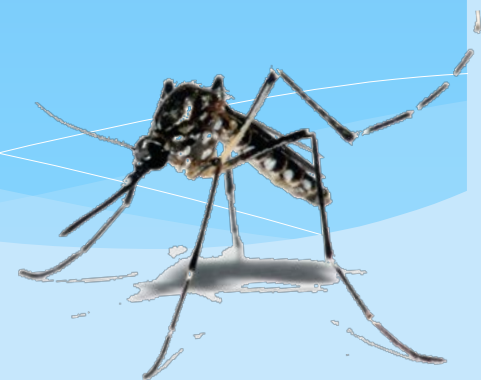


Zika and Charlotte County

What you need to know about Mosquito Control

Beth Kovach AS, BA

Scott D. Schermerhorn MS, MPA, RS



Charlotte County Mosquito Control reminds everyone to practice the THREE D's of — mosquito prevention —

Drain, Dress, and Defend:



- * - **Drain:** Empty out water containers at least once per week
- * - **Dress:** Wear long sleeves, long pants, and light-colored, loose-fitting clothing
- * - **Defend:** Properly apply an approved repellent such as DEET, Picaridin, IR3535 or oil of lemon-eucalyptus



Mosquito Control Preparation

Public Outreach -pushing the message “Dress, Drain, Defend”

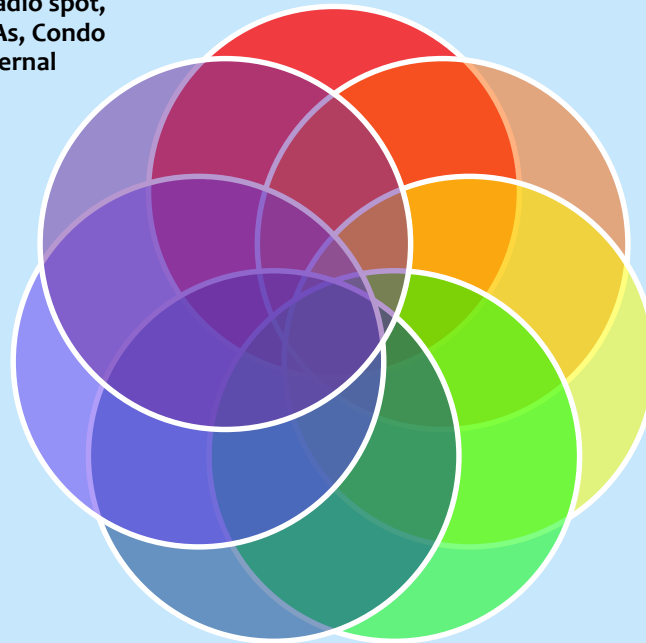
Customer brochures, website, news articles, radio spot, in-house posters, public outreach forums (HOAs, Condo Associations, Civic Groups, Social and Fraternal Organizations)

