

# Zika Virus Update



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# Emerging Arboviruses

- Zika Virus
- Chikungunya
- Dengue Viruses
- Same Mosquito Vectors
- Similar Symptoms
- Rapidly Expanding in the Americas
- Imported cases
- Have potential to start transmission here !

# Mosquito Transmission



## Zika, Chikungunya, and Dengue Vectors

- *Aedes aegypti* and *Aedes albopictus* are the primary mosquito vectors
- Infected humans are the reservoir for the viruses. Infections result in high viremias which can persist up to 7 days
- Both mosquitoes bite mostly during the daytime
- *Aedes aegypti* are “ankle biters”
- Both mosquitoes breed in backyard containers
- *Aedes aegypti* mosquitoes are widespread and thriving in Maricopa County

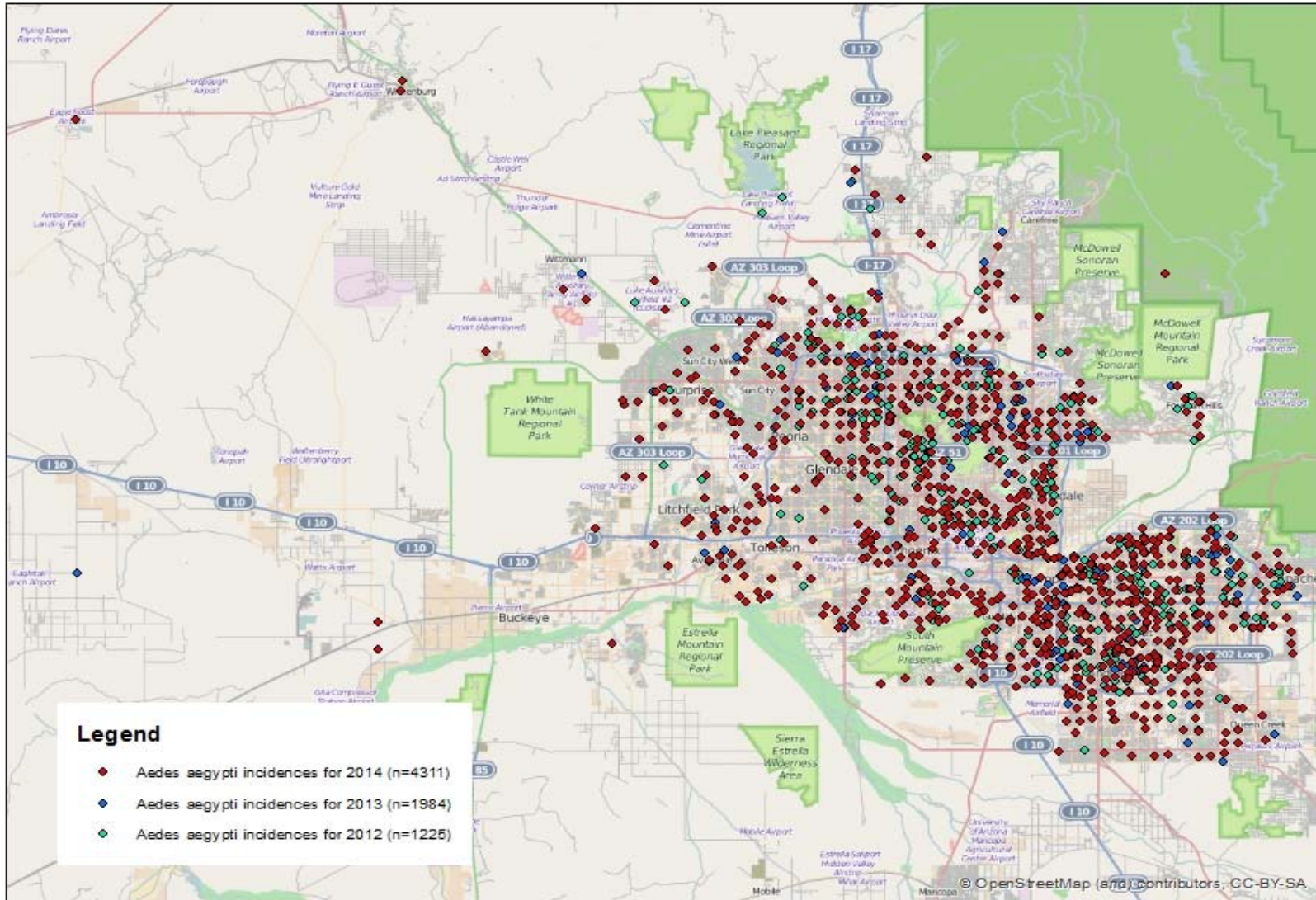


# *Aedes* sp. Breeding Sites





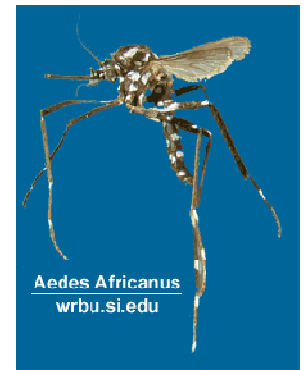
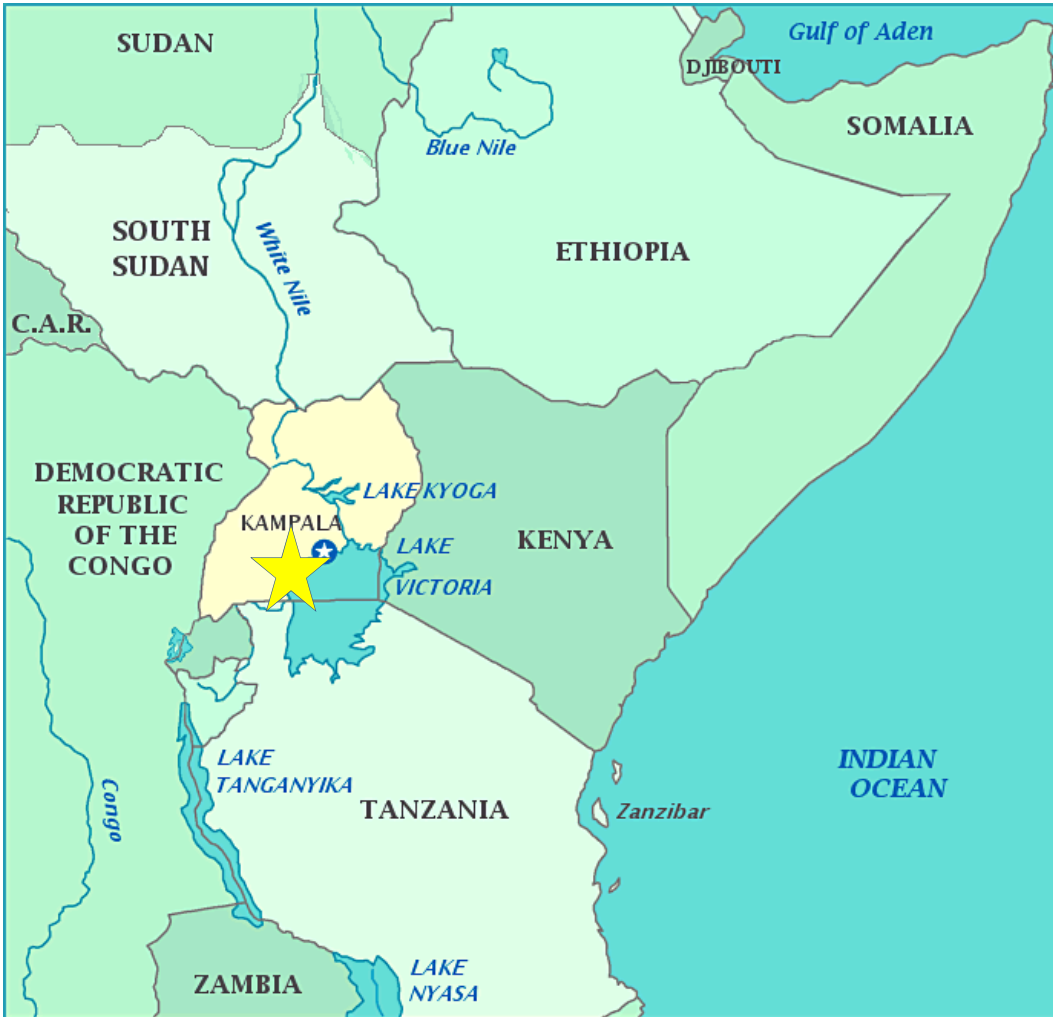
# Aedes aegypti incidences in Maricopa County (2012-2014)

