



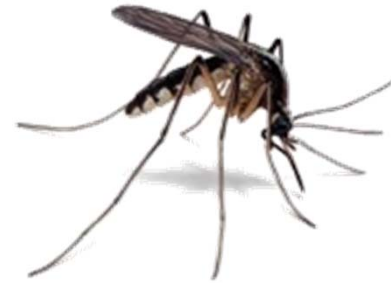
# Mosquitoes in Orange County

## City of Santa Ana

**Lora Young**

**Director of Communications**

Orange County Mosquito and Vector Control District



# Scope and Governance

---

- Established in 1947 as the Orange County Mosquito Abatement District
  - Independent Special District governed by the California H&S Code
- Serves all of Orange County's 34 cities and unincorporated areas
  - 3.2 million residents
- Governed by a 35 member Board of Trustees
  - One City appointed representative from each city
  - One appointee from County
  - Budget 15.5 Million FY 20/21



# Mosquitoes

Southern House  
Mosquito  
*Culex quinquefasciatus*



- West Nile virus
- St. Louis encephalitis
- Western equine encephalitis

Yellow Fever Mosquito  
*Aedes aegypti*



- Zika
- Dengue viruses
- Yellow fever
- Chikungunya
- West Nile virus
- Dog heartworm

Asian Tiger Mosquito  
*Aedes albopictus*



- Dengue viruses
- Zika
- Chikungunya
- West Nile virus
- Dog heartworm

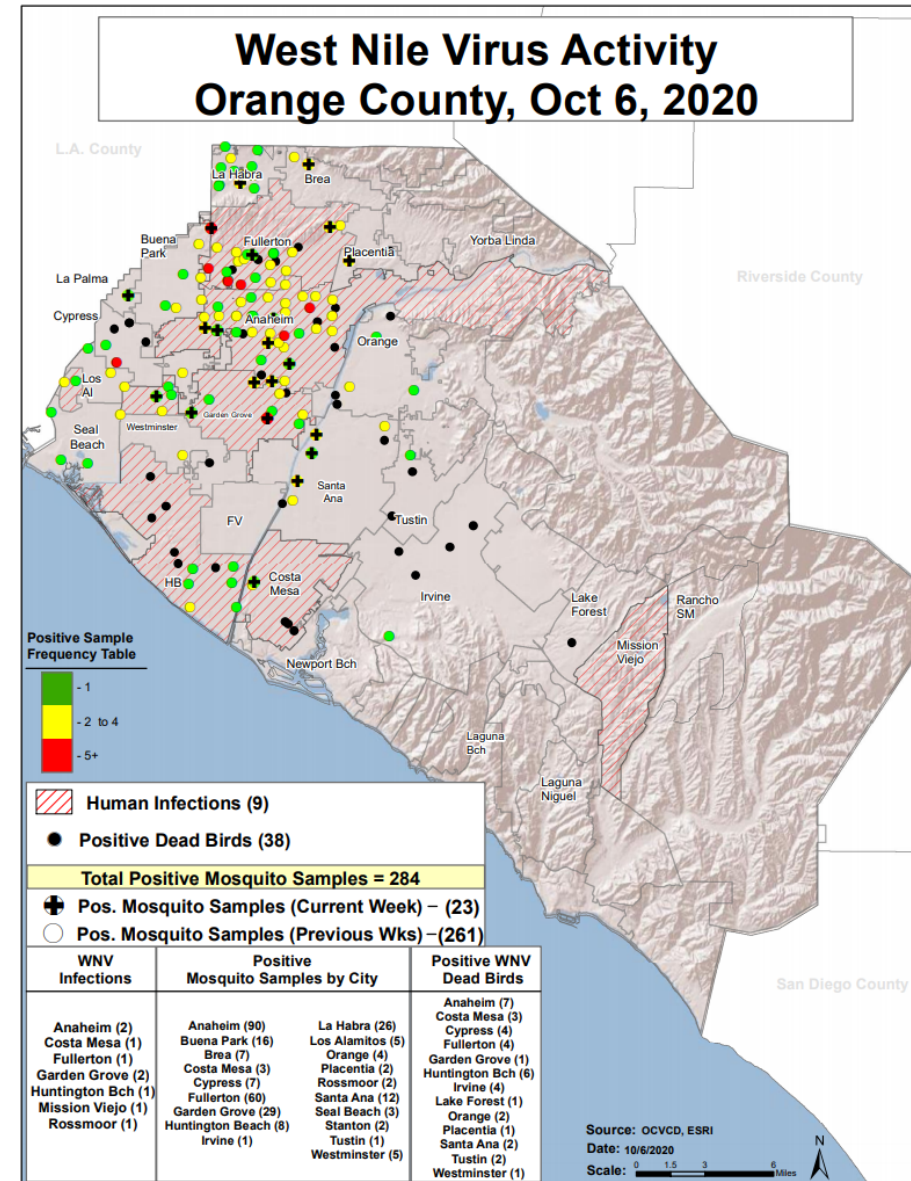


# West Nile Virus in OC in 2020

- 284 WNV Positive Mosquito Samples
- 9 WNV Human Cases
- 38 Birds Tested Positive for WNV