Increased specialized trapping methods



Development of specialized local spraying program

Coordination with DOH & FDACS



Targeted source reduction

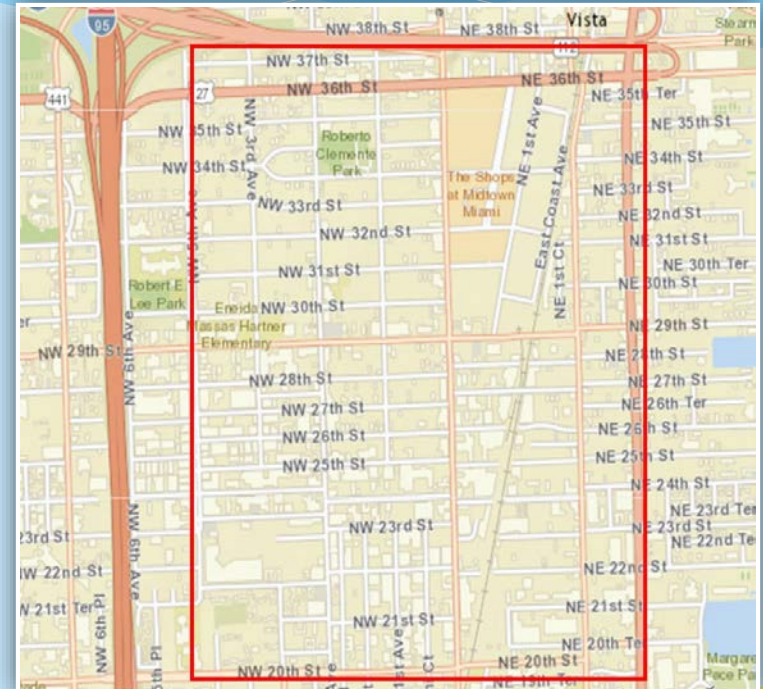
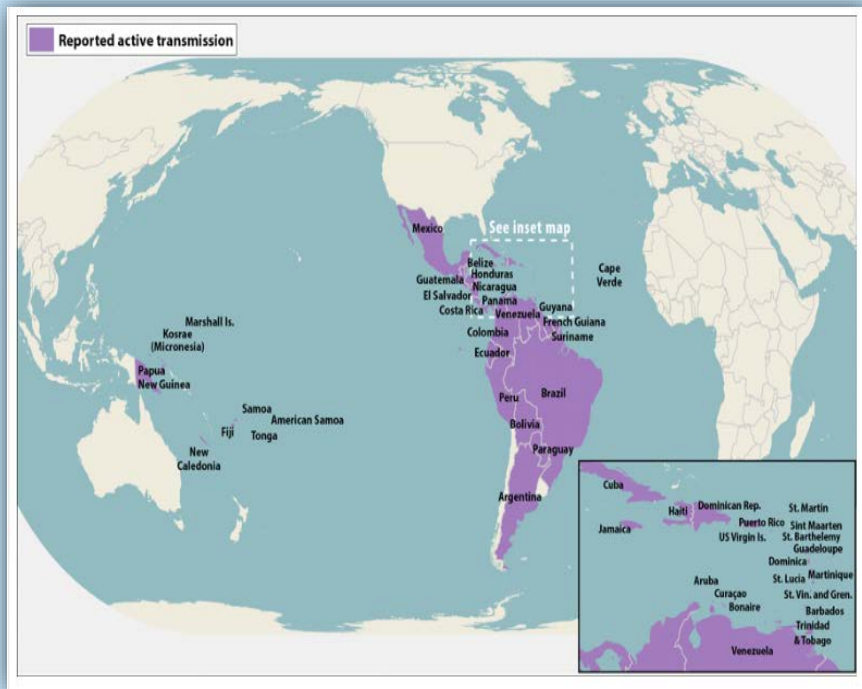
Working on reduced response time to service requests

Increased overall surveillance



Zika Fever Distribution

Countries that have past or current evidence of Zika virus transmission
(as of May 26, 2016)



Courtesy of CDC.



Zika Fever Symptoms

- Incubation period: 2-14 days
- 1 in 5 people infected will become symptomatic
- Few hospitalizations

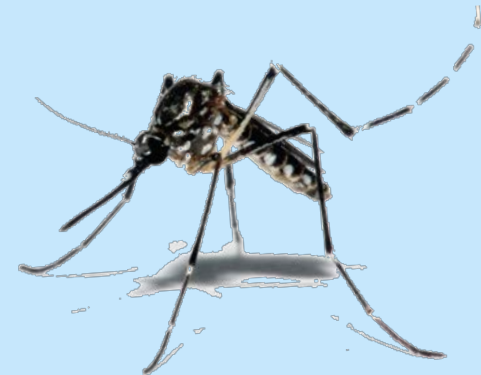
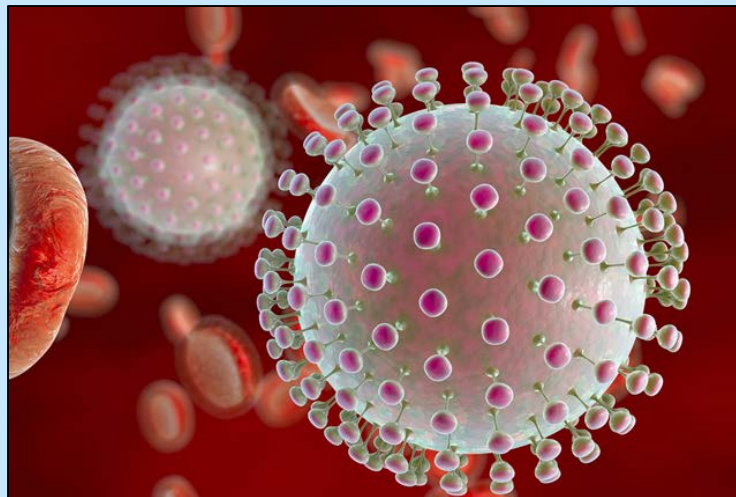
Most common signs and symptoms