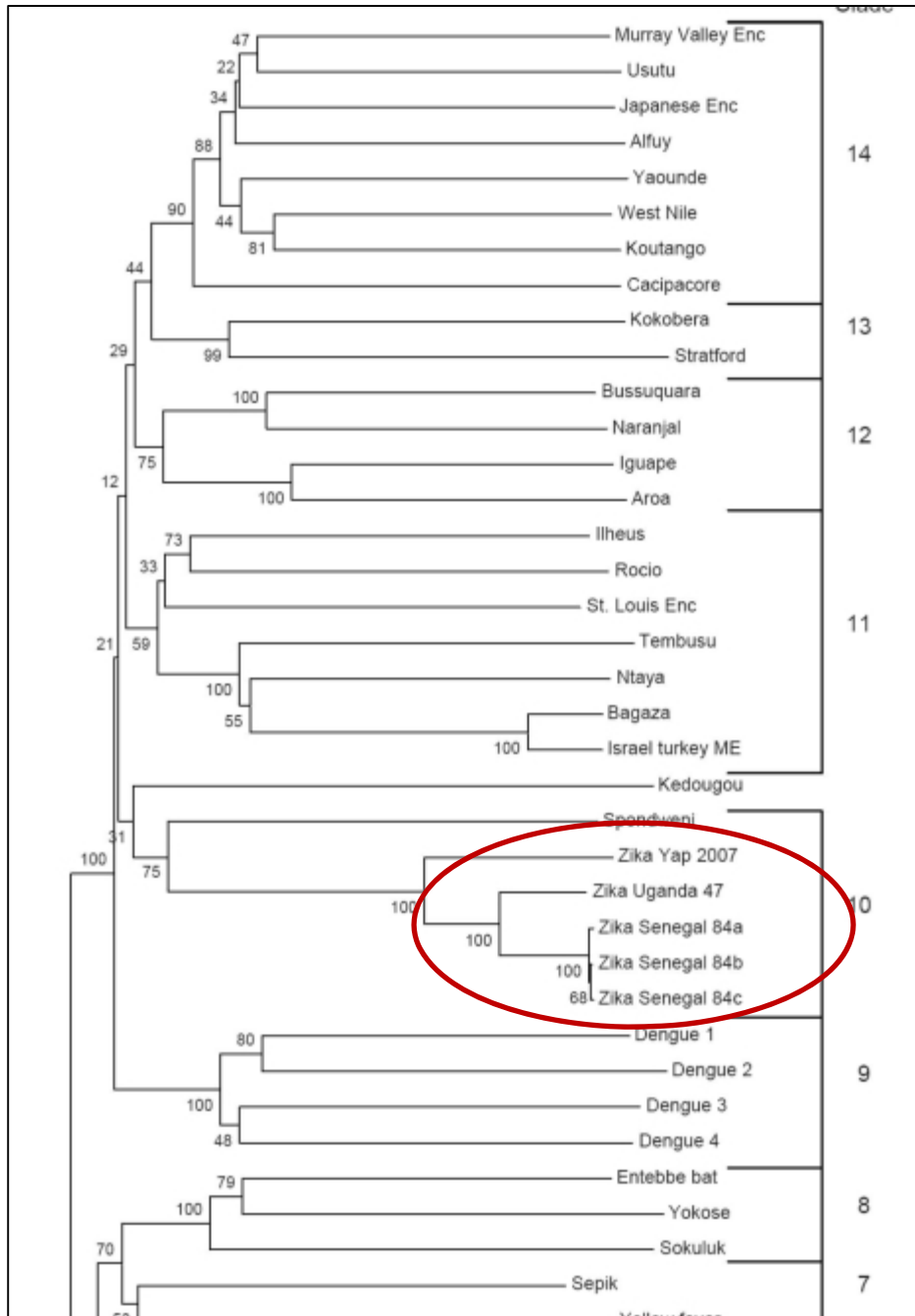


0 5 10 20 30 40 Miles



# Zika Virus: Discovered in 1947 in the Zika Forest





# Zika is a Flavivirus

- Related viruses:
  - Dengue
  - Yellow fever
  - West Nile
  - St. Louis encephalitis
  - Japanese encephalitis