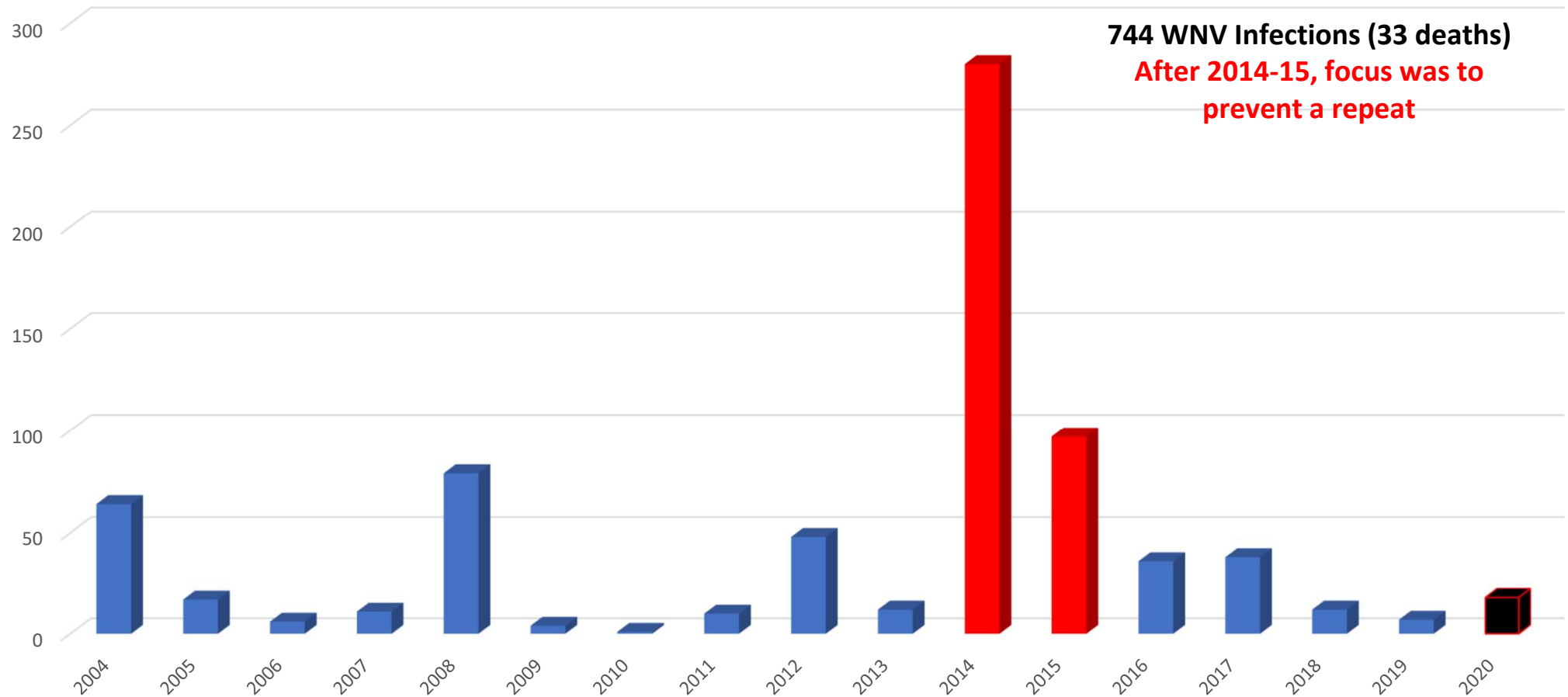
## In Santa Ana

- 12 WNV Positive Mosquito Samples
- No WNV Human Cases
- 2 Bird Tested Positive for WNV