- Fever (often low-grade)
- Rash
- Joint pain
- Red eyes
- Muscle ache
- Headache
- Pain behind the eyes
- Vomiting



What is Known About Zika

- An RNA flavivirus that was first detected in Uganda in 1947
- First human cases were detected in 1952. No vaccine available.
- Incubation period 2-14 days & virus can cross placental barrier
- Linked to microcephaly and Guillain-barré syndrome
- Primarily spread through the bite of an infected mosquito, but other modes of transmission have occurred (sexual transmission, & blood products)
- Known vectors are *Aedes aegypti* and *Aedes albopictus* species
- Similar in Structure to Dengue Virus I-V





Charlotte County Mosquito Control is Not Just Limited to Zika Efforts *We Attempt to Prevent Many Arboviruses*



Dengue I-V

Chikungunya

West Nile Virus

Zika Virus

St. Louis Encephalitis La Crosse Encephalitis

Eastern Equine Encephalitis Highlands J Virus

Filariasis Malaria Yellow Fever Heartworm

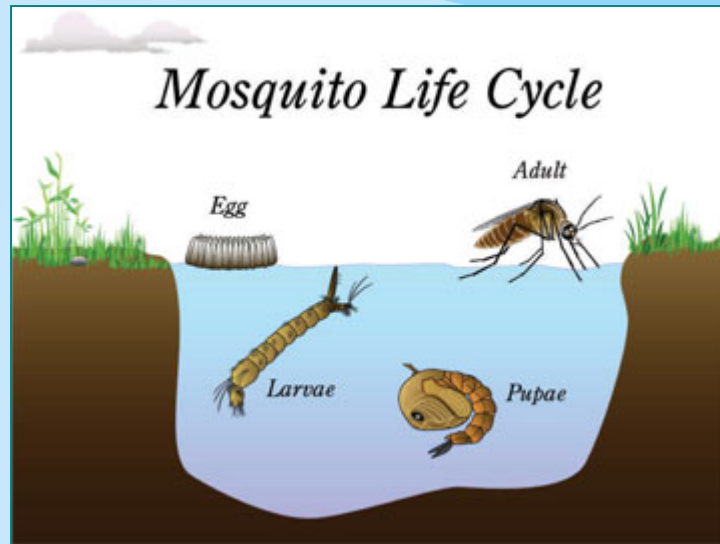
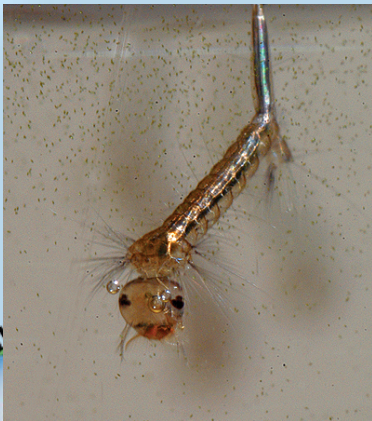


Mosquito Life Cycle

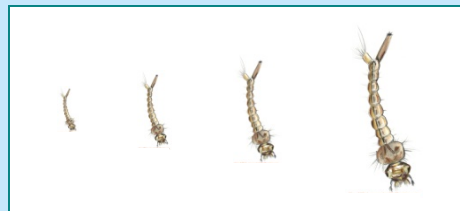
Egg



Larva



4 instars



Adult



Pupa

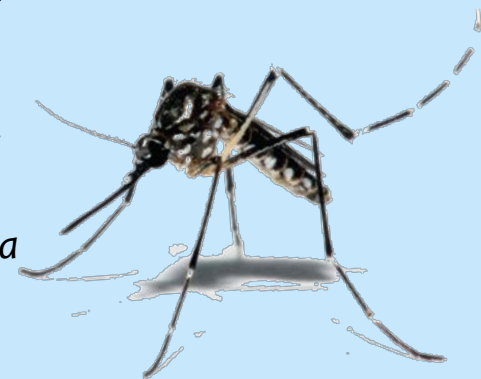


40 Mosquito Species Documented in Charlotte County



Aedes aegypti
Aedes albopictus
Aedes atlanticus
Aedes canadensis
Aedes infirmatus
Aedes mathesoni
Aedes pallens
Aedes sollicitans
Aedes taeniorhynchus
Aedes thibaulti
Aedes triseriatus
Aedes vexans
Anopheles atropos
Anopheles bradleyi
Anopheles crucians
Anopheles quadrimaculatus
Coquillettidia perturbans
Culex cedecei
Culex coronator
Culex erraticus

