



# **Mosquito Control Matters**

**Gary Goodman  
General Manager**

**Sacramento-Yolo Mosquito &  
Vector Control District**

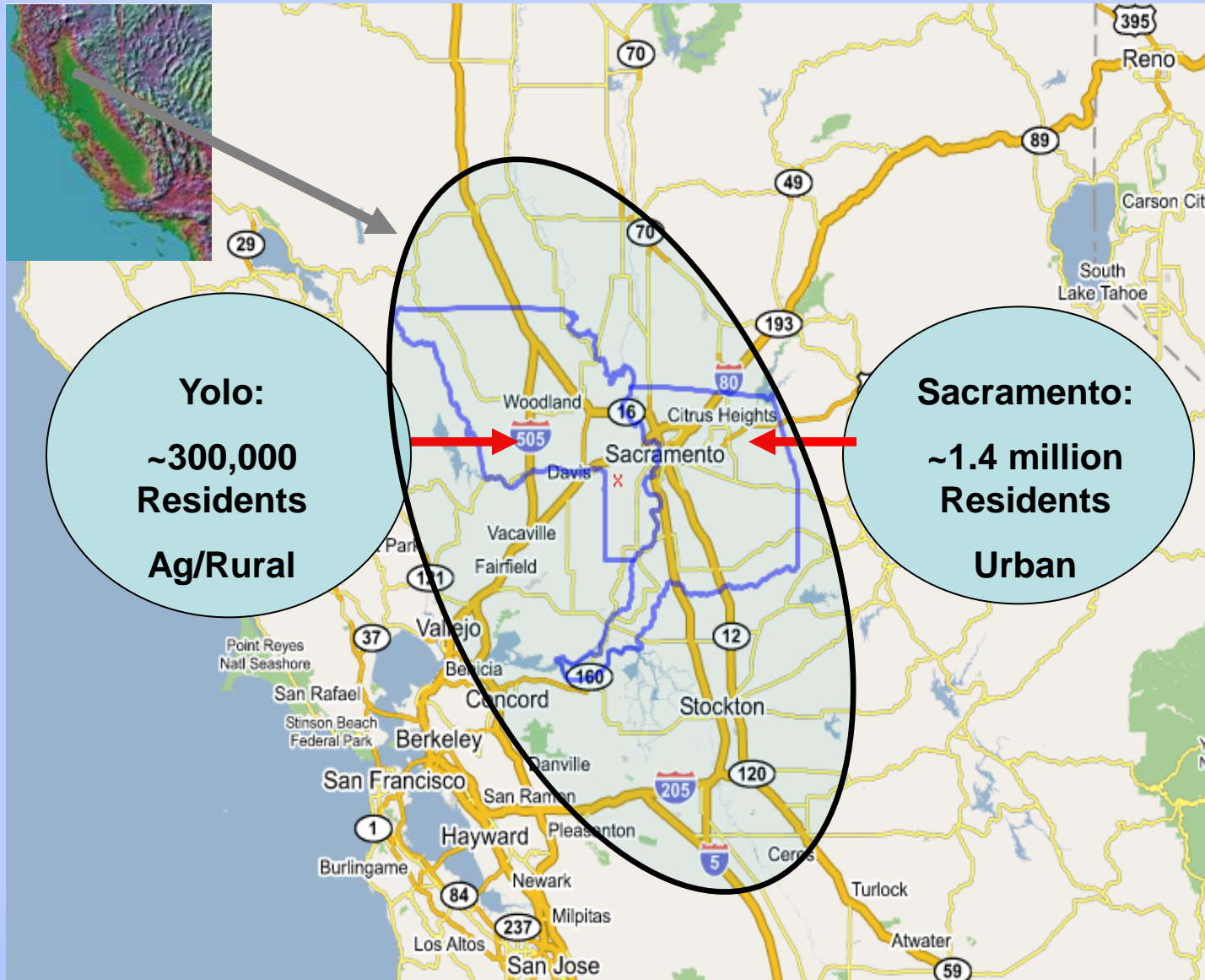
# Sacramento–Yolo Mosquito & Vector Control District