# West Nile Virus in Orange County, 2004 - 2020

---

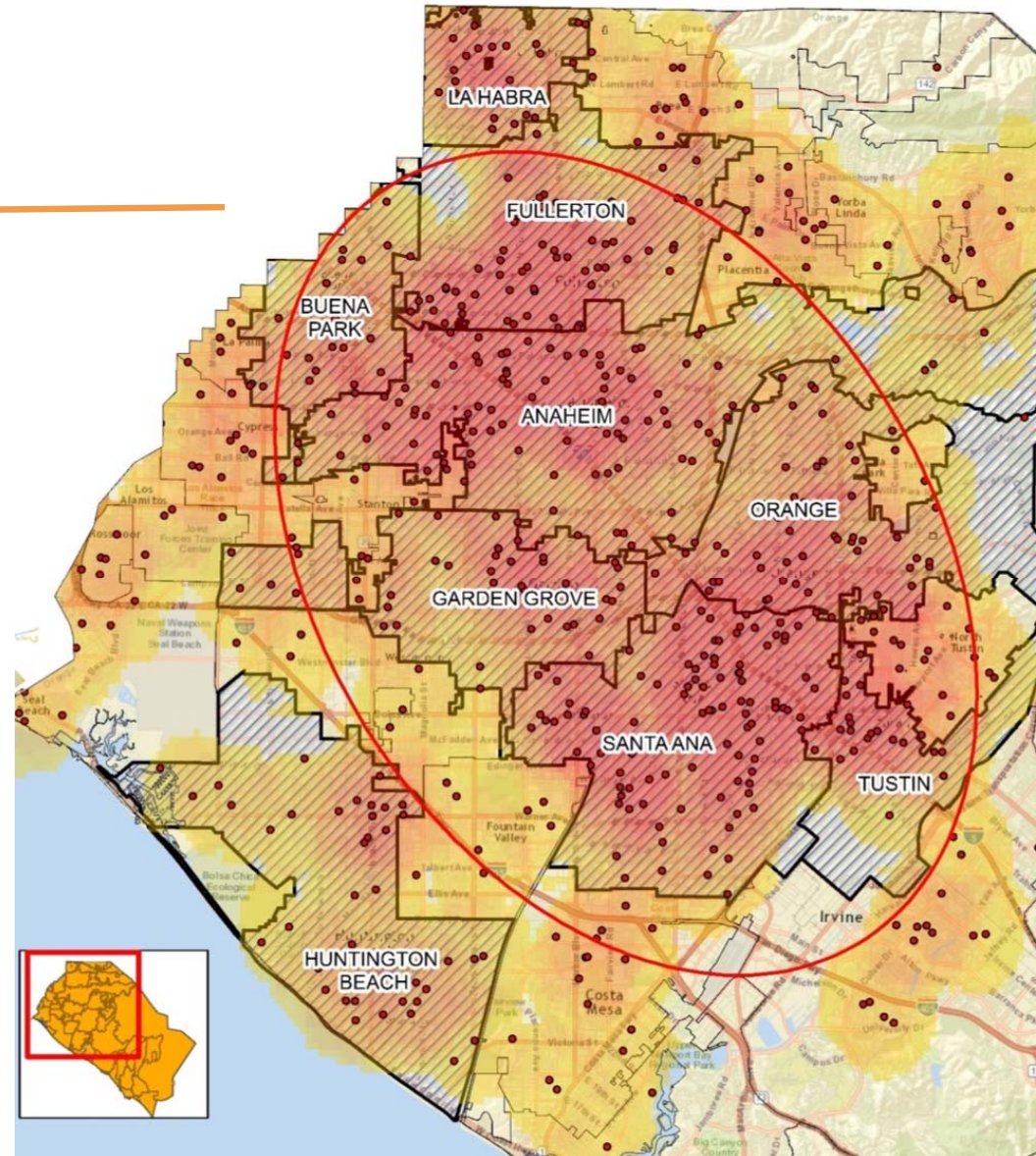
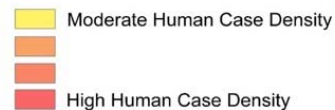




# High Risk 9 Cities

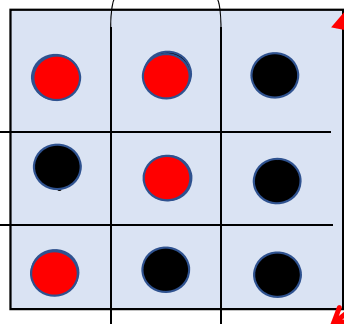
- Santa Ana
- Anaheim
- Fullerton
- Orange
- Garden Grove
- Huntington Beach
- Tustin
- La Habra
- Buena Park