Culex iolambdis
Culex nigripalpus
Culex pilosus
Culex quinquefasciatus
Culex restuans
Culex salinarius
Culiseta inornata
Culiseta melanura
Mansonia dyari
Mansonia titillans
Orthopodomyia signifera
Psorophora ciliata
Psorophora columbiae
Psorophora ferox
Psorophora howardii
Toxorhynchites rutilus
Uranotaenia lowii
Uranotaenia sapphirina
Wyeomyia mitchellii
Wyeomyia vanduzeei



Aedes aegypti & *Aedes albopictus*



Container Breeding or Urban Mosquitos

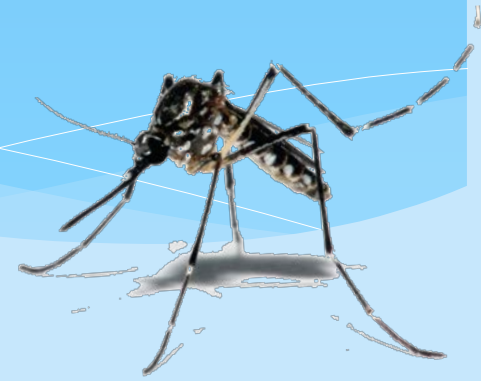


Breeding Habitats of *aegypti* & *albopictus*

Tire pile: Definite breeding site



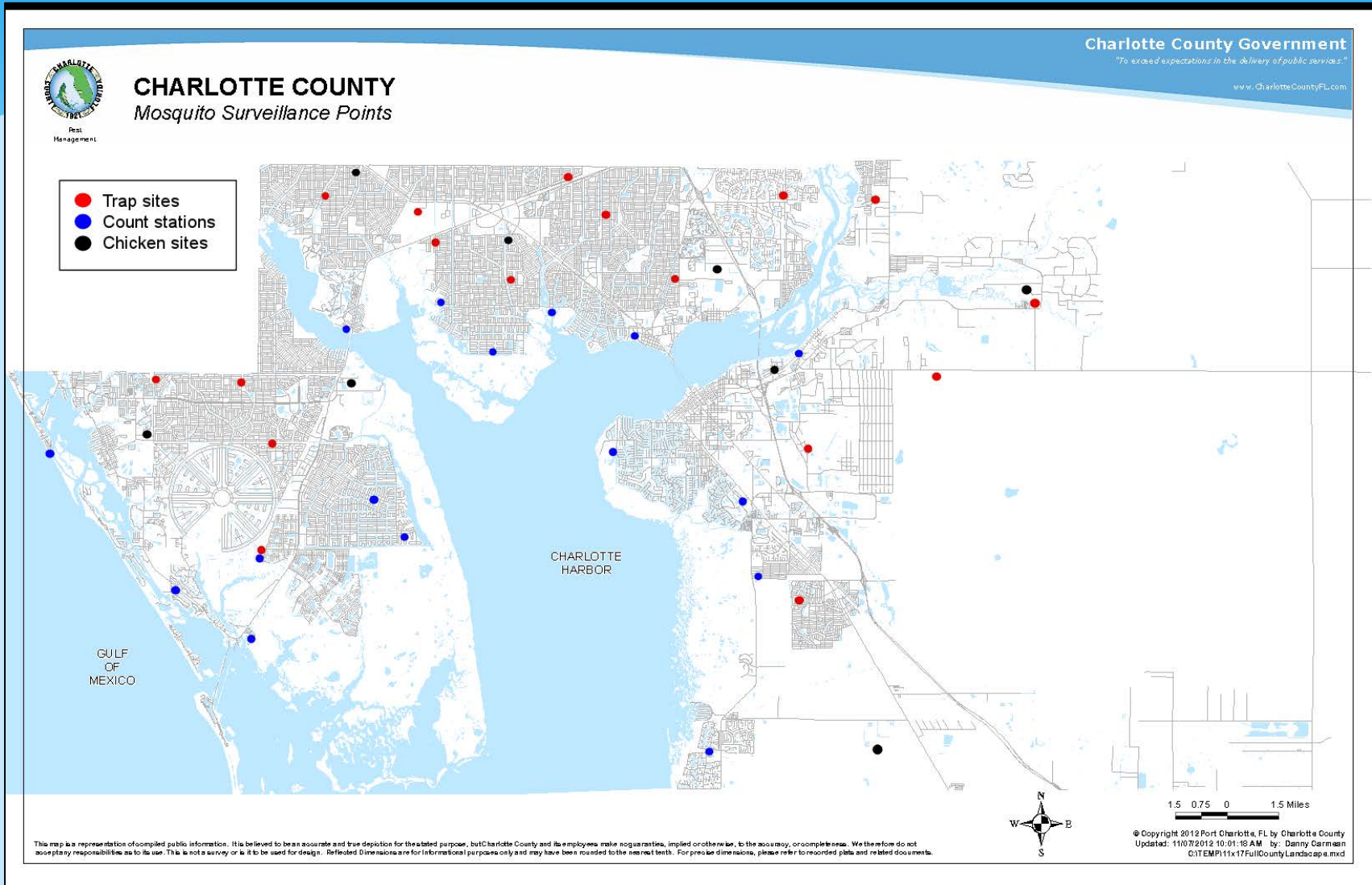
Salt marsh: Not a breeding site



Aedes aegypti & *Aedes albopictus*



Surveillance Points

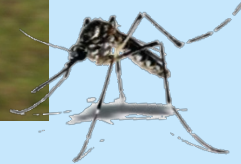


Larvicide

By Ground



By Air



Charlotte County Protected Lands



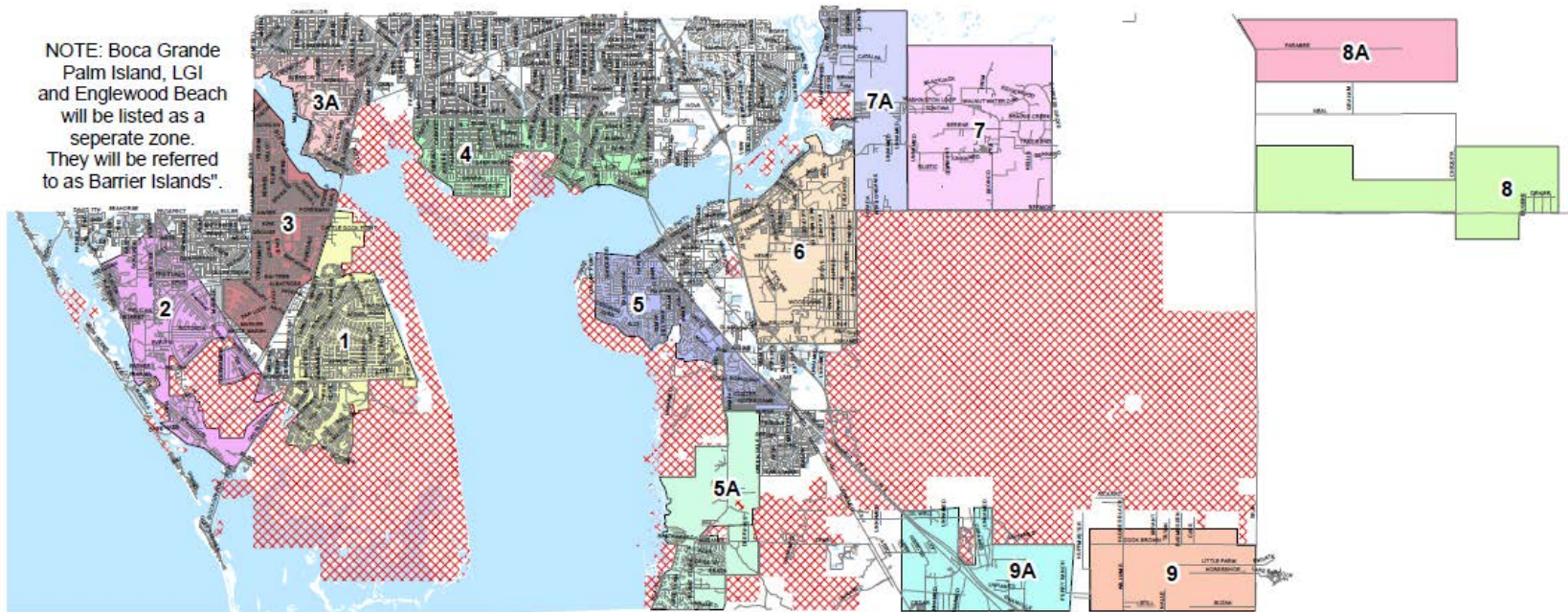
CHARLOTTE COUNTY Air Adulticide Spray Zones