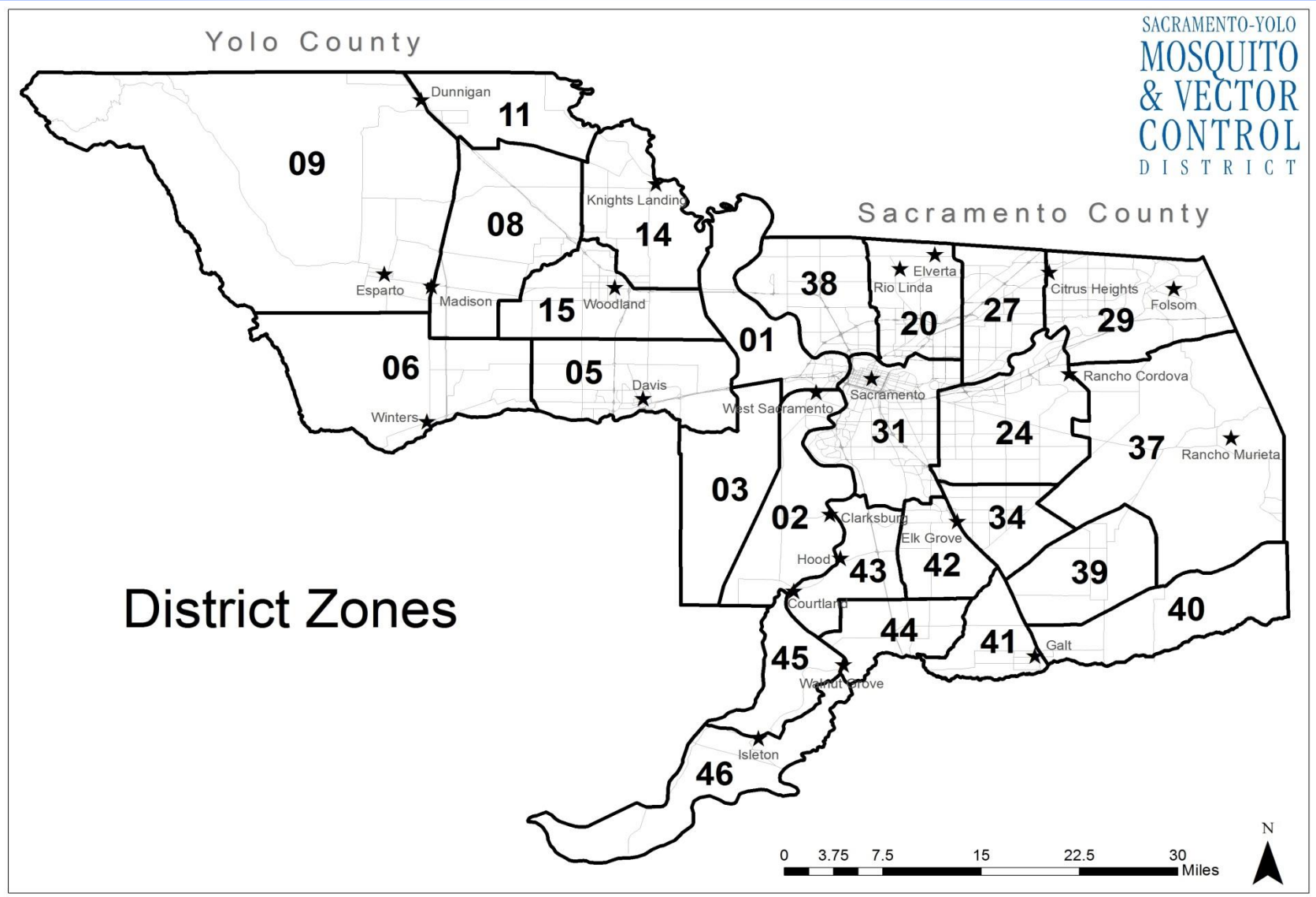
To provide safe, effective and economical mosquito and vector control. To accomplish this, we provide ongoing surveillance of mosquitoes and other vectors to determine the threat of disease transmission and lower annoyance levels.