WNV Nile Virus High Risk Areas  
2004-2016  
Hotspot Analysis



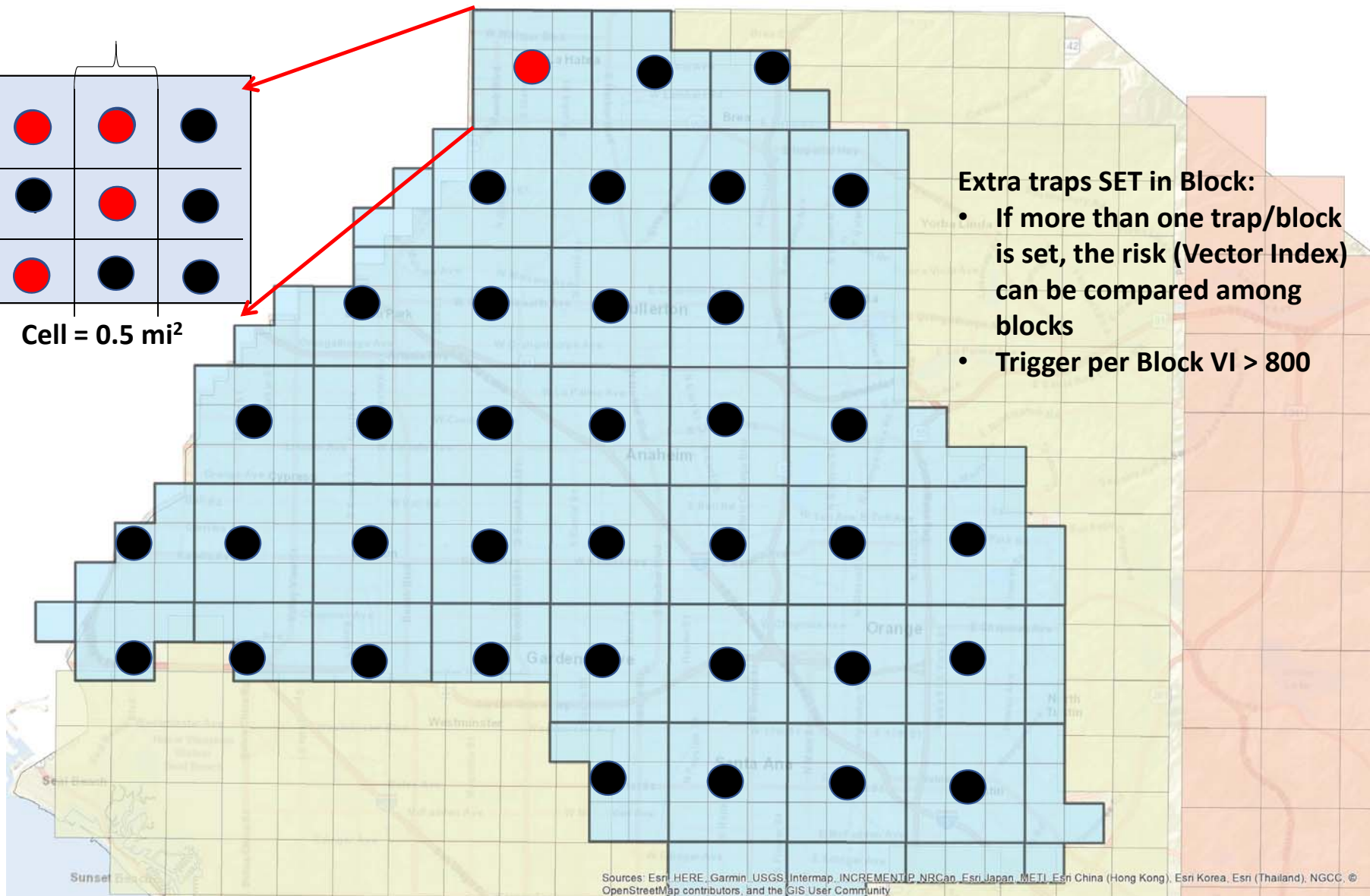
BLK =  
4.5 mi<sup>2</sup>

Cell = 0.5 mi<sup>2</sup>



**Extra traps SET in Block:**

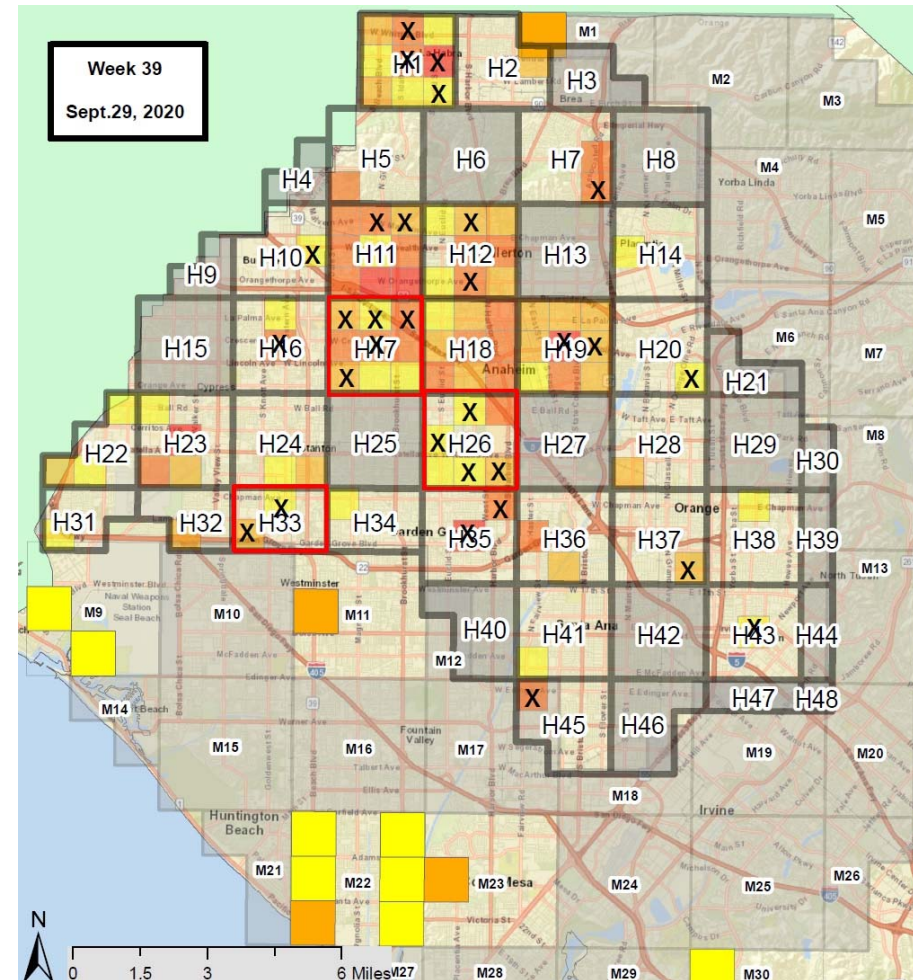
- If more than one trap/block is set, the risk (Vector Index) can be compared among blocks
- Trigger per Block VI > 800