Charlotte County Government

"To exceed expectations in the delivery of public services."

www.CharlotteCountyFL.gov

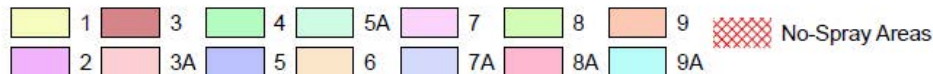
NOTE: Boca Grande
Palm Island, LGI
and Englewood Beach
will be listed as a
separate zone.
They will be referred
to as Barrier Islands."



Stateplane Projection
Datum: NAD83
Units: Feet

Source: Community Development,

Metadata available upon request



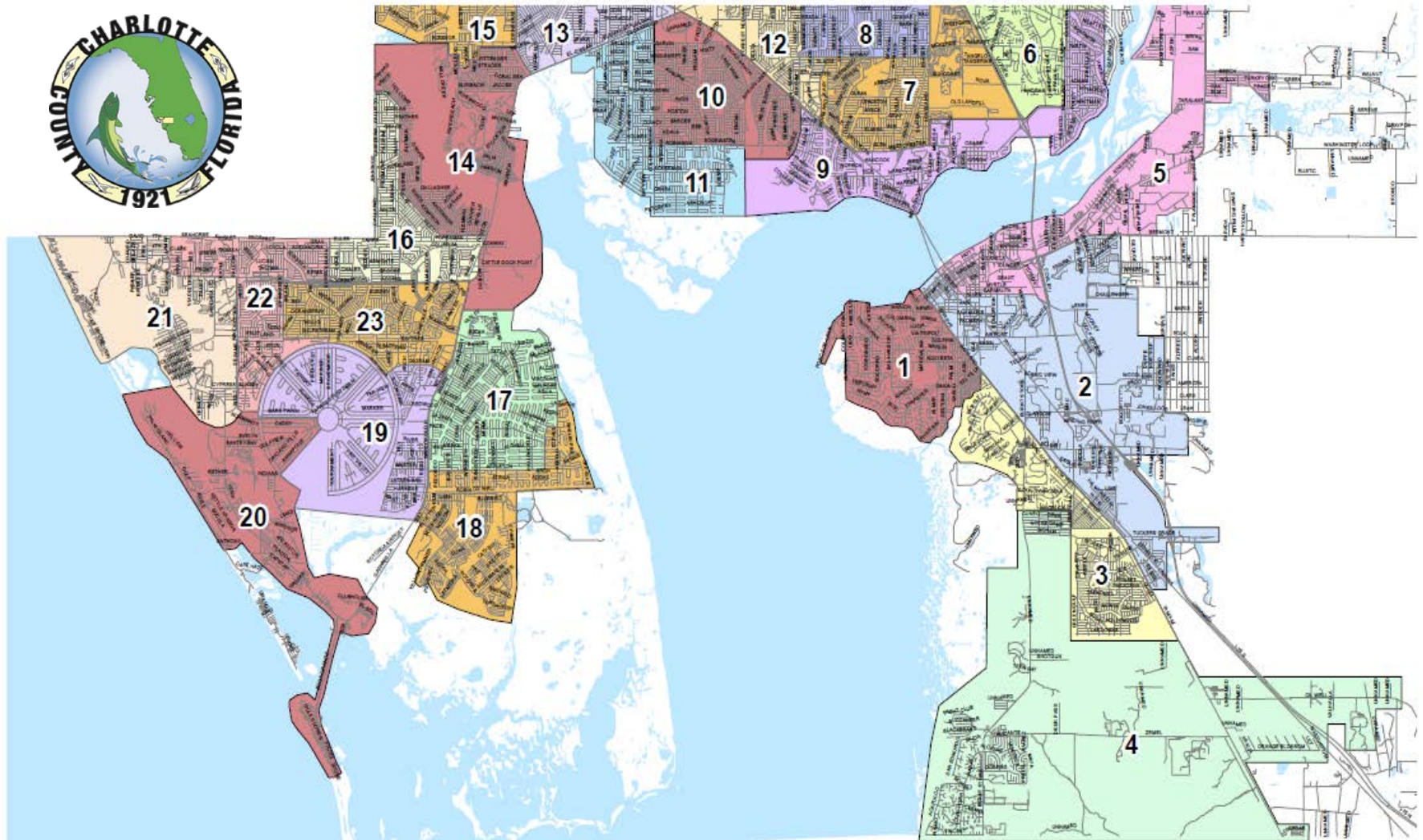
00.51 2 3 4 5
Miles

This map is a representation of compiled public information. It is believed to be an accurate and true depiction for the stated purpose, but Charlotte County and its employees make no guarantees, implied or otherwise, to the accuracy, or completeness. We therefore do not accept any responsibility as to its use. This is not a survey or is it to be used for design. Reflected Dimensions are for informational purposes only and may have been rounded to the nearest tenth. For precise dimensions, please refer to recorded plats and related documents.

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Updated: 7/14/2016 2:12:38 PM by: Denny Carmain
H:\Fog Areas 2013 - 2014\Aerial Spray Zones - New Template 2013.mxd



Ground ULV Areas



ULV Truck Fleet

- 7 spray trucks
- “Grizzly” blowers
- Briggs & Stratton engines



ULV Spraying



- Handheld foggers for targeted spray
- Ground trucks for broader areas



Proactive and Increased Outreach

- Deny breeding opportunities



- Identify & eliminate breeding areas
- Notify & educate homeowners



Aerial Treatment



Aerial Treatment follows strict guidelines as outlined by the FAA as well as FDACS. Air Adulticide treatment areas are zoned as are the ground spray areas.



25 or more:



75 or more:



Aerial Treatment





Operational Philosophy