# Zika Transmission



- **Mosquitoes Bites**
- Perinatal
- Sexual transmission
- Possible blood transfusion-associated
- Laboratory exposure





# Zika Epidemiology



- Incubation period in people: 2–12 days
- ~ 80% of infections = no symptoms

# Zika Symptoms



- Low-grade fever
- Joint pain/swelling
- Muscle pain
- Rash
- Headache, retro-ocular pain
- Conjunctivitis
- Note: Guillain-Barre' Syndrome (GBS) has been reported post Zika

# Zika Virus During Pregnancy

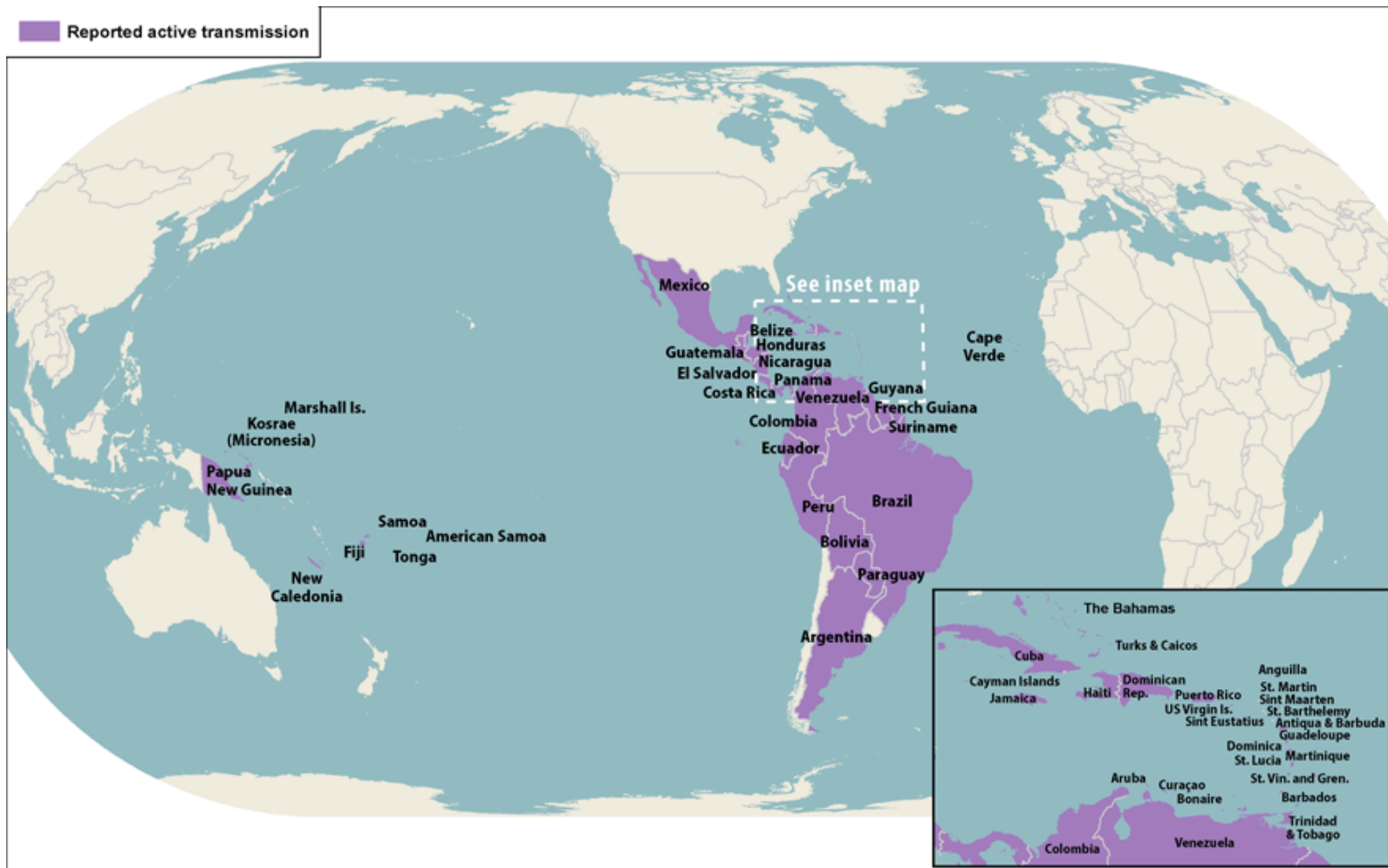


## Microcephaly



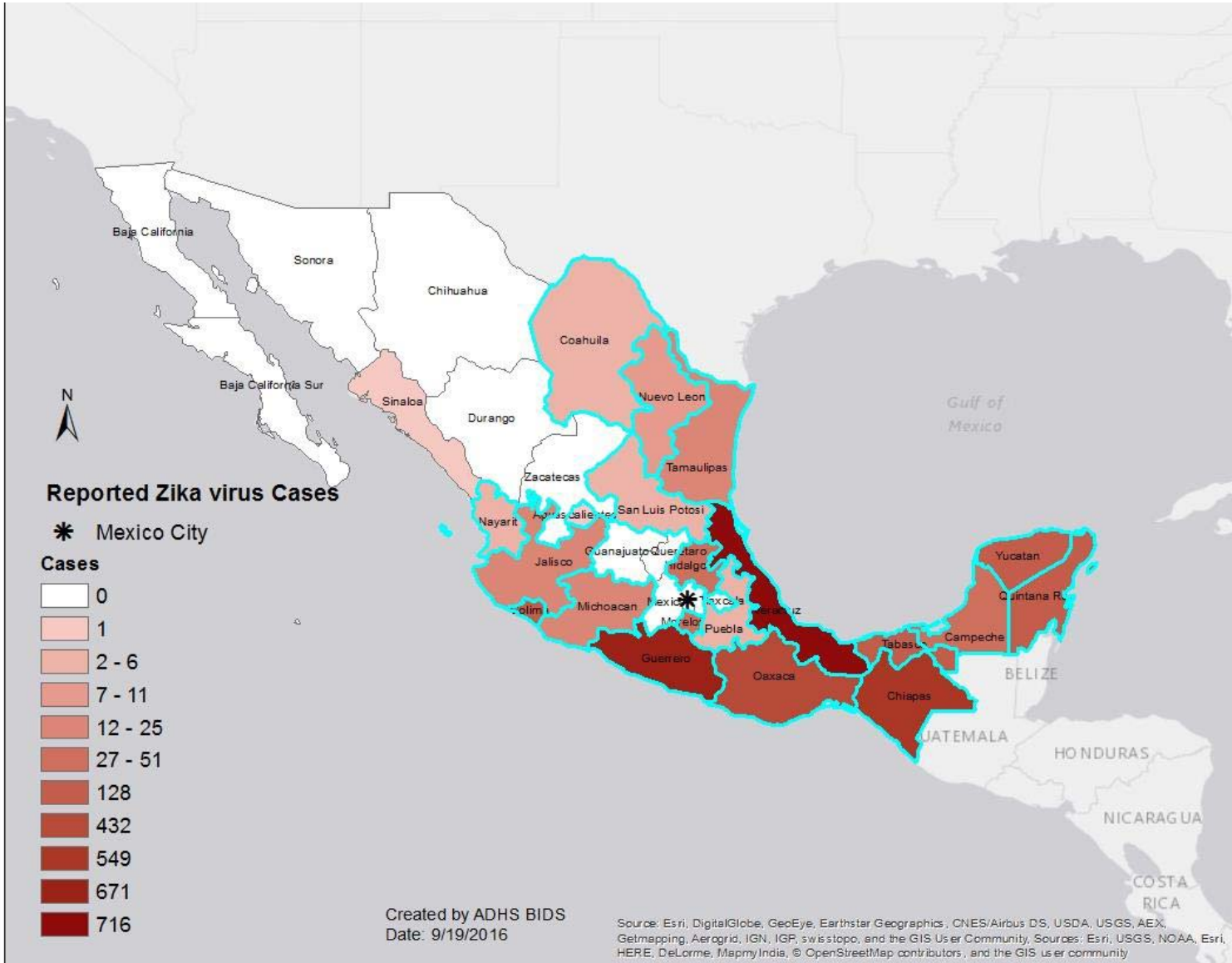
- Microcephaly
- Intracranial calcifications
- Ventriculomegaly
- Miscarriage
- Stillbirth
- Eye defects
- Hearing loss
- Impaired growth and development