# Determining High Risk Areas

- District sets over 100 traps per week
- Extended trapping is initiated with a positive sample
- Control methods are determined based on surveillance data and increased risk for mosquito-borne diseases





# Integrated Vector Management

## Early Intervention

- Advisory Notices
- Treatment of mosquito breeding sources
- Source Reductions
- Surveillance
- Emergency Response



**PUBLIC HEALTH NOTICE**

**West Nile virus has been detected in this area**

Adult mosquito control applications may occur if the area continues to have high West Nile virus activity

Follow these recommendations to protect yourself and your community:

- Dump or drain any standing water
- Repair window and door screens
- Apply repellent when outdoors
- Avoid spending time outdoors at dawn or dusk
- Report mosquitoes, dead birds, neglected swimming pools, ponds, and fountains

OCVECTOR.ORG | 714.971.2421



# Invasive Aedes in Orange County



## DAILY BREEZE

SIGN UP FOR NEWSLETTERS  
E-EDITION  
SUBSCRIBE + SUBSCRIBER SERVICES

AUDIENCE X Elevate campaign performance  
with micro-targeted messaging.

[News + Investigations](#) ▾ [Local News](#) ▾ [Sports](#) ▾ [Things to do](#) ▾ [Business](#) ▾ [Obituaries](#) ▾ [Opinion](#)

Search

### TRENDING:

[3 burglary suspects arrested](#) [Arson charges after boat fire](#) [‘The Real Housewives of Orange County’](#) [Mosquito misery](#) [Pit bull kills small dog, awaits fat](#)

### NEWS

## Meet the new Aedes mosquito spreading misery around a wide swath of Southern California

## THE ORANGE COUNTY REGISTER

SIGN UP FOR NEWSLETTERS  
E-EDITION  
SUBSCRIBE + SUBSCRIBER SERVICES

AUDIENCE X Turn  
and

[News](#) ▾ [North OC News](#) ▾ [South OC News](#) ▾ [Sports](#) ▾ [OC Varsity](#) ▾ [Things To Do](#) ▾ [Obituaries](#) ▾ [Opinion](#)

### TRENDING:

[She helped capture Golden State Killer](#) [Friday football photos](#) [Milo Yiannopoulos plots UCI return](#) [10-vehicle crash on 5 Freeway](#) [D](#)

**BREAKING NEWS** [Holy fire flares up near Santiago Peak, home of several communication towers](#) August 27, 2018, 12:47 pm