- * **Charlotte County Mosquito Control strives to control mosquito populations through an integrated pest management approach consistent with applicable laws and justified by principles of public health, vector control, environmental safety, and fiscal responsibility.**
- * **While we all must do our part in controlling mosquitoes, Charlotte County Mosquito Control will continue to economize, engage in more efficient operations, and maintain a sustainable program to control all mosquito vectors that have the potential to cause disease.**

Charlotte County

Mosquito Control & Aquatic Weed Control

Comparison to Neighboring Counties

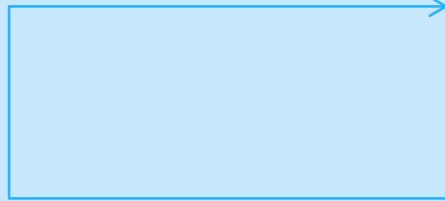
County	Annual Budget	Staffing Levels	Annual Acreage Treated	
			Ground Treatment	Aerial Treatment
Lee	\$ 24,097,100.00	83 FTE (23 TS)	760,941	1,414,654
Manatee	\$ 4,478,493.00	29 FTE (6 TS)	122,000	883,000
Sarasota	\$ 3,320,009.00	20 FTE (8 TS)	140,318	405,400
Charlotte	<u>\$ 2,153,531.00</u>	<u>15 FTE (5 TS)</u>	<u>1,391,125</u>	<u>497,588</u>



Should Zika become an epidemic In Charlotte County



- * Additional Expenses will be incurred



- * Additional Services will be performed



Charlotte County Zika Staff Committee



Ray Sandrock

Kelly Shoemaker

Hector Flores

- | | | |
|--------------------|---|--|
| Ralph Mitchell | - | Ralph.Mitchell@charlottecountyfl.gov |
| Marianne Taylor | - | Marianne.Taylor@charlottecountyfl.gov |
| Tommy Scott | - | Tommy.Scott@charlottecountyfl.gov |
| Dan Quick | - | Dan.Quick@charlottecountyfl.gov |
| Scott Schermerhorn | - | Scott.Schermerhorn@charlottecountyfl.gov |



Remember to tell your Friends:



Flip it!
Tip it!
so you



Don't get BIT!

Mosquitoes can breed in standing water

Distributed by Charlotte County Government

Questions?



Charlotte County Mosquito & Aquatic Weed Control Staff



**Charlotte County Mosquito &
Aquatic Weed Control**

941.764.4370

www.charlottecountyfl.com/public-works/pestmanagement/mosquito

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