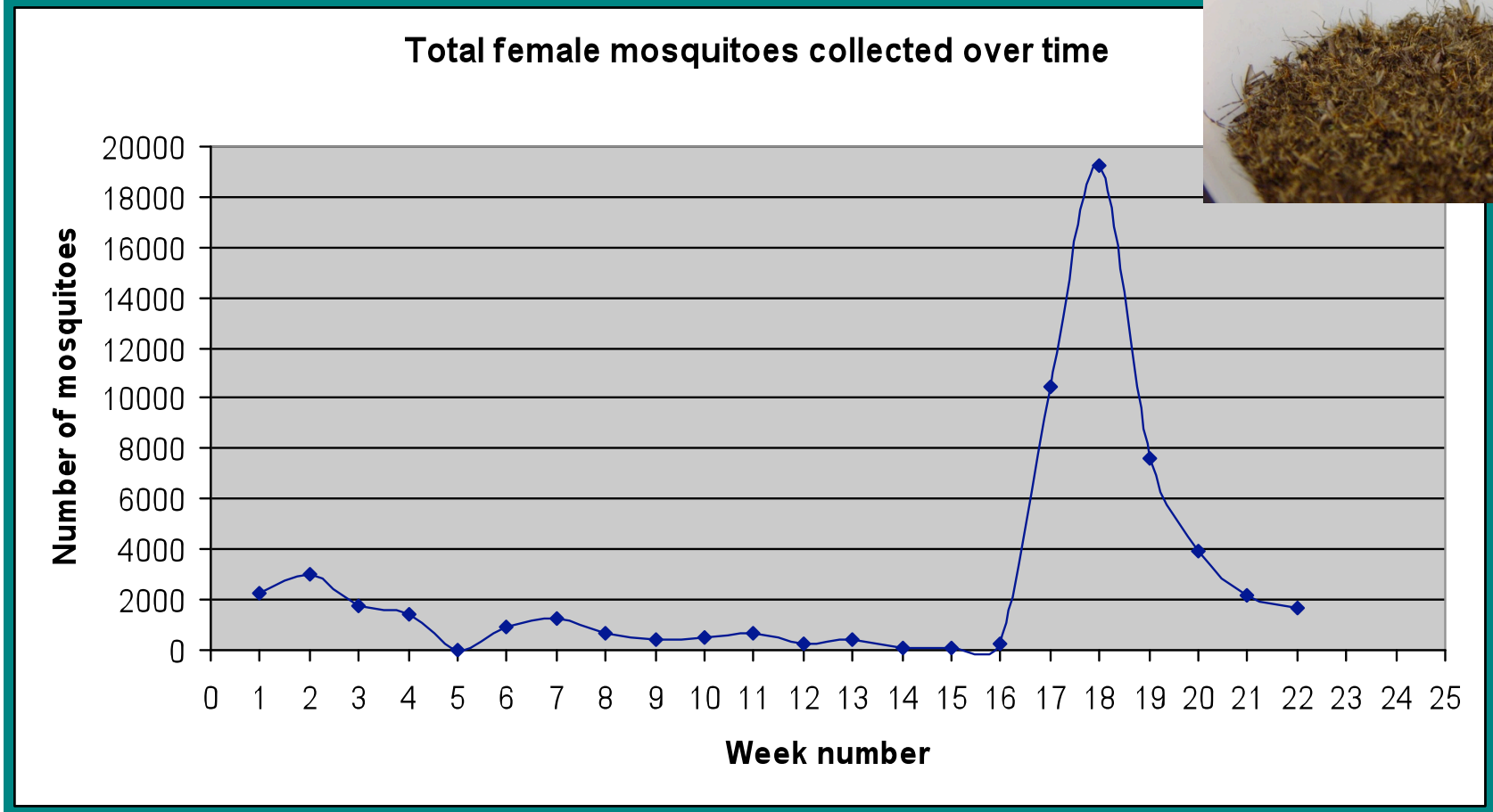




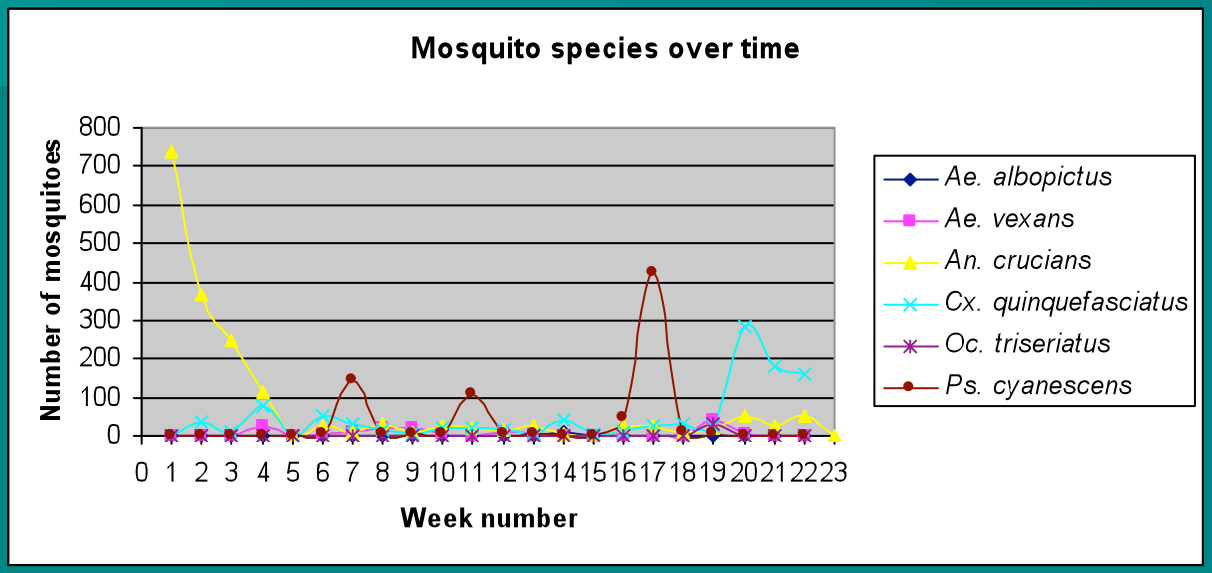
www.srh.noaa.gov/tlh/

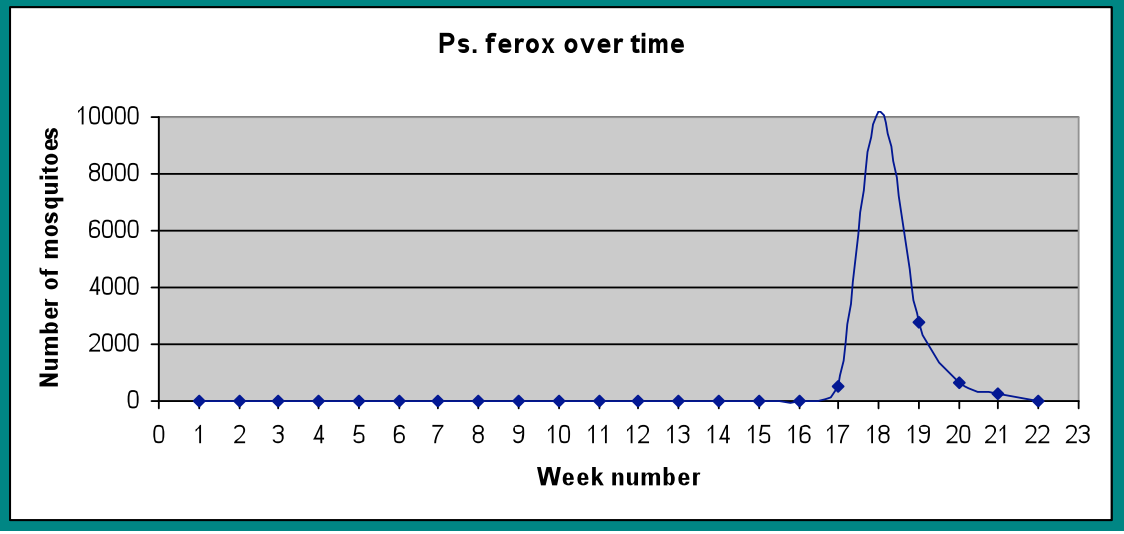
Abundance of mosquitoes over time

May 13- October 10, 2008

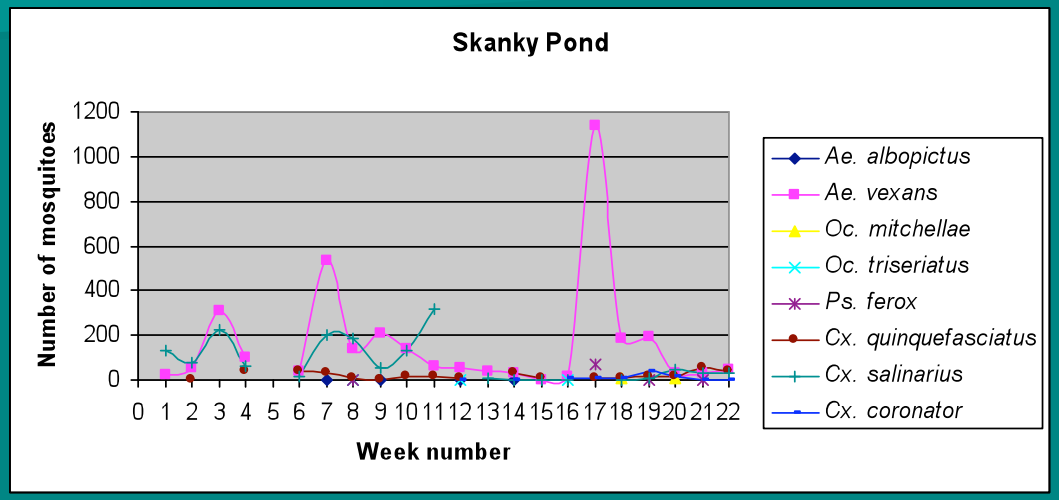


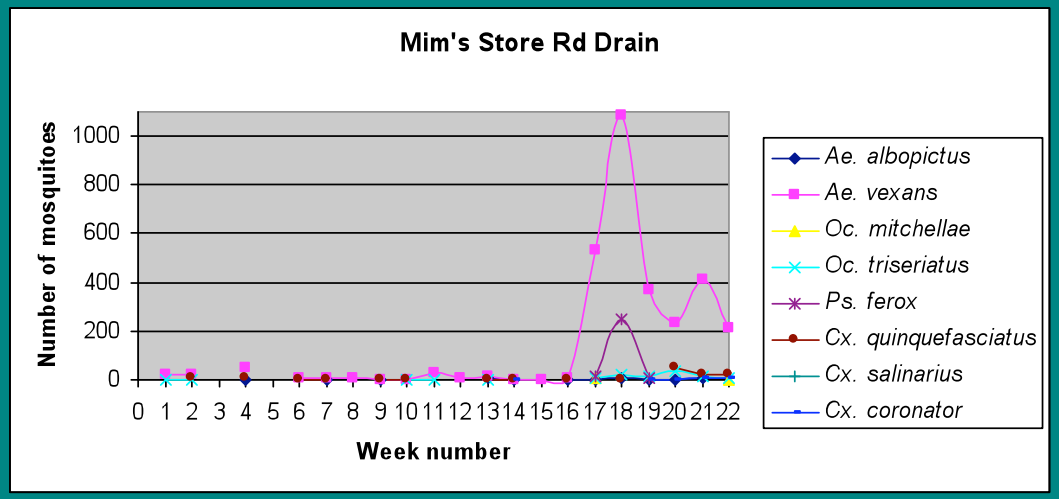
Selected species abundances over time





Comparison of Disturbed to Hardwood Depression





Preliminary results continued