### NEWS

## Increase in mosquito population throughout Orange County — particularly in Santa Ana — has vector officials on alert

# Aedes Infestation

2016 = 3,500 acres or 5.0 sq.mi

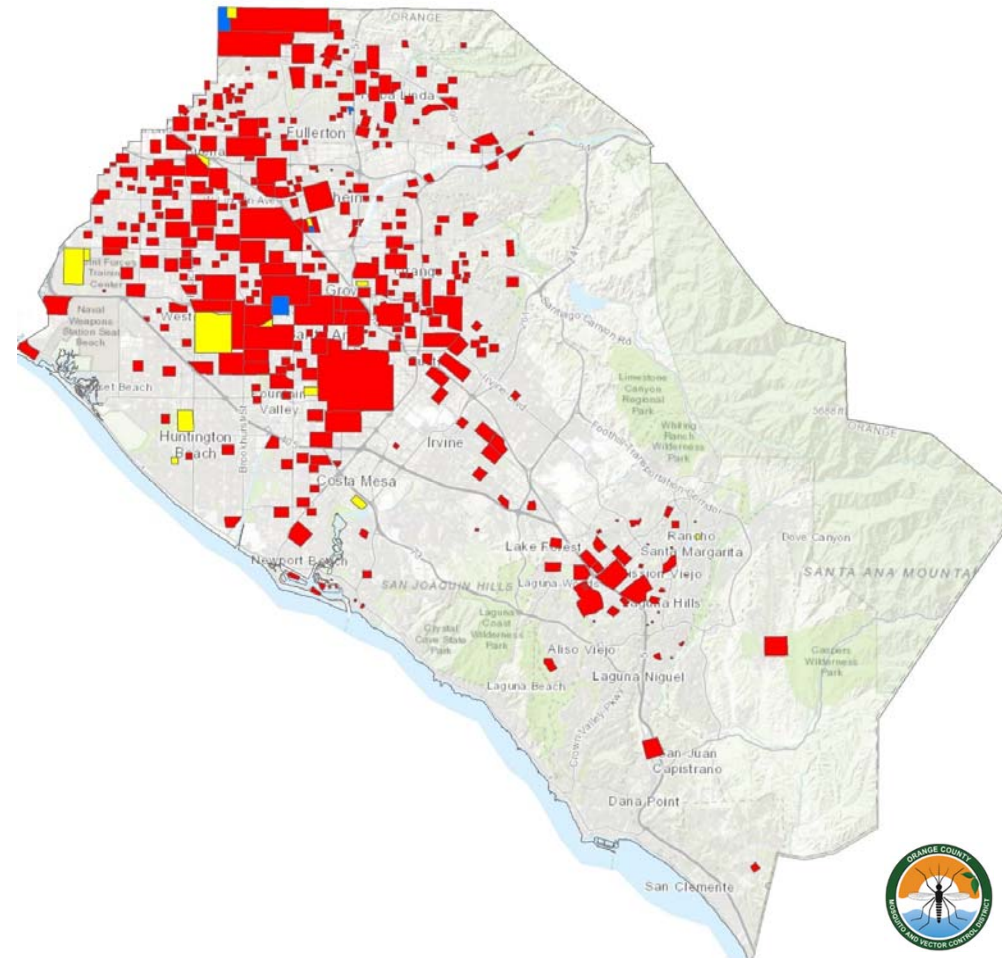
2017 = 17,000 acres or 26 sq.mi

2018 = 45,600 acres or 71 sq.mi

2019 = 63,813 acres or 99.7 sq.mi

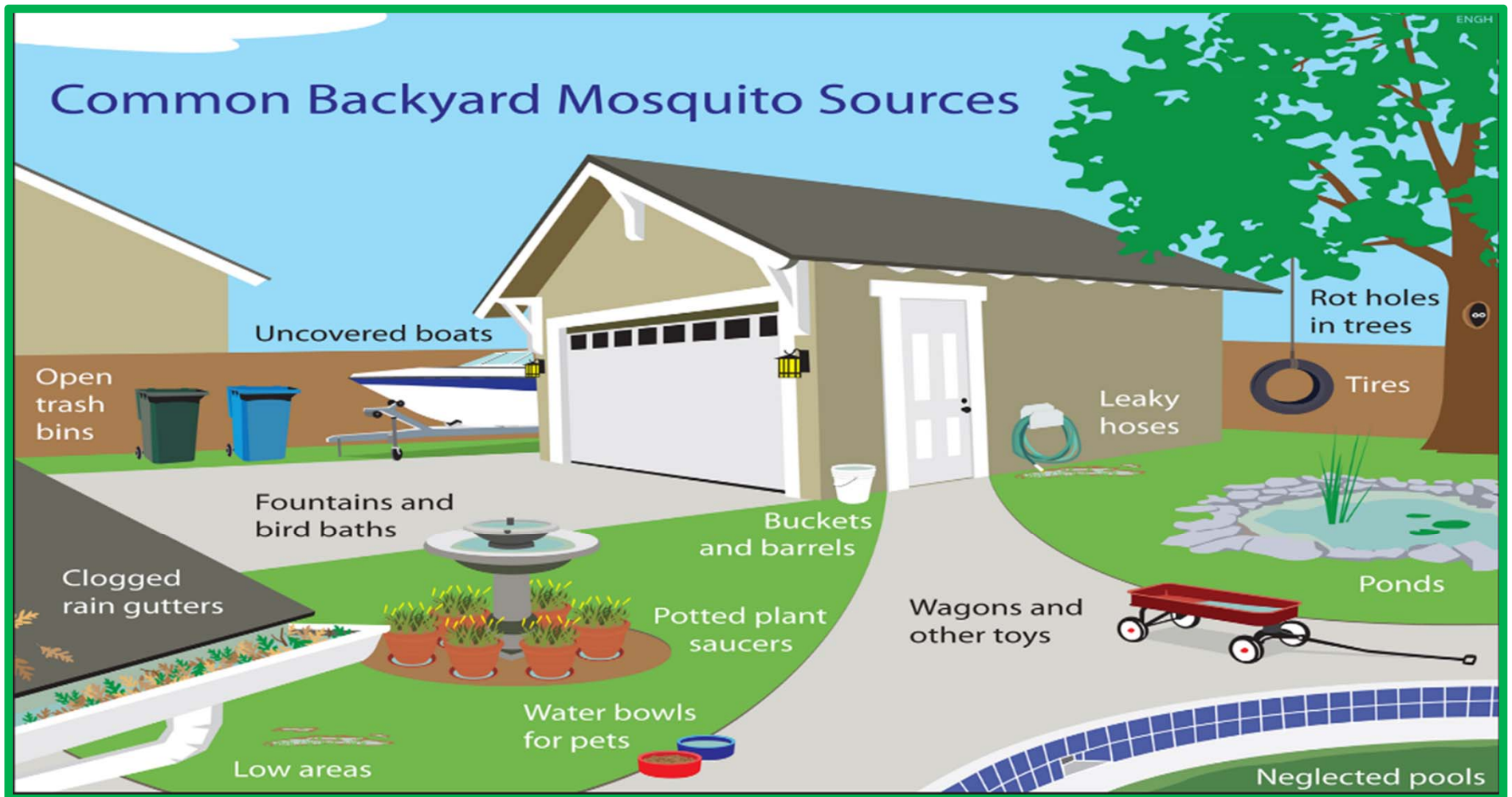
2020 = 65,229 acres or 102 sq.mi

2020



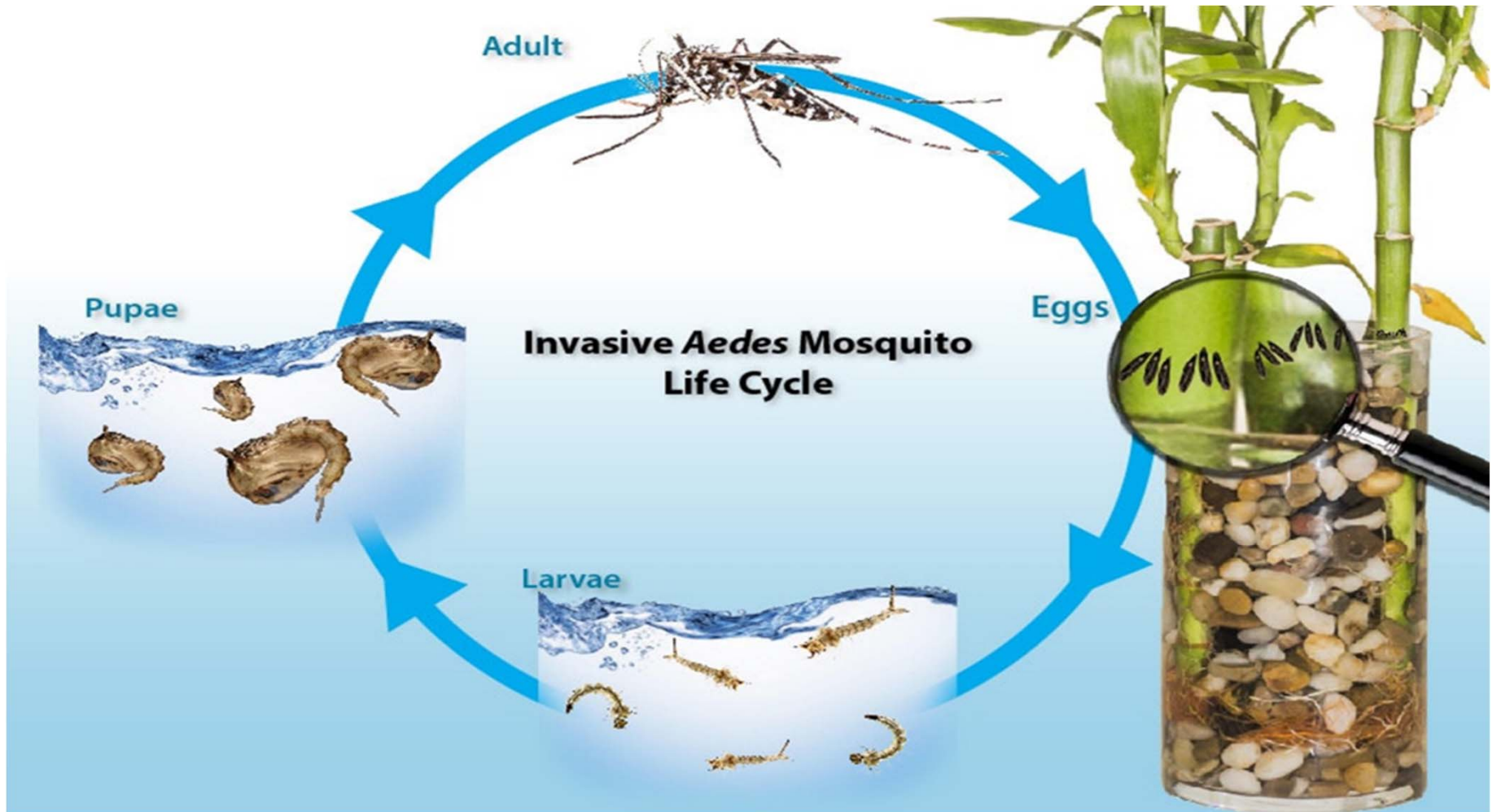


# Backyard Breeding

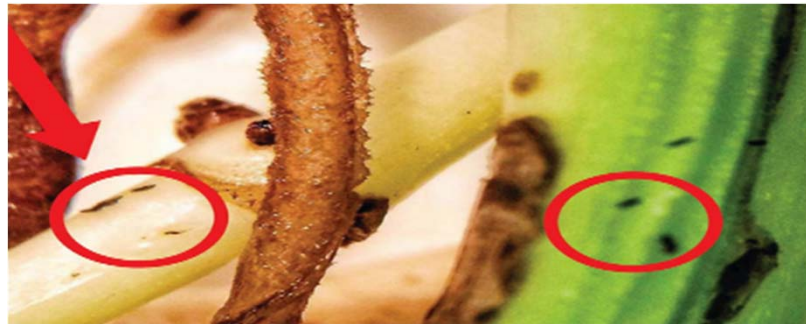




# Invasive Aedes Life Cycle



# Egg Size



# What Is the difference?

---

	Culex	Aedes
Breeding habits	Larger Sources	Backyard Sources
Biting habits	Bite at dusk and dawn, prefer birds	Bite during day, prefer mammals
Eggs	Eggs laid in rafts	Individual eggs
Breeding time	One week	Eggs viable for years in dry conditions
Where do they live	Outdoors	Indoors and Outdoors