# Sacramento and Yolo Counties



# Our District Area



# Mosquito Life Cycle



Egg Raft



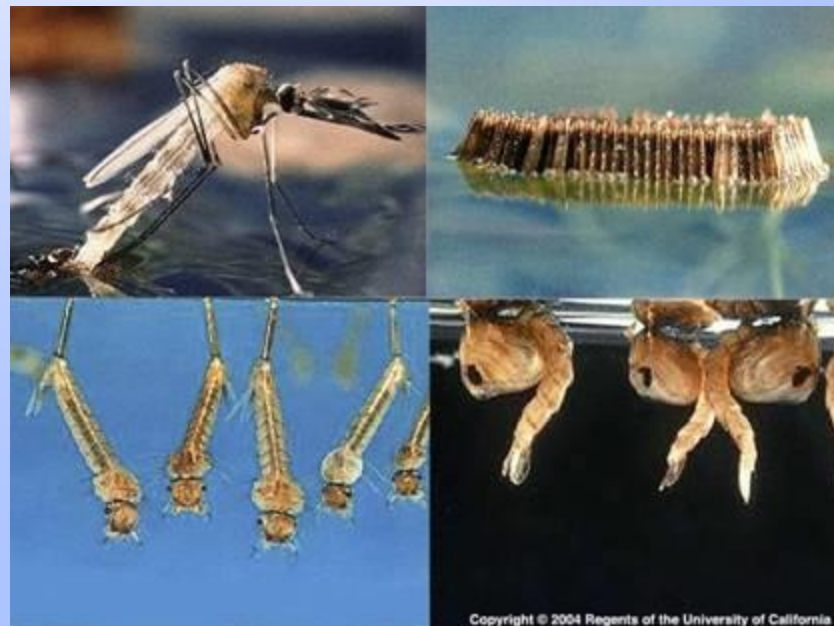
Larva



Pupa



Adult Mosquito



# Mosquito Habitat – Ag Areas



# Natural Sources

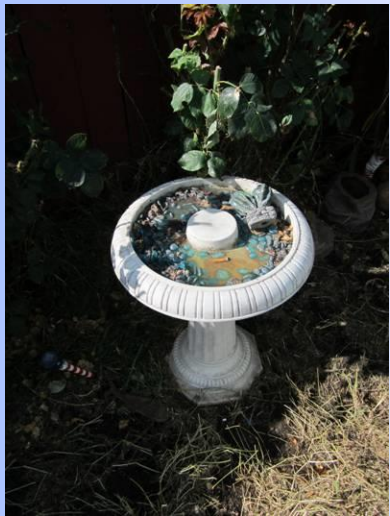


# Urban Sources





# Backyard Sources



# Urban “Wetlands”



Properly maintained pool will not produce mosquitoes but an un-maintained pool will!

Mosquitofish will prevent mosquitoes

Requires public participation

- 1) Alert us to bad pools
- 2) DO NOT put chlorine into pool unless consistently maintained!



# Water Management is KEY



Managed Water = No Mosquitoes

Only irrigate lawn - NOT sidewalk/gutter

Recycle green waste - DON'T dump in the street!

Check yard once a week!

- Empty any stagnant water from buckets, containers, bird baths, pet dishes
- Recycle fountains
- Call District for free mosquitofish