- 175 blood-fed mosquitoes collected

  -Species collected:

  Ae. vexans

  An. quadrimaculatus

  Cx. salinarius

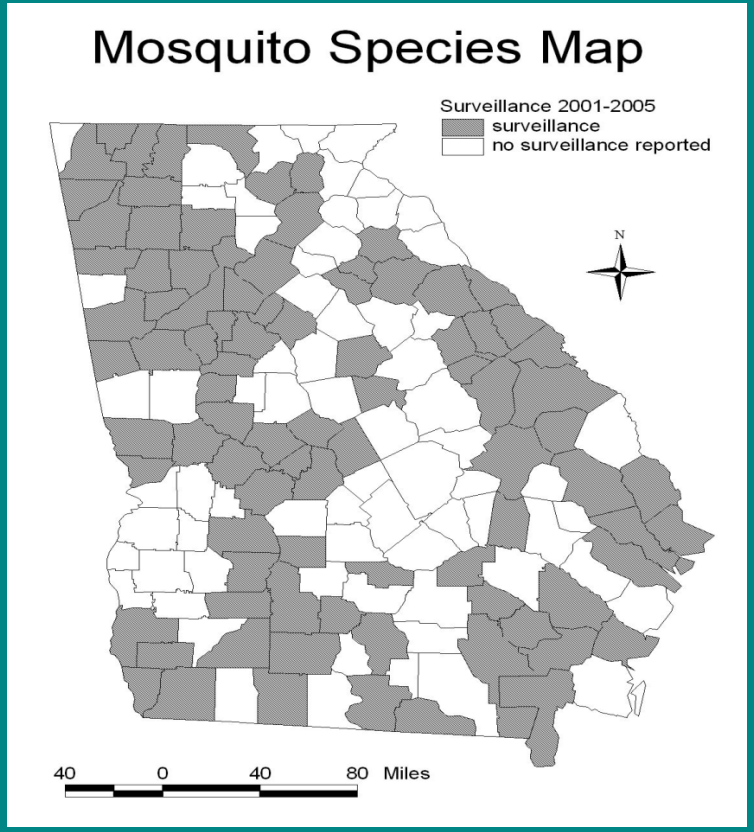
  Cx. quinquefasciatus

  Ps. ferox …

- Approx. 900 virus isolation pools

Practical Importance of Research

- Baker County Public Health Department
- Georgia DHR Division of Public Health
- GMCA species map



www.gamosquito.org/resources/maps/surveillance.jpg

AMCA Meeting 2009

What to look forward to seeing

- Comparison of:
  - Mosquito community composition
  - Species diversity
  - Arbovirus prevalence
  - Host-feeding patterns of mosquitoes
- Comparison to Valdosta

Acknowledgments

- Committee:
  - Steve Golladay
  - Alan Covich
  - Mark Blackmore
  - Danny Mead
- Golladay Lab
- Rosmarie Kelly
- Parker Whitt
- Julie McEntire
- Jones Center staff

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