## 2020 Service Request in Santa Ana

---

	Santa Ana	County
Mosquitoes	568	7230
Rats	13	374
Red Imported Fire Ants	18	659
Other (includes mosquitofish requests)	25	193
Total	624	8456





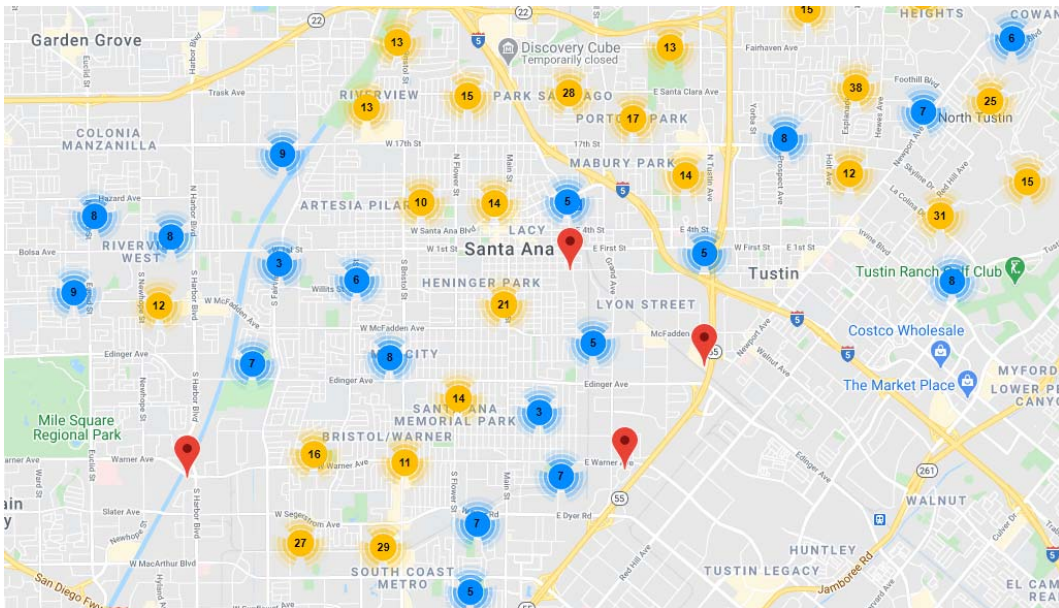
# Mosquito Activity in Santa Ana

## High Service Request Areas

- E. 17th St & Wright
- W. Edinger & S. Flower area
- Civic Center (W Santa Ana Blvd. between N Ross St & N Broadway)

## High Mosquito Trap Counts

- 21<sup>st</sup> and Alana
- Birch Park
- Fairhaven/Santa Ana Cemetery



# Controlling for Rats

---

- The District modified its rat control program due to:
  - Growing concerns and evidence showing secondary poisoning of wildlife
  - Increasing regulatory restrictions
  - The District's commitment to integrated vector management practices (IVM)



# Controlling for Rats

- Rats are attracted to an area due to:
  - Availability of food
    - Pet food
    - Improper composting
    - Vegetable gardens, fruit trees
    - Snails
  - Availability of habitat
    - Over-grown trees, shrubs, and plants
    - Access into homes and other structures
  - Water





# Working Together

---

- Include the District messages in emails and newsletters to residents
- Partner on shared social media messaging
  - Reshare alerts and notifications for your district
- Invite the District to community outreach events and presentations
- Help increase awareness on the shared responsibility of mosquito control:
  - Residents should check and eliminate for standing water weekly
  - Remove saucers from under potted plants.
  - Scrub outdoor containers that have held water with hot, soapy water to kill mosquito eggs. Store in a dry place
  - Wear EPA-registered repellent when outdoors
  - Talk to neighbors about their mosquito control







# Questions



[www.ocvector.org](http://www.ocvector.org)