# What Diseases Can Mosquitoes Carry?



West Nile Virus

Chikungunya

Dengue Fever

Malaria

Dog Heartworm

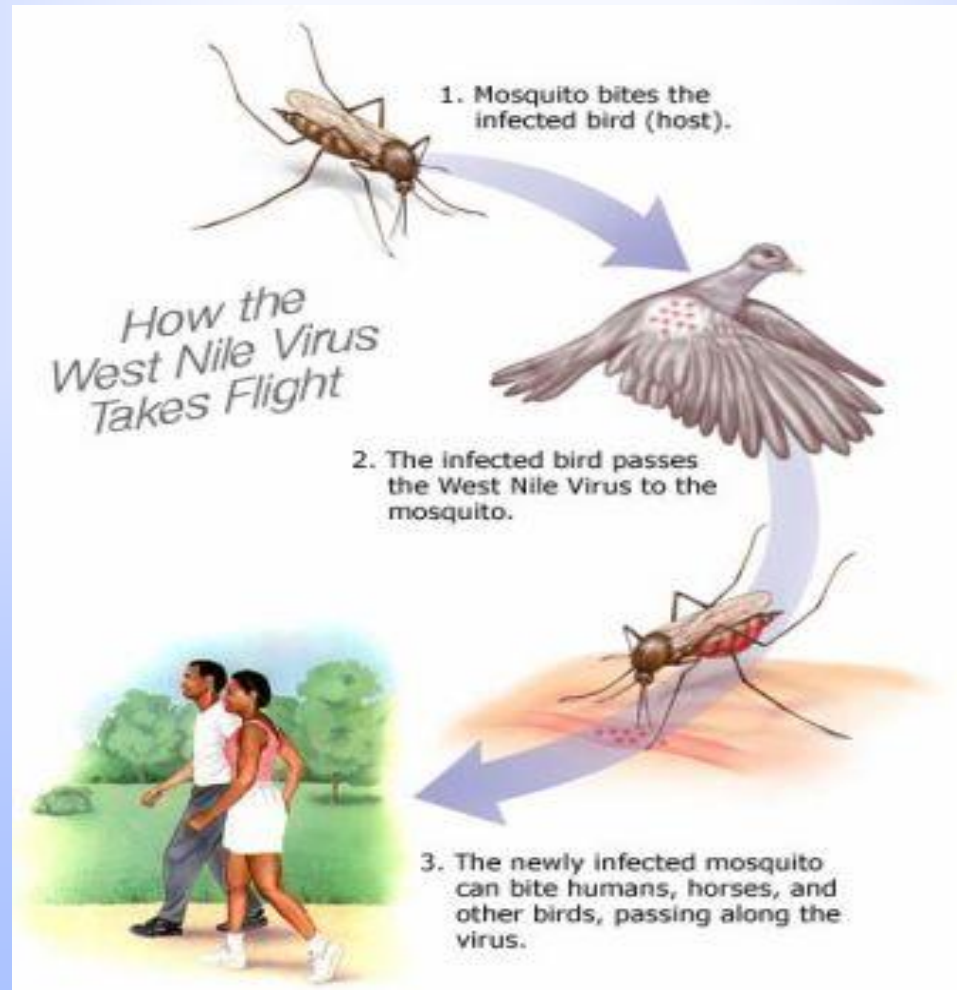
# What is West Nile Virus?



West Nile Virus (WNV) is a virus transmitted by mosquitoes that can cause disease in humans, birds, horses, domestic and wild animals.



# How Do Mosquitoes Get West Nile Virus?



# What are the Symptoms?



20% of people develop West Nile Fever. Approximately 2 to 14 days after being bitten you can have these symptoms:

- Fever between 101°-106° degrees
- Headaches, body aches
- Fatigue
- Rash on your skin
- Possible pain around the eyes
- Possible swelling of the lymph nodes

# How long do Symptoms Last?



These symptoms can last 2-3 weeks or longer. If symptoms persist, you can develop the more severe neuroinvasive form of the disease such as:

- Meningitis: inflammation of the membranes that cover the brain
- Encephalitis: swelling of the brain



# WNV Activity in California



<u>Year</u>	<u>Confirmed Human Cases</u>
2014	801
2013	372
2012	479
2011	158
2010	111
2009	112
2008	445
2007	380
2006	278
2005	880
2004	779



# New Threats?



Dengue Fever transmitted by  
the  
**Asian Tiger Mosquito**  
(*Aedes albopictus*)

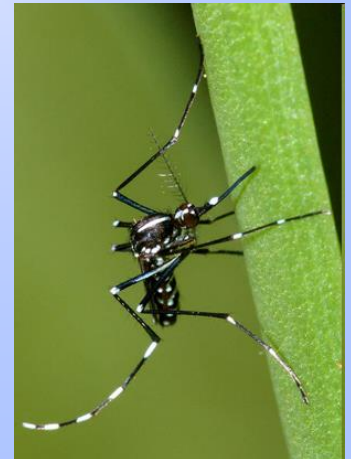


Aggressive bay biter

Was first imported in a tire shipment, later was also brought in Lucky Bamboo plants

2011 was found in Southern California and is now well established

Symptoms of dengue: high fever, headaches, intense pain in muscles, joints and bones



# New Threats?



## Dengue Fever and Chikungunya transmitted by Yellow Fever Mosquito (*Aedes aegypti*)

Bites during the day

2013 was found in Madera, Fresno  
and San Mateo County and the  
concern is it will continue to spread  
Eggs can stay dormant for months



# What is Chikungunya?



A viral infection transmitted to humans by the bite of an infected mosquito, mainly *Aedes aegypti* and *Aedes albopictus*