# Zika World Map





# Zika Cases in Mexico: mid-September



# State of Residence for U.S. Travel-Associated Zika Cases, Jan 2015-August 2016

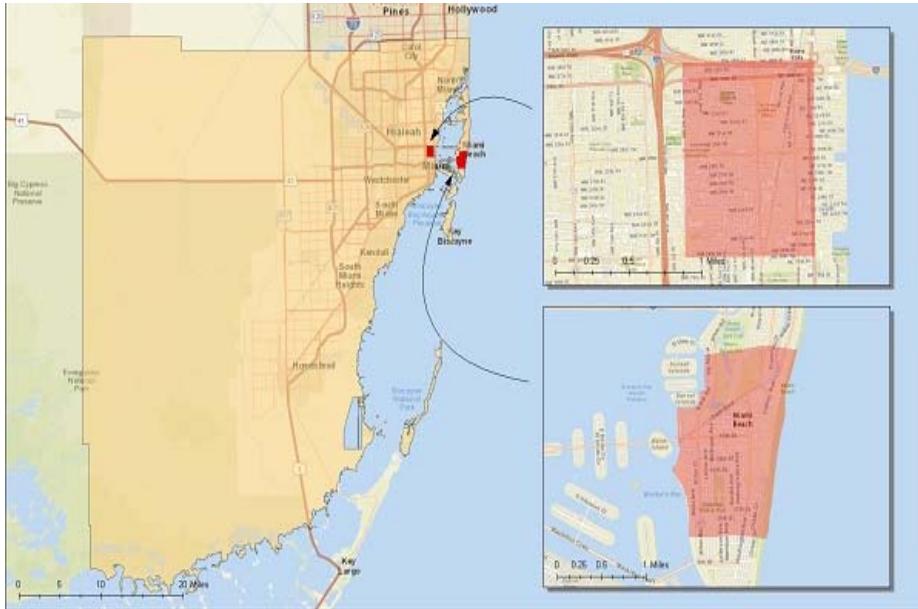


**N = 3,133 imported cases**

## Top Six States

- NY - 685 (22%)
- FL - 596 (19%)
- CA - 224 (7%)
- TX - 181 (6%)
- PN - 102 (3%)
- MD - 95 (3%)
  
- AZ - 29 (1%)

# Zika in Florida



- 43 locally acquired infections
- Additional asx infections
- Miami-Dade County
- Wynwood neighborhood and Miami Beach
- St. Petersburg/Pinellas C.-1
- 430+ imported cases
- NOTE: all southern states are at risk for local transmission

# Zika Update – Maricopa County



- 460+ - people triaged (travelers and pregnant females)
- 22 cases – imported / travelers
- 370+ ruled-out
- 66 - lab testing pending



# Zika Treatment



- No vaccine or specific treatment
- Supportive care
  - Treatment with aspirin and NSAIDs discouraged unless dengue has been ruled-out

# Zika Prevention



- Mosquito avoidance – during & after travel
- Travel alert issued by CDC – pregnant mothers should NOT travel to Zika affected areas
- Pregnant women should abstain from sex or ensure condoms used during sex with men who have travelled to Zika affected areas for the duration of pregnancy
- Blood donors – wait 28+ days after returning from Zika active areas

# Preventing Local Transmission



- For all returning travelers and suspected cases of Zika, chikungunya or dengue:
- Prevent mosquito bites for 3 weeks after return or onset.
- Notify public health officials immediately if you or any family members develop sx
- Check you property for mosquito breeding
- Remove, store or cover all containers

# Zika Surveillance & Response



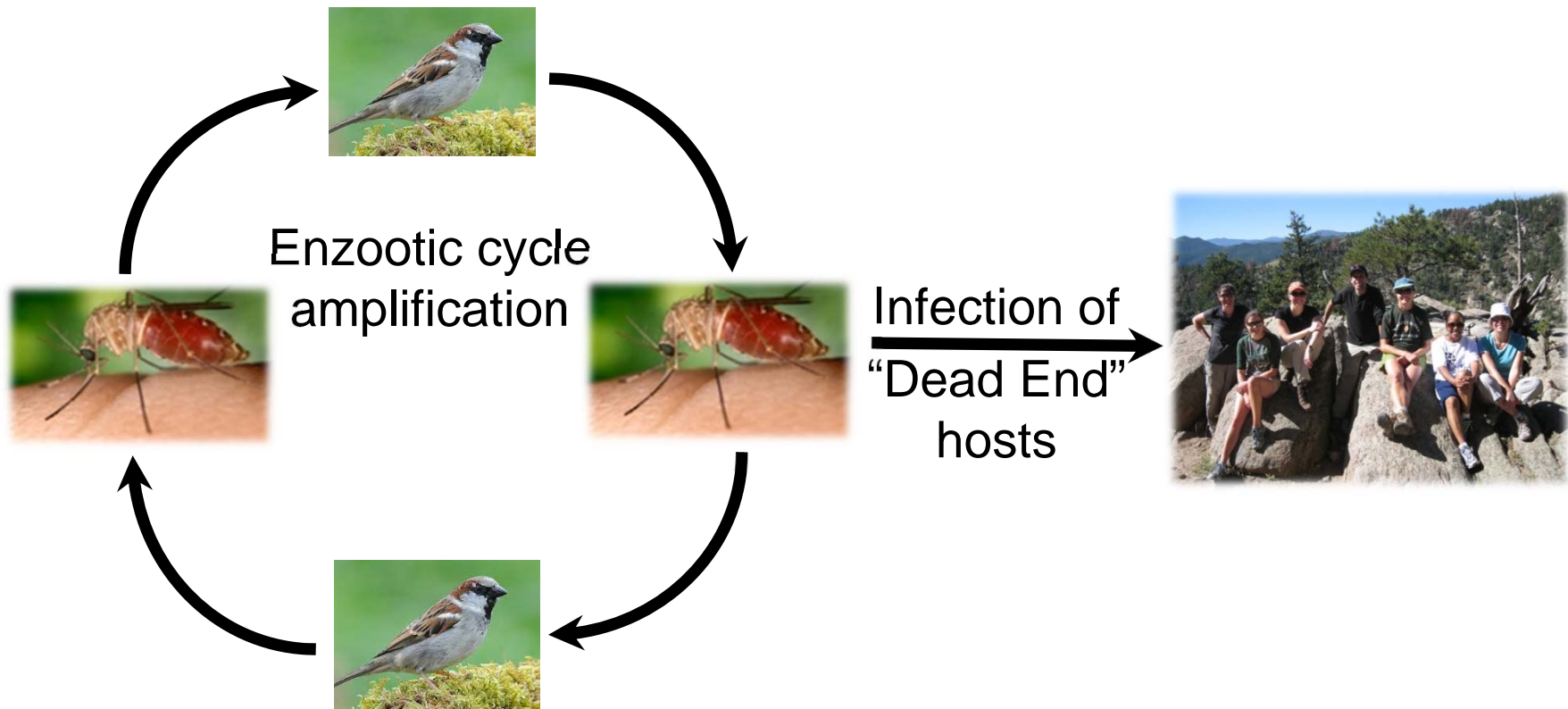
- Enhanced human case surveillance & testing
- Mosquito Surveillance – Valley wide trapping and targeted surveillance in case locations
- Environmental Response/Vector Control
- Prevention Education & Community Involvement