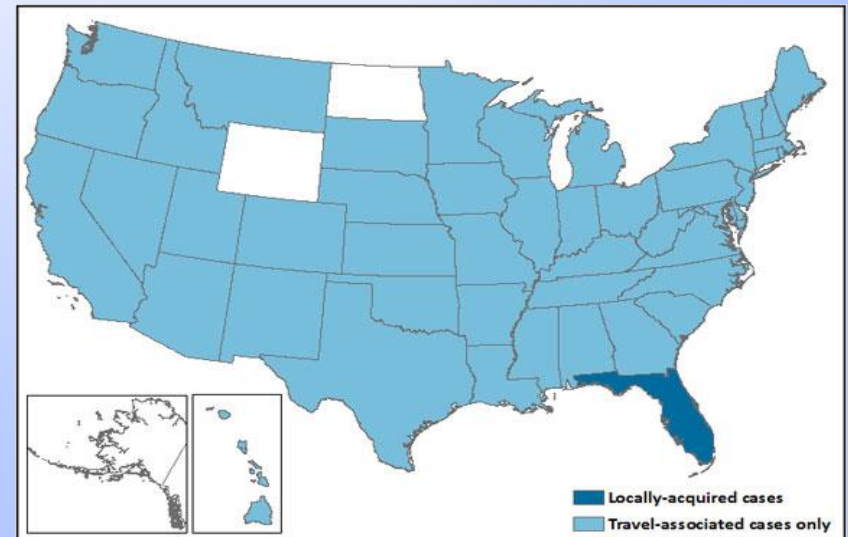
*Aedes aegypti*



*Aedes albopictus*

Originated in Tanzania and the word means to be bent out of shape in reference to how it can cause people to contort in pain

Since 2013, more than 1 million cases have been reported in the Caribbean, Central America and South America



**In 2014, 2492 cases were reported in the United States**

# Integrated Mosquito Management Measures



- Public Information
- Surveillance
- Biological Control
- Physical Control
- Control-Larvicide
- Control-Adulticide



# Public Information



**Mosquito and West Nile Awareness Week**  
**April 19–April 25**  
PREVENT MOSQUITOES AND WEST NILE VIRUS:  
**DRAIN** standing water  
**DRESS** protectively  
**DEFEND** yourself with insect repellent

**FIGHT THE BITE!**  
For event information call  
1 (800) 429-1022  
or visit [www.FIGHTtheBITE.net](http://www.FIGHTtheBITE.net)



**NEGLECTED SWIMMING POOLS**  
produce mosquitoes putting you  
and your family at risk.  
One pool can produce thousands  
of mosquitoes and affect an  
entire neighborhood!

**Fight the Bite**

Report Neglected Pools or other Mosquito Problems  
**1.800.429.1022** [www.FIGHTtheBITE.net](http://www.FIGHTtheBITE.net)

SACRAMENTO-YOLO MOSQUITO & VECTOR CONTROL DISTRICT

FOR A FULL LIST OF BUSINESSES FOR THE BITE  
VISIT [WWW.FIGHTTHEBITE.NET](http://WWW.FIGHTTHEBITE.NET)  
OR CALL 1-800-429-1022  
FILE NAME: 07-02-09  
DATE: 07-02-09  
REVISION: 07-02-09

FOR CREDIT SELECTION:  
PHYS / ANIMALS / BIRDS / OTHER



# Surveillance



# Fisheries Program

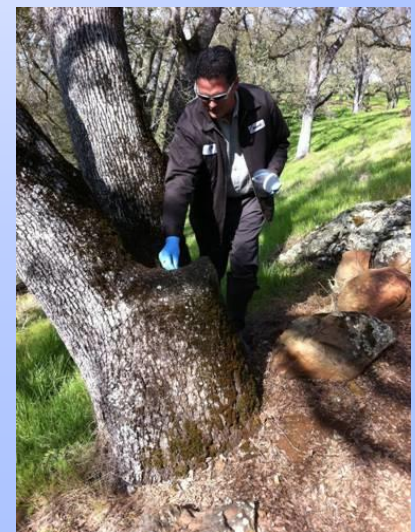




# Physical Control



# Larval and Adult Mosquito Control



# Protect yourself !



## Repellents (CDC Website)

### – DEET

- 23.8% DEET = ~5 hours of protection
- 20% DEET = ~4 hours of protection
- 6.65% DEET = ~2 hours of protection
- 4.75% DEET = ~1.5 hour of protection.

### – Picaridin

### – Oil of Lemon Eucalyptus

### – IR 3535



# **Sacramento-Yolo Mosquito and Vector Control District**

**1-800-429-1022**

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