# West Nile Virus (WNV) & St. Louis Encephalitis (SLEV)



# SLEV transmission cycle

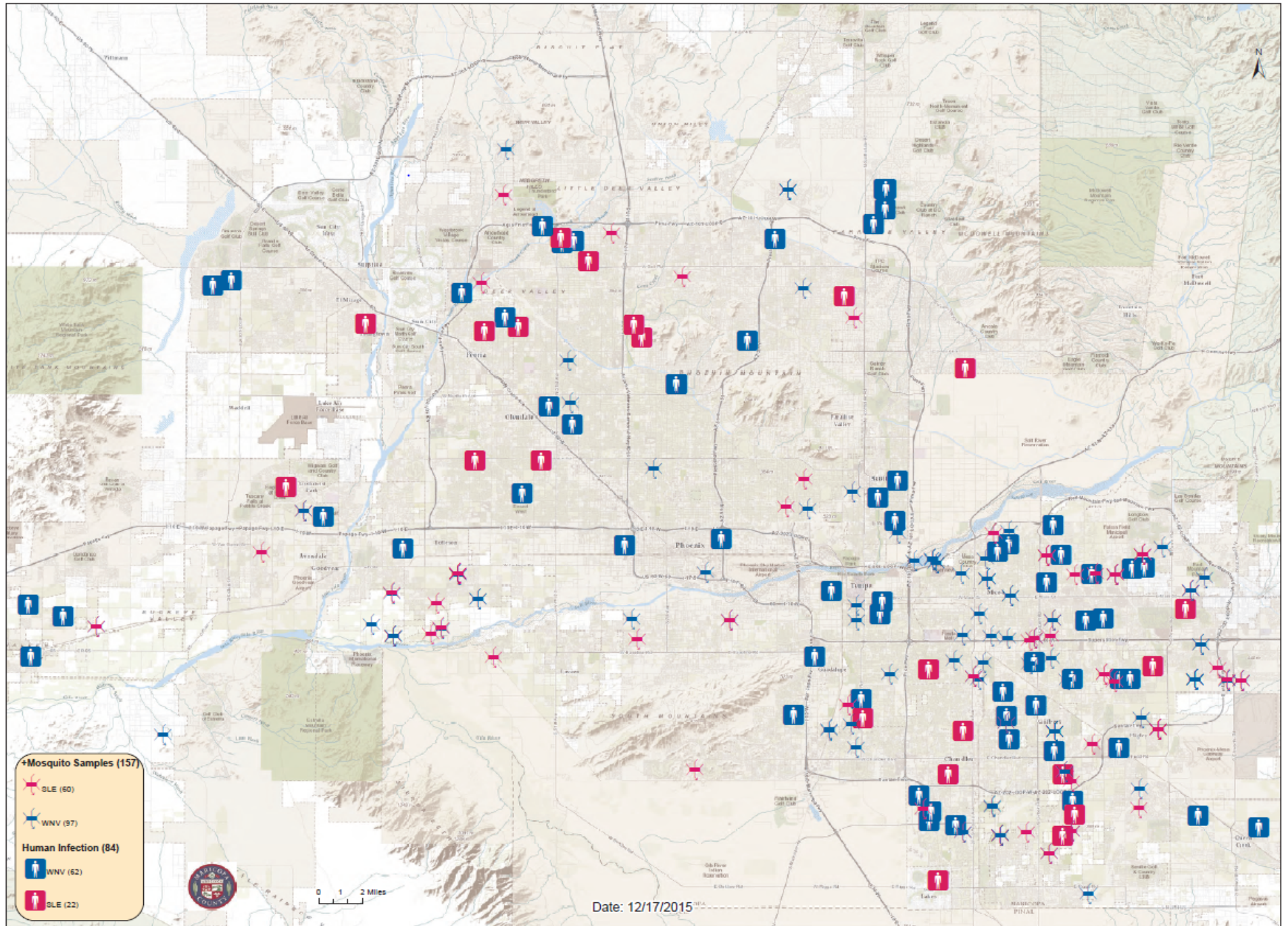


# *Culex* Mosquito Breeding





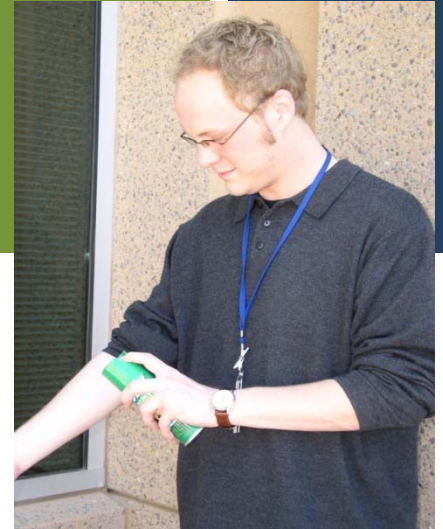
# 2015 ARBOVIRUS ACTIVITY MAP



# Prevention

**The best way to prevent arbovirus infection is to avoid mosquito exposure:**

- Stay indoors if possible
- Use air conditioning and window/door screens
- Use mosquito repellents on exposed skin
- Wear long-sleeved shirts and long pants
- Empty standing water from outdoor containers
- Scrub & rinse insides of any containers that had water
- Remove, cover or properly store all containers to prevent water collection
- **FIGHT THE BITE! DAY & NIGHT!**





Questions?

